



November 27, 2007

**VIA OVERNIGHT MAIL**

Veronique Dubois  
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800, Place Victoria  
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Montréal, Québec H4Z 1A2

Re: *North American Electric Reliability Corporation*

Dear Ms. Dubois:

The North American Electric Reliability Corporation ("NERC") hereby submits Notice of Filing of the North American Electric Reliability Corporation of Proposed Reliability Standard Regarding Nuclear Plant Interface Coordination. In addition to the paper copy of this filing, NERC is also submitting one CD containing a copy of the filing. NERC requests, to the extent necessary, a waiver of any applicable filing requirements with respect to the filing of this notice.

Please contact the undersigned if you have any questions.

Respectfully submitted,

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Enclosures

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**BEFORE THE  
RÉGIE DE L'ÉNERGIE  
THE PROVINCE OF QUÉBEC**

**NORTH AMERICAN ELECTRIC            )  
RELIABILITY CORPORATION            )**

**NOTICE OF FILING OF THE  
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION  
OF PROPOSED RELIABILITY STANDARD  
REGARDING NUCLEAR PLANT INTERFACE COORDINATION**

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## **I. INTRODUCTION**

The North American Electric Reliability Corporation (“NERC”) hereby files notice of one reliability standard, NUC-001-1 — Nuclear Plant Interface Coordination reliability standard.

On May 2, 2007, the NERC Board of Trustees approved NUC-001-1 reliability standard proposed by NERC. **Exhibit A** to this filing sets forth the proposed reliability standard. **Exhibit B** contains the complete development record of the reliability standard. **Exhibit C** contains the Standard Drafting Team roster.

NERC petitioned the Federal Energy Regulatory Commission (“FERC”) for approval of this reliability standard on November 19, 2007. NERC also is filing this reliability standard with the other relevant governmental authorities in Canadian provinces and with the National Energy Board.

## II. NOTICES AND COMMUNICATIONS

Notices and communications with respect to this filing may be addressed to the following:

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## III. BACKGROUND

### a. Reliability Standards Development Procedure

NERC develops reliability standards in accordance with Section 300 (Reliability Standards Development) of its Rules of Procedure and the NERC *Reliability Standards Development Procedure*, which is incorporated into the Rules of Procedure as Appendix 3A. The development process is open to any person or entity with a legitimate interest in the reliability of the bulk power system. NERC considers the comments of all stakeholders, and a vote of stakeholders and the NERC Board of Trustees is required to approve a reliability standard for submission to the Commission.

The proposed reliability standard set out in **Exhibit A** has been developed and approved by industry stakeholders using NERC's *Reliability Standards Development Procedure*, and it was approved by the NERC Board of Trustees on May 2, 2007 for filing with the appropriate governmental authorities.

## **b. Progress in Improving Proposed Reliability Standards**

NERC continues to develop new and revised reliability standards that address the issues NERC identified in its initial filing of proposed reliability standards in April 2006. NERC has incorporated these activities into its *Reliability Standards Development Plan: 2008-2010* that was submitted on October 11, 2007. The reliability standard proposed for approval is a new reliability standard that addresses a key reliability goal that was not subject to review during the initial submission of NERC's reliability standards. Further, since the reliability standard is completed and approved, it is not included in NERC's work plan.

## **IV. JUSTIFICATION FOR APPROVAL OF PROPOSED RELIABILITY STANDARD**

This section summarizes the development of the proposed reliability standard and provides evidence that the proposed reliability standard is just, reasonable, not unduly discriminatory or preferential and in the public interest. This section describes the reliability objectives to be achieved by approving the reliability standard. The following section describes the stakeholder ballot results and how key issues were considered and addressed by the standard drafting team.

The complete development record for the proposed reliability standard is available in **Exhibit B**. This record includes the successive drafts of the reliability standard, the implementation plan, the ballot pool and the final ballot results by registered ballot body members, stakeholder comments received during the development of the reliability standard, and how those comments were considered in developing the reliability standard. The standard drafting team roster is provided in **Exhibit C**.

### **a. Basis and Purpose of NUC-001-1 — Nuclear Plant Interface Coordination**

This reliability standard requires coordination between nuclear plant generator operators (may be generator owners or generator operators) and transmission entities for the purpose of ensuring nuclear plant safe operation and shutdown. This proposed reliability standard, NUC-001-1 — Nuclear Plant Interface Coordination standard, addresses the coordination of interface requirements for two domains: (i) the bulk power system planning and operations; and (ii) the nuclear power plant licensing requirements for off-site power necessary to enable safe nuclear plant shutdown. The proposed reliability standard represents the first such reliability standard that expressly addresses the interface between the bulk power system and the nuclear power plant. The submission of this reliability standard is a landmark activity as it ensures that the unique needs of the bulk power system and the nuclear power plant at the interface are understood, formally documented, and adhered to in practice.

The requirements applicable to the nuclear power plant are presented as Nuclear Plant Licensing Requirements (“NPLR”), while those applicable to the bulk power system are identified as system operating limits (“SOLs”) (or in severe cases, interconnection reliability operating limits). The development of this watershed reliability standard provides a mutual benefit to both domains because a nuclear power plant generator must meet its NPLR in order to generate power in a safe manner, and bulk power system reliability is supported by the provision of the power to the grid by the nuclear plant. Both domains operate under certain established reliability and safety concepts or processes to meet the individual needs of their respective domains. This proposed reliability standard serves the important purpose of establishing a consistent set

of expectations and the framework for coordinating and understanding the needs of both the bulk power system and the nuclear power plant at the interface.

The proposed reliability standard introduces four new definitions: nuclear plant generator operator, nuclear plant off-site power supply, NPLR, and nuclear plant interface requirements (“NPIRs”). Further, the reliability standard proposes nine requirements summarized as follows:

- R1. The nuclear plant generator operator must provide the proposed nuclear plant interface requirements to the transmission entities with whom it interfaces.
- R2. The nuclear plant generator operator and the transmission entity must develop an agreement on the mutually-agreed upon NPIRs and how they are to be supported.
- R3. The transmission entity must incorporate the NPIR information into its planning analyses and forward the study results to the nuclear plant generator operator.
- R4. The transmission entity must incorporate the NPIR information into its operating analyses and operate to meet them.
- R5. The nuclear plant generator operator must operate in accordance with the agreement with the transmission entity.
- R6. The nuclear plant generator operator and the transmission entity must coordinate outages and maintenance activities that impact the NPIRs.
- R7. The nuclear plant generator operator must inform the transmission entity of actual or proposed changes at the plant that impact the NPIRs.



- R8. The transmission entity must inform the nuclear plant generator operator of actual or proposed changes on the electric system that impact the NPIRs.
- R9. The nuclear plant generator operator and the transmission entity must include specific administrative, technical, operations, maintenance, coordination, communications, and training elements in the agreement as presented in the sub-requirements.

**The proposed reliability standard is just, reasonable, not unduly discriminatory or preferential and in the public interest**

The discussion below explains how the proposed reliability standard has met or exceeded criteria for demonstrating that the standard is just, reasonable, not unduly discriminatory or preferential and in the public interest:

**1. Proposed reliability standard is designed to achieve a specified reliability goal**

Proposed reliability standard NUC-001-1 — Nuclear Plant Interface Coordination is designed to achieve the specific reliability goal of ensuring transmission entities understand and respect the nuclear power plant requirements for safe and reliable nuclear plant operations and safe nuclear reactor shutdowns, and that the nuclear plant generator operators understand the requirements for bulk power system operations and planning that affect and impact the grid interface at the nuclear power plant. To achieve this goal, the proposed reliability standard establishes nine primary requirements for coordination between nuclear plant generator operators and transmission entities at the interface.

According to the Canadian Nuclear Association, there are 18 operating nuclear reactors in Canada<sup>1</sup> that provide almost 16% of the energy generated in Canada annually. These nuclear facilities require the bulk power system to interconnect and transport its

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<sup>1</sup> This proposed reliability standard also applies to nuclear plant generator operators and associated transmission entities in the U.S.

energy across the grid. Accordingly, it is necessary to have a clear understanding of the requirements on both sides of the interface to ensure power can be produced and delivered in a safe and reliable fashion. It also is necessary to recognize the unique safe shutdown requirements at the nuclear power plants. Requirement R2 requires documented agreements regarding planning, assessment, analysis and operation of the bulk power system relative to the safe and reliable operation and shutdown of the nuclear plants. Requirements R3 through R8 provide additional specificity on the expectations of the nuclear plant generator operator and the transmission entities while Requirement R9 lists the required elements to be included in the agreement mandated by Requirement R2.

This proposed reliability standard enables transmission entities and nuclear plant generator operators to consider and address the intersection of a myriad of activities with respect to planning, assessment, analysis, and operation issues. The proposed reliability standard strikes a balance between the interests of both domains to achieve the communication and coordination necessary to meet the specified reliability and safety goals. The agreements must be developed taking into account individual nuclear power plant license requirements that translate into NPIRs at the interface. This is accomplished through Requirement R1 in which the nuclear plant generator operator provides its proposed NPIRs to the transmission entities. Because unanticipated events in either domain may threaten to cause a violation of either a NPLR or a transmission reliability standard, the proposed reliability standard is important to facilitate prompt and effective communication and coordination as required in Requirements R3 through R8.

## **2. Proposed reliability standard contains a technically sound method to achieve the goal**

The reliability standard contains a technically sound method to achieve the goal.

Inherent in the reliability standard is an identification and understanding of:

- Nuclear power plant's licensing requirements on a plant reactor basis that lead to mutually agreed-upon NPIRs for the nuclear domain; and
- Bulk power system reliability requirements that lead to mutually agreed upon NPIRs for the bulk power system domain as they affect the nuclear plant interface.

Once identified per Requirement R1, the proposed NPIRs create a platform for establishing documented agreements (required in Requirement R2) under which the entities will coordinate planning, assessment, analysis, and operation of the bulk power system to ensure safe, nuclear plant operations and shutdowns. The requirements within the standard are specific with respect to the required coordination (Requirements R3 through R8) and the general elements that must be included within the respective entities' agreements as documented in Requirement R9 and its sub-requirements. But the details of the agreements allow the unique nature of individual plant designs, physical/electrical interconnections with the grid, NPLR commitments, established regulatory standards, operational philosophies and procedures, and the specific day to day issues that arise in grid planning and operations to be accounted for within such agreements. In particular, Requirement R9 and its sub-requirements of the proposed reliability standard each require that the agreement must include administrative elements, technical requirements and analyses, operations and maintenance coordination, and communication and training provisions.

Currently, many, if not all, nuclear plant generator operators and transmission entity owners of the offsite power sources identified in the plant's technical specifications have agreements in place. However, the agreements vary in scope and content and the requirements thereunder are not mandatory or enforceable. This proposed reliability standard, once approved, will be mandatory and enforceable and will ensure each interface agreement addresses the critical elements needed to achieve the specified reliability objective.

**3. Proposed reliability standard is applicable to users, owners, and operators of the bulk power system, and not others**

The proposed reliability standard is applicable only to users, owners, and operators of the bulk power system, and not others. The proposed reliability standard identifies applicable entities as the nuclear plant generator operator and transmission entities. Transmission entities are defined, in the proposed reliability standard, as all entities that are responsible for providing services related to NPIRs. Such entities may include one or more of the following: transmission operators, transmission owners, transmission planners, transmission service providers, balancing authorities, reliability coordinators, planning authorities, distribution providers, and load-serving entities. Each of these entities is defined as a user, owner, or operator of the bulk power system. NERC notes that certain entities as defined in the reliability standard, including, but not limited to, distribution providers, are transmission entities by virtue of their involvement with a nuclear plant, via a NPIR. For example, a distribution provider who supplies backup power to a nuclear plant from a local 13.8 kV distribution system to meet the plant's licensing requirements for offsite power for safe shutdown is considered a transmission

entity. In such a case, the distribution provider can impact the safety and reliability of the nuclear plant and the bulk power system.

Requirement R1 of proposed reliability standard NUC-001-1 requires the nuclear plant generator operator to identify all applicable nuclear plant generator operator and transmission entities that must be party to the agreement mandated by Requirement R2. Because the relationship of each nuclear plant generator operator with its provider of transmission-related services is unique, it will be important and necessary for the registration process to identify on a plant-by-plant basis the specific transmission entities required to identify NPIRs and develop the requisite agreement. Once the agreement becomes final, all applicable nuclear plant generator operators and transmission entities for each agreement will be identified by name and specific function. The respective Regional Entity will then be responsible for ensuring that each nuclear plant generator operator and transmission entity identified in the agreement(s) is registered on the NERC Compliance Registry for the applicable function(s). NERC will work with the Regional Entities to ensure that all nuclear plant generator operators and transmission entities included in the agreements that result from the NPIRs are listed in the Compliance Registry for this specific reliability standard.

**4. Proposed reliability standard is clear and unambiguous as to what is required and who is required to comply**

As noted above, the proposed reliability standard applies to the nuclear plant generator operator and transmission entities (defined as including one or more of the following: transmission operators, transmission owners, transmission planners, transmission service providers, balancing authorities, reliability coordinators, planning authorities, distribution providers, and load-serving entities). Also as discussed above,

NERC will ensure its registration process provides for the identification of the specific transmission entities that are required to comply with this proposed reliability standard. These entities will be explicitly identified in NERC's Compliance Registry to ensure the obligation to comply is formally identified, documented, and acknowledged.

The proposed reliability standard requirements are clear and unambiguous as to what is expected from applicable entities. The proposed reliability standard has nine requirements, which include sub-requirements, which set forth the compliance obligations. Requirement R9 identifies the elements required to be included in the agreements between nuclear plant generator operators and the transmission entities for each commercially operational nuclear reactor used to produce electricity. The proposed reliability standard also clearly identifies in Requirement R2 that the agreements between nuclear plant generator operators and transmission entities must be developed, which must detail the mutually agreed upon procedures and protocols for coordination and communication at the interface. The requirements also establish what the entities must do to coordinate planning, assessment, analysis, and operation of the power system to ensure safe, nuclear plant operations and shutdowns (Requirements R3 through R8).

**5. Proposed reliability standard includes clear and understandable consequences and a range of penalties (monetary and/or non-monetary) for a violation**

The proposed reliability standard includes a violation risk factor for each main requirement in the reliability standard. In addition, the reliability standard contains a description of violation severity levels that address the reliability standard's requirements but not on a requirement-by-requirement basis. NERC will develop violation severity levels for the NUC-001-1 standard to be included in the filing due on March 1, 2008 that are specific to individual requirements. Once violation severity levels are approved, the

ranges of penalties for violations will be based on the applicable violation risk factor and violation severity levels and will be administered based on the sanctions table and supporting penalty determination process described in the NERC Sanction Guidelines, located as Appendix 4B in NERC's Rules of Procedure.

**6. Proposed reliability standard identifies clear and objective criterion or measure for compliance, so that it can be enforced in a consistent and non-preferential manner**

Each requirement in the proposed reliability standard is supported by a measure that clearly identifies what is required and how the requirement will be enforced. These eight measures, with sub-requirements, will ensure the requirements are clearly administered for enforcement in a consistent manner and without prejudice to any party. These eight measures are included in Section C of the proposed reliability standard. Furthermore, to aid in the compliance monitoring processes, NERC will develop a reliability standard audit worksheet ("RSAW") for this proposed reliability standard if it includes the reliability standard, once approved, in the list of actively monitored reliability standards for a particular program year. As these RSAWs are guides, they assist the applicable entity in understanding what they are expected to provide in support of the particular measures to demonstrate compliance.

**7. Proposed reliability standard helps achieve a reliability goal effectively and efficiently - but does not reflect "best practices" without regard to implementation cost**

The proposed reliability standard helps the industry achieve the stated reliability goal effectively and efficiently. The proposed reliability standard requires the identification and documentation of NPIRs (Requirement R2) relevant for both nuclear plant generator operators and the transmission entities at the interface and details the coordination and communication that is required to ensure the NPIRs are respected

(Requirements R3 through R8). The proposed reliability standard requires nuclear plant generator operators to expressly identify and provide proposed NPIRs to the transmission entity (Requirement R1), and for the transmission entity to identify its operational and system restrictions, and then to mutually agree on the NPIRs to be included in a documented agreement (Requirement R2). For nuclear plant and transmission entity NPIRs that potentially may conflict in practice, the agreement must include the prospective course of action to be taken if a conflict occurs, as required in Requirements R9.3.4 and R9.4.2. The required agreements and coordination will improve operations and planning at the interface, thereby improving efficiency. NERC believes this cooperation and coordination is essential to effectively achieve the reliability goal.

**8. Proposed reliability standard does not reflect “lowest common denominator,” i.e., a compromise that does not adequately protect bulk power system reliability**

This proposed reliability standard does not reflect a “lowest common denominator” approach. It requires users, owners, or operators of the bulk power system to coordinate with respect to planning, assessment, analysis, and operation of the bulk power system through establishment of NPIRs and the development of agreements, to ensure reliability of the bulk power system. This proposed reliability standard advances system reliability from the current state in which coordination at the interface of the nuclear plant is not mandated explicitly.

In developing this proposed reliability standard, NERC conducted one ballot event, consisting of an initial ballot and a recirculation ballot required after the standard drafting team responded to comments associated with negative votes. This one ballot event was successful in achieving the necessary 75% quorum of ballot pool participants and at least a two-thirds weighted segment affirmative vote to demonstrate industry



consensus. In this regard, the reliability standard as proposed was not balloted previously with a more stringent set of requirements that failed to achieve the required quorum and consensus.

Further, the standard drafting team prepared three drafts of the proposed reliability standard, two that were published for industry comment, and the final version that was balloted. The content of these drafts remained relatively consistent and no more stringent proposals were put forth for industry input and comment that were ultimately rejected. The standard drafting team added further clarity to the proposed reliability standard to respond to stakeholder comments regarding: (a) clearly matching the title to reflect the content; (b) re-sequencing the requirements for better flow; (c) removing the reference to suspending the FERC Standards of Conduct; (d) restructuring the requirements to address transmission entity concerns that the NPIRs were being dictated to them; and, (e) adding insight into the use of the term ‘transmission entity.’

**9. Proposed reliability standard considers costs to implement for smaller entities but not at consequence of less than excellence in operating system reliability**

While there will be costs incurred to formalize or align the currently-used interface agreements or to develop new agreements in line with the requirements in the proposed reliability standard, the benefits to the reliability of the bulk power system outweigh any such potential costs. The proposed reliability standard will apply equally to all applicable entities in a consistent manner. The record demonstrates that the cost impact to smaller entities was not a negative consideration in the development of the proposed reliability standard as no stakeholder offered comments in the public comment periods that pertained to cost based on the size of the entity. The vital public interest of safe nuclear power plant operation outweighs the concern for costs potentially incurred

by any entity, regardless of size. Upon approval of the reliability standard and once identified as an applicable entity, all designated entities must comply with this proposed reliability standard.

**10. Proposed reliability standard is designed to apply throughout North America to the maximum extent achievable with a single reliability standard while not favoring one area or approach**

The proposed reliability standard is a single standard that will be universally applicable in the U.S. and in Canada. This proposed reliability standard recognizes the business and operational variations in the organizational and corporate structures of transmission owners, operators, variations in generation fuel type, and ownership patterns and practices and will be considered through the registration process. The unique licensing requirements of each nuclear power plant are initially described through the individual nuclear plant generator operator's proposed NPIRs (Requirement R1) that must be developed into mutually agreed upon NPIRs formalized through agreements between the nuclear plant generator operator and the transmission entity per Requirement R2. The approach taken in the proposed reliability standard affords the flexibility to utilize a single standard that accommodates the organizational and technical differences between individual nuclear plants and their transmission entities.

**11. Proposed reliability standard causes no undue negative effect on competition or restriction of the grid**

This proposed reliability standard requires coordination, cooperation, and communication between and among nuclear plant generator operators and transmission entities per the elements to be included in the agreements as outlined in Requirement R9 and as specified in Requirements R3 through R8. The proposed reliability standard was initially drafted such that the nuclear power plant entities could unilaterally identify or change the NPIRs as then defined without mutual collaboration and agreement with the

transmission entity. This approach could have created limitations on the bulk power system solely as a result of the NPIR declaration and resultant obligation of the transmission entity to operate the bulk power system to these NPIRs. The standard drafting team responded to comments from Ameren, American Transmission Company, and the Midwest ISO Nuclear Plant Working Group during the first comment period for the draft reliability standard and created the term NPLRs. NPLR is defined as the requirements included in the design basis of the nuclear plant and statutorily mandated for the operation of the plant, that includes its licensing requirements for off-site power supply and avoiding preventable challenges to nuclear safety. The term NPIR was also modified to reflect the requirements based on NPLRs and bulk power system requirements that have been mutually agreed to by the nuclear plant generator operator and the applicable transmission entity. These changes ensured that the transmission entities actively participated in the establishment of NPIRs and mitigated the potential for transmission limitations caused by unilateral decisions by the nuclear plant generator operators. Additionally, in defining NPIRs and documenting them in the required agreements per Requirement R2, the transmission entities can safeguard against the acceptance of NPIRs not expressly tied to licensing requirements that could impose a constraint to grid operation and limit available transmission capability.

The proposed reliability standard also acknowledges that the obligation to public safety relative to nuclear plant operation establishes a unique set of requirements that other generating facilities are not subjected to. In order to protect the common good, the applicable transmission entities must respect these unique requirements that maintain and/or restore offsite power adequate to supply minimum nuclear safety requirements.

The transmission entities, while respecting these NPIRs as provided for in the requirements of this proposed reliability standard, must then operate and plan the bulk power system in a non-discriminatory manner for *all* participants, respecting *all* system operating or interconnection reliability operating limits identified. In this regard, the proposed reliability standard does not unduly constrain competition or restrict transmission capability beyond that necessary to satisfy the unique nuclear plant requirements.

**12. The implementation time for the proposed reliability standard is reasonable.**

The implementation plan for the proposed reliability standard indicates that the reliability standard is to become effective the first day of the quarter no sooner than fifteen months after regulatory approval. NERC believes this presents a reasonable time frame to identify the transmission entities that are responsible for compliance to the proposed reliability standard, to allow them to coordinate with the nuclear plant generator operators to identify and agree to a set of NPIRs, and then to formalize the overall coordination platform in a documented agreement.

**13. The reliability standard development process is open and fair**

NERC develops reliability standards in accordance with Section 300 (Reliability Standards Development) of its Rules of Procedure and the NERC *Reliability Standards Development Procedure*, which was incorporated into the Rules of Procedure as Appendix 3A. The development process is open to any person or entity with a legitimate interest in the reliability of the bulk power system. NERC considers the comments of all stakeholders and a vote of stakeholders and the NERC Board of Trustees is required to approve a reliability standard for submission to the appropriate governmental authority.

The proposed reliability standard set out in **Exhibit A** has been developed and approved by industry stakeholders using NERC's *Reliability Standards Development Procedure*, and was approved by the NERC Board of Trustees on May 2, 2007 for filing with the appropriate governmental authority. Therefore, NERC has utilized its standard development process in good faith and in a manner that is open and fair.

#### **14. Proposed reliability standard is balanced with other vital public interests**

A most vital public interest is the assured safety of nuclear reactors used for power generation under all conditions and circumstances. Adherence to the nuclear plant's licensing requirements is core to developing this assurance. Coordination is necessary to ensure that the transmission entities responsible for the planning, assessment, operation, and analysis of the bulk power system are aware of the specific licensing requirements of each nuclear power plant and that they incorporate these nuclear power plant requirements into the planning, assessment, operation, and analysis of the bulk power system. This coordination requires the nuclear power plant licensee to convey its proposed requirements to the responsible transmission entities and to work with the transmission entities to establish mutually agreed upon interface requirements. These interface requirements must address the nuclear power plant licensing requirements and the transmission system operating limits. The coordination also requires the transmission entities responsible for the planning, assessment, operation, and analysis of the bulk power system to demonstrate to the nuclear power plant licensee that the specific requirements of the nuclear power plant are being addressed by the bulk power system. This proposed reliability standard achieves this goal and, as a result, a vital public interest is served.

## V. SUMMARY OF THE RELIABILITY STANDARD DEVELOPMENT PROCEEDINGS

### a. Development History

NERC received the Standard Authorization Request (“SAR”) for this proposed reliability standard on October 20, 2004 from the Nuclear Energy Institute Grid Reliability Task Force. The SAR was posted for industry comment from December 1, 2004 – January 7, 2005. Based on those comments, the SAR was revised and the second draft SAR was posted for industry comment from April 1, 2005 – May 16, 2005. At its May 25, 2005 meeting, the Standards Committee approved the SAR and authorized the development of the reliability standard.

The standard drafting team consisted of 26 participating members, with about 40 percent of the team representing the interests of the nuclear power plants and the remaining 60 percent from transmission entities and non-nuclear organizations. NERC posted the first draft of the reliability standard for industry comment from December 1, 2005 – January 17, 2006. NERC received 24 sets of comments from approximately 60 companies. After considering and responding to the comments received, the standard drafting team posted its second draft for public comment from September 15, 2006 – October 16, 2006. The standard drafting team considered the 29 sets of comments from more than 50 companies and incorporated additional changes to the proposed reliability standard. The team finalized the proposed reliability standard, and, on February 9, 2007, the Standards Committee approved it for balloting. In accordance with the *Reliability Standard Development Procedure*, NERC posted the proposed reliability standard for a 30-day pre-ballot review starting on February 15, 2007. The first ballot took place March 19, 2007 – March 30, 2007. During the first ballot, 89.62% of those registered for the

ballot pool voted, which exceeded the minimum 75% quorum required to be considered a valid vote. The proposed reliability standard received a weighted segment approval of 77.10%. However, there were negative ballots submitted with a comment, triggering the need for a recirculation ballot.

After the standard drafting team responded to the comments, the proposed reliability standard proceeded to a recirculation ballot that was conducted from April 17, 2007 – April 26, 2007. The proposed reliability standard passed with a final quorum of 96.17% and a weighted segment approval of 79.94%. A two-thirds weighted segment approval is required for passage. On May 2, 2007, the NERC Board of Trustees adopted the proposed reliability standard.

During the ballot, the standard drafting team received comments that fall into two main categories. Commenters indicated that the use of “transmission entities” in the applicability section was ambiguous and that more specificity should be provided in order to be enforceable. The standard drafting team agreed with the comment, noting that the varying nuclear plant relationships with the owners and operators of the grid to which the plant is interconnected drove this generic approach. Further, the standard drafting team indicated that the standard implementation plan includes a process for specifying the entities to which the reliability standard will apply as discussed earlier.

Also, commenters interpreted that the proposed reliability standard relegates SOLs and bulk power system integrity to nuclear plant requirements. The standard drafting team responded that the NPIRs included in the agreements are to be developed by mutual collaboration between the nuclear plant generator operators and the transmission entities. By mutually determining the interface requirements, both the

nuclear plant generator operator and the transmission entity have the responsibility and expectation to identify and include any NPIRs and subsequent response procedures that impact operation of the nuclear power plant at the interface. In this regard, bulk power system limits are identified and included in the agreements.

#### **b. Key Issues**

During the development of the proposed reliability standard, the standard drafting team considered two major issues that are discussed in this section: (i) how to reconcile differences in business and operating models between the transmission entity and the nuclear plant generator operator, and (ii) how to properly apply standards under the various configurations and relationships at each nuclear power plant.

#### **Different Business/Operation Models**

Transmission entities operate in accordance with NERC Reliability Standards that provide for an adequate level of reliability of the bulk power system. Nuclear plant generator operators operate in accord with their licensing requirements that must be met to ensure safe and reliable nuclear plant operation and safe shutdown of the nuclear reactor. The standard drafting team needed to determine how best to provide the platform for coordination at the interface that allowed each to respect its main drivers. The standard drafting team discussed the prudence of determining the common aspects of each model upon which they could build an effective coordination mechanism. However, the amount of time and effort to identify areas of commonality would require first identifying all the various elements of each business model. The ability, time, and effort to launch such an enormous effort were prohibitive and the value of such an exercise questionable. The standard drafting team decided to examine the methods and processes



currently used within both domains in support of its objectives and to link these to a consistent set of requirements to coordinate and communicate based on such current methods. Because various types of interface agreements are widely used between the nuclear plant generator operators and the transmission entities, the standard drafting team decided to build its proposed reliability standard on this concept. In doing so, the drafting team added a framework for consistency to these agreements by requiring that each include a list of topics to be included. In this manner, both the nuclear plant generator operators and the transmission entities are given an opportunity to include the specific items it deemed necessary and important for inclusion in the agreement, and recognized that this specific list is variable based on the unique configurations and relationships at each plant. Through this approach, each party continues to respect its main objectives while identifying those factors that are important to each at the interface that must be effectively identified and coordinated.

### **Applicability Issues**

Each nuclear power plant has a unique relationship with the transmission entities with whom it interfaces or provides services to the plant. There is no one model that is consistent across the 124 nuclear power plants in the U.S. and Canada due to the varying designs and interface relationships that exist. The standard drafting team discussed how best to develop the applicability section to ensure those held accountable to the standard were clearly identified. Because the responsible entities are dependent upon local operating relationships, the standard drafting team could not break down the requirements in the proposed reliability standard to identify the specific functional entity or entities that would be required to comply with each of the requirements as they may be different from

plant to plant. To address this issue, the standard drafting team determined that this specificity was best handled through the compliance registration process and thereby modified the implementation plan to include language to specify when and how ‘transmission entities’ will be identified. In the proposed reliability standard itself, the standard drafting team developed a generic list of possible functional entities that could be included in this registration and used the term “transmission entity” to capture this grouping. Through NERC’s Compliance Registry, NERC will identify the specific entities that have interface agreements with nuclear plant generator operators. This listing will specifically determine those who will be required to comply with the proposed reliability standard. Further, NERC will require the review of the agreements every five years or as needed to determine if the list of registered entities needs revision.

Respectfully submitted,

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# **Exhibit A**

**Reliability Standard**

**Proposed for Approval**

**A. Introduction**

- 1. Title:** Nuclear Plant Interface Coordination
- 2. Number:** NUC-001-1
- 3. Purpose:** This standard requires coordination between Nuclear Plant Generator Operators and Transmission Entities for the purpose of ensuring nuclear plant safe operation and shutdown.
- 4. Applicability:**
  - 4.1.** Nuclear Plant Generator Operator.
  - 4.2.** Transmission Entities shall mean all entities that are responsible for providing services related to Nuclear Plant Interface Requirements (NPIRs). Such entities may include one or more of the following:
    - 4.2.1** Transmission Operators.
    - 4.2.2** Transmission Owners.
    - 4.2.3** Transmission Planners.
    - 4.2.4** Transmission Service Providers.
    - 4.2.5** Balancing Authorities.
    - 4.2.6** Reliability Coordinators.
    - 4.2.7** Planning Authorities.
    - 4.2.8** Distribution Providers.
    - 4.2.9** Load-serving Entities.
    - 4.2.10** Generator Owners.
    - 4.2.11** Generator Operators.
- 5. Effective Date:** First day of first quarter 15 months after applicable regulatory approvals.

**B. Requirements**

- R1.** The Nuclear Plant Generator Operator shall provide the proposed NPIRs in writing to the applicable Transmission Entities and shall verify receipt [*Risk Factor: Lower*]
- R2.** The Nuclear Plant Generator Operator and the applicable Transmission Entities shall have in effect one or more Agreements<sup>1</sup> that include mutually agreed to NPIRs and document how the Nuclear Plant Generator Operator and the applicable Transmission Entities shall address and implement these NPIRs. [*Risk Factor: Lower*]
- R3.** Per the Agreements developed in accordance with this standard, the applicable Transmission Entities shall incorporate the NPIRs into their planning analyses of the

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1. Agreements may include mutually agreed upon procedures or protocols.

electric system and shall communicate the results of these analyses to the Nuclear Plant Generator Operator. [*Risk Factor: Medium*]

- R4.** Per the Agreements developed in accordance with this standard, the applicable Transmission Entities shall: [*Risk Factor: Medium*]
  - R4.1.** Incorporate the NPIRs into their operating analyses of the electric system.
  - R4.2.** Operate the electric system to meet the NPIRs.
  - R4.3.** Inform the Nuclear Plant Generator Operator when the ability to assess the operation of the electric system affecting NPIRs is lost.
- R5.** The Nuclear Plant Generator Operator shall operate per the Agreements developed in accordance with this standard. [*Risk Factor: Medium*]
- R6.** Per the Agreements developed in accordance with this standard, the applicable Transmission Entities and the Nuclear Plant Generator Operator shall coordinate outages and maintenance activities which affect the NPIRs. [*Risk Factor: Medium*]
- R7.** Per the Agreements developed in accordance with this standard, the Nuclear Plant Generator Operator shall inform the applicable Transmission Entities of actual or proposed changes to nuclear plant design, configuration, operations, limits, protection systems, or capabilities that may impact the ability of the electric system to meet the NPIRs. [*Risk Factor: Medium*]
- R8.** Per the Agreements developed in accordance with this standard, the applicable Transmission Entities shall inform the Nuclear Plant Generator Operator of actual or proposed changes to electric system design, configuration, operations, limits, protection systems, or capabilities that may impact the ability of the electric system to meet the NPIRs. [*Risk Factor: Medium*]
- R9.** The Nuclear Plant Generator Operator and the applicable Transmission Entities shall include, as a minimum, the following elements within the agreement(s) identified in R2: [*Risk Factor: Lower*]
  - R9.1.** Administrative elements:
    - R9.1.1.** Definitions of key terms used in the agreement.
    - R9.1.2.** Names of the responsible entities, organizational relationships, and responsibilities related to the NPIRs.
    - R9.1.3.** A requirement to review the agreement(s) at least every three years.
    - R9.1.4.** A dispute resolution mechanism.
  - R9.2.** Technical requirements and analysis:
    - R9.2.1.** Identification of parameters, limits, configurations, and operating scenarios included in the NPIRs and, as applicable, procedures for providing any specific data not provided within the agreement.
    - R9.2.2.** Identification of facilities, components, and configuration restrictions that are essential for meeting the NPIRs.

- R9.2.3.** Types of planning and operational analyses performed specifically to support the NPIRs, including the frequency of studies and types of Contingencies and scenarios required.
- R9.3.** Operations and maintenance coordination:
  - R9.3.1.** Designation of ownership of electrical facilities at the interface between the electric system and the nuclear plant and responsibilities for operational control coordination and maintenance of these facilities.
  - R9.3.2.** Identification of any maintenance requirements for equipment not owned or controlled by the Nuclear Plant Generator Operator that are necessary to meet the NPIRs.
  - R9.3.3.** Coordination of testing, calibration and maintenance of on-site and off-site power supply systems and related components.
  - R9.3.4.** Provisions to address mitigating actions needed to avoid violating NPIRs and to address periods when responsible Transmission Entity loses the ability to assess the capability of the electric system to meet the NPIRs. These provisions shall include responsibility to notify the Nuclear Plant Generator Operator within a specified time frame.
  - R9.3.5.** Provision to consider nuclear plant coping times required by the NPLRs and their relation to the coordination of grid and nuclear plant restoration following a nuclear plant loss of Off-site Power.
  - R9.3.6.** Coordination of physical and cyber security protection of the Bulk Electric System at the nuclear plant interface to ensure each asset is covered under at least one entity's plan.
  - R9.3.7.** Coordination of the NPIRs with transmission system Special Protection Systems and underfrequency and undervoltage load shedding programs.
- R9.4.** Communications and training:
  - R9.4.1.** Provisions for communications between the Nuclear Plant Generator Operator and Transmission Entities, including communications protocols, notification time requirements, and definitions of terms.
  - R9.4.2.** Provisions for coordination during an off-normal or emergency event affecting the NPIRs, including the need to provide timely information explaining the event, an estimate of when the system will be returned to a normal state, and the actual time the system is returned to normal.
  - R9.4.3.** Provisions for coordinating investigations of causes of unplanned events affecting the NPIRs and developing solutions to minimize future risk of such events.
  - R9.4.4.** Provisions for supplying information necessary to report to government agencies, as related to NPIRs.

**R9.4.5.** Provisions for personnel training, as related to NPIRs.

**C. Measures**

- M1.** The Nuclear Plant Generator Operator shall, upon request of the Compliance Monitor, provide a copy of the transmittal and receipt of transmittal of the proposed NPIRs to the responsible Transmission Entities. (Requirement 1)
- M2.** The Nuclear Plant Generator Operator and each Transmission Entity shall each have a copy of the Agreement(s) addressing the elements in Requirement 9 available for inspection upon request of the Compliance Monitor. (Requirement 2 and 9)
- M3.** Each Transmission Entity responsible for planning analyses in accordance with the Agreement shall, upon request of the Compliance Monitor, provide a copy of the planning analyses results transmitted to the Nuclear Plant Generator Operator, showing incorporation of the NPIRs. The Compliance Monitor shall refer to the Agreements developed in accordance with this standard for specific requirements. (Requirement 3)
- M4.** Each Transmission Entity responsible for operating the electric system in accordance with the Agreement shall demonstrate or provide evidence of the following, upon request of the Compliance Monitor:
  - M4.1** The NPIRs have been incorporated into the current operating analysis of the electric system. (Requirement 4.1)
  - M4.2** The electric system was operated to meet the NPIRs. (Requirement 4.2)
  - M4.3** The Transmission Entity informed the Nuclear Plant Generator Operator when it became aware it lost the capability to assess the operation of the electric system affecting the NPIRs. (Requirement 4.3)
- M5.** The Nuclear Plant Generator Operator shall, upon request of the Compliance Monitor, demonstrate or provide evidence that the Nuclear Power Plant is being operated consistent with the Agreements developed in accordance with this standard. (Requirement 5)
- M6.** The Transmission Entities and Nuclear Plant Generator Operator shall, upon request of the Compliance Monitor, provide evidence of the coordination between the Transmission Entities and the Nuclear Plant Generator Operator regarding outages and maintenance activities which affect the NPIRs. (Requirement 6)
- M7.** The Nuclear Plant Generator Operator shall provide evidence that it informed the applicable Transmission Entities of changes to nuclear plant design, configuration, operations, limits, protection systems, or capabilities that would impact the ability of the Transmission Entities to meet the NPIRs. (Requirement 7)
- M8.** The Transmission Entities shall each provide evidence that it informed the Nuclear Plant Generator Operator of changes to electric system design, configuration, operations, limits, protection systems, or capabilities that would impact the ability of the Nuclear Plant Generator Operator to meet the NPIRs. (Requirement 8)

## D. Compliance

### 1. Compliance Monitoring Process

#### 1.1. Compliance Monitoring Responsibility

Regional Reliability Organization.

#### 1.2. Compliance Monitoring Period and Reset Time Frame

One calendar year.

#### 1.3. Data Retention

For Measure 1, the Nuclear Plant Generator Operator shall keep its latest transmittals and receipts.

For Measure 2, the Nuclear Plant Generator Operator and each Transmission Entity shall have its current, in-force agreement.

For Measure 3, the Transmission Entity shall have the latest planning analysis results.

For Measures 4.3, 6 and 8, the Transmission Entity shall keep evidence for two years plus current.

For Measures 5, 6 and 7, the Nuclear Plant Generator Operator shall keep evidence for two years plus current.

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor.

The Compliance Monitor shall keep the last periodic audit report and all requested and submitted subsequent compliance records.

#### 1.4. Additional Compliance Information

The Nuclear Plant Generator Operator and Transmission Entities shall each demonstrate compliance through self-certification or audit (periodic, as part of targeted monitoring or initiated by complaint or event), as determined by the Compliance Monitor.

### 2. Violation Severity Levels

**2.1. Lower:** Agreement(s) exist per this standard and NPIRs were identified and implemented, but documentation described in M1-M8 was not provided.

**2.2. Moderate:** Agreement(s) exist per R2 and NPIRs were identified and implemented, but one or more elements of the Agreement in R9 were not met.

**2.3. High:** One or more requirements of R3 through R8 were not met.



**2.4. Severe:** No proposed NPIRs were submitted per R1, no Agreement exists per this standard, or the Agreements were not implemented.

**E. Regional Differences**

The design basis for Canadian (CANDU) NPPs does not result in the same licensing requirements as U.S. NPPs. NRC design criteria specifies that in addition to emergency on-site electrical power, electrical power from the electric network also be provided to permit safe shutdown. This requirement is specified in such NRC Regulations as 10 CFR 50 Appendix A — General Design Criterion 17 and 10 CFR 50.63 Loss of all alternating current power. There are no equivalent Canadian Regulatory requirements for Station Blackout (SBO) or coping times as they do not form part of the licensing basis for CANDU NPPs. Therefore the definition of NPLR for Canadian CANDU units will be as follows:

**Nuclear Plant Licensing Requirements (NPLR)** are requirements included in the design basis of the nuclear plant and are statutorily mandated for the operation of the plant; when used in this standard, NPLR shall mean nuclear power plant licensing requirements for avoiding preventable challenges to nuclear safety as a result of an electric system disturbance, transient, or condition.

**F. Associated Documents**

**Version History**

<b>Version</b>	<b>Date</b>	<b>Action</b>	<b>Change Tracking</b>
1	May 2, 2007	Approved by Board of Trustees	New

# **Exhibit B**

**Record of Development of Proposed Reliability**

**Standard**



## Reliability Standards

### Nuclear Plant Interface Coordination

[Registered Ballot Body](#) | [Related Files](#) | [Reliability Standards Home Page](#)

#### **Status**

The drafting team has posted initial results and consideration of comments from the Nuclear Plant Interface Coordination standard (NUC-001-1). The recirculation ballot results are posted.

The Board of Trustees will consider adopting reliability standard NUC-001-1 at its May 2, 2007 meeting.

#### **Purpose/Industry Need**


Nuclear Power Plant (NPP) licensing requirements specify that the grid be used as the primary source of normal and emergency power to plant equipment required for safe shutdown per 10 CFR 50, Appendix A - General Design Criterion 17 or earlier guidance, such as, earlier Safety Guide. Thus, the bulk transmission system must be planned and operated in a manner that assures grid voltage, frequency, and stability requirements at the NPP will be met in the event a plant accident occurs, causing a loss of that MW/MVAR generation source and the subsequent application of safety system loads.

In order to ensure the transmission system has the capacity and capability to support the safe operation of NPP safety systems, the electric transmission systems serving the NPP must use the NPP specific licensing and design requirements as the transmission system performance standard in addition to existing NERC reliability standards. These licensing requirements shall be specified in written agreements between the NPP and the Transmission System Operator.

Proposed Standard	Supporting Materials	Comment Period	Comments Received	Response to Comments
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<p><b>Draft 3 Nuclear Plant Interface Coordination Standard Posted for Board of Trustees Adoption May 2, 2007</b></p> <p>Nuclear Plant Interface Coordination Clean (same as 22)   Redline to last Posting (same as 23)</p>				
<p>Announcement (32)</p> <p>Draft 3 Nuclear Plant Interface Coordination Standard 10-day Recirculation Ballot Window April 17 through April 26, 2007</p> <p>Nuclear Plant Interface Coordination Clean (same as 22)   Redline to last Posting (same as 23)</p>		<p>04/17/07 - 04/26/07</p> <p>10-day Recirculation Ballot Window Closed</p>		<p>Recirculation Ballot Results (33)</p>
<p>Announcement (28)</p> <p>Draft 3 Nuclear Plant Interface Coordination Standard 10-day Ballot Window March 19 through</p>	<p>Implementation Plan (29)</p>	<p>03/19/07 - 03/30/07</p> <p>10-day Ballot Window Closed</p>		<p>Initial Ballot Results (31)</p> <p>Consideration of Comments (30)</p>

<p>March 30, 2007</p> <p>Nuclear Plant Interface Coordination Clean (same as 22)   Redline to last Posting (same as 23)</p>				
<p>March 8, 2007 Webcast/Conference Call: Power Point Presentation (27)</p>				
<p>Conference Call and WebEx: Nuclear Plant Interface Coordination (26)</p>				
<p>Announcement (24)</p> <p>Draft 3 Nuclear Plant Interface Coordination Standard 30-day Pre-ballot Review February 15 through March 16, 2007</p> <p>Nuclear Plant Interface Coordination Clean (22)   Redline to last Posting (23)</p>	<p>Implementation Plan (25)</p>	<p>02/15/07 - 03/16/07</p> <p>30-day Pre-ballot Review Closed</p>		
<p>Announcement (17)</p> <p>Draft 2 Nuclear Plant Off-site Power Supply Coordination Standard 30-day Comment Posting September 15 through October 16, 2006</p> <p>Nuclear Plant Off-site Power Supply Coordination</p>	<p>Implementation Plan (18)</p>	<p>09/15/06 - 10/16/06</p> <p>Comment Form (19)</p>	<p>Comments (20)</p>	<p>Consideration of Comments (21)</p>

Clean (15)   Redline to 1st Posting (16)				
Draft 1  Nuclear Plant Off- site Power Supply Coordination (11)  Implementation Plan (10)		12/01/05 - 01/17/06  Comment Form (12)	Comments (13)	Consideration of Comments (14)
Draft 3 SAR - FINAL (9)				
Draft 2 SAR (5)	Attachment A (6)	May 16, 2005	Comments (7)	Consideration of Comments (8)
Draft 1 SAR (1)		January 28,2005	Comments (2)	Summary and General Response (4)  Specific Response (3)
To download a file click on the file using your right mouse button, then save it to your computer in a directory of your choice.				
Documents in the PDF format require use of the Adobe Reader® software. Free <a href="#">Adobe Reader®</a> software allows anyone view and print Adobe <a href="#">Portable Document Format (PDF)</a> files. For more information download the <a href="#">Adobe Reader User Guide</a> .				

**All comments should be forwarded to [sarcomm@nerc.com](mailto:sarcomm@nerc.com).  
Questions? Contact Barbara Bogenrief - [barbara.bogenrief@nerc.net](mailto:barbara.bogenrief@nerc.net) or 609-452-8060.**

When completed, email to: [gerry.cauley@nerc.net](mailto:gerry.cauley@nerc.net)

## Standard Authorization Request Form

Title of Proposed Standard	Nuclear Offsite Supply Reliability
Request Date	10/20/04

SAR Requestor Information		SAR Type (Put an 'x' in front of one of these selections)	
Name	NEI Grid Reliability Task	<input type="checkbox"/>	New Standard
Primary Contact	David Gladey/Vince Gilbert	<input checked="" type="checkbox"/>	Revision to existing Standard
Telephone	610-774-7774/202-739-8138	<input type="checkbox"/>	Withdrawal of existing Standard
Fax	610-774-7782		
E-mail	<a href="mailto:dlgladey@pplweb.com">dlgladey@pplweb.com</a> or <a href="mailto:jvg@nei.org">jvg@nei.org</a>	<input type="checkbox"/>	Urgent Action

### Purpose/Industry Need (Provide one or two sentences)

Nuclear Power Plant (NPP) licensing requirements specify that the grid be used as the primary source of normal and emergency power to plant equipment required for safe shutdown per 10 CFR 50, Appendix A - General Design Criterion 17 or earlier guidance, such as, earlier Safety Guide. Thus, the bulk transmission system must be planned and operated in a manner that assures grid voltage, frequency, and stability requirements at the NPP will be met in the event a plant accident occurs, causing a loss of that MW/MVAR generation source and the subsequent application of safety system loads.

In order to ensure the transmission system has the capacity and capability to support the safe operation of NPP safety systems, the electric transmission systems serving the NPP must use the NPP specific licensing and design requirements as the transmission system performance standard in addition to existing NERC reliability standards. These licensing requirements shall be specified in written agreements between the NPP and the Transmission System Operator.

## Reliability Functions

The Standard will Apply to the Following Functions (Check box for each one that applies by double clicking the grey boxes.)		
<input checked="" type="checkbox"/>	Reliability Authority	Ensures the reliability of the bulk transmission system within its Reliability Authority area. This is the highest reliability authority.
<input type="checkbox"/>	Balancing Authority	Integrates resource plans ahead of time, and maintains load-interchange-resource balance within its metered boundary and supports system frequency in real time
<input type="checkbox"/>	Interchange Authority	Authorizes valid and balanced Interchange Schedules
<input checked="" type="checkbox"/>	Planning Authority	Plans the bulk electric system
<input type="checkbox"/>	Resource Planner	Develops a long-term (>1year) plan for the resource adequacy of specific loads within a Planning Authority area.
<input checked="" type="checkbox"/>	Transmission Planner	Develops a long-term (>1 year) plan for the reliability of transmission systems within its portion of the Planning Authority area.
<input checked="" type="checkbox"/>	Transmission Service Provider	Provides transmission services to qualified market participants under applicable transmission service agreements
<input checked="" type="checkbox"/>	Transmission Owner	Owns transmission facilities
<input checked="" type="checkbox"/>	Transmission Operator	Operates and maintains the transmission facilities, and executes switching orders
<input type="checkbox"/>	Distribution Provider	Provides and operates the “wires” between the transmission system and the customer
<input checked="" type="checkbox"/>	Generator Owner	Owns and maintains generation unit(s)
<input checked="" type="checkbox"/>	Generator Operator	Operates generation unit(s) and performs the functions of supplying energy and Interconnected Operations Services
<input type="checkbox"/>	Purchasing-Selling Entity	The function of purchasing or selling energy, capacity and all necessary Interconnected Operations Services as required
<input checked="" type="checkbox"/>	Market Operator	Integrates energy, capacity, balancing, and transmission resources to achieve an economic, reliability-constrained dispatch.
<input type="checkbox"/>	Load-Serving Entity	Secures energy and transmission (and related generation services) to serve the end user



### ***Reliability and Market Interface Principles***

<b>Applicable Reliability Principles</b> <i>(Check boxes for all that apply by double clicking the grey boxes.)</i>	
<input checked="" type="checkbox"/>	1. Interconnected bulk electric systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards.
<input checked="" type="checkbox"/>	2. The frequency and voltage of interconnected bulk electric systems shall be controlled within defined limits through the balancing of real and reactive power supply and demand.
<input checked="" type="checkbox"/>	3. Information necessary for the planning and operation of interconnected bulk electric systems shall be made available to those entities responsible for planning and operating the systems reliably.
<input checked="" type="checkbox"/>	4. Plans for emergency operation and system restoration of interconnected bulk electric systems shall be developed, coordinated, maintained and implemented.
<input checked="" type="checkbox"/>	5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk electric systems.
<input checked="" type="checkbox"/>	6. Personnel responsible for planning and operating interconnected bulk electric systems shall be trained, qualified and have the responsibility and authority to implement actions.
<input checked="" type="checkbox"/>	7. The security of the interconnected bulk electric systems shall be assessed, monitored and maintained on a wide area basis.
<b>Does the proposed Standard comply with all of the following Market Interface Principles?</b> <i>(Select 'yes' or 'no' from the drop-down box by double clicking the grey area.)</i>	
1.	The planning and operation of bulk electric systems shall recognize that reliability is an essential requirement of a robust North American economy. Yes
2.	An Organization Standard shall not give any market participant an unfair competitive advantage. Yes
3.	An Organization Standard shall neither mandate nor prohibit any specific market structure. Yes
4.	An Organization Standard shall not preclude market solutions to achieving compliance with that Standard. Yes
5.	An Organization Standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards. Yes

**Scope** (Provide enough detail so that an independent entity familiar with the industry could draft, modify, or withdraw a Standard based on this description.)

Each NERC Planning Authority (PA) shall incorporate the relevant key parameters (voltage, frequency, etc) of each Nuclear Power Plant licensing and design base requirements within the PA’s area into the PA’s methodology for transmission system assessments and plans. The PA’s shall develop plans to mitigate any inability to meet the relevant key parameters of the plants licensing and design base requirements.

Each NERC Reliability Authority (RA) shall incorporate the key parameters of each Nuclear Power Plant licensing and design base requirements within the RA’s area into its methodology for the calculation of Interconnection Reliability Operating Limits (IROL) and System Operating Limits (SOL). The RA shall take actions to correct any IROL/SOL that is identified as a result of the inability to meet the relevant key parameters of the plants licensing and design base requirements. The RA shall notify the nuclear power plant operator that corrective action was taken and the nature of such action.

Communication protocols shall also be established between the transmission operator and the nuclear power plant staff to provide the necessary information any time grid conditions are degraded such that they could potentially impact the operation of the nuclear power plant.

***Related Standards***

<b>Standard No.</b>	<b>Explanation</b>
NERC TOP-007-0 R1.	Existing: R1. A Transmission Operator shall inform its Reliability Coordinator when an IROL or SOL has been exceeded and the actions being taken to return the system to within limits.
Suggest:	Add: R1.1 “Reliability Coordinator will contact the affected nuclear plant when the IROL or SOL that has been exceeded impacts the voltage or reactive capacity at the interconnection with the plant and the actions being taken to return the system to within limits.”
NERC TOP-002-0 R10.	Existing: R10. Each Balancing Authority and Transmission Operator shall plan to meet all System Operating Limits (SOLs) and Interconnection Reliability Operating Limits (IROLs).
Suggest:	Add: R10.1 “Included in the studies shall be the voltage and reactive capability at the interconnection with all nuclear power plants as specified in the agreement between the Transmission Operator and the nuclear power plant.”

***Related Standards (cont)***

<b>Standard No.</b>	<b>Explanation</b>

NERC TPL-003-0 R1.	Existing: The Planning Authority and Transmission Planner shall each demonstrate through a valid assessment that its portion of the interconnected transmission systems is planned such that the network can be operated to supply projected customer demands and projected Firm (nonrecallable reserved) Transmission Services, at all demand Levels over the range of forecast system demands, under the contingency conditions as defined in Category C of Table I (attached). The controlled interruption of customer Demand, the planned removal of generators, or the Curtailment of firm (non-recallable reserved) power transfers may be necessary to meet this standard. To be valid, the Planning Authority and Transmission Planner assessments shall:
Suggest:	Add: R1.3.13 “Including the voltage and reactive capability at the interconnection with all nuclear power plants as specified in the agreement between the Transmission Operator and the nuclear power plant.”
NERC EOP-005-0 R9.4	The existing standard makes mention of priority during system restoration “The affected Transmission Operators shall give high priority to restoration of off-site power to nuclear stations.”

***Related SARs***

SAR ID	Explanation

***Regional Differences***

Region	Explanation
ECAR	
ERCOT	
FRCC	
MAAC	
MAIN	
MAPP	
NPCC	
SERC	
SPP	

WECC	
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*Related NERC Operating Policies or Planning Standards*

<b>ID</b>	<b>Explanation</b>
FAC-001-0	Facility Connection Requirements

**COMMENT FORM  
Proposed Nuclear Offsite Supply Reliability Standard**

This form is to be used to submit comments on the proposed Nuclear Offsite Supply Reliability Standard Authorization Request. Comments must be submitted by **January 07, 2005**. You may submit the completed form by emailing it to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the words “Nuclear Offsite Supply Reliability SAR Comments” in the subject line. If you have questions please contact Mark Ladrow at [mark.ladrow@nerc.net](mailto:mark.ladrow@nerc.net) or by telephone at 609-452-8060.

**ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE AND IT IS THEREFORE IMPORTANT TO ADHERE TO THE FOLLOWING REQUIREMENTS:**

- DO:**
- Do enter text only, with no formatting or styles added.
  - Do use punctuation and capitalization as needed (except quotations).
  - Do use more than one form if responses do not fit in the spaces provided.
  - Do submit any formatted text or markups in a separate WORD file.

- DO NOT:**
- Do not insert tabs or paragraph returns in any data field.
  - Do not use numbering or bullets in any data field.
  - Do not use quotation marks in any data field.
  - Do not submit a response in an unprotected copy of this form.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
Email:		
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 - Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/>	2 - RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> FRCC	<input type="checkbox"/>	3 - Load-serving Entities
<input type="checkbox"/> MAAC	<input type="checkbox"/>	4 - Transmission-dependent Utilities
<input type="checkbox"/> MAIN	<input type="checkbox"/>	5 - Electric Generators
<input type="checkbox"/> MAPP	<input type="checkbox"/>	6 - Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> NPCC	<input type="checkbox"/>	7 - Large Electricity End Users
<input type="checkbox"/> SERC	<input type="checkbox"/>	8 - Small Electricity End Users
<input type="checkbox"/> SPP	<input type="checkbox"/>	9 - Federal, State, Provincial Regulatory or other Government Entities
<input type="checkbox"/> WECC	<input type="checkbox"/>	
<input type="checkbox"/> NA - Not Applicable	<input type="checkbox"/>	



## **Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

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### **Background Information:**

Posted for comments is the first posting of the Nuclear Offsite Supply Reliability SAR. The NEI Reliability Task Force has identified the offsite electric supply characteristics to nuclear plants as potentially being inconsistent with the requirements of 10CFR50 Appendix A- General Design Criteria for Nuclear Power Plants. This Standard Authorization Request was initiated to address this concern by requiring the Reliability Authority and Planning Authority to specifically incorporate the key parameters of the offsite electric supply as delineated in each nuclear power plant's licensing and design base.

The requestor would like to receive industry comments on this SAR and to obtain the input of the industry prior to determining the final scope and requirements of the SAR. Accordingly, we request your comments included on this form, emailed with the subject "Nuclear Offsite Supply Reliability SAR Comments" by January 07, 2005.

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

**Question 1: Do you agree there is a reliability need for a specifying the offsite electric supply characteristics provided to nuclear power plants so that the planning studies and reliability calculations are consistent with the nuclear design basis?**

Yes

No

**If no, please explain in the space provided below.**

**Comments**



**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

**Question 2: Do you agree with the scope and applicability of the proposed standard?**

Yes

No

**If no, please explain in the space provided below.**

**Comments**

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

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**Question 3: Do you agree with the intent of the proposal to add these requirements to existing standards as opposed to creating new standards?**

Yes

No

**Do you agree with the proposed location in existing standards?**

Yes

No

**If no, please identify the location you believe would be the most appropriate for the proposed standard.**

The proposed location includes only Category C contingencies. Category B contingencies should also be considered.

**Comments**

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

**Question 4: Do you have any additional comments regarding the SAR that you believe should be addressed?**

Yes

No

**If yes, please share those comments in the space provided below.**

The Related Standards section refers to the voltage and reactive capability. The words "reactive capability" and "reactive capacity" should be deleted. Reference to the voltage at the interconnection is sufficient.

**COMMENT FORM  
Proposed Nuclear Offsite Supply Reliability Standard**

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<b>Individual Commenter Information</b>		
<b>(Complete this page for comments from one organization or individual.)</b>		
Name:	Gerald Sauve	
Organization:	US Army Corps of Engineers, Walla Walla District, Operations Division	
Telephone:	509-527-7117	
Email:	Gerald.L.Sauve@usace.army.mil	
NERC Region	Registered Ballot Body Segment	
<input type="checkbox"/> ERCOT	<input type="checkbox"/> 1 - Transmission Owners	
<input type="checkbox"/> ECAR	<input type="checkbox"/> 2 - RTOs, ISOs, Regional Reliability Councils	
<input type="checkbox"/> FRCC	<input type="checkbox"/> 3 - Load-serving Entities	
<input type="checkbox"/> MAAC	<input type="checkbox"/> 4 - Transmission-dependent Utilities	
<input type="checkbox"/> MAIN	<input type="checkbox"/> 5 - Electric Generators	
<input type="checkbox"/> MAPP	<input type="checkbox"/> 6 - Electricity Brokers, Aggregators, and Marketers	
<input type="checkbox"/> NPCC	<input type="checkbox"/> 7 - Large Electricity End Users	
<input type="checkbox"/> SERC	<input type="checkbox"/> 8 - Small Electricity End Users	
<input type="checkbox"/> SPP	<input type="checkbox"/> 9 - Federal, State, Provincial Regulatory or other Government Entities	
<input type="checkbox"/> WECC		
<input type="checkbox"/> NA - Not Applicable		



## **Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

### **Background Information:**

Posted for comments is the first posting of the Nuclear Offsite Supply Reliability SAR. The NEI Reliability Task Force has identified the offsite electric supply characteristics to nuclear plants as potentially being inconsistent with the requirements of 10CFR50 Appendix A- General Design Criteria for Nuclear Power Plants. This Standard Authorization Request was initiated to address this concern by requiring the Reliability Authority and Planning Authority to specifically incorporate the key parameters of the offsite electric supply as delineated in each nuclear power plant's licensing and design base.

The requestor would like to receive industry comments on this SAR and to obtain the input of the industry prior to determining the final scope and requirements of the SAR. Accordingly, we request your comments included on this form, emailed with the subject "Nuclear Offsite Supply Reliability SAR Comments" by January 07, 2005.

## Comment Form – Proposed Nuclear Offsite Supply Reliability Standard

---

**Question 1: Do you agree there is a reliability need for a specifying the offsite electric supply characteristics provided to nuclear power plants so that the planning studies and reliability calculations are consistent with the nuclear design basis?**

Yes

No

**If no, please explain in the space provided below.**

A SAR listed in your web sight titled Nuclear Offsite Supply Reliability and dated 10/20/04 makes the following statement: - Each NERC Planning Authority (PA) shall incorporate the relevant key parameters (voltage, frequency, etc) of each Nuclear Power Plant licensing and design base requirements within the PA's area into the PA's methodology for transmission system assessments and plans. The PA's shall develop plans to mitigate any inability to meet the relevant key parameters of the plants licensing and design base requirements. -

Voltage and frequency performance of the system not only depends on switching decisions of the transmission system operator, but they are critically dependent on the maintenance practices for and control system characteristics of generators. The inability to meet the relevant key parameters of the plants licensing and design base requirements is not just the transmission system operator responsibility, but also the generator owners. The transmission system having the capacity and capability to support the safe operation of NPP safety systems means that the generation systems must meet the same level of reliability assurance. You can not be assured that that frequency and voltage limits can be met at all times by the transmission system unless there are requisite limits and conditions place on the generator owner/operator. This will extend the licensing requirements of the NPP over the generator owner/operator. The effect of this SAR is to shift responsibility and cost for reliability assurance for power needed for safe shutdown of a NPP during an accident to a different facility, which is not associated with or under the control of the NPP.

In the northwestern part of the United States, the transmission system owner does not own generating equipment. Most of the generating equipment is owned by the US government under the Department of Defense and the Interior Department. Actions, policies, and funding are subject to Congressional Authorization. Extending the licensing requirements (under NRC regulations) of the NPP over the generator owner/operator (under Congressional authorization) is unwise and unworkable. The two authorities have conflicting charters and jurisdictions. The entire culture and vision of the generator owner is in conflict with the culture of NRC. Congress is moving toward downsizing, outsourcing, and streamlining the generator owner's capabilities. Extending the licensing requirements for nuclear reliability assurance would require expanding, complicating, and instituting an entirely new approach to function. The entire proposal is unworkable.

The transmission system provider and the generation system owner/operator are not chartered for, competent in, nor structured to support the technology needed to assure grid reliability adequately for licensing under NRC standards. When you say - The PA's shall develop plans to mitigate any inability to meet the relevant key parameters of the plants licensing and design base requirements - the transmission system providers and generation system owner/operator can't understand what that means because they lack competency in reliability and safety analysis, quality assurance, configuration control, conduct of operations, documentation control, and quality assurance

## **Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

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adequate to meet NRC requirements. Typically, generator owner/operators in the Northwest use skill of the craft and expert opinion for operation and maintenance. A typical charter directs that the maintenance schedule be crafted to optimize resource utilization, minimizes equipment downtimes and failures, and maximizes the serviceable life of equipment, structures, and facilities. The charter does not include meeting requirements for grid stability and reliability.

If the inherent conflict with governmental jurisdiction is overcome, and if it were possible to convince Congress to provide all the funds needed to institute a new infrastructure of compliance in the generation owner/operator, it would take at least 15 years to change the culture of the staff to be able to meet these requirements. The only effect of implementing this SAR is to give the individuals doing the NPP license a false sense of security in evaluating the scenarios and thereby increasing the risk of a major nuclear accident. The only way to avoid this increase in risk is to have those doing the risk analysis to take no credit for any controls that intend to enhance the capability and reliability of the transmission system. If that were done, then there would be no need for this SAR.

### **Comments**



**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

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**Question 2: Do you agree with the scope and applicability of the proposed standard?**

Yes

No

**If no, please explain in the space provided below.**

See the comments above. The scope of this proposed standard is inadequate because it only addresses the transmission service provider. System stability and reliability is greatly dependent on the generation owner/operator.

**Comments**

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

**Question 3: Do you agree with the intent of the proposal to add these requirements to existing standards as opposed to creating new standards?**

Yes

No

**Do you agree with the proposed location in existing standards?**

Yes

No

**If no, please identify the location you believe would be the most appropriate for the proposed standard.**

It should not exist.

**Comments**

## Comment Form – Proposed Nuclear Offsite Supply Reliability Standard

---

**Question 4: Do you have any additional comments regarding the SAR that you believe should be addressed?**

Yes

No

**If yes, please share those comments in the space provided below.**

The existing standard should be removed. It is the responsibility of the Nuclear Power Plant owner to address risk for his plant and demonstrate and maintain safe operations. If an individual NPP owner wishes to enter into a contract with anyone to provide a service, he can. If he elects to depend on some offsite supplier of power, it is the nuclear power plant owner's responsibility to develop legal agreements as needed to support the risk analysis that the NPP owner did to form the authorization basis for his plant. It should remain the NPP owner's responsibility if somehow the requirement for safe operation of his plant is not met. The NPP owner is the only one motivated and competent enough to ensure that safety standards will be met. This standard dilutes and confuses responsibility unnecessarily. There is no need for this standard.

**COMMENT FORM  
Proposed Nuclear Offsite Supply Reliability Standard**

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<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	Karl A. Bryan	
Organization:	US Army Corps of Engineers	
Telephone:	503-808-3894	
Email:	karl.a.bryan@usace.army.mil	
NERC Region	Registered Ballot Body Segment	
<input type="checkbox"/> ERCOT	<input type="checkbox"/> 1 - Transmission Owners	
<input type="checkbox"/> ECAR	<input type="checkbox"/> 2 - RTOs, ISOs, Regional Reliability Councils	
<input type="checkbox"/> FRCC	<input type="checkbox"/> 3 - Load-serving Entities	
<input type="checkbox"/> MAAC	<input type="checkbox"/> 4 - Transmission-dependent Utilities	
<input type="checkbox"/> MAIN	<input checked="" type="checkbox"/> 5 - Electric Generators	
<input type="checkbox"/> MAPP	<input type="checkbox"/> 6 - Electricity Brokers, Aggregators, and Marketers	
<input type="checkbox"/> NPCC	<input type="checkbox"/> 7 - Large Electricity End Users	
<input type="checkbox"/> SERC	<input type="checkbox"/> 8 - Small Electricity End Users	
<input type="checkbox"/> SPP	<input type="checkbox"/> 9 - Federal, State, Provincial Regulatory or other Government Entities	
<input checked="" type="checkbox"/> WECC		
<input type="checkbox"/> NA - Not Applicable		



## **Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

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### **Background Information:**

Posted for comments is the first posting of the Nuclear Offsite Supply Reliability SAR. The NEI Reliability Task Force has identified the offsite electric supply characteristics to nuclear plants as potentially being inconsistent with the requirements of 10CFR50 Appendix A- General Design Criteria for Nuclear Power Plants. This Standard Authorization Request was initiated to address this concern by requiring the Reliability Authority and Planning Authority to specifically incorporate the key parameters of the offsite electric supply as delineated in each nuclear power plant's licensing and design base.

The requestor would like to receive industry comments on this SAR and to obtain the input of the industry prior to determining the final scope and requirements of the SAR. Accordingly, we request your comments included on this form, emailed with the subject "Nuclear Offsite Supply Reliability SAR Comments" by January 07, 2005.

## Comment Form – Proposed Nuclear Offsite Supply Reliability Standard

---

**Question 1: Do you agree there is a reliability need for a specifying the offsite electric supply characteristics provided to nuclear power plants so that the planning studies and reliability calculations are consistent with the nuclear design basis?**

Yes

No

**If no, please explain in the space provided below.**

This standard is clearly aimed at shifting the economic burden of providing a reliable shutdown power supply system from the Nuclear Plant owner to the transmission owner/users. The Nuclear facility should have its own reliable shutdown source that is totally under their control and maintenance. The transmission owner that signs on to accepting this responsibility will soon realize that they now fall under the nuclear plant's licensing requirements for maintenance and documentation of maintenance. The increased level of maintenance (as well as the increased reporting/documenting necessary to comply with NRC maintenance standards) will drastically increase maintenance costs to the transmission owners. What is ludicrous is for the Nuclear facility to think that during a system disturbance the transmission system can keep power up on the line to the Nuclear facility.

**Comments**

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

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**Question 2: Do you agree with the scope and applicability of the proposed standard?**

Yes

No

**If no, please explain in the space provided below.**

see comments above

**Comments**



**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

**Question 3: Do you agree with the intent of the proposal to add these requirements to existing standards as opposed to creating new standards?**

Yes

No

**Do you agree with the proposed location in existing standards?**

Yes

No

**If no, please identify the location you believe would be the most appropriate for the proposed standard.**

I feel that the entire responsibility for safe shutdown power should be on the shoulders of the Nuclear facility (both ownership and maintenance). The power grid has too many failure modes for it to also be a source of shutdown power for a Nuclear plant.

**Comments**

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

**Question 4: Do you have any additional comments regarding the SAR that you believe should be addressed?**

Yes

No

**If yes, please share those comments in the space provided below.**

**COMMENT FORM  
Proposed Nuclear Offsite Supply Reliability Standard**

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<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	Don McInnis, John W Shaffer H F Horacio Perez	
Organization:	Florida Power & Light	
Telephone:	(	
Email:	don_mclnnis@fpl.com	
NERC Region	<input type="checkbox"/>	Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 - Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/>	2 - RTOs, ISOs, Regional Reliability Councils
<input checked="" type="checkbox"/> FRCC	<input checked="" type="checkbox"/>	3 - Load-serving Entities
<input type="checkbox"/> MAAC	<input type="checkbox"/>	4 - Transmission-dependent Utilities
<input type="checkbox"/> MAIN	<input checked="" type="checkbox"/>	5 - Electric Generators
<input type="checkbox"/> MAPP	<input type="checkbox"/>	6 - Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> NPCC	<input type="checkbox"/>	7 - Large Electricity End Users
<input type="checkbox"/> SERC	<input type="checkbox"/>	8 - Small Electricity End Users



**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

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\* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

**Background Information:**

Posted for comments is the first posting of the Nuclear Offsite Supply Reliability SAR. The NEI Reliability Task Force has identified the offsite electric supply characteristics to nuclear plants as potentially being inconsistent with the requirements of 10CFR50 Appendix A- General Design Criteria for Nuclear Power Plants. This Standard Authorization Request was initiated to address this concern by requiring the Reliability Authority and Planning Authority to specifically incorporate the key parameters of the offsite electric supply as delineated in each nuclear power plant’s licensing and design base.

The requestor would like to receive industry comments on this SAR and to obtain the input of the industry prior to determining the final scope and requirements of the SAR. Accordingly, we request your comments included on this form, emailed with the subject “Nuclear Offsite Supply Reliability SAR Comments” by January 07, 2005.

## Comment Form – Proposed Nuclear Offsite Supply Reliability Standard

---

**Question 1: Do you agree there is a reliability need for a specifying the offsite electric supply characteristics provided to nuclear power plants so that the planning studies and reliability calculations are consistent with the nuclear design basis?**

Yes

No

**If no, please explain in the space provided below.**

The Planning Standards changes should be limited to working with and account for only existing, pre-established nuclear licensing requirements of existing nuclear facilities. Future nuclear or even fossil plant designs must conform with and be consistent with the "Facilities Connection Requirements" and Planning Standards of the applicable Transmission Provider including the specified transmission voltage operating range, nominal and short term frequency excursions, etc. It is cheaper to design a plant up front to conform to the existing transmission system design than to modify the transmission to each and every plants individual design.

**Comments**

**Question 2: Do you agree with the scope and applicability of the proposed standard?**

Yes

No

**If no, please explain in the space provided below.**

The standard's scope should address only requirements for pre-existing nuclear facilities. The standard needs to say that new, planned generation facilities either nuclear or fossil must be designed to meet and be in conformance with the requirements of the Transmission Providers "Facilities Connection Requirements" and Planning Standards. Additionally, the scope of the document needs to address the responsibility of the NPP to provide the design basis and calculations to support their requirements, and the obligation of the NPP to consider design changes within the plant to establish the most cost effective means of meeting the licensing requirements.

Additionally, the standard must clearly state the obligation by the NPP that future changes i.e. planned uprates must be reviewed by the NPP and the Transmission Provider to ensure that the changes will not cause the NPP to violate pre-existing "Facilities Connection Requirements" of the Transmission Provider or significantly change or modify the already established and agreed to voltage, frequency, short circuit or stability limitations of the transmission grid.

**Comments**

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

**Question 3: Do you agree with the intent of the proposal to add these requirements to existing standards as opposed to creating new standards?**

Yes

No

**Do you agree with the proposed location in existing standards?**

Yes

No

**If no, please identify the location you believe would be the most appropriate for the proposed standard.**

**Comments**



## Comment Form – Proposed Nuclear Offsite Supply Reliability Standard

---

**Question 4: Do you have any additional comments regarding the SAR that you believe should be addressed?**

Yes

No

**If yes, please share those comments in the space provided below.**

The SAR states that transmission grid must meet NPP specific licensing and design requirements. These NPP specific requirements are developed through engineering studies performed by the NPP licensee or its agents. When requested, the NPP owner shall provide the Planning or Operating Authorities with an explanation of the technical basis for the NPP specific grid requirements and sufficient technical data to permit an analysis of those requirements.

The SAR language implies the Planning authority is responsible for correcting any perceived deficiency in the grid power supply that could affect safety related shut down functions. The Planning Authority, Operating Authority together with the NPP owner should jointly review the technical basis for grid power supply requirements as well as appropriate mitigation measures. These mitigation measures may involve changes to transmission grid or NPP operating procedures or may involve improvements to transmission grid or NPP auxiliary bus equipment.

As long as the Planning Standards are being modified the Interconnection Design Characteristics /Requirements for Future Plants either nuclear or fossil should be clearly stated i.e. operating voltage ranges both normal and short term excursion, ride through capability for pumps, fans, etc, operating frequency ranges both normal and short term excursions.

The obligation of all plants both fossil and nuclear to provide their requirements, design calculations and assumptions, basis for margin selections should be included somewhere in the changes.

**COMMENT FORM  
Proposed Nuclear Offsite Supply Reliability Standard**

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<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	Howard Rulf	
Organization:	We Energies	
Telephone:	262-574-6046	
Email:	Howard.Rulf@we-energies.com	
NERC Region	Registered Ballot Body Segment	
<input type="checkbox"/> ERCOT	<input type="checkbox"/> 1 - Transmission Owners	
<input type="checkbox"/> ECAR	<input type="checkbox"/> 2 - RTOs, ISOs, Regional Reliability Councils	
<input type="checkbox"/> FRCC	<input checked="" type="checkbox"/> 3 - Load-serving Entities	
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<input type="checkbox"/> MAPP	<input type="checkbox"/> 6 - Electricity Brokers, Aggregators, and Marketers	
<input type="checkbox"/> NPCC	<input type="checkbox"/> 7 - Large Electricity End Users	
<input type="checkbox"/> SERC	<input type="checkbox"/> 8 - Small Electricity End Users	
<input type="checkbox"/> SPP	<input type="checkbox"/> 9 - Federal, State, Provincial Regulatory or other Government Entities	
<input type="checkbox"/> WECC		
<input type="checkbox"/> NA - Not Applicable		



## **Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

### **Background Information:**

Posted for comments is the first posting of the Nuclear Offsite Supply Reliability SAR. The NEI Reliability Task Force has identified the offsite electric supply characteristics to nuclear plants as potentially being inconsistent with the requirements of 10CFR50 Appendix A- General Design Criteria for Nuclear Power Plants. This Standard Authorization Request was initiated to address this concern by requiring the Reliability Authority and Planning Authority to specifically incorporate the key parameters of the offsite electric supply as delineated in each nuclear power plant's licensing and design base.

The requestor would like to receive industry comments on this SAR and to obtain the input of the industry prior to determining the final scope and requirements of the SAR. Accordingly, we request your comments included on this form, emailed with the subject "Nuclear Offsite Supply Reliability SAR Comments" by January 07, 2005.

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

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**Question 1: Do you agree there is a reliability need for a specifying the offsite electric supply characteristics provided to nuclear power plants so that the planning studies and reliability calculations are consistent with the nuclear design basis?**

Yes

No

**If no, please explain in the space provided below.**

**Comments**

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

**Question 2: Do you agree with the scope and applicability of the proposed standard?**

Yes

No

**If no, please explain in the space provided below.**

**Comments**

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

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**Question 3: Do you agree with the intent of the proposal to add these requirements to existing standards as opposed to creating new standards?**

Yes

No

**Do you agree with the proposed location in existing standards?**

Yes

No

**If no, please identify the location you believe would be the most appropriate for the proposed standard.**

**Comments**

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

**Question 4: Do you have any additional comments regarding the SAR that you believe should be addressed?**

Yes

No

**If yes, please share those comments in the space provided below.**

I don't expect there will be disagreements, but there should be a statement that while disagreements are being resolved, the NPP specific licensing and design requirements will take precedence.



**COMMENT FORM  
Proposed Nuclear Offsite Supply Reliability Standard**

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<b>Individual Commenter Information</b>		
<b>(Complete this page for comments from one organization or individual.)</b>		
Name:	P.D. Henderson	
Organization:	Independent Electric System Operator(formerly IMO)	
Telephone:	905 855 6258	
Email:	peter.henderson@theIMO.com	
NERC Region	Registered Ballot Body Segment	
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 - Transmission Owners
<input type="checkbox"/> ECAR	<input checked="" type="checkbox"/>	2 - RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> FRCC	<input type="checkbox"/>	3 - Load-serving Entities
<input type="checkbox"/> MAAC	<input type="checkbox"/>	4 - Transmission-dependent Utilities
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<input type="checkbox"/> SERC	<input type="checkbox"/>	8 - Small Electricity End Users
<input type="checkbox"/> SPP	<input type="checkbox"/>	9 - Federal, State, Provincial Regulatory or other Government Entities
<input type="checkbox"/> WECC		
<input type="checkbox"/> NA - Not Applicable		



## **Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

### **Background Information:**

Posted for comments is the first posting of the Nuclear Offsite Supply Reliability SAR. The NEI Reliability Task Force has identified the offsite electric supply characteristics to nuclear plants as potentially being inconsistent with the requirements of 10CFR50 Appendix A- General Design Criteria for Nuclear Power Plants. This Standard Authorization Request was initiated to address this concern by requiring the Reliability Authority and Planning Authority to specifically incorporate the key parameters of the offsite electric supply as delineated in each nuclear power plant's licensing and design base.

The requestor would like to receive industry comments on this SAR and to obtain the input of the industry prior to determining the final scope and requirements of the SAR. Accordingly, we request your comments included on this form, emailed with the subject "Nuclear Offsite Supply Reliability SAR Comments" by January 07, 2005.

## Comment Form – Proposed Nuclear Offsite Supply Reliability Standard

---

**Question 1: Do you agree there is a reliability need for a specifying the offsite electric supply characteristics provided to nuclear power plants so that the planning studies and reliability calculations are consistent with the nuclear design basis?**

Yes

No

**If no, please explain in the space provided below.**

### **Comments**

We could not find any inconsistencies mentioned in the recommendations in the US-Canada Task Force report. However, we recognize that recognition of the special needs of nuclear power plants (NPP) may warrant documentation in a standard with appropriate scope that addresses the real issues. If there are inconsistencies with Criterion 17 the scope should include them.

Note, it is not clear what is not being considered in the planning studies or reliability calculations. It should be noted that the proposed scope goes beyond planning studies and reliability calculations and includes communications with the NPP which is not mentioned in this question.

## Comment Form – Proposed Nuclear Offsite Supply Reliability Standard

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### Question 2: Do you agree with the scope and applicability of the proposed standard?

Yes

No

#### If no, please explain in the space provided below.

It is not clear as to what is not being done now or covered by current standards. For instance, it is our belief that studies under the present standards would address the required voltage and reactive capabilities at the interconnection with the NPP.

The scope needs to better address any specific inconsistencies that have been identified, if there are any.

Criterion 17 recognizes both an onsite and an offsite supply of electrical power to the NPP. It should be made clear in the SAR that the NPPs will also have an independent & fully capable on site electric power supply for a controlled safe shutdown, etc.

The SAR refers to written agreements between the Transmission System Operator and the NPP. Flexibility should be provided such that this can be handled in other ways, such as through operations policies, market rules, etc.

While the current licensing requirement as specified in CFR 50, Appendix A-General Design Criterion 17 may be acceptable, we have concern that other licensing requirements or future changes may not be readily achievable. Hence, the NERC standard should be written such that it refers only to the agreements or operating policies, market rules, etc rather than the NPP specific licensing and design requirements.

It should be noted that in some cases communications from the RA may go through an intermediary before it reaches the NPP

#### Comments

The scope needs to be reworked.

## Comment Form – Proposed Nuclear Offsite Supply Reliability Standard

---

**Question 3: Do you agree with the intent of the proposal to add these requirements to existing standards as opposed to creating new standards?**

Yes

No

**Do you agree with the proposed location in existing standards?**

Yes

No

**If no, please identify the location you believe would be the most appropriate for the proposed standard.**

If there are true inconsistencies with criterion 17, then this should be a new stand alone standard to give it more prominence.

The proposed Nuclear Offsite Supply Reliability Standard is an important action to address a recommendation of the August 2003 Blackout Investigation. The time and effort should be taken to properly create the standard in a well thought manner. Not a rush job that gives the impression of being forced on the industry.

The IRC disagrees with the attempt to add these requirements to existing standards. These standards apply to a separate and distinct segment of the power industry. In as much as these standards only apply to nuclear power plants, a new standard regarding nuclear power plants should be created. The standards will be hard to find in the proposed locations. .

**Comments**

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

**Question 4: Do you have any additional comments regarding the SAR that you believe should be addressed?**

Yes

No

**If yes, please share those comments in the space provided below.**

Note: In many cases these standards are being met now by RTO's and ISO's.

It would be beneficial if the NEI concerns were specified regarding the inconsistency. The standard should recognize that the RC function is currently adopted for the Version 0 Standards rather than the RA function. Also, the term Transmission Operator should be used rather than Transmission System Operator.

**COMMENT FORM  
Proposed Nuclear Offsite Supply Reliability Standard**

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<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
Email:		
NERC Region	Registered Ballot Body Segment	
<input type="checkbox"/> ERCOT	<input type="checkbox"/> 1 - Transmission Owners	
<input type="checkbox"/> ECAR	<input checked="" type="checkbox"/> 2 - RTOs, ISOs, Regional Reliability Councils	
<input type="checkbox"/> FRCC	<input type="checkbox"/> 3 - Load-serving Entities	
<input type="checkbox"/> MAAC	<input type="checkbox"/> 4 - Transmission-dependent Utilities	
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<input type="checkbox"/> MAPP	<input type="checkbox"/> 6 - Electricity Brokers, Aggregators, and Marketers	
<input checked="" type="checkbox"/> NPCC	<input type="checkbox"/> 7 - Large Electricity End Users	
<input type="checkbox"/> SERC	<input type="checkbox"/> 8 - Small Electricity End Users	
<input type="checkbox"/> SPP	<input type="checkbox"/> 9 - Federal, State, Provincial Regulatory or other Government Entities	
<input type="checkbox"/> WECC		
<input type="checkbox"/> NA - Not Applicable		





## **Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

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### **Background Information:**

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**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

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**Question 1: Do you agree there is a reliability need for a specifying the offsite electric supply characteristics provided to nuclear power plants so that the planning studies and reliability calculations are consistent with the nuclear design basis?**

Yes

No

**If no, please explain in the space provided below.**

NPCC recognizes the importance of reliability in the supply of a nuclear power station however is concerned that there is a duplication of existing NRC siting or licensing criteria and an imposition of that criteria on the BPS Transmission system.

**Comments**

## Comment Form – Proposed Nuclear Offsite Supply Reliability Standard

---

**Question 2: Do you agree with the scope and applicability of the proposed standard?**

Yes

No

**If no, please explain in the space provided below.**

The SAR incorrectly quotes Criterion 17 as: the grid be used as the primary source of normal and emergency power to plant equipment required for safe shutdown..... It should be made clear that the Nuclear Power Plants (NPP) will also have an independent & fully capable on site electric power supply for safe shutdown,etc.

The SAR refers to written agreements between the Transmission System Operator and the NPP. Flexibility should be provided such that this can be handled in other ways, such as through operations policies, market rules, etc.

While the current licensing requirement as specified in CFR 50, Appendix A-General Design Criteria 17 may be acceptable, we have concern that other licensing requirements or future changes may not be readily achievable. Hence, the NERC standard should be written such that it refers only to the agreements or operating policies, market rules, etc rather than the NPP specific licensing and design requirements.

NPCC believes that this Standard would go beyond the NERC task of ensuring reliability of the Bulk Power System and deals more with individual interconnection of NPP rather than the reliability of the Interconnected Bulk Power System.

**Comments**

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

**Question 3: Do you agree with the intent of the proposal to add these requirements to existing standards as opposed to creating new standards?**

Yes

No

**Do you agree with the proposed location in existing standards?**

Yes

No

**If no, please identify the location you believe would be the most appropriate for the proposed standard.**

This should be a "stand-alone" standard.

**Comments**

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

**Question 4: Do you have any additional comments regarding the SAR that you believe should be addressed?**

Yes

No

**If yes, please share those comments in the space provided below.**

As stated in Question 1 comments, NPCC is concerned that there is a duplication of NRC siting/licensing criteria on the reliability of the BPS Transmission system.

**COMMENT FORM  
Proposed Nuclear Offsite Supply Reliability Standard**

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<b>Individual Commenter Information</b>	
(Complete this page for comments from one organization or individual.)	
Name:	Chris Schaeffer
Organization:	Duke Energy Corporation
Telephone:	704 382-3658
Email:	ceschaef@duke-energy.com
NERC Region	Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/> 1 - Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/> 2 - RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> FRCC	<input type="checkbox"/> 3 - Load-serving Entities
<input type="checkbox"/> MAAC	<input type="checkbox"/> 4 - Transmission-dependent Utilities
<input type="checkbox"/> MAIN	<input checked="" type="checkbox"/> 5 - Electric Generators
<input type="checkbox"/> MAPP	<input type="checkbox"/> 6 - Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> NPCC	<input type="checkbox"/> 7 - Large Electricity End Users
<input checked="" type="checkbox"/> SERC	<input type="checkbox"/> 8 - Small Electricity End Users
<input type="checkbox"/> SPP	<input type="checkbox"/> 9 - Federal, State, Provincial Regulatory or other Government Entities
<input type="checkbox"/> WECC	
<input type="checkbox"/> NA - Not Applicable	





## **Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

### **Background Information:**

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The requestor would like to receive industry comments on this SAR and to obtain the input of the industry prior to determining the final scope and requirements of the SAR. Accordingly, we request your comments included on this form, emailed with the subject "Nuclear Offsite Supply Reliability SAR Comments" by January 07, 2005.

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

**Question 1: Do you agree there is a reliability need for a specifying the offsite electric supply characteristics provided to nuclear power plants so that the planning studies and reliability calculations are consistent with the nuclear design basis?**

Yes

No

**If no, please explain in the space provided below.**

**Comments**

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

**Question 2: Do you agree with the scope and applicability of the proposed standard?**

Yes

No

**If no, please explain in the space provided below.**

**Comments**

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

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**Question 3: Do you agree with the intent of the proposal to add these requirements to existing standards as opposed to creating new standards?**

Yes

No

**Do you agree with the proposed location in existing standards?**

Yes

No

**If no, please identify the location you believe would be the most appropriate for the proposed standard.**

Standard VAR-001-0 — Voltage and Reactive Control in the version 0 operating standards addresses the issue of operation of generator unit AVRs. Revision of this standard may be necessary to require that evaluations are performed on any units operating in manual control due to equipment problems. These evaluations should:

- a. Assure that the assumption of automatic AVR operation typically used in planning studies are not invalidated by the ongoing operation of a unit in manual control, and/or
- b. Assure the status of any units operating in manual are properly reflected in any real time contingency analysis tools that may be used to provide indication that the NPP off-site power source would be degraded in the event of an accident.

**Comments**

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

**Question 4: Do you have any additional comments regarding the SAR that you believe should be addressed?**

Yes

No

**If yes, please share those comments in the space provided below.**

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<b>Individual Commenter Information</b>	
(Complete this page for comments from one organization or individual.)	
Name:	John Blazekovich
Organization:	Exelon Corporation
Telephone:	630-691-4777
Email:	john.blazekovich@exeloncorp.com
NERC Region	Registered Ballot Body Segment
<input checked="" type="checkbox"/> ERCOT	<input checked="" type="checkbox"/> 1 - Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/> 2 - RTOs, ISOs, Regional Reliability Councils
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<input checked="" type="checkbox"/> SPP	<input type="checkbox"/> 9 - Federal, State, Provincial Regulatory or other Government Entities
<input type="checkbox"/> WECC	
<input type="checkbox"/> NA - Not Applicable	



## **Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

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## Comment Form – Proposed Nuclear Offsite Supply Reliability Standard

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**Question 1: Do you agree there is a reliability need for a specifying the offsite electric supply characteristics provided to nuclear power plants so that the planning studies and reliability calculations are consistent with the nuclear design basis?**

Yes

No

**If no, please explain in the space provided below.**

**Comments**

Exelon Corporation supports NERC in its effort to apply formal, measurable, and effective reliability standards in order to ensure the reliability of the North American interconnected electric systems. Due to the number of operationally sensitive issues associated with this proposal Exelon Corporation will not offer an opinion whether nuclear offsite supply reliability should be added to the NERC Reliability Standards. As the largest owner/operator of nuclear power facilities in the United States, Exelon Corporation respectfully requests to be included in the Standards drafting process if this SAR is accepted.

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

**Question 2: Do you agree with the scope and applicability of the proposed standard?**

Yes

No

**If no, please explain in the space provided below.**

**Comments**

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

**Question 3: Do you agree with the intent of the proposal to add these requirements to existing standards as opposed to creating new standards?**

Yes

No

**Do you agree with the proposed location in existing standards?**

Yes

No

**If no, please identify the location you believe would be the most appropriate for the proposed standard.**

**Comments**

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

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**Question 4: Do you have any additional comments regarding the SAR that you believe should be addressed?**

Yes

No

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<b>Individual Commenter Information</b>		
<b>(Complete this page for comments from one organization or individual.)</b>		
Name:	Peter Burke [on behalf of ATC's System Planners]	
Organization:	American Transmission Company (ATC)	
Telephone:	262-506-6863	
Email:	PBurke@atcllc.com	
NERC Region	Registered Ballot Body Segment	
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 - Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/>	2 - RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> FRCC	<input type="checkbox"/>	3 - Load-serving Entities
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<input checked="" type="checkbox"/> MAIN	<input type="checkbox"/>	5 - Electric Generators
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<input type="checkbox"/> WECC		
<input type="checkbox"/> NA - Not Applicable		



## **Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

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**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

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**Question 1: Do you agree there is a reliability need for a specifying the offsite electric supply characteristics provided to nuclear power plants so that the planning studies and reliability calculations are consistent with the nuclear design basis?**

Yes

No

**If no, please explain in the space provided below.**

**Comments**

Agree because of the increased specificity of these supply requirements.



**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

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**Question 2: Do you agree with the scope and applicability of the proposed standard?**

Yes

No

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**Comments**

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

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**Comments**

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

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Yes

No

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<b>Individual Commenter Information</b>	
(Complete this page for comments from one organization or individual.)	
Name:	Kathleen M. Goodman
Organization:	ISO New England Inc.
Telephone:	(413) 535-4111
Email:	kgoodman@iso-ne.com
NERC Region	Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/> 1 - Transmission Owners
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ISO-NE recognizes the importance of reliability in the supply of a nuclear power station however is concerned that there is a duplication of existing NRC siting or licensing criteria and an imposition of that criteria on the BPS Transmission system.

**Comments**

## Comment Form – Proposed Nuclear Offsite Supply Reliability Standard

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**Question 2: Do you agree with the scope and applicability of the proposed standard?**

Yes

No

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The SAR incorrectly quotes Criterion 17 as: the grid be used as the primary source of normal and emergency power to plant equipment required for safe shutdown..... It should be made clear that the Nuclear Power Plants (NPP) will also have an independent & fully capable on site electric power supply for safe shutdown,etc.

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ISO-NE believes that this Standard would go beyond the NERC task of ensuring reliability of the Bulk Power System and deals more with the individual interconnection of NPP rather than the reliability of the Interconnected Bulk Power System.

**Comments**



**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

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**Question 3: Do you agree with the intent of the proposal to add these requirements to existing standards as opposed to creating new standards?**

Yes

No

**Do you agree with the proposed location in existing standards?**

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No

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This should be a "stand-alone" standard.

**Comments**

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

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**Question 4: Do you have any additional comments regarding the SAR that you believe should be addressed?**

Yes

No

**If yes, please share those comments in the space provided below.**

As stated in Question 1 comments, ISO-NE is concerned that there is a duplication of NRC siting/licensing criteria on the reliability of the BPS Transmission system.

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

**COMMENT FORM  
Proposed Nuclear Offsite Supply Reliability Standard**

This form is to be used to submit comments on the proposed Nuclear Offsite Supply Reliability Standard Authorization Request. Comments must be submitted by **January 07, 2005**. You may submit the completed form by emailing it to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the words “Nuclear Offsite Supply Reliability SAR Comments” in the subject line. If you have questions please contact Mark Ladrow at [mark.ladrow@nerc.net](mailto:mark.ladrow@nerc.net) or by telephone at 609-452-8060.

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<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
Email:		
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 - Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/>	2 - RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> FRCC	<input checked="" type="checkbox"/>	3 - Load-serving Entities
<input type="checkbox"/> MAAC	<input type="checkbox"/>	4 - Transmission-dependent Utilities
<input type="checkbox"/> MAIN	<input type="checkbox"/>	5 - Electric Generators
<input type="checkbox"/> MAPP	<input type="checkbox"/>	6 - Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> NPCC	<input type="checkbox"/>	7 - Large Electricity End Users
<input checked="" type="checkbox"/> SERC	<input type="checkbox"/>	8 - Small Electricity End Users
<input type="checkbox"/> SPP	<input type="checkbox"/>	9 - Federal, State, Provincial Regulatory or other Government Entities
<input type="checkbox"/> WECC	<input type="checkbox"/>	
<input type="checkbox"/> NA - Not Applicable		



## **Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

### **Background Information:**

Posted for comments is the first posting of the Nuclear Offsite Supply Reliability SAR. The NEI Reliability Task Force has identified the offsite electric supply characteristics to nuclear plants as potentially being inconsistent with the requirements of 10CFR50 Appendix A- General Design Criteria for Nuclear Power Plants. This Standard Authorization Request was initiated to address this concern by requiring the Reliability Authority and Planning Authority to specifically incorporate the key parameters of the offsite electric supply as delineated in each nuclear power plant's licensing and design base.

The requestor would like to receive industry comments on this SAR and to obtain the input of the industry prior to determining the final scope and requirements of the SAR. Accordingly, we request your comments included on this form, emailed with the subject "Nuclear Offsite Supply Reliability SAR Comments" by January 07, 2005.

## Comment Form – Proposed Nuclear Offsite Supply Reliability Standard

---

**Question 1: Do you agree there is a reliability need for a specifying the offsite electric supply characteristics provided to nuclear power plants so that the planning studies and reliability calculations are consistent with the nuclear design basis?**

Yes

No

**If no, please explain in the space provided below.**

### **Comments**

The primary issue/concern is the ability of the Nuclear Plant to operate in accordance with its license requirements in terms of available off site power supply and other operating conditions. It may not be a load serving reliability issue because the loads to be served by the system may not be adversely impacted by the operating conditions that would be outside of the license requirement limits for the nuclear plant. Therefore, meeting the license requirements of the nuclear units may not fit the standard definition of "reliability" as normally included the NERC Standards. This may suggest that a separate Standard for Nuclear issues may be more appropriate than the suggested modification of existing Standards.

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

**Question 2: Do you agree with the scope and applicability of the proposed standard?**

Yes

No

**If no, please explain in the space provided below.**

**Comments**

It appears that the implementation of the proposed SAR scope is to modify the existing Standards to include the nuclear requirements under the existing Standards framework. The concept of addressing the nuclear license requirements in the NERC Standards is appropriate but the modification of existing Standards may not be the best approach. See comments on later questions for more discussion related to developing a separate Nuclear Standard.

## Comment Form – Proposed Nuclear Offsite Supply Reliability Standard

---

**Question 3: Do you agree with the intent of the proposal to add these requirements to existing standards as opposed to creating new standards?**

Yes

No

**Do you agree with the proposed location in existing standards?**

Yes

No

**If no, please identify the location you believe would be the most appropriate for the proposed standard.**

The license requirements for each nuclear plant is unique and may be significantly different for each plant. The contingencies and conditions that need to be evaluated to meet the license requirements may not fit very well in the existing NERC Standard framework, including definitions of contingency categories. Also from the preliminary discussions with other individuals so far, there appears to be a significant number of other standards than mentioned in this SAR that may need to be modified. For these reasons, it may be more appropriate and direct to develop a separate SAR to incorporate the reliability and licensing requirements of the nuclear units as an addition to the existing Version 0 NERC standards. However, if the existing Standards are modified as opposed to the creation of a new SAR (or standard), it should be noted that the proposed location includes only Category C contingencies. Category B contingencies should also be considered.

### **Comments**

In principle, agree that existing standards should be revised as appropriate. However, the concept of a dedicated NERC standard for the nuclear plant sector makes sense in terms of ensuring proper focus on nuclear plant grid reliability requirements which tend to be more restrictive than those imposed by the NERC standards.

Draft 1 of the SAR looks like a good start, but additional standards need to be revised. The standard drafting team should perform a thorough review of all existing NERC standards and identify others that need to address possible impacts to nuclear plants. (The Standards Process Manual should be revised to ensure that the Version 1 standards and other future standards consider nuclear plant licensing requirements and impacts during their development. If a dedicated nuclear plant standard is developed, the Standards Process Manual should reference it for development of new standards and revision of existing standards to ensure the nuclear requirements are considered).

Two examples are as follows:



## **Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

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- 1) Standard VAR-001-0 — Voltage and Reactive Control in the Version 0 operating standards addresses the issue of operation of generator unit AVRs. Revision of this standard may be necessary to require that appropriate evaluations be performed on any units operating in manual control due to equipment problems. These evaluations should: a.) Assure that the assumption of automatic AVR operation typically used in planning studies are not invalidated by the ongoing operation of a unit in manual control, and/or b.) Assure the status of any units operating in manual are properly reflected in any real time contingency analysis tools that may be used to provide indication that the NPP off-site power source would be degraded in the event of an accident.
- 2) Standard MOD-012-1 (IIB.S1.M3) - Verification of Dependable [Generator] Reactive Capability in the Version 1 standards addresses on-line testing to verify generator reactive capability. In order to reach the reactive capability of some generators and still maintain voltages within acceptable limits, other system reactive sources (nearby generators, capacitors, reactor banks) may have to be placed in service, taken out of service, or adjusted. This would represent an abnormal condition on the grid, and coupled with a trip of the generator in test or some other contingency, possibly result in degraded voltage to the nuclear plant offsite supply buses.

This could render the offsite source to the nuclear plant inoperable and/or result in loss of multiple units. This standard or other appropriate NERC standard(s) should require that, prior to such testing, appropriate evaluations be performed to assess the impacts of the testing on the grid and the nuclear plant. In addition, real time contingency analyses should be performed during an actual test evolution.

## Comment Form – Proposed Nuclear Offsite Supply Reliability Standard

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**Question 4: Do you have any additional comments regarding the SAR that you believe should be addressed?**

Yes

No

**If yes, please share those comments in the space provided below.**

The SAR shows a "related" Standard EOP-005-0R9.4 but does not make any suggestion for a changes. We assume that the present standard is appropriate without a change. If not, additional information is needed to address the intent of the SAR.

Another issue that needs to be addressed is who is responsible for making improvements to meet the licensing requirements. A balance between what the plants can do to mitigate conditions that would breach the licensing requirements, which may be more restrictive than for other customers, versus what the Transmission Owner may be required to do, should be maintained and evaluated in terms of providing service to the nuclear plants. It may be more cost effective for the plant to make improvements instead of requiring expensive transmission improvements. If a new or amended standard is developed, consideration should be given to language requiring the Plant Owner and the Transission Owner to implement the "least cost solution" to maintain operating conditions within limits.

Finally, the Related Standards section refers to the voltage and reactive capability. The words "reactive capability" and "reactive capacity" should be deleted. Reference to the voltage at the interconnection is sufficient.

**COMMENT FORM  
Proposed Nuclear Offsite Supply Reliability Standard**

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<b>Individual Commenter Information</b>		
<b>(Complete this page for comments from one organization or individual.)</b>		
Name:	Michael C. Calimano	
Organization:	New York Independent System Operator	
Telephone:	518-356-6129	
Email:	mcalimano@nyiso.com	
NERC Region	Registered Ballot Body Segment	
<input type="checkbox"/> ERCOT	<input type="checkbox"/> 1 - Transmission Owners	
<input type="checkbox"/> ECAR	<input checked="" type="checkbox"/> 2 - RTOs, ISOs, Regional Reliability Councils	
<input type="checkbox"/> FRCC	<input type="checkbox"/> 3 - Load-serving Entities	
<input type="checkbox"/> MAAC	<input type="checkbox"/> 4 - Transmission-dependent Utilities	
<input type="checkbox"/> MAIN	<input type="checkbox"/> 5 - Electric Generators	
<input type="checkbox"/> MAPP	<input type="checkbox"/> 6 - Electricity Brokers, Aggregators, and Marketers	
<input checked="" type="checkbox"/> NPCC	<input type="checkbox"/> 7 - Large Electricity End Users	
<input type="checkbox"/> SERC	<input type="checkbox"/> 8 - Small Electricity End Users	
<input type="checkbox"/> SPP	<input type="checkbox"/> 9 - Federal, State, Provincial Regulatory or other Government Entities	
<input type="checkbox"/> WECC		
<input type="checkbox"/> NA - Not Applicable		



## **Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

### **Background Information:**

Posted for comments is the first posting of the Nuclear Offsite Supply Reliability SAR. The NEI Reliability Task Force has identified the offsite electric supply characteristics to nuclear plants as potentially being inconsistent with the requirements of 10CFR50 Appendix A- General Design Criteria for Nuclear Power Plants. This Standard Authorization Request was initiated to address this concern by requiring the Reliability Authority and Planning Authority to specifically incorporate the key parameters of the offsite electric supply as delineated in each nuclear power plant's licensing and design base.

The requestor would like to receive industry comments on this SAR and to obtain the input of the industry prior to determining the final scope and requirements of the SAR. Accordingly, we request your comments included on this form, emailed with the subject "Nuclear Offsite Supply Reliability SAR Comments" by January 07, 2005.

## Comment Form – Proposed Nuclear Offsite Supply Reliability Standard

---

**Question 1: Do you agree there is a reliability need for a specifying the offsite electric supply characteristics provided to nuclear power plants so that the planning studies and reliability calculations are consistent with the nuclear design basis?**

Yes

No

**If no, please explain in the space provided below.**

We could not find any inconsistencies mentioned in the recommendations in the US-Canada Task Force report. It is not clear what is being considered in the planning studies or reliability calculations. .

**Comments**

**Question 2: Do you agree with the scope and applicability of the proposed standard?**

Yes

No

**If no, please explain in the space provided below.**

It is not clear as to what is not being done or covered by the current NYISO standards. NYISO believes our present standards address the required voltage and reactive capabilities at the interconnections with the NPP.

The specific inconsistencies need to be enumerated. NYISO does not think there are any, but the definitions in the SAR are murky.

The SAR refers to written agreements between the Transmission System Operator and the NPP. Flexibility should be provided as this is currently being handled through market rules and operations policies.

It should be noted that in many cases communication from the RA go through an intermediary before it reaches the NPP.

While the current licensing requirements as specified in CFR 50, Appendix A General Design Criterion 17, may be acceptable, we have concerns that other licensing requirements or future changes may not be readily achievable.

**Comments**

The scope needs to be reworked, if work proceeds on this SAR.

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**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

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**Question 3: Do you agree with the intent of the proposal to add these requirements to existing standards as opposed to creating new standards?**

Yes

No

**Do you agree with the proposed location in existing standards?**

Yes

No

**If no, please identify the location you believe would be the most appropriate for the proposed standard.**

If there are true inconsistencies with criterion 17, then this should be a new stand alone standard to give it more prominence.

If a new standard is necessary, the time and effort should be taken to properly create the standard in a well thought manner. Not a rush job that gives the impression of being forced on the industry.

The NYISO disagrees with the attempt to add these requirements to existing standards. These standards apply to a separate and distinct segment of the power industry. In as much as these standards only apply to nuclear power plants, a new standard regarding nuclear power plants should be created. The standards will be hard to find in the proposed locations. .

**Comments**



**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

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**Question 4: Do you have any additional comments regarding the SAR that you believe should be addressed?**

Yes

No

**If yes, please share those comments in the space provided below.**

In many cases these proposed standards are being met now by RTO's and ISO's.

**COMMENT FORM  
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<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	Jennifer Weber, Mitchell Needham, Jerry Niceley, Doug Bailey	
Organization:	Tennessee Valley Authority	
Telephone:	(423) 751-6013	
Email:	meneedham@tva.gov	
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 - Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/>	2 - RTOs, ISOs, Regional Reliability Councils
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<input type="checkbox"/> NA - Not Applicable		



## **Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

### **Background Information:**

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The requestor would like to receive industry comments on this SAR and to obtain the input of the industry prior to determining the final scope and requirements of the SAR. Accordingly, we request your comments included on this form, emailed with the subject "Nuclear Offsite Supply Reliability SAR Comments" by January 07, 2005.

## Comment Form – Proposed Nuclear Offsite Supply Reliability Standard

---

**Question 1: Do you agree there is a reliability need for a specifying the offsite electric supply characteristics provided to nuclear power plants so that the planning studies and reliability calculations are consistent with the nuclear design basis?**

Yes

No

**If no, please explain in the space provided below.**

Only in specific cases (see comments below), but not on a general basis.

### **Comments**

Only in the special case where a nuclear generator is designated Reliability Must-Run (RMR) is there a grid Reliability interest in assuring that GDC-17 offsite power supply to the station remains qualified, as an unresolved disqualification could force the station into a controlled shutdown, typically within a period of days or hours. If the unit is not designated RMR, then a forced controlled shutdown due to offsite power disqualification is a commercial issue rather than a grid reliability issue. The planning and operation of the power system to provide qualified GDC-17 offsite power to allow commercial operation of the station should be handled according to individually established protocols.

## Comment Form – Proposed Nuclear Offsite Supply Reliability Standard

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**Question 2: Do you agree with the scope and applicability of the proposed standard?**

Yes

No

**If no, please explain in the space provided below.**

Only in the special case where a nuclear generator is designated Reliability Must-Run (RMR) is there a grid Reliability interest in assuring that GDC-17 offsite power supply to the station remains qualified. If the unit is not designated RMR, then a forced controlled shutdown due to offsite power disqualification is a commercial issue rather than a grid reliability issue. Only Reliability-Must-Run units should have their GDC-17 offsite power requirements built into the system IROLs and/or SOLs, since they are the only units whose shutdown could potentially cause a reliability concern for the grid. Since grid operating parameters across several control areas could affect GDC-17 offsite power qualification, communication protocols for situations that impact such qualification should be established among all of the interested parties, rather than having NERC standards specify the party that must contact the plants.

**Comments**

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**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

**Question 3: Do you agree with the intent of the proposal to add these requirements to existing standards as opposed to creating new standards?**

Yes

No

**Do you agree with the proposed location in existing standards?**

Yes

No

**If no, please identify the location you believe would be the most appropriate for the proposed standard.**

See other question responses for comments relating to communication protocols and the non-IROL and non-SOL nature of GDC-17 qualification.

**Comments**

A number of existing standards and oversight agencies already address nuclear offsite power (10CFR50, GDC-17, RG 1.93, IEEE Stds. 765 and 308, the NRC, INPO, etc.). For those particular situations where a nuclear station is designated Reliability-Must-Run, GDC-17 offsite power qualification procedures are already in place to support continued plant generation for reliable grid operations. For non-RMR units, communications protocols and planning and operating agreements necessary for commercial operation should be handled through processes already sufficiently covered in the NERC standards.

## Comment Form – Proposed Nuclear Offsite Supply Reliability Standard

---

**Question 4: Do you have any additional comments regarding the SAR that you believe should be addressed?**

Yes

No

**If yes, please share those comments in the space provided below.**

A nuclear plant is both a generator and a load. In order to support commercial operation of the generator, the plant must also arrange for its special GDC-17 load requirements to be met. Planning, Operating, and Reliability organizations should treat this load according to whatever procedures, protocols and agreements are established for such load service. Only if a plant is designated Reliability Must-Run (RMR) does disqualification of GDC-17 offsite power have the potential to adversely impact grid reliability (should the LCO time window expire and the plant be forced into a controlled shutdown). Only in this special case should GDC-17 offsite power qualification should be included in system IROLs and/or SOLs. If the unit is not designated RMR, then a forced controlled shutdown is a commercial issue rather than a grid reliability issue (assuming that the plant is operated such that it can be brought to a controlled safe configuration in the event of the loss of GDC-17 qualified offsite power).



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<b>Individual Commenter Information</b>		
<b>(Complete this page for comments from one organization or individual.)</b>		
Name:	Raj Rana - coordinator	
Organization:	AEP	
Telephone:	614-716-2359	
Email:	raj_rana@AEP.com	
NERC Region	<input type="checkbox"/>	Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 - Transmission Owners
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<input type="checkbox"/> NA - Not Applicable	<input type="checkbox"/>	



## **Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

### **Background Information:**

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The requestor would like to receive industry comments on this SAR and to obtain the input of the industry prior to determining the final scope and requirements of the SAR. Accordingly, we request your comments included on this form, emailed with the subject "Nuclear Offsite Supply Reliability SAR Comments" by January 07, 2005.

## Comment Form – Proposed Nuclear Offsite Supply Reliability Standard

---

**Question 1: Do you agree there is a reliability need for a specifying the offsite electric supply characteristics provided to nuclear power plants so that the planning studies and reliability calculations are consistent with the nuclear design basis?**

Yes

No

**If no, please explain in the space provided below.**

There is a reliability need for specifying the offsite-electric supply characteristics provided to nuclear power plants so that the planning studies and reliability calculations are consistent with nuclear power plant's design requirements to meet corresponding NRC standards. The primary result of applying nuclear power plant (NPP) offsite electric power requirements to planning studies and reliability calculations ensures that the potential problems with anticipated changes to the grid are recognized early so that a mutually agreeable resolution can be found before the problem actually occurs.

We do not dispute that an NPP is a 'special needs' customer. Nor do we dispute that the NPP design requirements and the transmission infrastructure and the operation of the transmission system must be compatible to ensure that the special needs of an NPP are addressed. However, the design characteristics of the NPP must also be compatible with the transmission system supplying the NPP. This issue is very important especially for new nuclear power plants interfacing with an existing transmission network. The transmission owner/operator supplying the NPP must also have input into the NPP design characteristics to ensure that the transmission system is not unduly and unilaterally burdened by NPP design requirements to which the transmission owner/operator was not party to. We believe that the 'special needs' of any customer, including those of an NPP, are better accomplished by a separate interface agreement between the NPP and the specific transmission owner/operator. Nonetheless, some standard requirements be included as part of the NERC planning standards currently being modified, and there is no need for a new separate NERC Standard to accomplish this goal (please see our comments below under Question 3).

**Comments**

## Comment Form – Proposed Nuclear Offsite Supply Reliability Standard

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### Question 2: Do you agree with the scope and applicability of the proposed standard?

Yes

No

#### If no, please explain in the space provided below.

The NRC requirements sufficient to promote necessary infrastructure/operations requirements should be outlined as part of the scope of this SAR. The proposed SAR does not require the NPP to consult with the transmission owner/operators in the design phase of the NPP to insure NPP/transmission system compatibility. Rather, the proposed SAR requires that the transmission system be designed and operated to meet the needs of a particular customer, without any consideration to the transmission owner's customer connection requirements, or the specific transmission characteristics of the local transmission system. The scope of this SAR must be modified to provide transmission owners/operators' input opportunities during the NPP design phase, especially for new nuclear power plant additions or upgrades of existing plants. Any requirements placed upon the transmission owner/operator, must be delineated in a specific interconnection and joint operating interface agreement, and be based upon the applicable regulations of the special needs customer as would be the case with any 'special needs' customer.

Also, to prevent confusion, the proposed SAR should indicate which specifications should prevail in case of a dispute - the one outlined in this proposed SAR or the one outlined in the interface agreement.

The NRC requirements are not sufficient to require the RTO to maintain what existed when the applicable NPP was built because the RTO does not get its license from the NRC. In the early days of Nuclear Power vertically integrated companies that owned and operated the grid and the NPP dominated the industry. Technical fixes were in the interest of the overall company. The gradual separation of grid operations from generation to accomplish a free market in generation has removed these common economic interests and will continue to do so at a greater rate. Many NPPs today are "problem children" for grid operations because since the time they were designed and built new requirements were added by the NRC that caused voltage requirements to be much tighter. These new requirements were accepted by the applicable vertically integrated companies. New plants built today would match their present requirements with those of the grid operating parameters and design accordingly.

The sections are vague with regard to short and long-term actions. It is quite one thing to recognize a long-term problem that may take years to develop and work together to solve it. It is quite another when due to unexpected outages of non-NPP equipment a trip of a NPP may result in inadequate voltages or instabilities.

Also, the followign requirements should be added to the scope:

- Minimum and maximum switchyard voltages;
- Maximum switchyard voltage change allowed for unit trip;
- Minimum and maximum frequency;
- Unit trip stability requirements;

## **Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

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- Unit generator operating curves;
- grid short circuit strengths;
- frequency and or situations for which the above are evaluated.

### **Comments**

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**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

**Question 3: Do you agree with the intent of the proposal to add these requirements to existing standards as opposed to creating new standards?**

Yes

No

**Do you agree with the proposed location in existing standards?**

Yes

No

**If no, please identify the location you believe would be the most appropriate for the proposed standard.**

A separate standard should not be developed because if NERC develops a standard to meet special requirements to interface nuclear power plants with the existing transmission, other customers could request the development of similar standards to meet their requirements. Such requests will divert NERC's attention and resources from meeting its primary objective of developing and enforcing standards to maintain reliability of the bulk transmission grid. Interconnection or interfacing agreements between generator/load and transmission provider should address such specific requirements. Transmission service provider/operator should plan/operate facilities to meet the requirements outlined in such agreements.

Therefore, to the extent that there are new requirements that need to be captured, these requests should be addressed through modifications to existing standards. For example, thoughts embodied in the proposed SAR, along with our comments, be included as part of the appropriate planning standards currently being revised (e.g. TLP-007).

**Comments**

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

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**Question 4: Do you have any additional comments regarding the SAR that you believe should be addressed?**

Yes

No

**If yes, please share those comments in the space provided below.**



**COMMENT FORM  
Proposed Nuclear Offsite Supply Reliability Standard**

This form is to be used to submit comments on the proposed Nuclear Offsite Supply Reliability Standard Authorization Request. Comments must be submitted by **January 07, 2005**. You may submit the completed form by emailing it to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the words “Nuclear Offsite Supply Reliability SAR Comments” in the subject line. If you have questions please contact Mark Ladrow at [mark.ladrow@nerc.net](mailto:mark.ladrow@nerc.net) or by telephone at 609-452-8060.

**ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE AND IT IS THEREFORE IMPORTANT TO ADHERE TO THE FOLLOWING REQUIREMENTS:**

- DO:**
- Do enter text only, with no formatting or styles added.
  - Do use punctuation and capitalization as needed (except quotations).
  - Do use more than one form if responses do not fit in the spaces provided.
  - Do submit any formatted text or markups in a separate WORD file.

- DO NOT:**
- Do not insert tabs or paragraph returns in any data field.
  - Do not use numbering or bullets in any data field.
  - Do not use quotation marks in any data field.
  - Do not submit a response in an unprotected copy of this form.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
Email:		
NERC Region	Registered Ballot Body Segment	
<input type="checkbox"/> ERCOT	<input type="checkbox"/> 1 - Transmission Owners	
<input type="checkbox"/> ECAR	<input type="checkbox"/> 2 - RTOs, ISOs, Regional Reliability Councils	
<input type="checkbox"/> FRCC	<input type="checkbox"/> 3 - Load-serving Entities	
<input type="checkbox"/> MAAC	<input type="checkbox"/> 4 - Transmission-dependent Utilities	
<input type="checkbox"/> MAIN	<input type="checkbox"/> 5 - Electric Generators	
<input type="checkbox"/> MAPP	<input type="checkbox"/> 6 - Electricity Brokers, Aggregators, and Marketers	
<input type="checkbox"/> NPCC	<input type="checkbox"/> 7 - Large Electricity End Users	
<input type="checkbox"/> SERC	<input type="checkbox"/> 8 - Small Electricity End Users	
<input type="checkbox"/> SPP	<input type="checkbox"/> 9 - Federal, State, Provincial Regulatory or other Government Entities	
<input type="checkbox"/> WECC		
<input type="checkbox"/> NA - Not Applicable		

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

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Group Comments (Complete this page if comments are from a group.)

**Group Name:** RTO/ISO Standards Review Committee  
**Lead Contact:** Karl Tammar  
**Contact Organization:** NYISO  
**Contact Segment:** 2  
**Contact Telephone:** 518-356-6205  
**Contact Email:** ktammar@nyiso.com

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>
Dale McMaster	AESO	WECC	2
Ed Riley	CAISO	WECC	2
Sam Jones	ERCOT	ERCOT	2
Peter Henderson	IESO	NPCC	2
Peter Brandien	ISO-NE	NPCC	2
Bill Phillips	MISO	MAIN	2
Karl Tammar	NYISO	NPCC	2
Bruce Balmat	PJM	MAAC	2
Charles Yeung	SPP	SPP	2

\* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

## **Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

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### **Background Information:**

Posted for comments is the first posting of the Nuclear Offsite Supply Reliability SAR. The NEI Reliability Task Force has identified the offsite electric supply characteristics to nuclear plants as potentially being inconsistent with the requirements of 10CFR50 Appendix A- General Design Criteria for Nuclear Power Plants. This Standard Authorization Request was initiated to address this concern by requiring the Reliability Authority and Planning Authority to specifically incorporate the key parameters of the offsite electric supply as delineated in each nuclear power plant's licensing and design base.

The requestor would like to receive industry comments on this SAR and to obtain the input of the industry prior to determining the final scope and requirements of the SAR. Accordingly, we request your comments included on this form, emailed with the subject "Nuclear Offsite Supply Reliability SAR Comments" by January 07, 2005.

## Comment Form – Proposed Nuclear Offsite Supply Reliability Standard

---

**Question 1: Do you agree there is a reliability need for a specifying the offsite electric supply characteristics provided to nuclear power plants so that the planning studies and reliability calculations are consistent with the nuclear design basis?**

Yes

No

**If no, please explain in the space provided below.**

### **Comments**

We could not find any inconsistencies mentioned in the recommendations in the US-Canada Task Force report. However, we recognize that recognition of the special needs of nuclear power plants (NPP) may warrant documentation in a standard with appropriate scope that addresses the real issues. If there are inconsistencies with Criterion 17 the scope should include them.

Note, it is not clear what is not being considered in the planning studies or reliability calculations. It should be noted that the proposed scope goes beyond planning studies and reliability calculations and includes communications with the NPP which is not mentioned in this question.

## Comment Form – Proposed Nuclear Offsite Supply Reliability Standard

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### Question 2: Do you agree with the scope and applicability of the proposed standard?

Yes

No

#### If no, please explain in the space provided below.

It is not clear as to what is not being done now or covered by current standards. For instance, it is our belief that studies under the present standards would address the required voltage and reactive capabilities at the interconnection with the NPP.

The scope needs to better address any specific inconsistencies that have been identified, if there are any.

Criterion 17 recognizes both an onsite and an offsite supply of electrical power to the NPP. It should be made clear in the SAR that the NPPs will also have an independent & fully capable on site electric power supply for a controlled safe shutdown, etc.

The SAR refers to written agreements between the Transmission System Operator and the NPP. Flexibility should be provided such that this can be handled in other ways, such as through operations policies, market rules, etc.

While the current licensing requirement as specified in CFR 50, Appendix A-General Design Criterion 17 may be acceptable, we have concern that other licensing requirements or future changes may not be readily achievable. Hence, the NERC standard should be written such that it refers only to the agreements or operating policies, market rules, etc rather than the NPP specific licensing and design requirements.

It should be noted that in some cases communications from the RA may go through an intermediary before it reaches the NPP

#### Comments

The scope needs to be reworked.

## Comment Form – Proposed Nuclear Offsite Supply Reliability Standard

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**Question 3: Do you agree with the intent of the proposal to add these requirements to existing standards as opposed to creating new standards?**

Yes

No

**Do you agree with the proposed location in existing standards?**

Yes

No

**If no, please identify the location you believe would be the most appropriate for the proposed standard.**

If there are true inconsistencies with criterion 17, then this should be a new stand alone standard to give it more prominence.

The proposed Nuclear Offsite Supply Reliability Standard is an important action to address a recommendation of the August 2003 Blackout Investigation. The time and effort should be taken to properly create the standard in a well thought manner. Not a rush job that gives the impression of being forced on the industry.

The IRC disagrees with the attempt to add these requirements to existing standards. These standards apply to a separate and distinct segment of the power industry. In as much as these standards only apply to nuclear power plants, a new standard regarding nuclear power plants should be created. The standards will be hard to find in the proposed locations. .

**Comments**

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

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**Question 4: Do you have any additional comments regarding the SAR that you believe should be addressed?**

Yes

No

**If yes, please share those comments in the space provided below.**

Note: In many cases these standards are being met now by RTO's and ISO's.

It would be beneficial if the NEI concerns were specified regarding the inconsistency. The standard should recognize that the RC function is currently adopted for the Version 0 Standards rather than the RA function. Also, the term Transmission Operator should be used rather than Transmission System Operator.

**COMMENT FORM  
Proposed Nuclear Offsite Supply Reliability Standard**

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  - Do not use quotation marks in any data field.
  - Do not submit a response in an unprotected copy of this form.

<b>Individual Commenter Information</b>	
(Complete this page for comments from one organization or individual.)	
Name:	Barry Green/Susan Ebata
Organization:	Ontario Power Generation
Telephone:	416-592-7883/905-837-4540 x 5411
Email:	barry.green@opg.com/susan.ebata@opg.com
NERC Region	Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/> 1 - Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/> 2 - RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> FRCC	<input type="checkbox"/> 3 - Load-serving Entities
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<input checked="" type="checkbox"/> NPCC	<input type="checkbox"/> 7 - Large Electricity End Users
<input type="checkbox"/> SERC	<input type="checkbox"/> 8 - Small Electricity End Users
<input type="checkbox"/> SPP	<input type="checkbox"/> 9 - Federal, State, Provincial Regulatory or other Government Entities
<input type="checkbox"/> WECC	
<input type="checkbox"/> NA - Not Applicable	



## Comment Form – Proposed Nuclear Offsite Supply Reliability Standard

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Group Comments (Complete this page if comments are from a group.)

**Group Name:**

**Lead Contact:**

**Contact Organization:**

**Contact Segment:**

**Contact Telephone:**

**Contact Email:**

Additional Member Name	Additional Member Organization	Region*	Segment*

\* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

## **Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

### **Background Information:**

Posted for comments is the first posting of the Nuclear Offsite Supply Reliability SAR. The NEI Reliability Task Force has identified the offsite electric supply characteristics to nuclear plants as potentially being inconsistent with the requirements of 10CFR50 Appendix A- General Design Criteria for Nuclear Power Plants. This Standard Authorization Request was initiated to address this concern by requiring the Reliability Authority and Planning Authority to specifically incorporate the key parameters of the offsite electric supply as delineated in each nuclear power plant's licensing and design base.

The requestor would like to receive industry comments on this SAR and to obtain the input of the industry prior to determining the final scope and requirements of the SAR. Accordingly, we request your comments included on this form, emailed with the subject "Nuclear Offsite Supply Reliability SAR Comments" by January 07, 2005.

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

**Question 1: Do you agree there is a reliability need for a specifying the offsite electric supply characteristics provided to nuclear power plants so that the planning studies and reliability calculations are consistent with the nuclear design basis?**

Yes

No

**If no, please explain in the space provided below.**

**Comments**

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

**Question 2: Do you agree with the scope and applicability of the proposed standard?**

Yes

No

**If no, please explain in the space provided below.**

The SAR as drafted refers explicitly to the appropriate regulations for U.S. NPPs. However, the standard needs to recognize the regulatory differences for nuclear power plants located in Canada which are subject to regulation by the Canadian Nuclear Safety Commission, not the Nuclear Regulatory Commission.

**Comments**

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

**Question 3: Do you agree with the intent of the proposal to add these requirements to existing standards as opposed to creating new standards?**

Yes

No

**Do you agree with the proposed location in existing standards?**

Yes

No

**If no, please identify the location you believe would be the most appropriate for the proposed standard.**

No comment. Would not oppose a new standard

**Comments**

**Comment Form – Proposed Nuclear Offsite Supply Reliability Standard**

---

**Question 4: Do you have any additional comments regarding the SAR that you believe should be addressed?**

Yes

No

**If yes, please share those comments in the space provided below.**

The draft SAR explicitly notes voltage and frequency as key parameters to be addressed in the standard. The standard should also address overall reliability target for supply to the NPP.



Question 6: Do you have any additional comments regarding the SAR that you believe should be addressed? If yes, please share these comments in the space provided below.	
<p><b>Comments</b></p>	<p><b>Response to Comments</b></p>
<p>The grid NPP exhibits safety ratings and regulatory set parameters for assessment of the reactor. The safety analysis model should be updated to reflect the NPP.</p>	<p>Rating team will review the safety analysis model and update it to reflect the NPP.</p>
<p>The SAR states that transmission grid power NPP output, including and design requirements. When NPP output is not available, the Planning &amp; Operating Authority will be responsible for the required power to the NPP grid. The SAR does not provide any information on the grid power supply that would affect safety related design functions. The Planning Authority Operating Authority together with the NPP owner should jointly review the design functions for grid power supply requirements as well as appropriate mitigation measures. These mitigation measures may include changes to transmission grid or NPP operating procedures or may involve improvements to transmission grid or NPP safety systems. As long as the Planning Authority is being notified the transmission design characteristics, the appropriate design functions other nuclear or fossil should be clearly stated in operating voltage ranges, both normal and fault conditions.</p>	<p>Rating team will review the safety analysis model and update it to reflect the NPP.</p>
<p>The existing standard should be reviewed. It is the responsibility of the Nuclear Power Plant owner to address risk to the grid and transmission and maintain the system. If a scheduled NPP outage occurs, it is the owner's responsibility to ensure that the system is able to maintain the required level of reliability. It is the owner's responsibility to develop and implement measures to ensure that the system is able to maintain the required level of reliability. The NPP owner is the only one authorized and competent enough to ensure that safety standards are met. The standard should be reviewed and updated accordingly. There is no need for the standard.</p>	<p>Rating team believes the proposed standard addresses a reliability issue.</p>
<p>The standard requires a minimum NPP N in operation that there is a requirement to NPP, being having minimum reliability of the NPP Transmission system.</p>	<p>Rating team will review the standard and update it to reflect the NPP.</p>
<p>The SAR states a "Minimum" Standard NPP N in operation that there is a requirement to NPP, being having minimum reliability of the NPP Transmission system.</p>	<p>Rating team will review the standard and update it to reflect the NPP.</p>
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<p>The SAR states a "Minimum" Standard NPP N in operation that there is a requirement to NPP, being having minimum reliability of the NPP Transmission system.</p>	<p>Rating team will review the standard and update it to reflect the NPP.</p>



**Summary of Key Issues and Responses**  
**Draft 1 of Nuclear Offsite Supply Reliability SAR**

<b>General Comment</b>	<b>Response of Drafting Team</b>
<p>Transmission owners commented that the proposed standard appears to be a shifting of responsibility of Nuclear Power Plant (NPP) requirements driven by the NRC onto the transmission owners through NERC standards.</p>	<p>The burden for this coordination was a previously existing obligation under vertically integrated utilities. Unbundling has caused a separation between the NPP licensees and the transmission owner/operator. Therefore, the coordination must be more formalized. A standard is necessary to ensure the coordination takes place and is consistent. Division of responsibilities needs to be clearly defined. Use of the functional model helps by introducing generic terms like transmission owner, transmission operator and transmission planner.</p>
<p>Are we creating duplicative requirements between NERC and NRC?</p>	<p>Transmission owners, operators and planners are not subject to NRC rules. Therefore there are no duplicative requirements. What is needed is agreements on how the NPP licensee and the bulk electric system operators and planners communicate.</p>
<p>Commenters indicated a preference for a separate nuclear offsite electricity supply standard rather than adding requirements to existing NERC operating and planning standards.</p>	<p>The drafting team agrees and is proposing a separate standard in Draft 2 of the SAR.</p>
<p>Commenters asked if the standard should apply to existing plants, future plants or both.</p>	<p>The drafting team believes the standard should be applied to all existing and future NPPs. The standard should be written generally without distinguishing between existing and new plants.</p>
<p>Commenters requested clarification that the purpose of the proposed standard was not driven primarily by a blackout recommendation.</p>	<p>The drafting team agrees, the genesis of the need for this standard began before the August 14, 2003 blackout. The need is driven mainly by separation of NPP licensees from the transmission operations and planners due to restructuring. There has also been concern with the increased frequency of NPP trips due to grid events, heightened by the August 2003 blackout.</p>
<p>Is the availability of a nuclear plant a reliability issue only if it is a must-run unit? Is this simply a commercial issue of replacement power supply? Is the forced shutdown of a nuclear plant a reliability issue?</p>	<p>NPP facilities tend to be large units that are critical to the reliable operation of the bulk electric system. NPP are subject to federal regulations for the protection of health and safety of the public. It is important to closely coordinate the operations of the bulk electric system and the NPP to ensure the</p>

	reliability and safety of both. The proposed standard is not intended to address any commercial or equity issues.
Need to consider Canadian nuclear regulations, not just U.S.	The drafting team agrees. The drafting team will investigate the relevant Canadian requirements for design and licensing of NPP and welcomes the inputs of Canadian nuclear experts.
These requirements are already being met in some regions.	The drafting team agrees. However, the requirements are not being consistently met in all regions. Therefore a standard is needed. Without a standard, there are no accepted minimum requirements for coordination between NPP licensees and grid operators and planners. Those who are already meeting the requirements would not have to change. The standards would affect the areas where that coordination is not effective.
Unbundling of vertically integrated utilities has resulted in separation of nuclear licensees from the host system. Some operating and planning requirements have moved from transmission owners to RTOs.	The drafting team agrees. Historically, in vertically integrated utilities, the NPP operator had close relations within the organization with the transmission operator and planner. With restructuring and the introduction of RTOs, the relationships between the transmission entities and the RTOs have been well defined in RTO protocols. There has not been a consistent integration of NPP requirements into the RTO protocols. This standard would reinforce the need for coordination of bulk electric system operations and planning with NPP licensing requirements.
NERC standard cannot deal with the equity issue of who should pay for additional requirements.	Agreed.

## Standard Authorization Request Form

Title of Proposed Standard: <b>Coordination of Nuclear Power Plant Licensing Requirements with Bulk Electric System Planning, Analysis, and Operations</b>	
Request Date: Draft 1	10/20/04
Revision Date: Draft 2	4/1/05

SAR Requestor Information		SAR Type (Put an 'x' in front of one of these selections)	
Name	Nuclear Energy Institute Grid Reliability Task Force	<input checked="" type="checkbox"/>	New Standard
Contact	David Gladey/Vince Gilbert	<input type="checkbox"/>	Revision to existing Standard
Telephone	610-774-7774/202-739-8138	<input type="checkbox"/>	Withdrawal of existing Standard
Fax	610-774-7782		
E-mail	<a href="mailto:dlgladey@pplweb.com">dlgladey@pplweb.com</a> or <a href="mailto:jvg@nei.org">jvg@nei.org</a>	<input type="checkbox"/>	Urgent Action

## **Purpose/Industry Need**

Title 10 of the Code of Federal Regulations, Part 50 (10CFR50), Appendix A – General Design Criterion (GDC) 17 requires a nuclear power plant's (NPP's) offsite power system to "Provide sufficient capacity and capability to assure that:

- 1.) Specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded as a result of anticipated operational occurrences and
- 2.) The core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents."

The offsite power system is the preferred (primary) power supply for a NPP's electrical loads used to operate equipment for the safe shutdown of the plant during both normal and accident conditions. The Nuclear Regulatory Commission (NRC) Standard Review Plan (NUREG 0800) is used by the NRC to verify that:

- "Two separate paths from the transmission network to the standby power distribution system are provided;
- Adequate physical and electrical separation exists; and
- The system has the capacity, capability, and reliability to supply power to all safety loads and other required equipment."

The NUREG has specific criteria for evaluating the "capacity, capability, and reliability" of the electric system:

"The results of grid stability analysis must show that loss of the largest single supply to the grid does not result in the complete loss of preferred power. The analysis should consider the loss, through a single event, of the largest capacity being supplied to the grid, removal of the largest load from the grid, or loss of the most critical transmission line. This could be the total output of the station, the largest station on the grid, or possibly several large stations if these use a common transmission tower, transformer, or breaker in a remote switchyard or substation."

There are equivalent regulations governing the operation of nuclear plants in Canada.

Coordination is necessary to ensure that the entities responsible for the planning, assessment, operation, and analysis of the electric system are aware of the specific licensing requirements of each NPP and that they incorporate these NPP requirements into the planning, assessment, operation, and analysis of the electric system. This coordination requires the NPP licensee to convey its requirements to the responsible electric system entities. The coordination also requires the entities responsible for the planning, assessment, operation, and analysis of the electric system to demonstrate to the NPP licensee that the specific requirements of the NPP are being addressed by the electric system.

This coordination of NPP licensing requirements with the electric system is not a new responsibility. Historically, in vertically integrated utilities owning a NPP facility, this coordination took place within a single organization. With the unbundling of ownership of the NPP facilities and separation from the entities owning and operating the electric system, that coordination is more challenging. Typically, the need for this coordination is addressed in interconnection, interface, or other agreements.

The purpose of the standard is to ensure that this coordination between the NPP licensee and the entities responsible for the planning, assessment, operation, and analysis of the electric system is consistently achieved in practice and is documented. The standard would apply only to those entities that interface with or provide services to a NPP.

### ***Reliability Functions***

The proposed standard will apply to the following functions, if they interface with or provide applicable services to Nuclear Power Plants.

<input checked="" type="checkbox"/>	Reliability Authority	Ensures the reliability of the bulk transmission system within its Reliability Authority area. This is the highest reliability authority.
<input checked="" type="checkbox"/>	Balancing Authority	Integrates resource plans ahead of time, and maintains load-interchange-resource balance within its metered boundary and supports system frequency in real time.
<input type="checkbox"/>	Interchange Authority	Authorizes valid and balanced Interchange Schedules.
<input checked="" type="checkbox"/>	Planning Authority	Plans the bulk electric system.
<input checked="" type="checkbox"/>	Resource Planner	Develops a long-term (>1year) plan for the resource adequacy of specific loads within a Planning Authority area.
<input checked="" type="checkbox"/>	Transmission Planner	Develops a long-term (>1 year) plan for the reliability of transmission systems within its portion of the Planning Authority area.
<input checked="" type="checkbox"/>	Transmission Service Provider	Provides transmission services to qualified market participants under applicable transmission service agreements.
<input checked="" type="checkbox"/>	Transmission Owner	Owns transmission facilities.
<input checked="" type="checkbox"/>	Transmission Operator	Operates and maintains the transmission facilities, and executes switching orders.
<input checked="" type="checkbox"/>	Distribution Provider	Provides and operates the “wires” between the transmission system and the customer.
<input checked="" type="checkbox"/>	Generator Owner	Owns and maintains generation unit(s).
<input checked="" type="checkbox"/>	Generator Operator	Operates generation unit(s) and performs the functions of supplying energy and Interconnected Operations Services.
<input type="checkbox"/>	Purchasing-Selling Entity	The function of purchasing or selling energy, capacity and all necessary Interconnected Operations Services as required.
<input checked="" type="checkbox"/>	Market Operator	Integrates energy, capacity, balancing, and transmission resources to achieve an economic, reliability-constrained dispatch.
<input checked="" type="checkbox"/>	Load-Serving Entity	Secures energy and transmission (and related generation services) to serve the end user.

**Reliability and Market Interface Principles**

<b>Applicable Reliability Principles</b> <i>(Check boxes for all that apply by double clicking the grey boxes.)</i>	
<input checked="" type="checkbox"/>	1. Interconnected bulk electric systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards.
<input checked="" type="checkbox"/>	2. The frequency and voltage of interconnected bulk electric systems shall be controlled within defined limits through the balancing of real and reactive power supply and demand.
<input checked="" type="checkbox"/>	3. Information necessary for the planning and operation of interconnected bulk electric systems shall be made available to those entities responsible for planning and operating the systems reliably.
<input checked="" type="checkbox"/>	4. Plans for emergency operation and system restoration of interconnected bulk electric systems shall be developed, coordinated, maintained and implemented.
<input checked="" type="checkbox"/>	5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk electric systems.
<input checked="" type="checkbox"/>	6. Personnel responsible for planning and operating interconnected bulk electric systems shall be trained, qualified and have the responsibility and authority to implement actions.
<input checked="" type="checkbox"/>	7. The security of the interconnected bulk electric systems shall be assessed, monitored and maintained on a wide area basis.
<b>Does the proposed Standard comply with all of the following Market Interface Principles?</b> <i>(Select 'yes' or 'no' from the drop-down box by double clicking the grey area.)</i>	
1. The planning and operation of bulk electric systems shall recognize that reliability is an essential requirement of a robust North American economy. Yes	
2. An Organization Standard shall not give any market participant an unfair competitive advantage. Yes	
3. An Organization Standard shall neither mandate nor prohibit any specific market structure. Yes	
4. An Organization Standard shall not preclude market solutions to achieving compliance with that Standard. Yes	
5. An Organization Standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards. Yes	

## Scope

The proposed standard will include the following requirements to coordinate and consider, in the planning, assessment, analysis, and operation of the electric system, the each specific NPP's licensing requirements for:

1. Offsite power to enable safe shutdown of the plant during an electric system or plant event; and
2. Limiting challenges to NPP safety systems as a result of an electric system disturbance or transient.

The proposed standard would address the following elements:

- Coordination of NPP licensing requirements with electric system planning and assessments.
- Coordination of NPP licensing requirements with the determination of electric system constraints, including stability requirements. Electric system analysis must, for example, verify that grid voltage and stability will be satisfactory if the NPP trips off line during an emergency. The analysis should address local switchyard conditions and also the current state and reactive limitations of nearby generators that may influence voltage in the NPP switchyard.
- Coordination of NPP licensing requirements with electric system operations and maintenance activities.
- Coordination of NPP licensing requirements with electric system reliability and contingency analysis, including identification of scenarios to be considered.
- Consideration of NPP or electric system design changes that may impact the ability to supply acceptable offsite power to the NPP.
- Communication and coordination of actions to mitigate off-normal and emergency conditions in the electric system that may affect the NPP. For, example, this includes conditions when the NPP or other generators have their automatic voltage regulator or power system stabilizer not in automatic control mode, and ensuring the acceptability of the NPP offsite power under such conditions. This also includes informing the NPP licensee when grid conditions are degraded such that the required voltage and stability requirements for operating plant safety equipment during an emergency may be affected.
- Communications protocols between NPP licensee and entities responsible for operation and planning of the electric system to address all items above.
- Coordination of NPP licensing requirements that limit challenges to plant safety systems resulting from electric system disturbances or transients.

## *Related Standards*

Standard No.	Explanation
Attachment A	Attachment A lists 73 requirements in the existing reliability standards related generically to generators. The proposed new standard would address only aspects that are unique to the licensing requirements of Nuclear Power Plants and would not duplicate the standards that already exist to define the relationship between electric system entities and generators.

EOP-005-0	R9.4. The existing standard makes mention of priority during system restoration “The affected Transmission Operators shall give high priority to restoration of off-site power to nuclear stations.”
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***Related SARs***

<b>SAR ID</b>	<b>Explanation</b>
Various	The Phase III-IV Planning Standards are currently in development. These standards include requirements for coordination of generator protection and validation of generator real and reactive power capability, voltage controls, etc. The proposed nuclear standard must avoid duplicating requirements emerging in those standards.

***Regional Differences***

<b>Region</b>	<b>Explanation</b>
ECAR	
ERCOT	
FRCC	
MAAC	
MAIN	
MAPP	
NPCC	
SERC	
SPP	
WECC	



Standard Number	Requirement Number	Existing Reliability Standard Requirements with "Generator" in the Text of the Requirement
BAL-005-0	R 1.1.	Each Generator Operator with generation facilities operating in an Interconnection shall ensure that those generation facilities are included within the metered boundaries of a Balancing Authority Area.
CIP-001-0	R 1.	Each Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, and Load Serving Entity shall have procedures for the recognition of and for making their operating personnel aware of sabotage events on its facilities and multi site sabotage affecting larger portions of the Interconnection.
CIP-001-0	R 2.	Each Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, and Load Serving Entity shall have procedures for the communication of information concerning sabotage events to appropriate parties in the Interconnection.
CIP-001-0	R 3.	Each Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, and Load Serving Entity shall provide its operating personnel with sabotage response guidelines, including personnel to contact, for reporting disturbances due to sabotage events.
CIP-001-0	R 4.	Each Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, and Load Serving Entity shall establish communications contacts, as applicable, with local Federal Bureau of Investigation (FBI) or Royal Canadian Mounted Police (RCMP) officials and develop reporting procedures as appropriate to their circumstances.
COM-002-0	R 1.	Each Transmission Operator, Balancing Authority, and Generator Operator shall have communications (voice and data links) with appropriate Reliability Coordinators, Balancing Authorities, and Transmission Operators. Such communications shall be staffed and available for addressing a real-time emergency condition.
EOP-001-0	R 7.3.	The Transmission Operator and Balancing Authority shall coordinate transmission and generator maintenance schedules to maximize capacity or conserve the fuel in short supply. (This includes water for hydro generators.)
EOP-004-0	R 2.	A Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator or Load Serving Entity shall promptly analyze Bulk Electric System disturbances on its system or facilities.
EOP-004-0	R 3.	A Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator or Load Serving Entity experiencing a reportable incident shall provide a preliminary written report to its Regional Reliability Organization and NERC.
EOP-004-0	R 3.1.	The affected Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator or Load Serving Entity shall submit within 24 hours of the disturbance or unusual occurrence either a copy of the report submitted to DOE, or, if no DOE report is required, a copy of the NERC Interconnection Reliability Operating Limit and Preliminary Disturbance Report form. Events that are not identified until some time after they occur shall be reported within 24 hours of being recognized.
EOP-004-0	R 3.3.	Under certain adverse conditions, e.g., severe weather, it may not be possible to assess the damage caused by a disturbance and issue a written Interconnection Reliability Operating Limit and Preliminary Disturbance Report within 24 hours. In such cases, the affected Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, or Load Serving Entity shall promptly notify its Regional Reliability Organization(s) and NERC, and verbally provide as much information as is available at that time. The affected Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, or Load Serving Entity shall then provide timely, periodic verbal updates until adequate information is available to issue a written Preliminary Disturbance Report.

Standard Number	Requirement Number	Existing Reliability Standard Requirements with "Generator" in the Text of the Requirement
EOP-004-0	R 3.4.	If, in the judgment of the Regional Reliability Organization, after consultation with the Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, or Load Serving Entity in which a disturbance occurred, a final report is required, the affected Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, or Load Serving Entity shall prepare this report within 60 days. As a minimum, the final report shall have a discussion of the events and its cause, the conclusions reached, and recommendations to prevent recurrence of this type of event. The report shall be subject to Regional Reliability Organization approval.
EOP-004-0	R 4.	When a Bulk Electric System disturbance occurs, the Regional Reliability Organization shall make its representatives on the NERC Operating Committee and Disturbance Analysis Working Group available to the affected Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, or Load Serving Entity immediately affected by the disturbance for the purpose of providing any needed assistance in the investigation and to assist in the preparation of a final report.
EOP-009-0	R 1.	The Generator Operator of each blackstart generating unit shall test the startup and operation of each system blackstart generating unit identified in the BCP as required in the Regional BCP (Reliability Standard EOP-007-0_R1). Testing records shall include the dates of the tests, the duration of the tests, and an indication of whether the tests met Regional BCP requirements.
EOP-009-0	R 2.	The Generator Owner or Generator Operator shall provide documentation of the test results of the startup and operation of each blackstart generating unit to the Regional Reliability Organizations and upon request to NERC.
FAC-002-0	R 1.	The Generator Owner, Transmission Owner, Distribution Provider, and Load-Serving Entity seeking to integrate generation facilities, transmission facilities, and electricity end-user facilities shall each coordinate and cooperate on its assessments with its Transmission Planner and Planning Authority. The assessment shall include:
FAC-002-0	R 2.	The Planning Authority, Transmission Planner, Generator Owner, Transmission Owner, Load-Serving Entity, and Distribution Provider shall each retain its documentation (of its evaluation of the reliability impact of the new facilities and their connections on the interconnected transmission systems) for three years and shall provide the documentation to the Regional Reliability Organization(s) Regional Reliability Organization(s) and NERC on request (within 30 calendar days).
FAC-004-0	R 1.	The Transmission Owner and Generator Owner shall each document the methodology(ies) used to determine its electrical equipment and Facility Rating. Further, the methodology(ies) shall comply with applicable Regional Reliability Organization requirements. The documentation shall address and include
FAC-004-0	R 2.	The Transmission Owner and Generator Owner shall provide documentation of the methodology(ies) used to determine its transmission equipment and Facility Ratings to the Regional Reliability Organization(s) and NERC on request (30 calendar days).
FAC-005-0	R 1.	The transmission Owner, and Generator Owner shall each have on file or be able to readily provide, a document or database identifying the Normal and Emergency Ratings of all of its transmission facilities (e.g., lines, transformers, terminal equipment, and storage devices) that are part of the interconnected transmission systems. Seasonal variations in Ratings shall be included as appropriate.
FAC-005-0	R 2.	The Transmission Owner and Generator Owner shall provide the Normal and Emergency Facility Ratings of all its transmission facilities to the Regional Reliability Organization(s) and NERC on request (30 calendar days).
INT-004-0	R 2.	A Generator Operator or Load Serving Entity may request the Host Balancing Authority to modify an Interchange Transaction due to loss of generation or load.

Standard Number	Requirement Number	Existing Reliability Standard Requirements with "Generator" in the Text of the Requirement
IRO-001-0	R 3.	The Reliability Coordinator shall have clear decision-making authority to act and to direct actions to be taken by Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities within its Reliability Coordinator Area to preserve the integrity and reliability of the Bulk Electric System. These actions shall be taken without delay, but no longer than 30 minutes.
IRO-001-0	R 8.	Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities shall comply with Reliability Coordinator directives unless such actions would violate safety, equipment, or regulatory or statutory requirements. Under these circumstances, the Transmission Operator, Balancing Authority, Generator Operator, Transmission Service Provider, Load-Serving Entity, or Purchasing-Selling Entity shall immediately inform the Reliability Coordinator of the inability to perform the directive so that the Reliability Coordinator may implement alternate remedial actions.
IRO-004-0	R 4.	Each Transmission Operator, Balancing Authority, Transmission Owner, Generator Owner, Generator Operator, and Load-Serving Entity in the Reliability Coordinator Area shall provide information required for system studies, such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions. This information shall be available by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.
IRO-005-0	R 9.	The Reliability Coordinator shall coordinate with other Reliability Coordinators and Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, IROL, CPS, or DCS violations. The Reliability Coordinator shall coordinate pending generation and transmission maintenance outages with other Reliability Coordinators and Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real time and next-day reliability analysis timeframes.
IRO-005-0	R13.	Each Reliability Coordinator shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities operate to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area will result in a SOL or IROL violation in another area of the Interconnection. In instances where there is a difference in derived limits, the Reliability Coordinator and its Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities shall always operate the Bulk Electric System to the most limiting parameter.
IRO-005-0	R17.	When an IROL or SOL is exceeded, the Reliability Coordinator shall evaluate the local and wide-area impacts, both real-time and post-contingency, and determine if the actions being taken are appropriate and sufficient to return the system to within IROL in thirty minutes. If the actions being taken are not appropriate or sufficient, the Reliability Coordinator shall direct the Transmission Operator, Balancing Authority, Generator Operator, or Load-Serving Entity to return the system to within IROL or SOL.
MOD-010-0	R 1.	The Transmission Owners, Transmission Planners Generator Owners, and Resource Planners (specified in the data requirements and reporting procedures of MOD-011-0_R1) shall provide appropriate equipment characteristics, system data, and existing and future Interchange Schedules in compliance with its respective Interconnection Regional steady-state modeling and simulation data requirements and reporting procedures as defined in Reliability Standard MOD-011-0_R 1.
MOD-010-0	R 2.	The Transmission Owners, Transmission Planners, Generator Owners, and Resource Planners (specified in the data requirements and reporting procedures of MOD-011-0_R1) shall provide this steady-state modeling and simulation data to the Regional Reliability Organizations, NERC, and those entities specified within Reliability Standard MOD-011-0_R 1. If no schedule exists, then these entities shall provide the data on request (30 calendar days).
MOD-011-0	R 1.	The Regional Reliability Organizations within an Interconnection, in conjunction with the Transmission Owners, Transmission Planners, Generator Owners, and Resource Planners, shall develop comprehensive steady-state data requirements and reporting procedures needed to model and analyze the steady-state conditions for each of the NERC Interconnections: Eastern, Western, and ERCOT. Within an Interconnection, the Regional Reliability Organizations shall jointly coordinate the development of the data requirements and reporting procedures for that Interconnection. The Interconnection-wide requirements shall include the following steady-state data requirements:
MOD-012-0	R 1.	The Transmission Owners, Transmission Planners, Generator Owners, and Resource Planners (specified in the data requirements and reporting procedures of MOD-013-0_R4) shall provide appropriate equipment characteristics and system data in compliance with the respective Interconnection-wide Regional dynamics system modeling and simulation data requirements and reporting procedures as defined in Reliability Standard MOD-013-0_R 4.

Standard Number	Requirement Number	Existing Reliability Standard Requirements with "Generator" in the Text of the Requirement
MOD-012-0	R 2.	The Transmission Owners, Transmission Planners, Generator Owners, and Resource Planners (specified in the data requirements and reporting procedures of MOD-013-0_R4) shall provide dynamics system modeling and simulation data to its Regional Reliability Organization(s), NERC, and those entities specified within the applicable reporting procedures identified in Reliability Standard MOD-013-0_R 1. If no schedule exists, then these entities shall provide data on request (30 calendar days).
MOD-013-0	R 1.	The Regional Reliability Organization, in coordination with its Transmission Owners, Transmission Planners, Generator Owners, and Resource Planners, shall develop comprehensive dynamics data requirements and reporting procedures needed to model and analyze the dynamic behavior or response of each of the NERC Interconnections: Eastern, Western, and ERCOT. Within an Interconnection, the Regional Reliability Organizations shall jointly coordinate on the development of the data requirements and reporting procedures for that Interconnection. Each set of Interconnection-wide dynamics data requirements shall include the following dynamics data requirements:
MOD-013-0	R 1.1.1.	Estimated or typical manufacturer's dynamics data, based on units of similar design and characteristics, may be submitted when unit-specific dynamics data cannot be obtained. In no case shall other than unit-specific data be reported for generator units installed after 1990.
PRC-001-1	R 1.	Each Transmission Operator, Balancing Authority, and Generator Operator shall be familiar with the purpose and limitations of protection system schemes applied in its area.
PRC-001-1	R 2.	Each Generator Operator and Transmission Operator shall notify reliability entities of relay or equipment failures as follows:
PRC-001-1	R 2.1.	If a protective relay or equipment failure reduces system reliability, the Generator Operator shall notify its Transmission Operator and Host Balancing Authority. The Generator Operator shall take corrective action as soon as possible.
PRC-001-1	R 3.	A Generator Operator or Transmission Operator shall coordinate new protective systems and changes as follows.
PRC-001-1	R 3.1.	Each Generator Operator shall coordinate all new protective systems and all protective system changes with its Transmission Operator and Host Balancing Authority.
PRC-001-1	R 4.	Each Transmission Operator shall coordinate protection systems on major transmission lines and interconnections with neighboring Generator Operators, Transmission Operators, and Balancing Authorities.
PRC-001-1	R 5.	A Generator Operator or Transmission Operator shall coordinate changes in generation, transmission, load or operating conditions that could require changes in the protection systems of others:
PRC-001-1	R 5.1.	Each Generator Operator shall notify its Transmission Operator in advance of changes in generation or operating conditions that could require changes in the Transmission Operator's protection systems.

Standard Number	Requirement Number	Existing Reliability Standard Requirements with "Generator" in the Text of the Requirement
PRC-004-0	R 1.	The Transmission Owner, Generator Owner, and Distribution Provider that owns a transmission protection system shall analyze all protection system misoperations and shall take corrective actions to avoid future misoperations.
PRC-004-0	R 2.	The Transmission Owner, Generator Owner, and Distribution Provider that owns a transmission protection system shall provide to its affected Regional Reliability Organization and NERC on request (within 30 calendar days) documentation of the misoperations analyses and corrective actions according to the Regional Reliability Organization's procedures of Reliability Standard PRC-003-0_R 1.
PRC-005-0	R 1.	The Transmission Owner, Generator Owner and Distribution Provider that owns a transmission protection system shall have a transmission protection system maintenance and testing program in place. The program(s) shall include:
PRC-005-0	R 2.	The Transmission Owner, Generator Owner, and Distribution Provider that owns a transmission protection system shall provide documentation of its transmission protection system program and its implementation to the appropriate Regional Reliability Organization and NERC on request (within 30 calendar days).
PRC-012-0	R 1.	Each Regional Reliability Organization with a Transmission Owner, Generator Owner, or Distribution Providers that uses or is planning to use an SPS shall have a documented Regional Reliability Organization SPS review procedure to ensure that SPSs comply with Regional criteria and NERC Reliability Standards. The Regional SPS review procedure shall include:
PRC-013-0	R 1.	The Regional Reliability Organization that has a Transmission Owner, Generator Owner, or Distribution Provider with an SPS installed shall maintain an SPS database. The database shall include the following types of information:
PRC-015-0	R 1.	The Transmission Owner, Generator Owner, and Distribution Provider that owns an SPS shall maintain a list of and provide data for existing and proposed SPSs as specified in Reliability Standard PRC-013-0_R 1.
PRC-015-0	R 2.	The Transmission Owner, Generator Owner, and Distribution Provider that owns an SPS shall have evidence it reviewed new or functionally modified SPSs in accordance with the Regional Reliability Organization's procedures as defined in Reliability Standard PRC-012-0_R1 prior to being placed in service.
PRC-015-0	R 3.	The Transmission Owner, Generator Owner, and Distribution Provider that owns an SPS shall provide documentation of SPS data and the results of Studies that show compliance of new or functionally modified SPSs with NERC Reliability Standards and Regional Reliability Organization criteria to affected Regional Reliability Organizations and NERC on request (within 30 calendar days).
PRC-016-0	R 1.	The Transmission Owner, Generator Owner, and Distribution Provider that owns an SPS shall analyze its SPS operations and maintain a record of all misoperations in accordance with the Regional SPS review procedure specified in Reliability Standard PRC-012-0_R 1.
PRC-016-0	R 2.	The Transmission Owner, Generator Owner, and Distribution Provider that owns an SPS shall take corrective actions to avoid future misoperations.

Standard Number	Requirement Number	Existing Reliability Standard Requirements with "Generator" in the Text of the Requirement
PRC-016-0	R 3.	The Transmission Owner, Generator Owner, and Distribution Provider that owns an SPS shall provide documentation of the misoperation analyses and the corrective action plans to its Regional Reliability Organization and NERC on request (within 90 calendar days).
PRC-017-0	R 1.	The Transmission Owner, Generator Owner, and Distribution Provider that owns an SPS shall have a system maintenance and testing program(s) in place. The program(s) shall include:
PRC-017-0	R 2.	The Transmission Owner, Generator Owner, and Distribution Provider that owns an SPS shall provide documentation of the program and its implementation to the appropriate Regional Reliability Organizations and NERC on request (within 30 calendar days).
TOP-001-0	R 3.	Each Transmission Operator, Balancing Authority, and Generator Operator shall comply with reliability directives issued by the Reliability Coordinator, and each Balancing Authority and Generator Operator shall comply with reliability directives issued by the Transmission Operator, unless such actions would violate safety, equipment, regulatory or statutory requirements. Under these circumstances the Transmission Operator, Balancing Authority or Generator Operator shall immediately inform the Reliability Coordinator or Transmission Operator of the inability to perform the directive so that the Reliability Coordinator or Transmission Operator can implement alternate remedial actions.
TOP-001-0	R 6.	Each Transmission Operator, Balancing Authority, and Generator Operator shall render all available emergency assistance to others as requested, provided that the requesting entity has implemented its comparable emergency procedures, unless such actions would violate safety, equipment, or regulatory or statutory requirements.
TOP-001-0	R 7.	Each Transmission Operator and Generator Operator shall not remove Bulk Electric System facilities from service if removing those facilities would burden neighboring systems unless:
TOP-001-0	R 7.1.	For a generator outage, the Generator Operator shall notify and coordinate with the Transmission Operator. The Transmission Operator shall notify the Reliability Coordinator and other affected Transmission Operators, and coordinate the impact of removing the Bulk Electric System facility.
TOP-001-0	R 7.3.	When time does not permit such notifications and coordination, or when immediate action is required to prevent a hazard to the public, lengthy customer service interruption, or damage to facilities, the Generator Operator shall notify the Transmission Operator, and the Transmission Operator shall notify its Reliability Coordinator and adjacent Transmission Operators, at the earliest possible time.
TOP-002-0	R 3.	Each Load Serving Entity and Generator Operator shall coordinate (where confidentiality agreements allow) its current-day, next-day, and seasonal operations with its Host Balancing Authority and Transmission Service Provider. Each Balancing Authority and Transmission Service Provider shall coordinate its current-day, next-day, and seasonal operations with its Transmission Operator.
TOP-002-0	R13.	At the request of the Balancing Authority or Transmission Operator, a Generator Operator shall perform generating real and reactive capability verification that shall include, among other variables, weather, ambient air and water conditions, and fuel quality and quantity, and provide the results to the Balancing Authority or Transmission Operator operating personnel as requested.
TOP-002-0	R18.	Neighboring Balancing Authorities, Transmission Operators, Generator Operators, Transmission Service Providers and Load Serving Entities shall use uniform line identifiers when referring to transmission facilities of an interconnected network.

Standard Number	Requirement Number	Existing Reliability Standard Requirements with "Generator" in the Text of the Requirement
TOP-003-0	R 1.1.	Each Generator Operator shall provide outage information daily to its Transmission Operator for scheduled generator outages planned for the next day (any foreseen outage of a generator greater than 50 MW). The Transmission Operator shall establish the outage reporting requirements.
TOP-003-0	R 1.2.	Each Transmission Operator shall provide outage information daily to its Reliability Coordinator, and to affected Balancing Authorities and Transmission Operators for scheduled generator and bulk transmission outages planned for the next day (any foreseen outage of a transmission line or transformer greater than 100 kV or generator greater than 50 MW) that may collectively cause or contribute to an SOL or IROL violation or a regional operating area limitation. The Reliability Coordinator shall establish the outage reporting requirements.
TOP-003-0	R 2.	Each Transmission Operator, Balancing Authority, and Generator Operator shall plan and coordinate scheduled outages of system voltage regulating equipment, such as automatic voltage regulators on generators, supplementary excitation control, synchronous condensers, shunt and series capacitors, reactors, etc., among affected Balancing Authorities and Transmission Operators as required.
TOP-003-0	R 3.	Each Transmission Operator, Balancing Authority, and Generator Operator shall plan and coordinate scheduled outages of telemetering and control equipment and associated communication channels between the affected areas.
TOP-006-0	R 1.1.	Each Generator Operator shall inform its Host Balancing Authority and the Transmission Operator of all generation resources available for use.
TPL-006-0	R 1.4.	Supply-side resources and their characteristics (existing and planned generator units, Ratings, performance characteristics, fuel types and availability, and real and reactive capabilities.)
VAR-001-0	R 9.	Each Generator Operator shall provide information to its Transmission Operator on the status of all generation reactive power resources, including the status of voltage regulators and power system stabilizers.
VAR-001-0	R 9.1.	When a generator's voltage regulator is out of service, the Generator Operator shall maintain the generator field excitation at a level to maintain Interconnection and generator stability.

**COMMENT FORM**  
**Proposed Reliability Standard on Coordination of Nuclear Power Plant Licensing Requirements in Bulk Electric System Planning and Operations**

This form is to be used to submit comments on the proposed Standard Authorization Request to develop a standard entitled: **Coordination of Nuclear Power Plant Licensing Requirements in Bulk Electric System Planning and Operations**. Comments must be submitted by **May 13, 2005**. You may submit the completed form by emailing it to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the words “Nuclear Power Plant SAR Comments” in the subject line. If you have questions please contact Gerry Cauley at [gerry.cauley@nerc.net](mailto:gerry.cauley@nerc.net) or by telephone at (609) 947-3885.

**ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE AND IT IS THEREFORE IMPORTANT TO ADHERE TO THE FOLLOWING REQUIREMENTS:**

- DO:**
- Do enter text only, with no formatting or styles added.
  - Do use punctuation and capitalization as needed (except quotations).
  - Do use more than one form if responses do not fit in the spaces provided.
  - Do submit any formatted text or markups in a separate WORD file.

- DO NOT:**
- Do not insert tabs or paragraph returns in any data field.
  - Do not use numbering or bullets in any data field.
  - Do not use quotation marks in any data field.
  - Do not submit a response in an unprotected copy of this form.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
Email:		
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 - Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/>	2 - RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> FRCC	<input type="checkbox"/>	3 - Load-serving Entities
<input type="checkbox"/> MAAC	<input type="checkbox"/>	4 - Transmission-dependent Utilities
<input type="checkbox"/> MAIN	<input type="checkbox"/>	5 - Electric Generators
<input type="checkbox"/> MAPP	<input type="checkbox"/>	6 - Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> NPCC	<input type="checkbox"/>	7 - Large Electricity End Users
<input checked="" type="checkbox"/> SERC	<input type="checkbox"/>	8 - Small Electricity End Users
<input type="checkbox"/> SPP	<input type="checkbox"/>	9 - Federal, State, Provincial Regulatory or other Government Entities
<input type="checkbox"/> WECC		
<input type="checkbox"/> NA		





**Background Information:**

Draft 2 of a SAR proposing a standard on coordination between Nuclear Power Plant licensees and entities responsible for the planning, assessment, analysis and operation of the electric system is now posted for comment. This second draft clarifies the scope of the proposed standard and addresses comments received from the posting of the first draft of the SAR.

**Comment Form – Proposed Standard on Nuclear Power Plants**

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**Question 1:** Do you agree there is a Bulk Electric System reliability need and a public health and safety need for coordinating the offsite electricity supply needs of a nuclear power plant with the planning, assessment, analysis, and operator of the electric system?

Yes

No

If no, please explain in the space provided below.

Comments

**Question 2:** Do you agree with the scope of the proposed standard?

Yes

No

Please explain in the space provided below any specific changes you suggest to the scope of the proposed standard.

Comments

Wherever it appears in the SAR, the words "planning, assessment, operation, and analysis" should be changed to "analysis, planning, design, and operation" to reflect the order of their performance.

## Comment Form – Proposed Standard on Nuclear Power Plants

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**Question 3:** Do you agree with the list of responsible entities to which this standard would apply? Please note the standard is proposed to apply to the following entities that interface with or provide service to a Nuclear Power Plant:

- **Generator Operator/Owner** – coordinates NPP requirements with the entities responsible for planning and operations of the electric system. Other nearby generator owners/operators may be required to notify the electric system operators of plant changes affecting a nearby NPP.
- **Reliability Authority, Transmission Owner/Operator, Distribution Provider, Load-Serving Entity** – incorporate NPP requirements for offsite power supply into planning, operation and analysis of electric system. LSE may be involved if offsite power is provided through an LSE rather than through a transmission owner/operator.
- **Transmission Service Provider** – manages tariff and transmission service arrangements used by the NPP.
- **Planning Authority, Transmission and Resource Planners** – develop transmission and resource plans; assess electric system supply and delivery capability to meet NPP offsite power requirements.
- **Balancing Authority and Market Operator** – Incorporate NPP offsite power supply constraints into reliability-constrained dispatch and provision and deployment of Interconnected Operations Services.

Yes

No

If no, please explain which responsible entities should be added or removed from the list of applicable entities in the SAR.

## Comment Form – Proposed Standard on Nuclear Power Plants

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**Question 4:** Do you have any additional comments regarding the SAR that you believe should be addressed?

Yes

No

If yes, please share those comments in the space provided below.

**COMMENT FORM**  
**Proposed Reliability Standard on Coordination of Nuclear Power Plant Licensing Requirements in Bulk Electric System Planning and Operations**

This form is to be used to submit comments on the proposed Standard Authorization Request to develop a standard entitled: **Coordination of Nuclear Power Plant Licensing Requirements in Bulk Electric System Planning and Operations**. Comments must be submitted by **May 2, 2005**. You may submit the completed form by emailing it to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the words “Nuclear Power Plant SAR Comments” in the subject line. If you have questions please contact Gerry Cauley at [gerry.cauley@nerc.net](mailto:gerry.cauley@nerc.net) or by telephone at (609) 947-3885.

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  - Do not** use quotation marks in any data field.
  - Do not** submit a response in an unprotected copy of this form.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	Don McInnis	
Organization:	Florida Power & Light Co.	
Telephone:	(305)442-5272	
Email:	don_mcinnis@fpl.com	
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 - Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/>	2 - RTOs, ISOs, Regional Reliability Councils
<input checked="" type="checkbox"/> FRCC	<input checked="" type="checkbox"/>	3 - Load-serving Entities
<input type="checkbox"/> MAAC	<input type="checkbox"/>	4 - Transmission-dependent Utilities
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<input type="checkbox"/> MAPP	<input type="checkbox"/>	6 - Electricity Brokers, Aggregators, and Marketers
<input checked="" type="checkbox"/> NPCC	<input type="checkbox"/>	7 - Large Electricity End Users
<input type="checkbox"/> SERC	<input type="checkbox"/>	8 - Small Electricity End Users
<input type="checkbox"/> SPP	<input type="checkbox"/>	9 - Federal, State, Provincial Regulatory or other Government Entities
<input type="checkbox"/> WECC		
<input type="checkbox"/> NA		



**Background Information:**

Draft 2 of a SAR proposing a standard on coordination between Nuclear Power Plant licensees and entities responsible for the planning, assessment, analysis and operation of the electric system is now posted for comment. This second draft clarifies the scope of the proposed standard and addresses comments received from the posting of the first draft of the SAR.



## Comment Form – Proposed Standard on Nuclear Power Plants

---

**Question 1:** Do you agree there is a Bulk Electric System reliability need and a public health and safety need for coordinating the offsite electricity supply needs of a nuclear power plant with the planning, assessment, analysis, and operator of the electric system?

Yes

No

If no, please explain in the space provided below.

Comments

FPL agrees with the present second draft and have no other comments to add

**Question 2:** Do you agree with the scope of the proposed standard?

Yes

No

Please explain in the space provided below any specific changes you suggest to the scope of the proposed standard.

Comments

No comments to be added

## Comment Form – Proposed Standard on Nuclear Power Plants

---

**Question 3:** Do you agree with the list of responsible entities to which this standard would apply? Please note the standard is proposed to apply to the following entities that interface with or provide service to a Nuclear Power Plant:

- **Generator Operator/Owner** – coordinates NPP requirements with the entities responsible for planning and operations of the electric system. Other nearby generator owners/operators may be required to notify the electric system operators of plant changes affecting a nearby NPP.
- **Reliability Authority, Transmission Owner/Operator, Distribution Provider, Load-Serving Entity** – incorporate NPP requirements for offsite power supply into planning, operation and analysis of electric system. LSE may be involved if offsite power is provided through an LSE rather than through a transmission owner/operator.
- **Transmission Service Provider** – manages tariff and transmission service arrangements used by the NPP.
- **Planning Authority, Transmission and Resource Planners** – develop transmission and resource plans; assess electric system supply and delivery capability to meet NPP offsite power requirements.
- **Balancing Authority and Market Operator** – Incorporate NPP offsite power supply constraints into reliability-constrained dispatch and provision and deployment of Interconnected Operations Services.

Yes

No

If no, please explain which responsible entities should be added or removed from the list of applicable entities in the SAR.

## Comment Form – Proposed Standard on Nuclear Power Plants

---

**Question 4:** Do you have any additional comments regarding the SAR that you believe should be addressed?

Yes

No

If yes, please share those comments in the space provided below.

**COMMENT FORM**  
**Proposed Reliability Standard on Coordination of Nuclear Power Plant Licensing Requirements in Bulk Electric System Planning and Operations**

This form is to be used to submit comments on the proposed Standard Authorization Request to develop a standard entitled: **Coordination of Nuclear Power Plant Licensing Requirements in Bulk Electric System Planning and Operations**. Comments must be submitted by **May 16, 2005**. You may submit the completed form by emailing it to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the words “Nuclear Power Plant SAR Comments” in the subject line. If you have questions please contact Gerry Cauley at [gerry.cauley@nerc.net](mailto:gerry.cauley@nerc.net) or by telephone at (609) 947-3885.

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<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	Jerry Nicely	
Organization:	TVA Nuclear	
Telephone:	423-751-8236	
Email:	glnicely@tva.gov	
NERC Region	<input type="checkbox"/>	Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 - Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/>	2 - RTOs, ISOs, Regional Reliability Councils
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**Comment Form – Proposed Standard on Nuclear Power Plants**

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**Question 1:** Do you agree there is a Bulk Electric System reliability need and a public health and safety need for coordinating the offsite electricity supply needs of a nuclear power plant with the planning, assessment, analysis, and operator of the electric system?

Yes

No

If no, please explain in the space provided below.

Comments

**Question 2:** Do you agree with the scope of the proposed standard?

Yes

No

Please explain in the space provided below any specific changes you suggest to the scope of the proposed standard.

Comments

Clear boundaries of responsibility and policy should be defined. Design and operating requirements, such as the MW and MVAR demand of the NPP for all operational modes, min/max generation limits, min/max voltage requirements needed to support the NPP must also be coordinated with ESP and/or ESO. One the first bullet, I do not understand what the coordination with "assessments" means. In the second bullet in the example, the verification of grid voltage and stability should be for the NPP tripping off-line, for any trip not just "during an emergency". Bullet 3 needs expanded scope for maintenance activities, i.e. it is important that the NPP operator know when the transmission system cannot sustain a reasonable level of contingencies, such as during maintenance, so that the NPP can perform adequate reliability evaluations before removing critical equipment out of service.

## Comment Form – Proposed Standard on Nuclear Power Plants

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**Question 3:** Do you agree with the list of responsible entities to which this standard would apply? Please note the standard is proposed to apply to the following entities that interface with or provide service to a Nuclear Power Plant:

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- **Balancing Authority and Market Operator** – Incorporate NPP offsite power supply constraints into reliability-constrained dispatch and provision and deployment of Interconnected Operations Services.

Yes

No

If no, please explain which responsible entities should be added or removed from the list of applicable entities in the SAR.



## Comment Form – Proposed Standard on Nuclear Power Plants

---

**Question 4:** Do you have any additional comments regarding the SAR that you believe should be addressed?

Yes

No

If yes, please share those comments in the space provided below.

The NRC has stated that communication protocols is the most important item that needs improving between the TO and the NPP. The standard must adequately address those concerns.

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<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
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Organization:		
Telephone:		
Email:		
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 - Transmission Owners
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## Comment Form – Proposed Standard on Nuclear Power Plants

---

**Question 1:** Do you agree there is a Bulk Electric System reliability need and a public health and safety need for coordinating the offsite electricity supply needs of a nuclear power plant with the planning, assessment, analysis, and operator of the electric system?

Yes

No

If no, please explain in the space provided below.

### Comments

NPCC Participating Members believe that while there should be generator standards, there should not be "Special" NERC standards for nuclear facilities and no additional Bulk Power Reliability requirements that go beyond any other generator's needs for reliability. Any additional requirements must be identified on a unit by unit basis and considered in the Individual Nuclear Unit Interconnection Agreement with the affected Transmission Owner.

Some Members of NPCC believe there is no need for this Standard and it appears to be an attempt to offload Nuclear Generator Interconnection costs onto the Transmission Owners. For example, any Nuclear Generator Owner could, at any time, identify a reliability requirement, and require the Transmission owners and operators to do excessive studies and analysis on a continual basis, based solely on their needs. Cost recovery issues are meant for interconnection agreements and applicable tariffs (retail or wholesale) not for NERC standards. Additionally, transmission owners are charged by policy and practice with a responsibility to provide equal treatment for similarly situated customers. Providing a different supply standard for a class of generators is inconsistent with this obligation. There are ample mechanisms currently in place for generators or any retail customer to obtain service at a higher standard.

**Question 2:** Do you agree with the scope of the proposed standard?

Yes

No

Please explain in the space provided below any specific changes you suggest to the scope of the proposed standard.

### Comments

See Comments in # 1 above



## Comment Form – Proposed Standard on Nuclear Power Plants

---

**Question 3:** Do you agree with the list of responsible entities to which this standard would apply? Please note the standard is proposed to apply to the following entities that interface with or provide service to a Nuclear Power Plant:

- **Generator Operator/Owner** – coordinates NPP requirements with the entities responsible for planning and operations of the electric system. Other nearby generator owners/operators may be required to notify the electric system operators of plant changes affecting a nearby NPP.
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- **Balancing Authority and Market Operator** – Incorporate NPP offsite power supply constraints into reliability-constrained dispatch and provision and deployment of Interconnected Operations Services.

Yes

No

If no, please explain which responsible entities should be added or removed from the list of applicable entities in the SAR.

NPCC Participating Members don't feel there is a need for this Standard, however if this Standard does move forward, then listed responsible entities seem appropriate.

The terminologies and/or functions of responsible entities outlined above are undergoing revisions re: Functional Model Working Group (FMWG). Any changes/revisions in above mentioned FM terminologies/functions, once approved, should be updated/included in this proposed standard.

Moreover, the implementation and application of this standard in terms of coordination with other Functional Model related entities should need to allow for a transition period until the FM related entities are fully certified.

**Comment Form – Proposed Standard on Nuclear Power Plants**

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**Question 4:** Do you have any additional comments regarding the SAR that you believe should be addressed?

Yes

No

If yes, please share those comments in the space provided below.

See # 1 Above



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<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	John P. Bonner	
Organization:	Entergy Nuclear Northeast	
Telephone:	508-830-8094	
Email:	jbonner@entergy.com	
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 - Transmission Owners
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## Comment Form – Proposed Standard on Nuclear Power Plants

---

**Question 1:** Do you agree there is a Bulk Electric System reliability need and a public health and safety need for coordinating the offsite electricity supply needs of a nuclear power plant with the planning, assessment, analysis, and operator of the electric system?

Yes

No

If no, please explain in the space provided below.

Comments

**Question 2:** Do you agree with the scope of the proposed standard?

Yes

No

Please explain in the space provided below any specific changes you suggest to the scope of the proposed standard.

Comments

## Comment Form – Proposed Standard on Nuclear Power Plants

---

**Question 3:** Do you agree with the list of responsible entities to which this standard would apply? Please note the standard is proposed to apply to the following entities that interface with or provide service to a Nuclear Power Plant:

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- **Balancing Authority and Market Operator** – Incorporate NPP offsite power supply constraints into reliability-constrained dispatch and provision and deployment of Interconnected Operations Services.

Yes

No

If no, please explain which responsible entities should be added or removed from the list of applicable entities in the SAR.

## Comment Form – Proposed Standard on Nuclear Power Plants

---

**Question 4:** Do you have any additional comments regarding the SAR that you believe should be addressed?

Yes

No

If yes, please share those comments in the space provided below.

The SAR should clarify the difference between stability studies contingencies to be considered and the contingency to be considered as part of a on-line AC contingency program. The on-line contingency should be limited to the trip of the unit with transfer of normal and/or accident loads to the off-site source. The contingencies (loss of the largest unit, most critical line, etc.) need to be addressed in the planning and operational stability studies but not part of the on-line system.

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Organization:		
Telephone:		
Email:		
NERC Region		Registered Ballot Body Segment
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---

**Question 1:** Do you agree there is a Bulk Electric System reliability need and a public health and safety need for coordinating the offsite electricity supply needs of a nuclear power plant with the planning, assessment, analysis, and operator of the electric system?

Yes

No

If no, please explain in the space provided below.

Comments

**Question 2:** Do you agree with the scope of the proposed standard?

Yes

No

Please explain in the space provided below any specific changes you suggest to the scope of the proposed standard.

Comments

Item 2 appears to be a subset of item 1. Please add some clarity to item 2. If you mean an unnecessary plant shutdown because of a disturbance on the transmission system please state that. "Licensing requirements" is a vague term. There are a lot of licensing requirements for a Nuclear Power Plants. The scope should be narrowed to the criteria that is necessary to maintain an operable source of off-site power.

## Comment Form – Proposed Standard on Nuclear Power Plants

---

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- **Balancing Authority and Market Operator** – Incorporate NPP offsite power supply constraints into reliability-constrained dispatch and provision and deployment of Interconnected Operations Services.

Yes

No

If no, please explain which responsible entities should be added or removed from the list of applicable entities in the SAR.

Remove the Generator Owner, Distribution Provider, Load-Serving Entity, Transmission Service Provider, Balancing Authority and Market Operator. It is the responsibility of the Reliability Authority or the Transmission Operator (depending on regional practices) to determine and notify others if a loss of generation, load or transmission system components will effect the NPP off-site power supply. The Transmission Operator should be monitoring and taking action to maintain the voltage of the off-site power supply. The Transmission Planner and Resource Planners will develop and review the plans to determine the capability of the electric system to support meet the criteria established by the NPP for off-site power. The Planning Authority will coordinate all of the Transmission Planners' plans. The Standard should establish what needs to be accomplished and who has the responsibility.

## Comment Form – Proposed Standard on Nuclear Power Plants

---

**Question 4:** Do you have any additional comments regarding the SAR that you believe should be addressed?

Yes

No

If yes, please share those comments in the space provided below.

Instead of the Purpose/Industry Need being focused on Nuclear requirements it should focus on the responsibilities, controls and communication that is necessary for operation, maintenance and modification of the transmission system as it impacts the operation of a Nuclear Power Plant. It is the Nuclear Power Plant's responsibility to determine the acceptable criteria for off-site power operability determination and communicating the criteria to the entities operating the transmission system. It is the responsibility of the Transmission Operator to take corrective actions and inform the Nuclear Power Plant when the transmission system cannot meet the criteria. NRC SOER 99-1 provides some good recommendations to consider as a basis for this Standard. 1) Planning for plant safety, system maintenance and testing activities that could effect electrical supply diversity is coordinated with grid maintenance and testing activities to prevent inadvertent reductions in nuclear plant defense-in-depth, 2) Plant operators are provided early warning from the grid operator of potential or developing grid instabilities. 3) Grid operators are apprised of the unique plant operating restrictions and requirements associated with operation of nuclear power plants with respect to nuclear safety. 4) The nuclear unit is clearly recognized as an important load (customer) from a nuclear safety perspective. This relationship should be reflected in grid operator load-shedding schemes. 5) The responsibility (ownership) for grid equipment maintenance is clearly defined between the plant and the grid operator.

The related standards reference every standard that mentions requirements for generator operators. The attached list of standards should be eliminated. The only correct related standard is EOP-005-0. Other related standards that are not mentioned and should be are TOP-004-0, TOP-006-0 and TOP-008-0. This SAR is too detailed and contains some "who and how to" statements. The Standard should establish what needs to be accomplished and who is responsible.

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<input type="checkbox"/> NA		



**Background Information:**

Draft 2 of a SAR proposing a standard on coordination between Nuclear Power Plant licensees and entities responsible for the planning, assessment, analysis and operation of the electric system is now posted for comment. This second draft clarifies the scope of the proposed standard and addresses comments received from the posting of the first draft of the SAR.

## Comment Form – Proposed Standard on Nuclear Power Plants

---

**Question 1:** Do you agree there is a Bulk Electric System reliability need and a public health and safety need for coordinating the offsite electricity supply needs of a nuclear power plant with the planning, assessment, analysis, and operator of the electric system?

Yes

No

If no, please explain in the space provided below.

Comments

**Question 2:** Do you agree with the scope of the proposed standard?

Yes

No

Please explain in the space provided below any specific changes you suggest to the scope of the proposed standard.

Comments



## Comment Form – Proposed Standard on Nuclear Power Plants

---

**Question 3:** Do you agree with the list of responsible entities to which this standard would apply? Please note the standard is proposed to apply to the following entities that interface with or provide service to a Nuclear Power Plant:

- **Generator Operator/Owner** – coordinates NPP requirements with the entities responsible for planning and operations of the electric system. Other nearby generator owners/operators may be required to notify the electric system operators of plant changes affecting a nearby NPP.
- **Reliability Authority, Transmission Owner/Operator, Distribution Provider, Load-Serving Entity** – incorporate NPP requirements for offsite power supply into planning, operation and analysis of electric system. LSE may be involved if offsite power is provided through an LSE rather than through a transmission owner/operator.
- **Transmission Service Provider** – manages tariff and transmission service arrangements used by the NPP.
- **Planning Authority, Transmission and Resource Planners** – develop transmission and resource plans; assess electric system supply and delivery capability to meet NPP offsite power requirements.
- **Balancing Authority and Market Operator** – Incorporate NPP offsite power supply constraints into reliability-constrained dispatch and provision and deployment of Interconnected Operations Services.

Yes

No

If no, please explain which responsible entities should be added or removed from the list of applicable entities in the SAR.

## Comment Form – Proposed Standard on Nuclear Power Plants

---

**Question 4:** Do you have any additional comments regarding the SAR that you believe should be addressed?

Yes

No

If yes, please share those comments in the space provided below.

This comment may be more applicable to the Standard than to the SAR. The PSCSC would be wary of anything that adds additional burden to the nuclear plant operators. While we know any new requirements would be added to Tech Specs, with which the operators must be intimately familiar, we are getting to the point where we are placing a lot of burden for nuclear safety in human hands. We are not sure it is appropriate to try to make nuclear plant operators into transmission system operators as well as expect them to continue to safely run their respective plants.

We are also curious as to the interface between this SAR, and the subsequent Standard, and the NRC's "Draft Generic Letter, "Grid Reliability and the Impact on Plant Risk and the Operability of Offsite Power", which was published in the Federal Register April 13, 2004 (60 FR 19125). The relationship is not as simple as "short-term / long-term" or "planning" and "operation".

**COMMENT FORM**  
**Proposed Reliability Standard on Coordination of Nuclear Power Plant Licensing Requirements in Bulk Electric System Planning and Operations**

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<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	Raj Rana - Coordinator	
Organization:	AEP	
Telephone:	614-716-2359	
Email:	raj_rana@AEP.com	
NERC Region	<input type="checkbox"/>	Registered Ballot Body Segment
<input checked="" type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 - Transmission Owners
<input checked="" type="checkbox"/> ECAR	<input type="checkbox"/>	2 - RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> FRCC	<input type="checkbox"/>	3 - Load-serving Entities
<input type="checkbox"/> MAAC	<input type="checkbox"/>	4 - Transmission-dependent Utilities
<input type="checkbox"/> MAIN	<input checked="" type="checkbox"/>	5 - Electric Generators
<input type="checkbox"/> MAPP	<input type="checkbox"/>	6 - Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> NPCC	<input type="checkbox"/>	7 - Large Electricity End Users
<input type="checkbox"/> SERC	<input type="checkbox"/>	8 - Small Electricity End Users
<input checked="" type="checkbox"/> SPP	<input type="checkbox"/>	9 - Federal, State, Provincial Regulatory or other Government Entities
<input type="checkbox"/> WECC		
<input type="checkbox"/> NA		



**Background Information:**

Draft 2 of a SAR proposing a standard on coordination between Nuclear Power Plant licensees and entities responsible for the planning, assessment, analysis and operation of the electric system is now posted for comment. This second draft clarifies the scope of the proposed standard and addresses comments received from the posting of the first draft of the SAR.

## Comment Form – Proposed Standard on Nuclear Power Plants

---

**Question 1:** Do you agree there is a Bulk Electric System reliability need and a public health and safety need for coordinating the offsite electricity supply needs of a nuclear power plant with the planning, assessment, analysis, and operator of the electric system?

Yes

No

If no, please explain in the space provided below.

Comments

**Question 2:** Do you agree with the scope of the proposed standard?

Yes

No

Please explain in the space provided below any specific changes you suggest to the scope of the proposed standard.

Comments

Item 2 of the scope document should read as follows: Limiting challenges to NPP safety systems as a result of an electric system disturbance or transient. This will be accomplished by optimizing NPP offsite power stability and reliability. Therefore, the proposed standard will address the following elements:

- o Coordination of NPP design and licensing requirements with electric system planning and assessments.
- o Coordination of NPP design and ..[The issue is not just how the plant is operated, but how it is designed to mitigate potential problems.]

Also, the scope outlined under the last six bullets, in the area of coordination and communication protocols between NPPs and /transmission service providers/grid operators, is too prescriptive, . The scope of this SAR should address coordination issues in a general way as to what kind of coordination steps should be included in the interconnection/interface agreement between the NPP and the transmission service provider/grid operator, rather than how it should be done. Each NPP site is unique, and the specifics of coordination requirements varies. Therefore, the details should be left to be developed by the transmission service provider/grid operator and the respective NPPs, as part of the interconnection/interface agreement.

## **Comment Form – Proposed Standard on Nuclear Power Plants**

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Similarly, communication protocols also should be left to be developed by transmission service providers and NPPs, as part of the interconnection/interface agreement

Therefore, these two elements in the SAR are more appropriately classified as 'special needs" of an NPP, and would be better handled through a separate interface agreement with the transmission service provider, especially since these "needs" may vary from one NPP to another NPP, and thus they should be removed from this draft.

## Comment Form – Proposed Standard on Nuclear Power Plants

---

**Question 3:** Do you agree with the list of responsible entities to which this standard would apply? Please note the standard is proposed to apply to the following entities that interface with or provide service to a Nuclear Power Plant:

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- **Balancing Authority and Market Operator** – Incorporate NPP offsite power supply constraints into reliability-constrained dispatch and provision and deployment of Interconnected Operations Services.

Yes

No

If no, please explain which responsible entities should be added or removed from the list of applicable entities in the SAR.



## Comment Form – Proposed Standard on Nuclear Power Plants

---

**Question 4:** Do you have any additional comments regarding the SAR that you believe should be addressed?

Yes

No

If yes, please share those comments in the space provided below.

Based on many comments made by many organizations at the NEI/NERC/NRC/INPO Grid Reliability Conference there is a lot of confusion about acceptable communication between RTOs or transmission service providers/operators and NPPs regarding grid condition. The concern is market information to a generator. NPPs, however, have a need to know certain grid information to protect the health and safety of the public. NPPs do not engage in market information as they are base load plants.

A concise statement from appropriate authority about an acceptable format and content along with confidentiality agreement would clarify this for the industry and provide some standardization in sharing the condition of the grid with NPPs.

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<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization: Bonneville Power Administration, Transmission		
Telephone:		
Email:		
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 - Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/>	2 - RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> FRCC	<input type="checkbox"/>	3 - Load-serving Entities
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<input checked="" type="checkbox"/> WECC	<input type="checkbox"/>	
<input type="checkbox"/> NA	<input type="checkbox"/>	



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## Comment Form – Proposed Standard on Nuclear Power Plants

---

**Question 1:** Do you agree there is a Bulk Electric System reliability need and a public health and safety need for coordinating the offsite electricity supply needs of a nuclear power plant with the planning, assessment, analysis, and operator of the electric system?

Yes

No

If no, please explain in the space provided below.

Comments

**Question 2:** Do you agree with the scope of the proposed standard?

Yes

No

Please explain in the space provided below any specific changes you suggest to the scope of the proposed standard.

Comments

## Comment Form – Proposed Standard on Nuclear Power Plants

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**Question 3:** Do you agree with the list of responsible entities to which this standard would apply? Please note the standard is proposed to apply to the following entities that interface with or provide service to a Nuclear Power Plant:

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- **Balancing Authority and Market Operator** – Incorporate NPP offsite power supply constraints into reliability-constrained dispatch and provision and deployment of Interconnected Operations Services.

Yes

No

If no, please explain which responsible entities should be added or removed from the list of applicable entities in the SAR.

## Comment Form – Proposed Standard on Nuclear Power Plants

---

**Question 4:** Do you have any additional comments regarding the SAR that you believe should be addressed?

Yes

No

If yes, please share those comments in the space provided below.

NO Transmission Grid in the world can promise and deliver 100% availability. For example, although the Benton and Ashe Station Service sources are apart geographically and separated from the 500 GRID by a distance factor, there are combinations of events, not readily planned for, that can and will impact the ability of the grid to supply SS shut down energy to CGS. Further, the restrictions on the voltage regulation at ASHE 230 (and to some extent Benton 115) are way outside our Reliability Criteria for both Planning and Operations.

Despite this, BPA has maintained conditions as requested, within our capability to provide them.

The critical nature of this one entity on the system, indicates that Columbia Gen Station needs to provide more assurances internally that they have the ability to ride through disturbances on the system that are a matter of time (not what if).

Therefore, we would reject any references within that place further responsibilities on GRID management that are not already there.

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<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	Dale Goodney	
Organization:	Constellation Energy	
Telephone:	315-349-7956	
Email:	dale.goodney@constellation.com	
NERC Region	Registered Ballot Body Segment	
<input type="checkbox"/> ERCOT	<input type="checkbox"/> 1 - Transmission Owners	
<input type="checkbox"/> ECAR	<input type="checkbox"/> 2 - RTOs, ISOs, Regional Reliability Councils	
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<input type="checkbox"/> WECC		
<input type="checkbox"/> NA		





**Background Information:**

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---

**Question 1:** Do you agree there is a Bulk Electric System reliability need and a public health and safety need for coordinating the offsite electricity supply needs of a nuclear power plant with the planning, assessment, analysis, and operator of the electric system?

Yes

No

If no, please explain in the space provided below.

### Comments

It is unclear what the term assessment means as it relates to the NPP interface. It also appears that maintenance is missing from the list as it is a distinct element in the transmission operator and NPP operator interface. Suggest replacing the terms planning, assessment, operation and analysis with the terms planning, operation, maintenance and analysis throughout the SAR.

It is important to emphasize that the purpose of the standard is to address licensing and design requirements that are unique to NPP's. Suggest moving or copying the following wording from the Related Standards section to the Purpose/Industry Need section:

The proposed new standard would address only aspects that are unique to the licensing requirements of Nuclear Power Plants and would not duplicate the standards that already exist to define the relationship between electric system entities and generators.

Considering the above, the ability of the grid to withstand single contingencies that are already addressed in existing planning standards, and that are not unique to NPP's (e.g. loss of the most critical transmission line), should be omitted from this SAR. Only contingencies that are unique to NPP's should be included in the SAR.

**Question 2:** Do you agree with the scope of the proposed standard?

Yes

No

Please explain in the space provided below any specific changes you suggest to the scope of the proposed standard.

### Comments



## Comment Form – Proposed Standard on Nuclear Power Plants

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## Comment Form – Proposed Standard on Nuclear Power Plants

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Yes

No

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<b>Individual Commenter Information</b>		
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Name:		
Organization: I		
Telephone:		
Email:		
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 - Transmission Owners
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<input type="checkbox"/> NA		





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Yes

No

If no, please explain in the space provided below.

**Comments**

We agree that is important that the Bulk Electric System supports the safe operation of any generator from both an Electric system reliability perspective and a plant reliability/safety perspective. However, specific requirements over and above what would be normally provided for generators should be addressed in the Interconnection Agreement with the Transmission owner which would also provide for cost recovery mechanism if a generator licence requires a higher level of supply than the norm. Since the "norm" is already covered by several NERC standards that are in place, we feel there should not be special NERC standards for nuclear facilities. If changes are needed they could be added to existing standards rather than creating a separate standard according to fuel type. An appropriate existing NERC Standard could require transmission owners to honor power plant licensing requirements as required by appropriate regulating entities.

**Question 2:** Do you agree with the scope of the proposed standard?

Yes

No

Please explain in the space provided below any specific changes you suggest to the scope of the proposed standard.

**Comments**

See Comments in # 1 above

We disagree with a specific standard being tied to NPP licensing requirements. These should be recognized in the Interconnection Agreements between the Transmission Owner and the NPP which could be referred to in the additions to the generator standards. If the licence linkages were removed and the requirements were general to involve any generator then we feel the scope is reasonable as it reflects current practices in most cases.



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- **Balancing Authority and Market Operator** – Incorporate NPP offsite power supply constraints into reliability-constrained dispatch and provision and deployment of Interconnected Operations Services.

Yes

No

If no, please explain which responsible entities should be added or removed from the list of applicable entities in the SAR.

If this Standard does move forward then the following comments apply:

The terminologies and/or functions of responsible entities outlined above are undergoing revisions re: Functional Model Working Group (FMWG). Any changes/revisions in above mentioned FM terminologies/functions, once approved, should be updated/included in this proposed standard.

Moreover, the implementation and application of this standard in terms of coordination with other Functional Model related entities should need to allow for a transition period until the FM related entities are fully certified.

**Comment Form – Proposed Standard on Nuclear Power Plants**

---

**Question 4:** Do you have any additional comments regarding the SAR that you believe should be addressed?

Yes

No

If yes, please share those comments in the space provided below.

See comments in Q # 1 and 2 above

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<input type="checkbox"/> NA		



**Background Information:**

Draft 2 of a SAR proposing a standard on coordination between Nuclear Power Plant licensees and entities responsible for the planning, assessment, analysis and operation of the electric system is now posted for comment. This second draft clarifies the scope of the proposed standard and addresses comments received from the posting of the first draft of the SAR.



## Comment Form – Proposed Standard on Nuclear Power Plants

---

**Question 1:** Do you agree there is a Bulk Electric System reliability need and a public health and safety need for coordinating the offsite electricity supply needs of a nuclear power plant with the planning, assessment, analysis, and operator of the electric system?

Yes

No

If no, please explain in the space provided below.

### Comments

There are public health and safety needs for this SAR. The purpose of the SAR and the resulting standard should be to ensure the coordination of operational information and planning study results as required by the regulatory requirements of the nuclear plants.

**Question 2:** Do you agree with the scope of the proposed standard?

Yes

No

Please explain in the space provided below any specific changes you suggest to the scope of the proposed standard.

### Comments

The scope is comprehensive under current regulatory regimes. Care should be taken, however, to build flexibility into the standard as it is developed to allow it to be adjusted, within reason, as regulatory requirements change over time.

The first sentence of the SAR scope should remove --the-- before the word --each-- in the second line. The second numbered item under the scope is not very clear. Unless the term --limiting challenges-- has some specific meaning in the nuclear arena, another way to explain what the scope is related to impacts on the NPP safety system from system disturbances or transients should be used. We are not sure what the intent was in the listing of this item. This comment also applies to the last bullet in the Scope that refers to --limit challenges to plant safety systems resulting from electric system disturbances or transients--.

The second bullet point under ---The proposed standards would address the following elements--- is unclear whether this is imposing a requirement for real or near real time stability studies to achieve the requirement that the ---analysis should address local switchyard conditions and also the current state and

## Comment Form – Proposed Standard on Nuclear Power Plants

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reactive limitations of nearby generators that may influence voltage in the NPP switchyard.--- In most cases stability studies are performed for a set of conditions at the plant defined in documents such as a --- Power Quality Guide--- and studies are done periodically based on these system conditions and contingency lists. These may not encompass all possible switchyard conditions or possible states and reactive limits of nearby generators that may involve in the NPP switchyard.. In most cases the operations function does not have the capability to perform real or near real time stability cases.

## Comment Form – Proposed Standard on Nuclear Power Plants

---

**Question 3:** Do you agree with the list of responsible entities to which this standard would apply? Please note the standard is proposed to apply to the following entities that interface with or provide service to a Nuclear Power Plant:

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- **Balancing Authority and Market Operator** – Incorporate NPP offsite power supply constraints into reliability-constrained dispatch and provision and deployment of Interconnected Operations Services.

Yes

No

If no, please explain which responsible entities should be added or removed from the list of applicable entities in the SAR.

Not all entities will be involved in nuclear plant transmission support in all regions. Practices vary widely today and will probably remain so in the foreseeable future. Flexibility will be required in the standard to allow it to effectively fit into the specific practices of each region, particularly as regulatory requirements evolve over time.

## Comment Form – Proposed Standard on Nuclear Power Plants

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**Question 4:** Do you have any additional comments regarding the SAR that you believe should be addressed?

Yes

No

If yes, please share those comments in the space provided below.

Clearly there is a need to coordinate nuclear power plant and transmission system reliability requirements. This need is widely recognized in the industry with most utilities having procedures in place which have evolved over many years of experience. However, coordination of requirements is NOT the same as prescription of requirements. The drafting team must focus on areas of coordination to be addressed and not upon prescribing specific rules or procedures. While the safety of NPPs is a critical consideration in the operation of the bulk power system, the transmission provider is ultimately responsible for the overall reliable operation of the transmission system. Transmission Providers can and should coordinate their activities to meet the offsite power requirements of NPPs, but Transmission Providers must also have the flexibility to utilize and evolve the practices that best provide overall service and reliability to the transmission system as a whole.

**COMMENT FORM**  
**Proposed Reliability Standard on Coordination of Nuclear Power Plant Licensing Requirements in Bulk Electric System Planning and Operations**

This form is to be used to submit comments on the proposed Standard Authorization Request to develop a standard entitled: **Coordination of Nuclear Power Plant Licensing Requirements in Bulk Electric System Planning and Operations**. Comments must be submitted by **May 2, 2005**. You may submit the completed form by emailing it to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the words “Nuclear Power Plant SAR Comments” in the subject line. If you have questions please contact Gerry Cauley at [gerry.cauley@nerc.net](mailto:gerry.cauley@nerc.net) or by telephone at (609) 947-3885.

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<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	Maurice Casadaban	
Organization:	Entergy Services, Inc.	
Telephone:	(504) 310-5871	
Email:	mcasada@entergy.com	
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 - Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/>	2 - RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> FRCC	<input type="checkbox"/>	3 - Load-serving Entities
<input type="checkbox"/> MAAC	<input type="checkbox"/>	4 - Transmission-dependent Utilities
<input type="checkbox"/> MAIN	<input type="checkbox"/>	5 - Electric Generators
<input type="checkbox"/> MAPP	<input type="checkbox"/>	6 - Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> NPCC	<input type="checkbox"/>	7 - Large Electricity End Users
<input checked="" type="checkbox"/> SERC	<input type="checkbox"/>	8 - Small Electricity End Users
<input type="checkbox"/> SPP	<input type="checkbox"/>	9 - Federal, State, Provincial Regulatory or other Government Entities
<input type="checkbox"/> WECC		
<input type="checkbox"/> NA		



**Background Information:**

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## Comment Form – Proposed Standard on Nuclear Power Plants

---

**Question 1:** Do you agree there is a Bulk Electric System reliability need and a public health and safety need for coordinating the offsite electricity supply needs of a nuclear power plant with the planning, assessment, analysis, and operator of the electric system?

Yes

No

If no, please explain in the space provided below.

Comments

**Question 2:** Do you agree with the scope of the proposed standard?

Yes

No

Please explain in the space provided below any specific changes you suggest to the scope of the proposed standard.

Comments

The drafting team must ensure that, as the scope is fleshed out, the standard does not expand beyond the actual NRC licensing requirements.



## Comment Form – Proposed Standard on Nuclear Power Plants

---

**Question 3:** Do you agree with the list of responsible entities to which this standard would apply? Please note the standard is proposed to apply to the following entities that interface with or provide service to a Nuclear Power Plant:

- **Generator Operator/Owner** – coordinates NPP requirements with the entities responsible for planning and operations of the electric system. Other nearby generator owners/operators may be required to notify the electric system operators of plant changes affecting a nearby NPP.
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- **Balancing Authority and Market Operator** – Incorporate NPP offsite power supply constraints into reliability-constrained dispatch and provision and deployment of Interconnected Operations Services.

Yes

No

If no, please explain which responsible entities should be added or removed from the list of applicable entities in the SAR.

Regarding the last bullet, only Interconnected Operations Services that directly apply to NRC Licensing requirements should be included in the standard. All other IOS issues should apply in other standards.

## Comment Form – Proposed Standard on Nuclear Power Plants

---

**Question 4:** Do you have any additional comments regarding the SAR that you believe should be addressed?

Yes

No

If yes, please share those comments in the space provided below.

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<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	Mike Calimano	
Organization:	New York Independent System Operator	
Telephone:	518-356-6129	
Email:	mcalimano@nyiso.com	
NERC Region	<input type="checkbox"/>	Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 - Transmission Owners
<input type="checkbox"/> ECAR	<input checked="" type="checkbox"/>	2 - RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> FRCC	<input type="checkbox"/>	3 - Load-serving Entities
<input type="checkbox"/> MAAC	<input type="checkbox"/>	4 - Transmission-dependent Utilities
<input type="checkbox"/> MAIN	<input type="checkbox"/>	5 - Electric Generators
<input type="checkbox"/> MAPP	<input type="checkbox"/>	6 - Electricity Brokers, Aggregators, and Marketers
<input checked="" type="checkbox"/> NPCC	<input type="checkbox"/>	7 - Large Electricity End Users
<input type="checkbox"/> SERC	<input type="checkbox"/>	8 - Small Electricity End Users
<input type="checkbox"/> SPP	<input type="checkbox"/>	9 - Federal, State, Provincial Regulatory or other Government Entities
<input type="checkbox"/> WECC		
<input type="checkbox"/> NA		



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## Comment Form – Proposed Standard on Nuclear Power Plants

---

**Question 1:** Do you agree there is a Bulk Electric System reliability need and a public health and safety need for coordinating the offsite electricity supply needs of a nuclear power plant with the planning, assessment, analysis, and operator of the electric system?

Yes

No

If no, please explain in the space provided below.

### Comments

The NYISO feels there should be generator standards and a well defined interface between the Nuclear Power Plant (NPP) and the power grid, but the nuclear standards should not extend past the interface point. Nuclear plants have been operating successfully and reliably for many years as a part if this Bulk Power System. There is not a public health and safety need relative to these existing NPP that is not already being addressed. Nuclear Generator Interconnection costs should not be pushed through to the transmission owners and operators.

**Question 2:** Do you agree with the scope of the proposed standard?

Yes

No

Please explain in the space provided below any specific changes you suggest to the scope of the proposed standard.

### Comments

The Scope seems to keep changing in a search for an acceptable rationale that will result in the creation of a NERC Standard that is not needed.

**Comment Form – Proposed Standard on Nuclear Power Plants**

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**Question 3:** Do you agree with the list of responsible entities to which this standard would apply? Please note the standard is proposed to apply to the following entities that interface with or provide service to a Nuclear Power Plant:

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- **Balancing Authority and Market Operator** – Incorporate NPP offsite power supply constraints into reliability-constrained dispatch and provision and deployment of Interconnected Operations Services.

Yes

No

If no, please explain which responsible entities should be added or removed from the list of applicable entities in the SAR.

NYISO does not feel there is a need for this Standard.

## Comment Form – Proposed Standard on Nuclear Power Plants

---

**Question 4:** Do you have any additional comments regarding the SAR that you believe should be addressed?

Yes

No

If yes, please share those comments in the space provided below.

The NPP should be treated with the same respect as all of the other generators in the system..



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<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
Email:		
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 - Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/>	2 - RTOs, ISOs, Regional Reliability Councils
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<input type="checkbox"/> SERC	<input type="checkbox"/>	8 - Small Electricity End Users
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<input type="checkbox"/> WECC		
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---

**Question 1:** Do you agree there is a Bulk Electric System reliability need and a public health and safety need for coordinating the offsite electricity supply needs of a nuclear power plant with the planning, assessment, analysis, and operator of the electric system?

Yes

No

If no, please explain in the space provided below.

### Comments

There is only a bulk system reliability need if a controlled shutdown with several hours notice per the NPP LCO, along with the accompanying load service contract adjustments, might result in a bulk system reliability problem. Otherwise, it is a resource adequacy issue. TVA understands the sensitivities of any type of unplanned shutdown activities at NPP locations, and its pursuant potential impact on public health and safety, and concurs that there is a need for proper coordination between the NPP operators and the appropriate NERC functional entities.

NPPs certainly need to know the state of their offsite power sources in order to operate safely and responsibly. TVA is unaware of any regulations which would preclude communications between a NPP operator and the appropriate NERC functional entities should the system become unable to meet the special needs of the NPP. The NPP could then, based on a proper risk assessment, decide the appropriate course of action, which might include an orderly shutdown of the subject unit(s).

TVA believes that this standard would essentially establish a different "Nuclear Plant Licensing Requirements" category, i.e. neither a bulk system reliability issue nor a public safety issue (although elements of both may exist). Compliance with such a standard should be considered differently from compliance to standards which address system operating limits or interconnection reliability operating limits.

**Question 2:** Do you agree with the scope of the proposed standard?

## Comment Form – Proposed Standard on Nuclear Power Plants

---

Yes

No

Please explain in the space provided below any specific changes you suggest to the scope of the proposed standard.

### Comments

Instead of establishing "requirements to coordinate and consider...NPP licensing requirements", the standard should "map the appropriate functional entities who would evaluate NPP requirements in the planning, assessment, analysis, and operation of the electric system, should these premium services be contracted on behalf of a specific NPP."

In reality, this standard addresses contractual issues between the NPP, who relies on its offsite power supply, and the applicable NERC functional entities who collectively provide it. Where studies are required for assessment or actual operational changes must be made, there should be contracts in place which cover the scope of the studies or operational changes along with any compensation required. This is not very different from the question of who is responsible for any 'required system upgrades' due to non-NPP load changes in a given area.

## Comment Form – Proposed Standard on Nuclear Power Plants

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**Question 3:** Do you agree with the list of responsible entities to which this standard would apply? Please note the standard is proposed to apply to the following entities that interface with or provide service to a Nuclear Power Plant:

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- **Balancing Authority and Market Operator** – Incorporate NPP offsite power supply constraints into reliability-constrained dispatch and provision and deployment of Interconnected Operations Services.

Yes

No

If no, please explain which responsible entities should be added or removed from the list of applicable entities in the SAR.

The descriptions appropriately avoid the issue of compensation, which is a business or contractual issue, not a bulk system reliability issue. TVA believes this issue should be carefully coordinated with the North American Energy Standards Board, Wholesale Electric Quadrant.

## Comment Form – Proposed Standard on Nuclear Power Plants

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**Question 4:** Do you have any additional comments regarding the SAR that you believe should be addressed?

Yes

No

If yes, please share those comments in the space provided below.

We are concerned that establishing NPP-support accountabilities beyond those applied uniformly across the bulk system may result in inappropriate cost shifting if the financial responsibility for NPP premium services are not clearly assigned to the interested NPP, hence the comments regarding contractual issues. Responsibilities should therefore apply to the various functional entities only to the extent that the NPPs have contracted for these services and comply with the enabling agreements that establish the terms and conditions of the premium services to be provided.

## Comment Form – Proposed Standard on Nuclear Power Plants

### COMMENT FORM

#### Proposed Reliability Standard on Coordination of Nuclear Power Plant Licensing Requirements in Bulk Electric System Planning and Operations

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Individual Commenter Information		
(Complete this page for comments from one organization or individual.)		
Name:	P. D. Henderson	
Organization:	Independent Electricity System Operator (IESO)	
Telephone:	905-855-6258	
Email:	Peter.Henderson@IESO.CA	
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 - Transmission Owners
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<input type="checkbox"/> NA		

<p>Group Comments (Complete this page if comments are from a group.)</p> <p>Group Name:</p> <p>Lead Contact:</p> <p>Contact Organization:</p> <p>Contact Segment:</p> <p>Contact Telephone:</p> <p>Contact Email:</p>
---





## Comment Form – Proposed Standard on Nuclear Power Plants

---

**Question 1:** Do you agree there is a Bulk Electric System reliability need and a public health and safety need for coordinating the offsite electricity supply needs of a nuclear power plant with the planning, assessment, analysis, and operator of the electric system?

Yes

No

If no, please explain in the space provided below.

### Comments

We agree that is important that the Bulk Electric System supports the safe operation of any generator from both an Electric system reliability perspective and a plant reliability/safety perspective.

However, specific requirements over and above what would be normally provided for generators should be addressed in the Interconnection Agreement with the Transmission owner which would also provide for cost recovery mechanism if a generator licence requires a higher level of supply than the norm. Since the "norm" is already covered by several NERC standards that are in place, we feel there should not be "special" NERC standards for nuclear facilities. If changes are needed they could be added to existing standards rather than creating a separate standard according to fuel type.

**Question 2:** Do you agree with the scope of the proposed standard?

Yes

No

Please explain in the space provided below any specific changes you suggest to the scope of the proposed standard.

### Comments

See Comments in # 1 above

We disagree with a specific standard being tied to NPP licensing requirements. These should be recognized in the Interconnection Agreements between the Transmission Owner and the NPP which could be referred to in the additions to the generator standards. If the licence linkages were removed and the requirements were general to involve any generator then we feel the scope is reasonable as it reflects current practices in most cases.

## Comment Form – Proposed Standard on Nuclear Power Plants

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- **Balancing Authority and Market Operator** – Incorporate NPP offsite power supply constraints into reliability-constrained dispatch and provision and deployment of Interconnected Operations Services.

Yes

No

If no, please explain which responsible entities should be added or removed from the list of applicable entities in the SAR.

If this Standard does move forward then the following comments apply:

The terminologies and/or functions of responsible entities outlined above are undergoing revisions re: Functional Model Working Group(FMWG). Any changes/revisions in above mentioned FM terminologies/functions, once approved, should be updated/included in this proposed standard.

Moreover, the implementation and application of this standard in terms of coordination with other Functional Model related entities should need to allow for a transition period until the FM related entities are fully certified.

## Comment Form – Proposed Standard on Nuclear Power Plants

---

**Question 4:** Do you have any additional comments regarding the SAR that you believe should be addressed?

Yes

No

If yes, please share those comments in the space provided below.

See comments in Q # 1 and 2 above

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<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	Barry Green	
Organization:	Ontario Power Generation	
Telephone:	416-592-7883	
Email:	barry.green@opg.com	
NERC Region	<input type="checkbox"/>	Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 - Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/>	2 - RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> FRCC	<input type="checkbox"/>	3 - Load-serving Entities
<input type="checkbox"/> MAAC	<input type="checkbox"/>	4 - Transmission-dependent Utilities
<input type="checkbox"/> MAIN	<input checked="" type="checkbox"/>	5 - Electric Generators
<input type="checkbox"/> MAPP	<input type="checkbox"/>	6 - Electricity Brokers, Aggregators, and Marketers
<input checked="" type="checkbox"/> NPCC	<input type="checkbox"/>	7 - Large Electricity End Users
<input type="checkbox"/> SERC	<input type="checkbox"/>	8 - Small Electricity End Users
<input type="checkbox"/> SPP	<input type="checkbox"/>	9 - Federal, State, Provincial Regulatory or other Government Entities
<input type="checkbox"/> WECC		
<input type="checkbox"/> NA		



**Background Information:**

Draft 2 of a SAR proposing a standard on coordination between Nuclear Power Plant licensees and entities responsible for the planning, assessment, analysis and operation of the electric system is now posted for comment. This second draft clarifies the scope of the proposed standard and addresses comments received from the posting of the first draft of the SAR.

**Comment Form – Proposed Standard on Nuclear Power Plants**

---

**Question 1:** Do you agree there is a Bulk Electric System reliability need and a public health and safety need for coordinating the offsite electricity supply needs of a nuclear power plant with the planning, assessment, analysis, and operator of the electric system?

Yes

No

If no, please explain in the space provided below.

Comments

**Question 2:** Do you agree with the scope of the proposed standard?

Yes

No

Please explain in the space provided below any specific changes you suggest to the scope of the proposed standard.

Comments

The reference to have "equivalent" Canadian standards seems insufficient. While there are similar objectives to the Canadian standards, they could not be construed as equivalent. I would suggest the following wording:

"The Canadian Nuclear Safety Commission requires Canadian Nuclear Power Plant Operators to similarly demonstrate an appropriately reliable supply to the plant. Coordination between the Plant Operator, the Transmission Owner and the Transmission Operator is required to provide such evidence."



## Comment Form – Proposed Standard on Nuclear Power Plants

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**Question 3:** Do you agree with the list of responsible entities to which this standard would apply? Please note the standard is proposed to apply to the following entities that interface with or provide service to a Nuclear Power Plant:

- **Generator Operator/Owner** – coordinates NPP requirements with the entities responsible for planning and operations of the electric system. Other nearby generator owners/operators may be required to notify the electric system operators of plant changes affecting a nearby NPP.
- **Reliability Authority, Transmission Owner/Operator, Distribution Provider, Load-Serving Entity** – incorporate NPP requirements for offsite power supply into planning, operation and analysis of electric system. LSE may be involved if offsite power is provided through an LSE rather than through a transmission owner/operator.
- **Transmission Service Provider** – manages tariff and transmission service arrangements used by the NPP.
- **Planning Authority, Transmission and Resource Planners** – develop transmission and resource plans; assess electric system supply and delivery capability to meet NPP offsite power requirements.
- **Balancing Authority and Market Operator** – Incorporate NPP offsite power supply constraints into reliability-constrained dispatch and provision and deployment of Interconnected Operations Services.

Yes

No

If no, please explain which responsible entities should be added or removed from the list of applicable entities in the SAR.

## Comment Form – Proposed Standard on Nuclear Power Plants

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**Question 4:** Do you have any additional comments regarding the SAR that you believe should be addressed?

Yes

No

If yes, please share those comments in the space provided below.

**COMMENT FORM**  
**Proposed Reliability Standard on Coordination of Nuclear Power Plant Licensing Requirements in Bulk Electric System Planning and Operations**

This form is to be used to submit comments on the proposed Standard Authorization Request to develop a standard entitled: **Coordination of Nuclear Power Plant Licensing Requirements in Bulk Electric System Planning and Operations**. Comments must be submitted by **May 2, 2005**. You may submit the completed form by emailing it to: [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the words “Nuclear Power Plant SAR Comments” in the subject line. If you have questions please contact Gerry Cauley at [gerry.cauley@nerc.net](mailto:gerry.cauley@nerc.net) or by telephone at (609) 947-3885.

**ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE AND IT IS THEREFORE IMPORTANT TO ADHERE TO THE FOLLOWING REQUIREMENTS:**

- DO:**
- Do enter text only, with no formatting or styles added.
  - Do use punctuation and capitalization as needed (except quotations).
  - Do use more than one form if responses do not fit in the spaces provided.
  - Do submit any formatted text or markups in a separate WORD file.

- DO NOT:**
- Do not insert tabs or paragraph returns in any data field.
  - Do not use numbering or bullets in any data field.
  - Do not use quotation marks in any data field.
  - Do not submit a response in an unprotected copy of this form.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	Kathleen Goodman	
Organization:	ISO New England	
Telephone:	(413) 535-4111	
Email:	kgoodman@iso-ne.com	
NERC Region	<input type="checkbox"/>	Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 - Transmission Owners
<input type="checkbox"/> ECAR	<input checked="" type="checkbox"/>	2 - RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> FRCC	<input type="checkbox"/>	3 - Load-serving Entities
<input type="checkbox"/> MAAC	<input type="checkbox"/>	4 - Transmission-dependent Utilities
<input type="checkbox"/> MAIN	<input type="checkbox"/>	5 - Electric Generators
<input type="checkbox"/> MAPP	<input type="checkbox"/>	6 - Electricity Brokers, Aggregators, and Marketers
<input checked="" type="checkbox"/> NPCC	<input type="checkbox"/>	7 - Large Electricity End Users
<input type="checkbox"/> SERC	<input type="checkbox"/>	8 - Small Electricity End Users
<input type="checkbox"/> SPP	<input type="checkbox"/>	9 - Federal, State, Provincial Regulatory or other Government Entities
<input type="checkbox"/> WECC		
<input type="checkbox"/> NA		



**Background Information:**

Draft 2 of a SAR proposing a standard on coordination between Nuclear Power Plant licensees and entities responsible for the planning, assessment, analysis and operation of the electric system is now posted for comment. This second draft clarifies the scope of the proposed standard and addresses comments received from the posting of the first draft of the SAR.

**Comment Form – Proposed Standard on Nuclear Power Plants**

---

**Question 1:** Do you agree there is a Bulk Electric System reliability need and a public health and safety need for coordinating the offsite electricity supply needs of a nuclear power plant with the planning, assessment, analysis, and operator of the electric system?

Yes

No

If no, please explain in the space provided below.

**Comments**

ISO-NE believes that, while there should be generator standards, there should not be "Special" NERC standards for nuclear facilities and no additional Bulk Power Reliability requirements that go beyond any other generator's needs for reliability. Any additional requirements must be identified on a unit by unit basis and considered in the Individual Nuclear Unit Interconnection Agreement with the affected Transmission Owner.

**Question 2:** Do you agree with the scope of the proposed standard?

Yes

No

Please explain in the space provided below any specific changes you suggest to the scope of the proposed standard.

**Comments**

See Comments in # 1 above

## Comment Form – Proposed Standard on Nuclear Power Plants

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**Question 3:** Do you agree with the list of responsible entities to which this standard would apply? Please note the standard is proposed to apply to the following entities that interface with or provide service to a Nuclear Power Plant:

- **Generator Operator/Owner** – coordinates NPP requirements with the entities responsible for planning and operations of the electric system. Other nearby generator owners/operators may be required to notify the electric system operators of plant changes affecting a nearby NPP.
- **Reliability Authority, Transmission Owner/Operator, Distribution Provider, Load-Serving Entity** – incorporate NPP requirements for offsite power supply into planning, operation and analysis of electric system. LSE may be involved if offsite power is provided through an LSE rather than through a transmission owner/operator.
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- **Balancing Authority and Market Operator** – Incorporate NPP offsite power supply constraints into reliability-constrained dispatch and provision and deployment of Interconnected Operations Services.

Yes

No

If no, please explain which responsible entities should be added or removed from the list of applicable entities in the SAR.

The terminologies and/or functions of responsible entities outlined above are undergoing revisions re: Functional Model Working Group (FMWG). Any changes/revisions in the above mentioned FM terminologies/functions, once approved, should be updated/included in this proposed standard.

The implementation and application of this standard in terms of coordination with other Functional Model related entities should need to allow for a transition period until the FM related entities are fully certified.

**Comment Form – Proposed Standard on Nuclear Power Plants**

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**Question 4:** Do you have any additional comments regarding the SAR that you believe should be addressed?

Yes

No

If yes, please share those comments in the space provided below.

See # 1 Above



**Consideration of Comments**  
**Draft 2 – SAR on Nuclear Plant Offsite Power Reliability**  
**May 23, 2005**

*Our goal is to give every comment serious consideration in this process. If you feel that your comment has been overlooked or there has been an error or omission in the process, please contact Gerry Cauley immediately at 609-452-8060 or at [gerry.cauley@nerc.net](mailto:gerry.cauley@nerc.net). You may submit an appeal in accordance with the [Reliability Standards Appeals Process](#)*

## **Background**

The Nuclear Energy Institute (NEI) Grid Reliability Task Force submitted a request for a NERC reliability standard on nuclear plant offsite power supply reliability on October 20, 2004.

The SAR was posted for stakeholder comment from December 2, 2004 through January 7, 2005. On the basis of the comments received, the drafting team revised the SAR and posted a second draft for comment from April 1 through May 16, 2005.

Comments in the first posting of the SAR focused on:

- Perception by some of a shifting of responsibilities from the nuclear power plant (NPP) to the electric system provider.
- Electric system – NPP interface requirements are already being met in some regions.
- Whether the proposed requirements for offsite power were commercial/equity issues or reliability issues.
- Questions of cost recovery for the electric system meeting NPP requirements.

The drafting team clarified the SAR in the second draft to address these issues and also to provide more detail in the scope of the proposed standard. The drafting team noted that interface requirements between the NPP and electric system have always existed. The proposed standard does not shift responsibilities, but rather reinforces prior existing responsibilities that may have become obscured by regulatory initiatives leading to unbundling of transmission and generation ownership and operations. The drafting team recognized that some regions may be implementing effective protocols for the NPP-electric system interface, and those could be used as models for the standard. However, not all regions and systems have addressed this issue. The drafting team emphasized the reliability and public health and safety issues that are paramount in assuring a reliable power supply to safely shut down the NPP. Finally, the drafting team noted that cost recovery is a regulatory policy issue that is outside the industry standards setting process.

The second draft of the SAR received 18 sets of comments, which are enclosed in the attached table. The comments on draft 2 focused on:

- A concern that the NPP-electric system interface is more appropriately addressed in service agreements than in a North American standard.
- A preference by some to revise the existing standards rather than develop separate NPP-related standards.

The drafting team acknowledges that the specifics of each NPP-electric system interface must be documented in local agreements. However, the drafting team believes there is a minimum set of

**Consideration of Comments**  
**Draft 2 – SAR on Nuclear Plant Offsite Power Reliability**  
**May 23, 2005**

criteria for the elements that must be considered in those agreements for the coordination of electric system planning, assessment, maintenance, and operation with NPP design criteria.

Furthermore, the NERC standard would provide a mechanism:

1. To ensure the appropriate transmission entities and NPP operators work together to put these agreements into place, and
2. To make sure the agreements address the necessary elements.

Such a mechanism does not exist at this time and is necessary to ensure the NPP special requirements continue to be properly understood, coordinated, and met as changes in the grid and in ownership of facilities occur over time.

### **Drafting Team Recommendation**

**The drafting team recommends the SAR be authorized for development as a NERC reliability standard.** While lacking unanimity, there is a strong majority stakeholder support for the proposed standard. Further revisions to the SAR are not likely to substantively improve the existing level of consensus on the scope and purpose of the proposed standard.

### **Drafting Team General Response to Comments**

The drafting team offers the following general response which is referenced in many of the comments in the attached table.

#### ***Drafting Team General Response***

*The drafting team concurs that agreements are necessary to document the unique requirements of each NPP – electric system interface, and also to provide a mechanism for cost recovery. However, the drafting team believes those agreements must address a minimum set of elements necessary to assure reliability of the bulk electric system and the health and safety of the public. While many regions and systems have such agreements in place today, and would be expected to be compliant with the proposed standard, some regions and systems do not have such agreements or may not address all of the elements identified in the scope of the proposed standard. In many cases agreements are not two-party – they are often multi-party agreements involving RTO/ISO protocols, transmission and generation owners, and others.*

*Nuclear plants are unique compared to other types of plants because they cannot meet their nuclear regulatory requirements without support of the grid. Existing NERC standards focus on ensuring generators of all types support bulk electric system reliability and ensuring the electric system operator operates within the stated electrical capabilities of the generator. However, NPPs present a unique set of electric system requirements not addressed in the existing NERC standards. It is essential that the planning, design, operation, and analysis of the electric system respect the NPP's license requirements for nuclear safety. Nuclear power plant safety systems are designed based on a 'defense-in-depth' concept and any unnecessary challenge to a safety*

**Consideration of Comments**  
**Draft 2 – SAR on Nuclear Plant Offsite Power Reliability**  
**May 23, 2005**

*system by an electric system condition or event can weaken the posture of nuclear safety systems. The need for the proposed standard is further supported by an increase in the number of times NPPs have lost offsite power in 2003 (even excluding the August 14, 2003 event) and 2004 compared to the last 10-year average. Although these events may not be directly related to a violation of NPP requirements, they do point to the need for improved communications agreements.*

*Nuclear license requirements for reliable offsite power are not new – they were addressed in the initial granting of the NPP license at a time when most electric systems were vertically integrated. Regulatory initiatives leading to the unbundling of NPP facilities from the transmission owner/operator have not altered or changed those requirements, but rather have led to a need to standardize the minimum set of issues that must be coordinated and communicated between the NPP and the electric system owner/operator to continue to ensure grid reliability and public health and safety. It is the obligation of the NPP to communicate its grid-related requirements to the electric system operator and to agree upon those requirements with the electric system operator. It is incumbent upon the electric system operator to be aware of the grid operating requirements related to an NPP connected to its system and to operate within those requirements as agreed or, if unable to do so, to communicate with the NPP. There are no existing NERC standards to enforce that communication and coordination.*

*The proposed standard would also provide an opportunity to improve consistency among NPP-electric system interface agreements.*

*The proposed standard would not address cost recovery. Cost recovery is a regulatory policy matter at the general level and a contractual matter for each individual NPP-electric system interface.*

**Consideration of Comments**

**Draft 2 – SAR on Nuclear Plant Offsite Power Reliability**

<b>Question 1: Do you agree there is a Bulk Electric System reliability need and a public health and safety need for coordinating the offsite electricity supply needs of a nuclear power plant with the planning, assessment, analysis, and operator of the electric system?</b>				
<b>Group Name</b>	<b>Group Members</b>	<b>13Y 4N 1Y&amp;N</b>	<b>Question 1 Comment</b>	<b>Drafting Team Response</b>
Bonneville Power Administration, Transmission	Richard Spence —BPAT Truman Conn — BPAT Mike Kreipe — BPAT Peggy Olds —BPAT Theodore Snodgrass — BPAT Berhanu Tesema — BPAT	Yes		
ISO/RTO Council Standards Review Committee	Karl Tammar — NYISO Anita Lee — AESO Ed Riley — CAISO Sam jones — ERCOT P. D. Henderson — IESO Peter Brandien — ISO-NE Bill Phillips — MISO Bruce Balmut — PJM Charles Yeung — SPP	No	We agree that is important that the Bulk Electric System supports the safe operation of any generator from both an Electric system reliability perspective and a plant reliability/safety perspective. However, specific requirements over and above what would be normally provided for generators should be addressed in the Interconnection Agreement with the Transmission owner which would also provide for cost recovery mechanism if a generator license requires a higher level of supply than the norm. Since the "norm" is already covered by several NERC standards that are in place, we feel there should not be "special" NERC standards for nuclear facilities. If changes are needed they could be added to existing standards rather than creating a separate standard according to fuel type. An appropriate existing NERC Standard could require transmission owners to honor power plant licensing requirements as required by appropriate entities.	See Drafting Team General Response.
Midwest Reliability Organization	Alan Boesch — Midwest Reliability Organization Terry Bilke — MISO Robert Coish — MHEB Dennis Florom — LES Ken Goldsmith — ALT Todd Gosnell — OPPD Wayne Guttormson — SPC Jim Maenner — WPS Darrick Moe — WAPA Tom Mielnik — MEC Joe Knight — MRO The 31 additional MRO Members	Yes		

**Consideration of Comments**

**Draft 2 – SAR on Nuclear Plant Offsite Power Reliability**

<p>NPCC CP9, Reliability Standards Working Group</p>	<p>Greg Campoli — New York ISO                  Al Adamson — New York State Reliability Council                  Kathleen Goodman — ISO-New England                  Mike Schiavone — Niagara Mohawk/National Grid US                  David Kiguel — Hydro One Networks (Ontario)                  Khaqan Khan — The IESO (Ontario)                  Roger Champagne – Transenergie HydroQuebec                  Ralph Rufrano — New York Power Authority                  David Little — Nova Scotia Power                  Robert Pellegrini — United Illuminating Co.                  Guy Zito – Northeast Power Coordinating Council</p>	<p>No</p>	<p>NPCC Participating Members believe that while there should be generator standards, there should not be "Special" NERC standards for nuclear facilities and no additional Bulk Power Reliability requirements that go beyond any other generator's needs for reliability. Any additional requirements must be identified on a unit by unit basis and considered in the Individual Nuclear Unit Interconnection Agreement with the affected Transmission Owner.</p> <p>Some Members of NPCC believe there is no need for this Standard and it appears to be an attempt to offload Nuclear Generator Interconnection costs onto the Transmission Owners. For example, any Nuclear Generator Owner could, at any time, identify a reliability requirement, and require the Transmission owners and operators to do excessive studies and analysis on a continual basis, based solely on their needs. Cost recovery issues are meant for interconnection agreements and applicable tariffs (retail or wholesale) not for NERC standards. Additionally, transmission owners are charged by policy and practice with a responsibility to provide equal treatment for similarly situated customers. Providing a different supply standard for a class of generators is inconsistent with this obligation. There are ample mechanisms currently in place for generators or any retail customer to obtain service at a higher standard.</p>	<p>See Drafting Team General Response.</p> <p>The scope of the standard will address only additional requirements unique to nuclear plants. The scope will not replace or duplicate existing standards related to generators. The standard drafting team will need to compare the proposed standards to existing requirements to avoid conflicts or duplications.</p>
<p>Public Service Commission of South Carolina</p>	<p>Philip Riley — PSCSC                  John E. Howard — PSCSC                  David A. Wright — PSCSC                  Randy Mitchell — PSCSC                  Elizabeth B. Fleming — PSCSC                  G. O'Neal Hamilton — PSCSC                  Mignon L. Clyburn — PSCSC                  C. Robert Moseley — PSCSC</p>	<p>Yes</p>		
<p>SERC Generation Subcommittee</p>	<p>Chris Schaeffere — Duke Power                  Terry Crawley — Southern Company, Generation                  Chris Georgeson — Progress Energy                  Ken Tiller — Progress Energy</p>	<p>Yes</p>		

Consideration of Comments

Draft 2 – SAR on Nuclear Plant Offsite Power Reliability

	Jerry Nicely — TVA David Thompson — TVA John Wolfmeyer — SERC Staff			
Southern Company	Raymond Vice — SCS Doug McLaughlin — SCS Keith Calhoun — SCS Jim Griffith — SCS Phil Winston — Georgia Power Roman Carter — Southern Gen. Roger Green — Southern Gen. Robert Moye — Southern Nuc. Terry Crawley — Southern Gen. Jim Viikinsalo — SCS	Yes	There are public health and safety needs for this SAR. The purpose of the SAR and the resulting standard should be to ensure the coordination of operational information and planning study results as required by the regulatory requirements of the nuclear plants.	Agree.
TVA	Mitchell E Needham David Till Doug Bailey Jennifer Weber Kathy Davis Chuck Feagans James Regg	Yes	There is only a bulk system reliability need if a controlled shutdown with several hours notice per the NPP LCO, along with the accompanying load service contract adjustments, might result in a bulk system reliability problem. Otherwise, it is a resource adequacy issue. TVA understands the sensitivities of any type of unplanned shutdown activities at NPP locations, and its pursuant potential impact on public health and safety, and concurs that there is a need for proper coordination between the NPP operators and the appropriate NERC functional entities.  NPPs certainly need to know the state of their offsite power sources in order to operate safely and responsibly. TVA is unaware of any regulations which would preclude communications between a NPP operator and the appropriate NERC functional entities should the system become unable to meet the special needs of the NPP. The NPP could then, based on a proper risk assessment, decide the appropriate course of action, which might include an orderly shutdown of the subject unit(s).  TVA believes that this standard would essentially establish a different "Nuclear Plant Licensing Requirements" category, i.e. neither a bulk system reliability issue nor a public safety issue (although	See Drafting Team General Response.

Consideration of Comments

Draft 2 – SAR on Nuclear Plant Offsite Power Reliability

			elements of both may exist). Compliance with such a standard should be considered differently from compliance to standards which address system operating limits or interconnection reliability operating limits.	
Individual	John P. Bonner — Entergy Nuclear Northeast	Yes		
Individual 2	Don McInnis - Florida Power & Light Co.	Yes	FPL agrees with the present second draft and have no other comments to add.	The drafting team agrees.
Individual 3	Jerry Nicely – TVA Nuclear	Yes		
Individual 4	Raj Rana — AEP	Yes		
Individual 5	Kathleen Goodman — ISO New England	No	ISO-NE believes that, while there should be generator standards, there should not be "Special" NERC standards for nuclear facilities and no additional Bulk Power Reliability requirements that go beyond any other generator's needs for reliability. Any additional requirements must be identified on a unit by unit basis and considered in the Individual Nuclear Unit Interconnection Agreement with the affected Transmission Owner.	Nuclear plants are unique compared to other types of plants because they cannot meet their nuclear safety requirements without support of the grid. Existing NERC standards focus on ensuring generators of all types support bulk electric system reliability and ensuring the electric system operator operates within the stated electrical capabilities of the generator. However, NPPs present a unique set of electric system requirements not addressed in the existing NERC standards. It is essential that the planning, design, operation, and analysis of the electric system respect the NPP's license requirements for nuclear safety. Nuclear power plant safety systems are designed based on a 'defense-in-depth' concept and any unnecessary challenge to a safety system by an electric system condition or event can weaken the posture of nuclear safety systems. The need for the proposed standard is further supported by an increase in the number of times NPPs have lost offsite power in 2003(even excluding the August 14, 2003 event) and 2004 compared to the last 10-year average. Although these events may not be directly related to a violation of NPP requirements, they do point to the need for improved communications agreements.
Individual 6	Dale Goodney – Constellation	Yes	It is unclear what the term assessment means as it	Use of assessment is consistent with

	Energy		<p>relates to the NPP interface. It also appears that maintenance is missing from the list as it is a distinct element in the transmission operator and NPP operator interface . Suggest replacing the terms planning, assessment, operation and analysis with the terms planning, operation, maintenance and analysis throughout the SAR.</p> <p>It is important to emphasize that the purpose of the standard is to address licensing and design requirements that are unique to NPP's. Suggest moving or copying the following wording from the Related Standards section to the Purpose/Industry Need section:</p> <p>The proposed new standard would address only aspects that are unique to the licensing requirements of Nuclear Power Plants and would not duplicate the standards that already exist to define the relationship between electric system entities and generators.</p> <p>Considering the above, the ability of the grid to withstand single contingencies that are already addressed in existing planning standards, and that are not unique to NPP's (e.g. loss of the most critical transmission line), should be omitted from this SAR. Only contingencies that are unique to NPP's should be included in the SAR.</p>	<p>existing NERC standards language. An assessment is an evaluation of reliability, achieved through study, analysis, and simulation. This is different than an assessment that might be an independent review. Analysis can be interpreted to be redundant with assessment, but assessment is a broader term and both are needed to fully describe the scope.</p> <p>Maintenance requirements are not explicit in NERC standards but are implied in the existing NERC transmission performance criteria. The performance standards imply that equipment is maintained to meet those criteria.</p>
Individual 7	D P Henderson — IESO	Yes and No	<p>We agree that is important that the Bulk Electric System supports the safe operation of any generator from both an Electric system reliability perspective and a plant reliability/safety perspective.</p> <p>However, specific requirements over and above what would be normally provided for generators should be addressed in the Interconnection Agreement with the Transmission owner which would also provide for cost recovery mechanism if a generator license requires a higher level of supply than the norm. Since the "norm" is already covered by several NERC standards that are in place, we feel there should not be "special" NERC standards for nuclear facilities. If changes are needed they could be added to existing standards rather than creating a separate standard according to fuel type</p>	<p>Nuclear plants are unique compared to other types of plants because they cannot meet their nuclear safety requirements without support of the grid. Existing NERC standards focus on ensuring generators of all types support bulk electric system reliability and ensuring the electric system operator operates within the stated electrical capabilities of the generator. However, NPPs present a unique set of electric system requirements not addressed in the existing NERC standards. It is essential that the planning, design, operation, and analysis of the electric system respect the NPP's license requirements for nuclear safety. Nuclear power plant safety systems are designed</p>



				based on a ‘defense-in-depth’ concept and any unnecessary challenge to a safety system by an electric system condition or event can weaken the posture of nuclear safety systems. The need for the proposed standard is further supported by an increase in the number of times NPPs have lost offsite power in 2003(even excluding the August 14, 2003 event) and 2004 compared to the last 10-year average. Although these events may not be directly related to a violation of NPP requirements, they do point to the need for improved communications agreements.
Individual 8	Mike Calimano — NYISO	No	The NYISO feels there should be generator standards and a well defined interface between the Nuclear Power Plant (NPP) and the power grid, but the nuclear standards should not extend past the interface point. Nuclear plants have been operating successfully and reliably for many years as a part of this Bulk Power System. There is not a public health and safety need relative to these existing NPP that is not already being addressed. Nuclear Generator Interconnection costs should not be pushed through to the transmission owners and operators.	See Drafting Team General Response.  The scope of the standard will address only additional requirements unique to nuclear plants. The scope will not replace or duplicate existing standards related to generators. The standard drafting team will need to compare the proposed standards to existing requirements to avoid conflicts or duplications.
Individual 9	Maurice Casadaban — Entergy Services, Inc	Yes		
Individual 10	Barry Green — Ontario Power Generation	Yes		

Question 2: Do you agree with the scope of the proposed standard?				
Group Name	Group Members	9Y 8N 1ABS	Question 2 Comment	Response
Bonneville Power Administration, Transmission	Richard Spence — BPAT Truman Conn — BPAT Mike Kreipe — BPAT Peggy Olds — BPAT Theodore Snodgrass — BPAT Berhanu Tesema — BPAT	No Answer		
ISO/RTO Council Standards Review Committee	Karl Tammar — NYISO Anita Lee — AESO Ed Riley — CAISO Sam Jones — ERCOT P. D. Henderson — IESO Peter Brandien — ISO-NE Bill Phillips — MISO Bruce Balmut — PJM Charles Yeung — SPP	No	See Comments in # 1 above  We disagree with a specific standard being tied to NPP licensing requirements. These should be recognized in the Interconnection Agreements between the Transmission Owner and the NPP which could be referred to in the additions to the generator standards. If the licence linkages were removed and the requirements were general to involve any generator then we feel the scope is reasonable as it reflects current practices in most cases.	See Drafting Team General Response.
Midwest Reliability Organization	Alan Boesch — Midwest Reliability Organization Terry Bilke — MISO Robert Coish — MHEB Dennis Florum — LES Ken Goldsmith — ALT Todd Gosnell — OPPD Wayne Guttormson — SPC Jim Maenner — WPS Darrick Moe — WAPA Tom Mielnik — MEC Joe Knight — MRO The 31 additional MRO Members	No	Item 2 appears to be a subset of item 1. Please add some clarity to item 2. If you mean an unnecessary plant shutdown because of a disturbance on the transmission system please state that. "Licensing requirements" is a vague term. There are a lot of licensing requirements for a Nuclear Power Plants. The scope should be narrowed to the criteria that are necessary to maintain an operable source of off-site power.	Items 1 and 2 are different. Item 1 addresses offsite power for safe shutdown power. The intent of Item 2 is to prevent unnecessary challenges to safety systems, whether or not the NPP is in a shutdown condition. The drafting team believes the scope is broader than just offsite power to shut down the plant. The scope includes grid operating and planning criteria to avoid challenging plant licensing requirements.
NPCC CP9, Reliability Standards Working Group	Greg Campoli — New York ISO Al Adamson — New York State Reliability Council Kathleen Goodman — ISO-New England Mike Schiavone — Niagara	No	See comments for #1 above.	See Drafting Team General Response.  The scope of the standard will address only additional requirements unique to nuclear plants. The scope will not replace or duplicate existing standards related to generators. The standard drafting team will need to compare

Consideration of Comments

Draft 2 – SAR on Nuclear Plant Offsite Power Reliability

	<p>Mohawk/National Grid US                  David Kiguel — Hydro One Networks (Ontario)                  Khaqan Khan — The IESO (Ontario)                  Roger Champagne – Transenergie HydroQuebec                  Ralph Rufrano — New York Power Authority                  David Little — Nova Scotia Power                  Robert Pellegrini — United Illuminating Co.                  Guy Zito – Northeast Power Coordinating Council</p>			<p>the proposed standards to existing requirements to avoid conflicts or duplications.</p>
<p>Public Service Commission of South Carolina</p>	<p>Philip Riley — PSCSC                  John E. Howard — PSCSC                  David A. Wright — PSCSC                  Randy Mitchell — PSCSC                  Elizabeth B. Fleming — PSCSC                  G. O’Neal Hamilton — PSCSC                  Mignon L. Clyburn — PSCSC                  C. Robert Moseley — PSCSC</p>	<p>Yes</p>		
<p>SERC Generation Subcommittee</p>	<p>Chris Schaeffere — Duke Power                  Terry Crawley — Southern Company, Generation                  Chris Georgeson — Progress Energy                  Ken Tiller — Progress Energy                  Jerry Nicely — TVA                  David Thompson — TVA                  John Wolfmeyer — SERC Staff</p>	<p>Yes</p>	<p>Wherever it appears in the SAR, the words "planning, assessment, operation, and analysis" should be changed to "analysis, planning, design, and operation" to reflect the order of their performance.</p>	<p>Use of assessment is consistent with existing NERC standards language. An assessment is an evaluation of reliability, achieved through study, analysis, and simulation. This is different than an assessment that might be an independent review. Analysis can be interpreted to be redundant with assessment, but assessment is a broader term and both are needed to fully describe the scope.</p> <p>The drafting team interprets planning to include design.</p>
<p>Southern Company</p>	<p>Raymond Vice — SCS                  Doug McLaughlin — SCS                  Keith Calhoun — SCS                  Jim Griffith — SCS                  Phil Winston — Georgia Power                  Roman Carter — Southern Gen.</p>	<p>Yes</p>	<p>The scope is comprehensive under current regulatory regimes. Care should be taken, however, to build flexibility into the standard as it is developed to allow it to be adjusted, within reason, as regulatory requirements change over time.</p> <p>The first sentence of the SAR scope should remove --the-- before the word --each-- in the second line.</p>	<p>The drafting team agrees with the need for flexibility.</p> <p>The drafting team has made this correction.</p>

	<p>Roger Green — Southern Gen.                  Robert Moyer — Southern Nuc.                  Terry Crawley — Southern Gen.                  Jim Viikinsalo — SCS</p>		<p>The second numbered item under the scope is not very clear. Unless the term --limiting challenges-- has some specific meaning in the nuclear arena, another way to explain what the scope is related to impacts on the NPP safety system from system disturbances or transients should be used. We are not sure what the intent was in the listing of this item. This comment also applies to the last bullet in the Scope that refers to --limit challenges to plant safety systems resulting from electric system disturbances or transients--.</p> <p>The second bullet point under ---The proposed standards would address the following elements--- is unclear whether this is imposing a requirement for real or near real time stability studies to achieve the requirement that the ---analysis should address local switchyard conditions and also the current state and reactive limitations of nearby generators that may influence voltage in the NPP switchyard.--- In most cases stability studies are performed for a set of conditions at the plant defined in documents such as a --Power Quality Guide--- and studies are done periodically based on these system conditions and contingency lists. These may not encompass all possible switchyard conditions or possible states and reactive limits of nearby generators that may involve in the NPP switchyard. In most cases the operations function does not have the capability to perform real or near real time stability cases.</p>	<p>The drafting team has clarified Item 2 in the scope description to address this concern.</p> <p>The standard would not require study of all possible configurations and conditions, but a selected set of bounding conditions. When actual conditions are outside the studied bounds, the NPP and electric system operator need to communicate. The proposed standard would not require real-time stability analysis – it would recognize when limiting conditions are no longer met and trigger communications.</p> <p>The drafting team revised the second bullet to not imply ‘real-time’ stability analysis.</p>
<p>TVA</p>	<p>Mitchell E Needham                  David Till                  Doug Bailey                  Jennifer Weber                  Kathy Davis                  Chuck Feagans                  James Regg</p>	<p>Yes</p>	<p>Instead of establishing "requirements to coordinate and consider...NPP licensing requirements", the standard should "map the appropriate functional entities who would evaluate NPP requirements in the planning, assessment, analysis, and operation of the electric system, should these premium services be contracted on behalf of a specific NPP."</p> <p>In reality, this standard addresses contractual issues between the NPP, who relies on its offsite power supply, and the applicable NERC functional entities who collectively provide it. Where studies are required for assessment or actual operational changes must be made, there should be contracts in place which cover the scope of the studies or operational changes along</p>	<p>See Drafting Team Response 1.</p>

Consideration of Comments

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			with any compensation required. This is not very different from the question of who is responsible for any 'required system upgrades' due to non-NPP load changes in a given area	
Individual	John P. Bonner — Entergy Nuclear Northeast	Yes		
Individual 2	Don McInnis - Florida Power & Light Co.	Yes		
Individual 3	Jerry Nicely – TVA Nuclear	Yes	<p>Clear boundaries of responsibility and policy should be defined. Design and operating requirements, such as the MW and MVAR demand of the NPP for all operational modes, min/max generation limits, min/max voltage requirements needed to support the NPP must also be coordinated with ESP and/or ESO. One the first bullet, I do not understand what the coordination with "assessments" means. In the second bullet in the example, the verification of grid voltage and stability should be for the NPP tripping off-line, for any trip not just "during an emergency". Bullet 3 needs expanded scope for maintenance activites, i.e. it is important that the NPP operator know when the transmission system cannot sustain a reasonable level of contingencies, such as during maintenance, so that the NPP can perform adequate reliability evaluations before removing critical equipment out of service.</p>	<p>Use of assessment is consistent with existing NERC standards language. An assessment is an evaluation of reliability, achieved through study, analysis and simulation. This is different than an assessment that might be an independent review. Analysis can be interpreted to be redundant with assessment, but assessment is a broader term and both are needed to fully describe the scope.</p> <p>Maintenance requirements are not explicit in NERC standards but are implied in the existing NERC transmission performance criteria. The performance standards imply that equipment is maintained to meet those criteria.</p> <p>Revised wording to second bullet.</p> <p>Coordination of maintenance activities will address both plant and grid maintenance.</p> <p>We agree with your comment on bullet 3. The SAR doesn't need to be revised to clarify your comment but will be addressed in the standard.</p>
Individual 4	Raj Rana — AEP	No	<p>Item 2 of the scope document should read as follows:                      Limiting challenges to NPP safety systems as a result of an electric system disturbance or transient. This will be accomplished by optimizing NPP offsite power stability and reliability. Therefore, the proposed standard will address the following elements:</p> <ul style="list-style-type: none"> <li>o Coordination of NPP design and licensing requirements with electric system planning and</li> </ul>	<p>This standard is not intended to address "optimizing" of the NPP offsite system, but to ensure NPP licensing requirements are addressed.</p> <p>Please see revised item 2 in the SAC scope description.</p> <p>See response to question #1. The SAR needs</p>

			<p>assessments. o Coordination of NPP design and . The issue is not just how the plant is operated, but how it is designed to mitigate potential problems.]</p> <p>Also, the scope outlined under the last six bullets, in the area of coordination and communication protocols between NPPs and /transmission service providers/grid operators, is too prescriptive,. The scope of this SAR should address coordination issues in a general way as to what kind of coordination steps should be included in the interconnection/interface agreement between the NPP and the transmission service provider/grid operator, rather than how it should be done. Each NPP site is unique, and the specifics of coordination requirements varies. Therefore, the details should be left to be developed by the transmission service provider/grid operator and the respective NPPs, as part of the interconnection/interface agreement. Similarly, communication protocols also should be left to be developed by transmission service providers and NPPs, as part of the interconnection/interface agreement</p> <p>Therefore, these two elements in the SAR are more appropriately classified as 'special needs" of an NPP, and would be better handled through a separate interface agreement with the transmission service provider, especially since these "needs" may vary from one NPP to another NPP, and thus they should be removed from this draft.</p>	<p>to clearly define the requirements that need to be met in order to frame the standard.</p>
<p>Individual 5</p>	<p>Kathleen Goodman — ISO New England</p>	<p>No</p>	<p>See Comment #1 above</p>	<p>Nuclear plants are unique compared to other types of plants because they cannot meet their nuclear safety requirements without support of the grid. Existing NERC standards focus on ensuring generators of all types support bulk electric system reliability and ensuring the electric system operator operates within the stated electrical capabilities of the generator. However, NPPs present a unique set of electric system requirements not addressed in the existing NERC standards. It is essential that the planning, design, operation, and analysis of the electric system respect the NPP's license requirements for nuclear safety.</p>

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				Nuclear power plant safety systems are designed based on a 'defense-in-depth' concept and any unnecessary challenge to a safety system by an electric system condition or event can weaken the posture of nuclear safety systems. The need for the proposed standard is further supported by an increase in the number of times NPPs have lost offsite power in 2003(even excluding the August 14, 2003 event) and 2004 compared to the last 10-year average. Although these events may not be directly related to a violation of NPP requirements, they do point to the need for improved communications agreements.
Individual 6	Dale Goodney – Constellation Energy	Yes		
Individual 7	D P Henderson — IESO	No	See Comments in # 1 above We disagree with a specific standard being tied to NPP licensing requirements. These should be recognized in the Interconnection Agreements between the Transmission Owner and the NPP which could be referred to in the additions to the generator standards. If the licence linkages were removed and the requirements were general to involve any generator then we feel the scope is reasonable as it reflects current practices in most cases.	See Drafting Team Response 1.
Individual 8	Mike Calimano — NYISO	No	The Scope seems to keep changing in a search for an acceptable rationale that will result in the creation of a NERC Standard that is not needed.	The drafting team is working to be responsive to industry comments on the SAR, as it was originally presented by the requestor.
Individual 9	Maurice Casadaban — Entergy Services, Inc	Yes	The drafting team must ensure that, as the scope is fleshed out, the standard does not expand beyond the actual NRC licensing requirements. The drafting team must ensure that, as the scope is fleshed out, the standard does not expand beyond the actual NRC licensing requirements.	The SAR team agrees with this comment.
Individual 10	Barry Green — Ontario Power Generation	No	The reference to have "equivalent" Canadian standards seems insufficient. While there are similar objectives to the Canadian standards, they could not be construed as equivalent. I would suggest the following wording: "The Canadian Nuclear Safety Commission requires Canadian Nuclear Power Plant Operators to similarly demonstrate an appropriately reliable supply to the	Agreed. This statement will be modified in the SAR. The drafting team will recommend the SAC appoint a Canadian nuclear expert to join the drafting team.

			plant. Coordination between the Plant Operator, the Transmission Owner and the Transmission Operator is required to provide such evidence."	
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<b>Question 3: Do you agree with the list of responsible entities to which this standard would apply?</b>				
<b>Group Name</b>	<b>Group Members</b>	<b>8Y 7N 2ABS</b>	<b>Question 3 Comment</b>	<b>Responses</b>
Bonneville Power Administration, Transmission	Richard Spence — BPAT Truman Conn — BPAT Mike Kreipe — BPAT Peggy Olds — BPAT Theodore Snodgrass — BPAT Berhanu Tesema — BPAT	No Answer		
ISO/RTO Council Standards Review Committee	Karl Tammar — NYISO Anita Lee — AESO Ed Riley — CAISO Sam Jones — ERCOT P. D. Henderson — IESO Peter Brandien — ISO-NE Bill Phillips — MISO Bruce Balmut — PJM Charles Yeung — SPP	No	If this Standard does move forward then the following comments apply:  The terminologies and/or functions of responsible entities outlined above are undergoing revisions re: Functional Model Working Group(FMWG). Any changes/revisions in above mentioned FM terminologies/functions, once approved, should be updated/included in this proposed standard.  Moreover, the implementation and application of this standard in terms of coordination with other Functional Model related entities should need to allow for a transition period until the FM related entities are fully certified.	NERC will address these process matters.
Midwest Reliability Organization	Alan Boesch — Midwest Reliability Organization Terry Bilke — MISO Robert Coish — MHEB Dennis Florom — LES Ken Goldsmith — ALT Todd Gosnell — OPPD Wayne Guttormson — SPC Jim Maenner — WPS Darrick Moe — WAPA Tom Mielnik — MEC Joe Knight — MRO The 31 additional MRO Members	No	Remove the Generator Owner, Distribution Provider, Load-Serving Entity, Transmission Service Provider, Balancing Authority and Market Operator. It is the responsibility of the Reliability Authority or the Transmission Operator (depending on regional practices) to determine and notify others if a loss of generation, load or transmission system components will effect the NPP off-site power supply. The Transmission Operator should be monitoring and taking action to maintain the voltage of the off-site power supply. The Transmission Planner and Resource Planners will develop and review the plans to determine the capability of the electric system to support meet the criteria established by the NPP for offsite power. The Planning Authority will coordinate all of the Transmission Planners' plans. The Standard should establish what needs to be accomplished and who has the	Some of the requirements will apply to nuclear generator operators. "Nuclear" will be spelled out in the standard under the Applicability section.  Distribution provider, load-serving entity, and transmission service provider may have responsibilities if the NPP is connected on a lower voltage subtransmission or distribution system. The drafting team prefers at this time to keep the list possible entities broad at this stage, with the option to drop some of the entities later. Adding new entities would require a new SAR.

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			responsibility.	
NPCC CP9, Reliability Standards Working Group	Greg Campoli — New York ISO Al Adamson — New York State Reliability Council Kathleen Goodman — ISO-New England Mike Schiavone — Niagara Mohawk/National Grid US David Kiguel — Hydro One Networks (Ontario) Khaqan Khan — The IESO (Ontario) Roger Champagne – Transenergie HydroQuebec Ralph Rufrano — New York Power Authority David Little — Nova Scotia Power Robert Pellegrini — United Illuminating Co. Guy Zito – Northeast Power Coordinating Council	No	NPCC Participating Members don't feel there is a need for this Standard, however if this Standard does move forward, then listed responsible entities seem appropriate. The terminologies and/or functions of responsible entities outlined above are undergoing revisions re: Functional Model Working Group (FMWG). Any changes/revisions in above mentioned FM terminologies/functions, once approved, should be updated/included in this proposed standard. Moreover, the implementation and application of this standard in terms of coordination with other Functional Model related entities should need to allow for a transition period until the FM related entities are fully certified.	NERC will address these process issues.
Public Service Commission of South Carolina	Philip Riley — PSCSC John E. Howard — PSCSC David A. Wright — PSCSC Randy Mitchell — PSCSC Elizabeth B. Fleming — PSCSC G. O'Neal Hamilton — PSCSC Mignon L. Clyburn — PSCSC C. Robert Moseley — PSCSC	Yes		
SERC Generation Subcommittee	Chris Schaeffere — Duke Power Terry Crawley — Southern Company, Generation Chris Georgeson — Progress Energy Ken Tiller — Progress Energy Jerry Nicely — TVA David Thompson — TVA John Wolfmeyer — SERC Staff	Yes		
Southern Company	Raymond Vice — SCS Doug McLaughlin — SCS Keith Calhoun — SCS Jim Griffith — SCS Phil Winston — Georgia Power Roman Carter — Southern Gen. Roger Green — Southern Gen. Robert Moye — Southern Nuc. Terry Crawley — Southern Gen. Jim Viikinsalo — SCS	Yes	Not all entities will be involved in nuclear plant transmission support in all regions. Practices vary widely today and will probably remain so in the foreseeable future. Flexibility will be required in the standard to allow it to effectively fit into the specific practices of each region, particularly as regulatory requirements evolve over time.	Agree.
TVA	Mitchell E Needham David Till Doug Bailey Jennifer Weber	Yes	The descriptions appropriately avoid the issue of compensation, which is a business or contractual issue, not a bulk system reliability issue. TVA believes this issue should be	Agree this not a NERC compensation issue but is a regulatory policy issue.

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	Kathy Davis Chuck Feagans James Regg		carefully coordinated with the North American Energy Standards Board, Wholesale Electric Quadrant.	
Individual	John P. Bonner — Entergy Nuclear Northeast	Yes		
Individual 2	Don McInnis - Florida Power & Light Co.	Yes		
Individual 3	Jerry Nicely – TVA Nuclear	Yes		
Individual 4	Raj Rana — AEP	No Answer		
Individual 5	Kathleen Goodman — ISO New England	No	The terminologies and/or functions of responsible entities outlined above are undergoing revisions re: Functional Model Working Group (FMWG). Any changes / revisions in the above mentioned FM terminologies/functions, once approved, should be updated/included in this proposed standard.  The implementation and application of this standard in terms of coordination with other Functional Model related entities should need to allow for a transition period until the FM related entities are fully certified.	NERC will address the process issue
Individual 6	Dale Goodney – Constellation Energy	Yes		
Individual 7	D P Henderson — IESO	No	If this Standard does move forward then the following comments apply: The terminologies and/or functions of responsible entities outlined above are undergoing revisions re: Functional Model Working Group(FMWG). Any changes/revisions in above mentioned FM terminologies/functions, once approved, should be updated/included in this proposed standard.  Moreover, the implementation and application of this standard in terms of coordination with other Functional Model related entities should need to allow for a transition period until the FM related entities are fully certified.	NERC will address the process issue.
Individual 8	Mike Calimano — NYISO	No	NYISO does not feel there is a need for this standard	See Drafting Team General Response.
Individual 9	Maurice Casadaban — Entergy Services, Inc	No	Regarding the last bullet, only Interconnected Operations Services that directly apply to NRC Licensing requirements should be included in the standard. All other IOS issues should apply in other standards.	Agree.
Individual 10	Barry Green — Ontario Power Generation		Yes	

<b>Question 4: Do you have any additional comments regarding the SAR that you believe should be addressed?</b>				
<b>Group Name</b>	<b>Group Members</b>		<b>Question 4 Comment</b>	<b>Response</b>
Bonneville Power Administration, Transmission	Richard Spence — BPAT Truman Conn — BPAT Mike Kreipe — BPAT Peggy Olds — BPAT Theodore Snodgrass — BPAT Berhanu Tesema — BPAT	Yes	NO Transmission Grid in the world can promise and deliver 100% availability. For example, although the Benton and Ashe Station Service sources are apart geographically and separated from the 500 GRID by a distance factor, there are combinations of events, not readily planned for, that can and will impact the ability of the grid to supply SS shut down energy to CGS. Further, the restrictions on the voltage regulation at ASHE 230 (and to some extent Benton 115) are way outside our Reliability Criteria for both Planning and Operations. Despite this, BPA has maintained conditions as requested, within our capability to provide them. The critical nature of this one entity on the system, indicates that Columbia Gen Station needs to provide more assurances internally that they have the ability to ride through disturbances on the system that are a matter of time (not what if). Therefore, we would reject any references within that place further responsibilities on GRID management that are not already there.	Agreed – 100% availability by the grid is not required.  Nuclear license requirements for reliable offsite power are not new – they were addressed in the initial granting of the NPP license at a time when most electric systems were vertically integrated. Regulatory initiatives leading to the unbundling of NPP facilities from the transmission owner/operator have led to a need to standardize the minimum set of issues that must be coordinated and communicated between the NPP and the electric system owner/operator to ensure grid reliability and public health and safety. It is incumbent upon the electric system operator to be aware of the equipment limitations of a NPP connected to its system and operate within those constraints. It is the obligation of the NPP to communicate those requirements and coordinate with the electric system operator. There are no existing NERC standards to enforce that communication and coordination.
ISO/RTO Council Standards Review Committee	Karl Tammar — NYISO Anita Lee — AESO Ed Riley — CAISO Sam Jones — ERCOT P. D. Henderson — IESO Peter Brandien — ISO-NE Bill Phillips — MISO Bruce Balmut — PJM Charles Yeung — SPP	Yes	See Comments in Q 1 and 2 above.	See Drafting Team General Response.
Midwest Reliability Organization	Alan Boesch — Midwest Reliability Organization Terry Bilke — MISO Robert Coish — MHEB	Yes	Instead of the Purpose/Industry Need being focused on Nuclear requirements it should focus on the responsibilities, controls and communication that is necessary for	Agreed – this is a good summary of the purpose of the proposed standard. The drafting team agrees with the scope you have described.

	<p>Dennis Florum — LES                  Ken Goldsmith — ALT                  Todd Gosnell — OPPD                  Wayne Guttormson — SPC                  Jim Maenner — WPS                  Darrick Moe — WAPA                  Tom Mielnik — MEC                  Joe Knight — MRO                  The 31 additional MRO Members</p>	<p>operation, maintenance and modification of the transmission system as it impacts the operation of a Nuclear Power Plant. It is the Nuclear Power Plant's responsibility to determine the acceptable criteria for off-site power operability determination and communicating the criteria to the entities operating the transmission system. It is the responsibility of the Transmission Operator to take corrective actions and inform the Nuclear Power Plant when the transmission system cannot meet the criteria. NRC SOER 99-1 provides some good recommendations to consider as a basis for this Standard.</p> <ol style="list-style-type: none"> <li>1) Planning for plant safety, system maintenance and testing activities that could effect electrical supply diversity is coordinated with grid maintenance and testing activities to prevent inadvertent reductions in nuclear plant defense-in-depth,</li> <li>2) Plant operators are provided early warning from the grid operator of potential or developing grid instabilities.</li> <li>3) Grid operators are apprised of the unique plant operating restrictions and requirements associated with operation of nuclear power plants with respect to nuclear safety.</li> <li>4) The nuclear unit is clearly recognized as an important load (customer) from a nuclear safety perspective. This relationship should be reflected in grid operator load-shedding schemes.</li> <li>5) The responsibility (ownership) for grid equipment maintenance is clearly defined between the plant and the grid operator.</li> </ol> <p>The related standards reference every standard that mentions requirements for generator operators. The attached list of standards should be eliminated. The only correct related standard is EOP-005-0. Other related standards that are not</p>	<p>In the standard development, the drafting team will review the standards referenced to confirm whether there are any impacts of the proposed new standard. The drafting team did not intend that all listed standards would be changed, just that those standards need to be reviewed to make sure no conflicts and no redundancies are created. The drafting team will add the standards listed to the SAR under related standards.</p>
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			mentioned and should be are TOP-004-0, TOP-006-0, and TOP-008-0. This SAR is too detailed and contains some "who and how to" statements. The Standard should establish what needs to be accomplished and who is responsible.	
NPCC CP9, Reliability Standards Working Group	Greg Campoli — New York ISO Al Adamson — New York State Reliability Council Kathleen Goodman — ISO-New England Mike Schiavone — Niagara Mohawk/National Grid US David Kiguel — Hydro One Networks (Ontario) Khaqan Khan — The IESO (Ontario) Roger Champagne – Transenergie HydroQuebec Ralph Rufrano — New York Power Authority David Little — Nova Scotia Power Robert Pellegrini — United Illuminating Co. Guy Zito – Northeast Power Coordinating Council	Yes	See #1 above	See Drafting Team General Response.
Public Service Commission of South Carolina	Philip Riley — PSCSC John E. Howard — PSCSC David A. Wright — PSCSC Randy Mitchell — PSCSC Elizabeth B. Fleming — PSCSC G. O’Neal Hamilton — PSCSC Mignon L. Clyburn — PSCSC C. Robert Moseley — PSCSC	Yes	This comment may be more applicable to the Standard than to the SAR. The PSCSC would be wary of anything that adds additional burden to the nuclear plant operators. While we know any new requirements would be added to Tech Specs, with which the operators must be intimately familiar, we are getting to the point where we are placing a lot of burden for nuclear safety in human hands. We are not sure it is appropriate to try to make nuclear plant operators into transmission system operators as well as expect them to continue to safely run their respective plants.  We are also curious as to the interface between this SAR, and the subsequent Standard, and the NRC's "Draft Generic Letter, "Grid Reliability and the Impact on Plant Risk and the Operability of Offsite Power", which was published in the Federal Register April 13, 2004 (60 FR 19125). The	The proposed standard would not add any requirements to the NPPs other than to coordinate licensing requirements with the grid operator/owner. The SAR does not propose to modify technical specifications. The proposed scope does not require NPP operators to have grid operator tools or capabilities. The proposed standard should help the NPP operator by requiring coordination between the NPP and grid so the grid can better support NPP licensing requirements.  The SAR was initiated to address industry concerns related to coordination between NPPs and grid operators/owners. The NRC Draft Generic Letter, in part, appears to have similar objectives.

			relationship is not as simple as "short-term / long-term" or "planning" and "operation".	
SERC Generation Subcommittee	Chris Schaeffere — Duke Power Terry Crawley — Southern Company, Generation Chris Georgeson — Progress Energy Ken Tiller — Progress Energy Jerry Nicely — TVA David Thompson — TVA John Wolfmeyer — SERC Staff	No		
Southern Company	Raymond Vice — SCS Doug McLaughlin — SCS Keith Calhoun — SCS Jim Griffith — SCS Phil Winston — Georgia Power Roman Carter — Southern Gen. Roger Green — Southern Gen. Robert Moye — Southern Nuc. Terry Crawley — Southern Gen. Jim Viikinsalo — SCS	Yes	Clearly there is a need to coordinate nuclear power plant and transmission system reliability requirements. This need is widely recognized in the industry with most utilities having procedures in place which have evolved over many years of experience. However, coordination of requirements is NOT the same as prescription of requirements. The drafting team must focus on areas of coordination to be addressed and not upon prescribing specific rules or procedures. While the safety of NPPs is a critical consideration in the operation of the bulk power system, the transmission provider is ultimately responsible for the overall reliable operation of the transmission system. Transmission Providers can and should coordinate their activities to meet the offsite power requirements of NPPs, but Transmission Providers must also have the flexibility to utilize and evolve the practices that best provide overall service and reliability to the transmission system as a whole.	See Drafting Team General Response..  The standard does not dictate how the grid is operated.  If the grid operator cannot meet the agreed upon NPP requirements, it must notify the NPP operator.  Drafting team agrees the grid operator has to handle a complex set of constraints for grid reliability, including NPP license requirements. This requires coordination between grid operator and NPP operator to meet the reliability and safety requirements of each.
TVA	Mitchell E Needham David Till Doug Bailey Jennifer Weber Kathy Davis Chuck Feagans James Regg	Yes	We are concerned that establishing NPP-support accountabilities beyond those applied uniformly across the bulk system may result in inappropriate cost shifting if the financial responsibility for NPP premium services are not clearly assigned to the interested NPP, hence the comments regarding contractual issues.	Agreed that the specific obligations need to be defined in agreements. The drafting team does not intend to address cost recovery in the standard – that is a regulatory policy issue.  NPPs have unique requirements that are not the same as interface requirements of other types of generators. These requirements

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			Responsibilities should therefore apply to the various functional entities only to the extent that the NPPs have contracted for these services and comply with the enabling agreements that establish the terms and conditions of the premium services to be provided.	have always existed. The standard will ensure the necessary coordination takes place and is documented in agreements.
Individual	John P. Bonner — Entergy Nuclear Northeast	Yes	The SAR should clarify the difference between stability studies contingencies to be considered and the contingency to be considered as part of a on-line AC contingency program. The on-line contingency should be limited to the trip of the unit with transfer of normal and/or accident loads to the off-site source. The contingencies (loss of the largest unit, most critical line, etc.) need to be addressed in the planning and operational stability studies but not part of the on-line system.	The proposed standard is not intended to prescribe which study analysis methods are required – that would be determined as part of the specific agreement between the grid operator and the NPP.  Clarified bullet 2 of the scope that online stability analysis is not specified by the standard.
Individual 2	Don McInnis - Florida Power & Light Co.	No		
Individual 3	Jerry Nicely – TVA Nuclear	Yes	The NRC has stated that communication protocols is the most important item that needs improving between the TO and the NPP. The standard must adequately address those concerns.	Agreed.
Individual 4	Raj Rana — AEP	Yes	Based on many comments made by many organizations at the NEI/NERC/NRC/INPO Grid Reliability Conference there is a lot of confusion about acceptable communication between RTOs or transmission service providers/operators and NPPs regarding grid condition. The concern is market information to a generator. NPPs, however, have a need to know certain grid information to protect the health and safety of the public. NPPs do not engage in market information as they are base load plants.  A concise statement from appropriate authority about an acceptable format and content along with confidentiality agreement would clarify this for the industry and provide	FERC standards of conduct allow communications between grid operators and generator operators for crucial operating issues.  The intent is to make the standard consistent with applicable regulations.



**Consideration of Comments**

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			some standardization in sharing the condition of the grid with NPPs	
Individual 5	Kathleen Goodman — ISO Newengland	Yes	See #1 above	
Individual 6	Dale Goodney – Constellation Energy	No		
Individual 7	D P Henderson — IESO	Yes	See Questions 1 and 2 above	
Individual 8	Mike Calimano — NYISO	Yes	The NPP should be treated with the same respect as all the other generators in the system.	NPPs have unique licensing requirements that other plants do not have. These requirements must be coordinated with grid operations and planning.
Individual 9	Maurice Casadaban — Entergy Services, Inc	No		
Individual 10	Barry Green — Ontario Power Generation	No		

## Standard Authorization Request Form

Title of Proposed Standard: <b>Coordination of Nuclear Power Plant Licensing Requirements with Bulk Electric System Planning, Analysis, and Operations</b>	
Request Date: Draft 1	10/20/04
Revision Date: Draft 2	4/1/05
Revision Date: Draft 3	5/23/05 (FINAL)

SAR Requestor Information		SAR Type (Put an 'x' in front of one of these selections)	
Name	Nuclear Energy Institute Grid Reliability Task Force	<input checked="" type="checkbox"/>	New Standard
Contact	David Gladey/Vince Gilbert	<input type="checkbox"/>	Revision to existing Standard
Telephone	610-774-7774/202-739-8138	<input type="checkbox"/>	Withdrawal of existing Standard
Fax	610-774-7782		
E-mail	<a href="mailto:dlgladey@pplweb.com">dlgladey@pplweb.com</a> or <a href="mailto:jvg@nei.org">jvg@nei.org</a>	<input type="checkbox"/>	Urgent Action

## **Purpose/Industry Need**

The purpose of the standard is to ensure that coordination between the NPP licensee and the entities responsible for the planning, assessment, operation, and analysis of the electric system is consistently achieved in practice and is documented. The standard would apply only to those entities that interface with or provide services to a nuclear power plant (NPP).

Title 10 of the Code of Federal Regulations, Part 50 (10CFR50), Appendix A – General Design Criterion (GDC) 17 requires a NPP’s offsite power system to “Provide sufficient capacity and capability to assure that:

- 1.) Specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded as a result of anticipated operational occurrences and
- 2.) The core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents.”

The offsite power system is the preferred (primary) power supply for a NPP’s electrical loads used to operate equipment for the safe shutdown of the plant during both normal and accident conditions. The Nuclear Regulatory Commission (NRC) Standard Review Plan (NUREG 0800) is used by the NRC to verify that:

- “Two separate paths from the transmission network to the standby power distribution system are provided;
- Adequate physical and electrical separation exists; and
- The system has the capacity, capability, and reliability to supply power to all safety loads and other required equipment.”

The NUREG has specific criteria for evaluating the “capacity, capability, and reliability” of the electric system:

“The results of grid stability analysis must show that loss of the largest single supply to the grid does not result in the complete loss of preferred power. The analysis should consider the loss, through a single event, of the largest capacity being supplied to the grid, removal of the largest load from the grid, or loss of the most critical transmission line. This could be the total output of the station, the largest station on the grid, or possibly several large stations if these use a common transmission tower, transformer, or breaker in a remote switchyard or substation.”

The Canadian Nuclear Safety Commission requires Canadian Nuclear Power Plant Operators to similarly demonstrate an appropriately reliable supply to the plant. Coordination between the NPP, the Transmission Owner, and the Transmission Operator is required to provide such evidence.

Coordination is necessary to ensure that the entities responsible for the planning, assessment, operation, and analysis of the electric system are aware of the specific licensing requirements of each NPP and that they incorporate these NPP requirements into the planning, assessment, operation, and analysis of the electric system. This coordination requires the NPP licensee to convey its requirements to the responsible electric system entities. The coordination also requires the entities responsible for the planning, assessment, operation, and analysis of the electric system to demonstrate to the NPP licensee that the specific requirements of the NPP are being addressed by the electric system.

This coordination of NPP licensing requirements with the electric system is not a new responsibility. Historically, in vertically integrated utilities owning a NPP facility, this coordination took place within a single organization. With the unbundling of ownership of the NPP facilities and separation from the entities owning and operating the electric system, that coordination is more challenging. Typically, the need for this coordination is addressed in interconnection, interface, or other agreements.

### ***Reliability Functions***

The proposed standard will apply to the following functions, <u>if they interface with or provide applicable services to Nuclear Power Plants.</u>		
<input checked="" type="checkbox"/>	Reliability Authority	Ensures the reliability of the bulk transmission system within its Reliability Authority area. This is the highest reliability authority.
<input checked="" type="checkbox"/>	Balancing Authority	Integrates resource plans ahead of time, and maintains load-interchange-resource balance within its metered boundary and supports system frequency in real time.
<input type="checkbox"/>	Interchange Authority	Authorizes valid and balanced Interchange Schedules.
<input checked="" type="checkbox"/>	Planning Authority	Plans the bulk electric system.
<input checked="" type="checkbox"/>	Resource Planner	Develops a long-term (>1year) plan for the resource adequacy of specific loads within a Planning Authority area.
<input checked="" type="checkbox"/>	Transmission Planner	Develops a long-term (>1 year) plan for the reliability of transmission systems within its portion of the Planning Authority area.
<input checked="" type="checkbox"/>	Transmission Service Provider	Provides transmission services to qualified market participants under applicable transmission service agreements.
<input checked="" type="checkbox"/>	Transmission Owner	Owns transmission facilities.
<input checked="" type="checkbox"/>	Transmission Operator	Operates and maintains the transmission facilities, and executes switching orders.
<input checked="" type="checkbox"/>	Distribution Provider	Provides and operates the “wires” between the transmission system and the customer.
<input checked="" type="checkbox"/>	Generator Owner	Owns and maintains generation unit(s).
<input checked="" type="checkbox"/>	Generator Operator	Operates generation unit(s) and performs the functions of supplying energy and Interconnected Operations Services.
<input type="checkbox"/>	Purchasing-Selling Entity	The function of purchasing or selling energy, capacity and all necessary Interconnected Operations Services as required.
<input checked="" type="checkbox"/>	Market Operator	Integrates energy, capacity, balancing, and transmission resources to achieve an economic, reliability-constrained dispatch.
<input checked="" type="checkbox"/>	Load-Serving Entity	Secures energy and transmission (and related generation services) to serve the end user.

### ***Reliability and Market Interface Principles***

<b>Applicable Reliability Principles</b> <i>(Check boxes for all that apply by double clicking the grey boxes.)</i>	
<input checked="" type="checkbox"/>	1. Interconnected bulk electric systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards.
<input checked="" type="checkbox"/>	2. The frequency and voltage of interconnected bulk electric systems shall be controlled within defined limits through the balancing of real and reactive power supply and demand.
<input checked="" type="checkbox"/>	3. Information necessary for the planning and operation of interconnected bulk electric systems shall be made available to those entities responsible for planning and operating the systems reliably.
<input checked="" type="checkbox"/>	4. Plans for emergency operation and system restoration of interconnected bulk electric systems shall be developed, coordinated, maintained and implemented.
<input checked="" type="checkbox"/>	5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk electric systems.
<input checked="" type="checkbox"/>	6. Personnel responsible for planning and operating interconnected bulk electric systems shall be trained, qualified and have the responsibility and authority to implement actions.
<input checked="" type="checkbox"/>	7. The security of the interconnected bulk electric systems shall be assessed, monitored, and maintained on a wide area basis.
<b>Does the proposed Standard comply with all of the following Market Interface Principles?</b> <i>(Select 'yes' or 'no' from the drop-down box by double clicking the grey area.)</i>	
1.	The planning and operation of bulk electric systems shall recognize that reliability is an essential requirement of a robust North American economy. Yes
2.	An Organization Standard shall not give any market participant an unfair competitive advantage. Yes
3.	An Organization Standard shall neither mandate nor prohibit any specific market structure. Yes
4.	An Organization Standard shall not preclude market solutions to achieving compliance with that Standard. Yes
5.	An Organization Standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards. Yes

## Scope

The proposed standard will include the requirements to coordinate and consider, in the planning, assessment, analysis, and operation of the electric system, each specific NPP's licensing requirements for:

1. Offsite power to enable safe shutdown of the plant during an electric system or plant event; and
2. Preventing unnecessary challenges to nuclear safety as a result of an electric system disturbance or transient as described in the NPP's licensing requirements.

The proposed standard would address the following elements:

- Coordination of electric system planning, assessments, and operations with NPP licensing requirements.
- Coordination of electric system constraints, including stability requirements, with NPP licensing requirements. Electric system analysis must, for example, verify that grid voltage will be adequate and grid stability will be satisfactory if the NPP trips off line. The analysis should address local switchyard conditions and reactive limitations of nearby generators that may influence voltage in the NPP switchyard.
- Coordination of electric system and NPP maintenance activities with respect to grid operations and NPP licensing requirements.
- Coordination of electric system reliability and contingency analysis, including identification of scenarios to be considered, with NPP licensing requirements.
- Consideration of NPP or electric system design changes that may impact the ability to supply acceptable offsite power to the NPP.
- Communication and coordination of actions to mitigate off-normal and emergency conditions in the electric system that may affect the NPP. For, example, this includes conditions when the NPP or other generators have their automatic voltage regulator or power system stabilizer not in automatic control mode, and ensuring the acceptability of the NPP offsite power under such conditions. This also includes informing the NPP licensee when grid conditions are degraded such that the voltage and stability requirements cannot be met.
- Communications protocols between NPP licensee and entities responsible for operation and planning of the electric system to address all items above.

The scope of the proposed standard will address only additional requirements unique to nuclear plants. The scope will not replace or duplicate existing standards related to generators. The standard drafting team will need to compare the proposed standards to existing requirements to avoid conflicts or duplications.

## *Related Standards*

<b>Standard No.</b>	<b>Explanation</b>
Attachment A	Attachment A lists 73 requirements in the existing reliability standards related generically to generators. The proposed new standard would address only aspects that are unique to the licensing requirements of Nuclear Power Plants and would not duplicate the standards that already exist to define the relationship between electric

	system entities and generators.
TPL-001 to TPL-004	Tables in TPL-001 to TPL-004 address transmission performance requirements. Proposed new standard will be compared to these standards to ensure there is no conflict or duplication with the TPL standards.
TOP-004, TOP-006, TOP-008.	These standards refer to operating within IROL and actions and notifications when there is an IROL violation.
EOP-005-0	R9.4. The existing standard makes mention of priority during system restoration “The affected Transmission Operators shall give high priority to restoration of off-site power to nuclear stations.”

***Related SARs***

<b>SAR ID</b>	<b>Explanation</b>
Various	The Phase III-IV Planning Standards are currently in development. These standards include requirements for coordination of generator protection and validation of generator real and reactive power capability, voltage controls, etc. The proposed nuclear standard must avoid duplicating requirements emerging in those standards.

***Regional Differences***

<b>Region</b>	<b>Explanation</b>
ECAR	
ERCOT	
FRCC	
MAAC	
MAIN	
MAPP	
NPCC	
SERC	
SPP	
WECC	

Standard Number	Requirement Number	Existing Reliability Standard Requirements with "Generator" in the Text of the Requirement
BAL-005-0	R 1.1.	Each Generator Operator with generation facilities operating in an Interconnection shall ensure that those generation facilities are included within the metered boundaries of a Balancing Authority Area.
CIP-001-0	R 1.	Each Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, and Load Serving Entity shall have procedures for the recognition of and for making their operating personnel aware of sabotage events on its facilities and multi site sabotage affecting larger portions of the Interconnection.
CIP-001-0	R 2.	Each Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, and Load Serving Entity shall have procedures for the communication of information concerning sabotage events to appropriate parties in the Interconnection.
CIP-001-0	R 3.	Each Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, and Load Serving Entity shall provide its operating personnel with sabotage response guidelines, including personnel to contact, for reporting disturbances due to sabotage events.
CIP-001-0	R 4.	Each Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, and Load Serving Entity shall establish communications contacts, as applicable, with local Federal Bureau of Investigation (FBI) or Royal Canadian Mounted Police (RCMP) officials and develop reporting procedures as appropriate to their circumstances.
COM-002-0	R 1.	Each Transmission Operator, Balancing Authority, and Generator Operator shall have communications (voice and data links) with appropriate Reliability Coordinators, Balancing Authorities, and Transmission Operators. Such communications shall be staffed and available for addressing a real-time emergency condition.
EOP-001-0	R 7.3.	The Transmission Operator and Balancing Authority shall coordinate transmission and generator maintenance schedules to maximize capacity or conserve the fuel in short supply. (This includes water for hydro generators.)
EOP-004-0	R 2.	A Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator or Load Serving Entity shall promptly analyze Bulk Electric System disturbances on its system or facilities.
EOP-004-0	R 3.	A Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator or Load Serving Entity experiencing a reportable incident shall provide a preliminary written report to its Regional Reliability Organization and NERC.
EOP-004-0	R 3.1.	The affected Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator or Load Serving Entity shall submit within 24 hours of the disturbance or unusual occurrence either a copy of the report submitted to DOE, or, if no DOE report is required, a copy of the NERC Interconnection Reliability Operating Limit and Preliminary Disturbance Report form. Events that are not identified until some time after they occur shall be reported within 24 hours of being recognized.
EOP-004-0	R 3.3.	Under certain adverse conditions, e.g., severe weather, it may not be possible to assess the damage caused by a disturbance and issue a written Interconnection Reliability Operating Limit and Preliminary Disturbance Report within 24 hours. In such cases, the affected Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, or Load Serving Entity shall promptly notify its Regional Reliability Organization(s) and NERC, and verbally provide as much information as is available at that time. The affected Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, or Load Serving Entity shall then provide timely, periodic verbal updates until adequate information is available to issue a written Preliminary Disturbance Report.



Standard Number	Requirement Number	Existing Reliability Standard Requirements with "Generator" in the Text of the Requirement
EOP-004-0	R 3.4.	If, in the judgment of the Regional Reliability Organization, after consultation with the Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, or Load Serving Entity in which a disturbance occurred, a final report is required, the affected Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, or Load Serving Entity shall prepare this report within 60 days. As a minimum, the final report shall have a discussion of the events and its cause, the conclusions reached, and recommendations to prevent recurrence of this type of event. The report shall be subject to Regional Reliability Organization approval.
EOP-004-0	R 4.	When a Bulk Electric System disturbance occurs, the Regional Reliability Organization shall make its representatives on the NERC Operating Committee and Disturbance Analysis Working Group available to the affected Reliability Coordinator, Balancing Authority, Transmission Operator, Generator Operator, or Load Serving Entity immediately affected by the disturbance for the purpose of providing any needed assistance in the investigation and to assist in the preparation of a final report.
EOP-009-0	R 1.	The Generator Operator of each blackstart generating unit shall test the startup and operation of each system blackstart generating unit identified in the BCP as required in the Regional BCP (Reliability Standard EOP-007-0_R1). Testing records shall include the dates of the tests, the duration of the tests, and an indication of whether the tests met Regional BCP requirements.
EOP-009-0	R 2.	The Generator Owner or Generator Operator shall provide documentation of the test results of the startup and operation of each blackstart generating unit to the Regional Reliability Organizations and upon request to NERC.
FAC-002-0	R 1.	The Generator Owner, Transmission Owner, Distribution Provider, and Load-Serving Entity seeking to integrate generation facilities, transmission facilities, and electricity end-user facilities shall each coordinate and cooperate on its assessments with its Transmission Planner and Planning Authority. The assessment shall include:
FAC-002-0	R 2.	The Planning Authority, Transmission Planner, Generator Owner, Transmission Owner, Load-Serving Entity, and Distribution Provider shall each retain its documentation (of its evaluation of the reliability impact of the new facilities and their connections on the interconnected transmission systems) for three years and shall provide the documentation to the Regional Reliability Organization(s) Regional Reliability Organization(s) and NERC on request (within 30 calendar days).
FAC-004-0	R 1.	The Transmission Owner and Generator Owner shall each document the methodology(ies) used to determine its electrical equipment and Facility Rating. Further, the methodology(ies) shall comply with applicable Regional Reliability Organization requirements. The documentation shall address and include
FAC-004-0	R 2.	The Transmission Owner and Generator Owner shall provide documentation of the methodology(ies) used to determine its transmission equipment and Facility Ratings to the Regional Reliability Organization(s) and NERC on request (30 calendar days).
FAC-005-0	R 1.	The transmission Owner, and Generator Owner shall each have on file or be able to readily provide, a document or database identifying the Normal and Emergency Ratings of all of its transmission facilities (e.g., lines, transformers, terminal equipment, and storage devices) that are part of the interconnected transmission systems. Seasonal variations in Ratings shall be included as appropriate.
FAC-005-0	R 2.	The Transmission Owner and Generator Owner shall provide the Normal and Emergency Facility Ratings of all its transmission facilities to the Regional Reliability Organization(s) and NERC on request (30 calendar days).
INT-004-0	R 2.	A Generator Operator or Load Serving Entity may request the Host Balancing Authority to modify an Interchange Transaction due to loss of generation or load.

Standard Number	Requirement Number	Existing Reliability Standard Requirements with "Generator" in the Text of the Requirement
IRO-001-0	R 3.	The Reliability Coordinator shall have clear decision-making authority to act and to direct actions to be taken by Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities within its Reliability Coordinator Area to preserve the integrity and reliability of the Bulk Electric System. These actions shall be taken without delay, but no longer than 30 minutes.
IRO-001-0	R 8.	Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities shall comply with Reliability Coordinator directives unless such actions would violate safety, equipment, or regulatory or statutory requirements. Under these circumstances, the Transmission Operator, Balancing Authority, Generator Operator, Transmission Service Provider, Load-Serving Entity, or Purchasing-Selling Entity shall immediately inform the Reliability Coordinator of the inability to perform the directive so that the Reliability Coordinator may implement alternate remedial actions.
IRO-004-0	R 4.	Each Transmission Operator, Balancing Authority, Transmission Owner, Generator Owner, Generator Operator, and Load-Serving Entity in the Reliability Coordinator Area shall provide information required for system studies, such as critical facility status, Load, generation, operating reserve projections, and known Interchange Transactions. This information shall be available by 1200 Central Standard Time for the Eastern Interconnection and 1200 Pacific Standard Time for the Western Interconnection.
IRO-005-0	R 9.	The Reliability Coordinator shall coordinate with other Reliability Coordinators and Transmission Operators, Balancing Authorities, and Generator Operators as needed to develop and implement action plans to mitigate potential or actual SOL, IROL, CPS, or DCS violations. The Reliability Coordinator shall coordinate pending generation and transmission maintenance outages with other Reliability Coordinators and Transmission Operators, Balancing Authorities, and Generator Operators as needed in both the real time and next-day reliability analysis timeframes.
IRO-005-0	R13.	Each Reliability Coordinator shall ensure that all Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities operate to prevent the likelihood that a disturbance, action, or non-action in its Reliability Coordinator Area will result in a SOL or IROL violation in another area of the Interconnection. In instances where there is a difference in derived limits, the Reliability Coordinator and its Transmission Operators, Balancing Authorities, Generator Operators, Transmission Service Providers, Load-Serving Entities, and Purchasing-Selling Entities shall always operate the Bulk Electric System to the most limiting parameter.
IRO-005-0	R17.	When an IROL or SOL is exceeded, the Reliability Coordinator shall evaluate the local and wide-area impacts, both real-time and post-contingency, and determine if the actions being taken are appropriate and sufficient to return the system to within IROL in thirty minutes. If the actions being taken are not appropriate or sufficient, the Reliability Coordinator shall direct the Transmission Operator, Balancing Authority, Generator Operator, or Load-Serving Entity to return the system to within IROL or SOL.
MOD-010-0	R 1.	The Transmission Owners, Transmission Planners Generator Owners, and Resource Planners (specified in the data requirements and reporting procedures of MOD-011-0_R1) shall provide appropriate equipment characteristics, system data, and existing and future Interchange Schedules in compliance with its respective Interconnection Regional steady-state modeling and simulation data requirements and reporting procedures as defined in Reliability Standard MOD-011-0_R 1.
MOD-010-0	R 2.	The Transmission Owners, Transmission Planners, Generator Owners, and Resource Planners (specified in the data requirements and reporting procedures of MOD-011-0_R1) shall provide this steady-state modeling and simulation data to the Regional Reliability Organizations, NERC, and those entities specified within Reliability Standard MOD-011-0_R 1. If no schedule exists, then these entities shall provide the data on request (30 calendar days).
MOD-011-0	R 1.	The Regional Reliability Organizations within an Interconnection, in conjunction with the Transmission Owners, Transmission Planners, Generator Owners, and Resource Planners, shall develop comprehensive steady-state data requirements and reporting procedures needed to model and analyze the steady-state conditions for each of the NERC Interconnections: Eastern, Western, and ERCOT. Within an Interconnection, the Regional Reliability Organizations shall jointly coordinate the development of the data requirements and reporting procedures for that Interconnection. The Interconnection-wide requirements shall include the following steady-state data requirements:
MOD-012-0	R 1.	The Transmission Owners, Transmission Planners, Generator Owners, and Resource Planners (specified in the data requirements and reporting procedures of MOD-013-0_R4) shall provide appropriate equipment characteristics and system data in compliance with the respective Interconnection-wide Regional dynamics system modeling and simulation data requirements and reporting procedures as defined in Reliability Standard MOD-013-0_R 4.

Standard Number	Requirement Number	Existing Reliability Standard Requirements with "Generator" in the Text of the Requirement
MOD-012-0	R 2.	The Transmission Owners, Transmission Planners, Generator Owners, and Resource Planners (specified in the data requirements and reporting procedures of MOD-013-0_R4) shall provide dynamics system modeling and simulation data to its Regional Reliability Organization(s), NERC, and those entities specified within the applicable reporting procedures identified in Reliability Standard MOD-013-0_R 1. If no schedule exists, then these entities shall provide data on request (30 calendar days).
MOD-013-0	R 1.	The Regional Reliability Organization, in coordination with its Transmission Owners, Transmission Planners, Generator Owners, and Resource Planners, shall develop comprehensive dynamics data requirements and reporting procedures needed to model and analyze the dynamic behavior or response of each of the NERC Interconnections: Eastern, Western, and ERCOT. Within an Interconnection, the Regional Reliability Organizations shall jointly coordinate on the development of the data requirements and reporting procedures for that Interconnection. Each set of Interconnection-wide dynamics data requirements shall include the following dynamics data requirements:
MOD-013-0	R 1.1.1.	Estimated or typical manufacturer's dynamics data, based on units of similar design and characteristics, may be submitted when unit-specific dynamics data cannot be obtained. In no case shall other than unit-specific data be reported for generator units installed after 1990.
PRC-001-1	R 1.	Each Transmission Operator, Balancing Authority, and Generator Operator shall be familiar with the purpose and limitations of protection system schemes applied in its area.
PRC-001-1	R 2.	Each Generator Operator and Transmission Operator shall notify reliability entities of relay or equipment failures as follows:
PRC-001-1	R 2.1.	If a protective relay or equipment failure reduces system reliability, the Generator Operator shall notify its Transmission Operator and Host Balancing Authority. The Generator Operator shall take corrective action as soon as possible.
PRC-001-1	R 3.	A Generator Operator or Transmission Operator shall coordinate new protective systems and changes as follows.
PRC-001-1	R 3.1.	Each Generator Operator shall coordinate all new protective systems and all protective system changes with its Transmission Operator and Host Balancing Authority.
PRC-001-1	R 4.	Each Transmission Operator shall coordinate protection systems on major transmission lines and interconnections with neighboring Generator Operators, Transmission Operators, and Balancing Authorities.
PRC-001-1	R 5.	A Generator Operator or Transmission Operator shall coordinate changes in generation, transmission, load or operating conditions that could require changes in the protection systems of others:
PRC-001-1	R 5.1.	Each Generator Operator shall notify its Transmission Operator in advance of changes in generation or operating conditions that could require changes in the Transmission Operator's protection systems.

Standard Number	Requirement Number	Existing Reliability Standard Requirements with "Generator" in the Text of the Requirement
PRC-004-0	R 1.	The Transmission Owner, Generator Owner, and Distribution Provider that owns a transmission protection system shall analyze all protection system misoperations and shall take corrective actions to avoid future misoperations.
PRC-004-0	R 2.	The Transmission Owner, Generator Owner, and Distribution Provider that owns a transmission protection system shall provide to its affected Regional Reliability Organization and NERC on request (within 30 calendar days) documentation of the misoperations analyses and corrective actions according to the Regional Reliability Organization's procedures of Reliability Standard PRC-003-0_R 1.
PRC-005-0	R 1.	The Transmission Owner, Generator Owner and Distribution Provider that owns a transmission protection system shall have a transmission protection system maintenance and testing program in place. The program(s) shall include:
PRC-005-0	R 2.	The Transmission Owner, Generator Owner, and Distribution Provider that owns a transmission protection system shall provide documentation of its transmission protection system program and its implementation to the appropriate Regional Reliability Organization and NERC on request (within 30 calendar days).
PRC-012-0	R 1.	Each Regional Reliability Organization with a Transmission Owner, Generator Owner, or Distribution Providers that uses or is planning to use an SPS shall have a documented Regional Reliability Organization SPS review procedure to ensure that SPSs comply with Regional criteria and NERC Reliability Standards. The Regional SPS review procedure shall include:
PRC-013-0	R 1.	The Regional Reliability Organization that has a Transmission Owner, Generator Owner, or Distribution Provider with an SPS installed shall maintain an SPS database. The database shall include the following types of information:
PRC-015-0	R 1.	The Transmission Owner, Generator Owner, and Distribution Provider that owns an SPS shall maintain a list of and provide data for existing and proposed SPSs as specified in Reliability Standard PRC-013-0_R 1.
PRC-015-0	R 2.	The Transmission Owner, Generator Owner, and Distribution Provider that owns an SPS shall have evidence it reviewed new or functionally modified SPSs in accordance with the Regional Reliability Organization's procedures as defined in Reliability Standard PRC-012-0_R1 prior to being placed in service.
PRC-015-0	R 3.	The Transmission Owner, Generator Owner, and Distribution Provider that owns an SPS shall provide documentation of SPS data and the results of Studies that show compliance of new or functionally modified SPSs with NERC Reliability Standards and Regional Reliability Organization criteria to affected Regional Reliability Organizations and NERC on request (within 30 calendar days).
PRC-016-0	R 1.	The Transmission Owner, Generator Owner, and Distribution Provider that owns an SPS shall analyze its SPS operations and maintain a record of all misoperations in accordance with the Regional SPS review procedure specified in Reliability Standard PRC-012-0_R 1.
PRC-016-0	R 2.	The Transmission Owner, Generator Owner, and Distribution Provider that owns an SPS shall take corrective actions to avoid future misoperations.

Standard Number	Requirement Number	Existing Reliability Standard Requirements with "Generator" in the Text of the Requirement
PRC-016-0	R 3.	The Transmission Owner, Generator Owner, and Distribution Provider that owns an SPS shall provide documentation of the misoperation analyses and the corrective action plans to its Regional Reliability Organization and NERC on request (within 90 calendar days).
PRC-017-0	R 1.	The Transmission Owner, Generator Owner, and Distribution Provider that owns an SPS shall have a system maintenance and testing program(s) in place. The program(s) shall include:
PRC-017-0	R 2.	The Transmission Owner, Generator Owner, and Distribution Provider that owns an SPS shall provide documentation of the program and its implementation to the appropriate Regional Reliability Organizations and NERC on request (within 30 calendar days).
TOP-001-0	R 3.	Each Transmission Operator, Balancing Authority, and Generator Operator shall comply with reliability directives issued by the Reliability Coordinator, and each Balancing Authority and Generator Operator shall comply with reliability directives issued by the Transmission Operator, unless such actions would violate safety, equipment, regulatory or statutory requirements. Under these circumstances the Transmission Operator, Balancing Authority or Generator Operator shall immediately inform the Reliability Coordinator or Transmission Operator of the inability to perform the directive so that the Reliability Coordinator or Transmission Operator can implement alternate remedial actions.
TOP-001-0	R 6.	Each Transmission Operator, Balancing Authority, and Generator Operator shall render all available emergency assistance to others as requested, provided that the requesting entity has implemented its comparable emergency procedures, unless such actions would violate safety, equipment, or regulatory or statutory requirements.
TOP-001-0	R 7.	Each Transmission Operator and Generator Operator shall not remove Bulk Electric System facilities from service if removing those facilities would burden neighboring systems unless:
TOP-001-0	R 7.1.	For a generator outage, the Generator Operator shall notify and coordinate with the Transmission Operator. The Transmission Operator shall notify the Reliability Coordinator and other affected Transmission Operators, and coordinate the impact of removing the Bulk Electric System facility.
TOP-001-0	R 7.3.	When time does not permit such notifications and coordination, or when immediate action is required to prevent a hazard to the public, lengthy customer service interruption, or damage to facilities, the Generator Operator shall notify the Transmission Operator, and the Transmission Operator shall notify its Reliability Coordinator and adjacent Transmission Operators, at the earliest possible time.
TOP-002-0	R 3.	Each Load Serving Entity and Generator Operator shall coordinate (where confidentiality agreements allow) its current-day, next-day, and seasonal operations with its Host Balancing Authority and Transmission Service Provider. Each Balancing Authority and Transmission Service Provider shall coordinate its current-day, next-day, and seasonal operations with its Transmission Operator.
TOP-002-0	R13.	At the request of the Balancing Authority or Transmission Operator, a Generator Operator shall perform generating real and reactive capability verification that shall include, among other variables, weather, ambient air and water conditions, and fuel quality and quantity, and provide the results to the Balancing Authority or Transmission Operator operating personnel as requested.
TOP-002-0	R18.	Neighboring Balancing Authorities, Transmission Operators, Generator Operators, Transmission Service Providers and Load Serving Entities shall use uniform line identifiers when referring to transmission facilities of an interconnected network.

Standard Number	Requirement Number	Existing Reliability Standard Requirements with "Generator" in the Text of the Requirement
TOP-003-0	R 1.1.	Each Generator Operator shall provide outage information daily to its Transmission Operator for scheduled generator outages planned for the next day (any foreseen outage of a generator greater than 50 MW). The Transmission Operator shall establish the outage reporting requirements.
TOP-003-0	R 1.2.	Each Transmission Operator shall provide outage information daily to its Reliability Coordinator, and to affected Balancing Authorities and Transmission Operators for scheduled generator and bulk transmission outages planned for the next day (any foreseen outage of a transmission line or transformer greater than 100 kV or generator greater than 50 MW) that may collectively cause or contribute to an SOL or IROL violation or a regional operating area limitation. The Reliability Coordinator shall establish the outage reporting requirements.
TOP-003-0	R 2.	Each Transmission Operator, Balancing Authority, and Generator Operator shall plan and coordinate scheduled outages of system voltage regulating equipment, such as automatic voltage regulators on generators, supplementary excitation control, synchronous condensers, shunt and series capacitors, reactors, etc., among affected Balancing Authorities and Transmission Operators as required.
TOP-003-0	R 3.	Each Transmission Operator, Balancing Authority, and Generator Operator shall plan and coordinate scheduled outages of telemetering and control equipment and associated communication channels between the affected areas.
TOP-006-0	R 1.1.	Each Generator Operator shall inform its Host Balancing Authority and the Transmission Operator of all generation resources available for use.
TPL-006-0	R 1.4.	Supply-side resources and their characteristics (existing and planned generator units, Ratings, performance characteristics, fuel types and availability, and real and reactive capabilities.)
VAR-001-0	R 9.	Each Generator Operator shall provide information to its Transmission Operator on the status of all generation reactive power resources, including the status of voltage regulators and power system stabilizers.
VAR-001-0	R 9.1.	When a generator's voltage regulator is out of service, the Generator Operator shall maintain the generator field excitation at a level to maintain Interconnection and generator stability.

## **Implementation Plan — Nuclear Plant Off-site Power Supply Coordination Standard**

### **Effective Date**

The proposed effective date for the standard is July 1, 2007. The drafting team believes that a December 1, 2005 initial posting of the standard and adoption by the Board of Trustees in May 2, 2006, will provide sufficient time for agreements to be developed or modified and implemented by July 1, 2007 (14 months after approval). Should the approval be delayed, the effective date would be delayed accordingly.

### **Impact on Existing Standards and Other Standards in Development**

The drafting team has determined that no existing standards or standards in development need to be modified as a result of this proposed standard.

### **Applicability**

The proposed standard is intended to apply only to entities that own or operate nuclear power plants licensed to provide commercial power and the entities that provide of-site power, transmission, or related services to a nuclear power plant. The standard would not apply to other entities.

## Standard Development Roadmap

*This section is maintained by the drafting team during the development of the standard and will be removed when the standard becomes effective.*

### Development Steps Completed:

1. A SAR was received on October 20, 2004 from the Nuclear Energy Institute Grid Reliability Task Force.
2. The SAR was posted for comment from December 1, 2004 to January 7, 2005.
3. Nominations for a SAR drafting team were solicited from December 1 to December 21, 2004. The nomination period was extended to January 28 to solicit additional nominations.
4. The SAR was revised and draft 2 was posted from April 1 to April 30. The comment period was extended to May 16.
5. On May 25, 2005, the Standards Authorization Committee authorized development of a standard and appointed the SAR drafting team to serve as the standard drafting team, while soliciting additional members.

### Description of Current Draft:

The drafting team has prepared the enclosed first draft of the proposed standard on nuclear power plant off-site power reliability for the purpose of soliciting public comment. The requested comment period is December 1, 2005 to January 15, 2006.

### Future Development Plan:

Anticipated Actions	Anticipated Date
1. The drafting team plans to review stakeholder comments from the posting and make a recommendation whether to proceed to ballot or to a second draft of the standard.	February 10, 2006
2. 30-day pre-ballot posting.	February 15, 2006 (tentative)
3. Ballot.	March 15 to April 15, 2006 (tentative)
4. 30-day board notice.	April 1, 2006 (tentative)
5. Adoption by board.	May 2, 2006 (tentative)



### **Definitions of Terms Used in Standard**

*This section includes all newly defined or revised terms used in the proposed standard. Terms already defined in the Reliability Standards Glossary of Terms are not repeated here. New or revised definitions listed below become approved when the proposed standard is approved. When the standard becomes effective, these defined terms will be removed from the individual standard and added to the Glossary.*

**Nuclear Plant Entities**, when used in this standard, shall mean any Generator Owners and/or Generator Operators responsible for a nuclear facility licensed to produce commercial power.

**Nuclear Plant Off-site Power Supply (Off-site Power)**, when used in this standard, shall mean the electric power supply provided from the transmission system to the nuclear power plant distribution system as required for nuclear safety.

**Transmission Entities**, when used in this standard, shall mean Transmission Operators, Transmission Owners, Transmission Planners, Transmission Service Providers, Planning Authorities, Balancing Authorities, Reliability Coordinators, Planning Authorities, Distribution Providers, Load-serving Entities that are responsible for providing services related to Nuclear Plant Off-site Power Supply.

**Nuclear Plant Interface Requirements**, when used in this standard, shall mean nuclear power plant licensing requirements for:

- 1) Off-site power supply to enable safe shutdown of the plant during an electric system or plant event; and
- 2) Avoiding preventable challenges to nuclear safety as a result of an electric system disturbance, transient, or condition.

## A. Introduction

1. **Title: Nuclear Plant Off-site Power Supply Coordination**
2. **Number:** To be determined.
3. **Purpose:** This standard requires coordination between Nuclear Plant Entities and Transmission Entities for the purpose of ensuring nuclear plant safe operation and shutdown. The standard applies only to those entities that interface with or provide services to a nuclear plant.
4. **Applicability**
  - 4.1. **Nuclear Plant Entities**, meaning Generator Owners and/or Generator Operators responsible for a nuclear facility licensed to produce commercial power
  - 4.2. **Transmission Entities**, meaning Transmission Operators, Transmission Owners, Transmission Planners, Transmission Service Providers, Planning Authorities, Balancing Authorities, Reliability Coordinators, Planning Authorities, Distribution Providers, Load-serving Entities that are responsible for providing services related to Nuclear Plant Off-site Power Supply.
5. **Proposed Effective Date:** July 1, 2007

## B. Requirements

- R1. Nuclear Plant Entities shall provide in writing to the applicable Transmission Entities the current Nuclear Plant Interface Requirements.
- R2. The Transmission Planner, per the Agreements developed in accordance with Requirement 8 (R8), shall incorporate the Nuclear Plant Interface Requirements into the planning analysis of the electric system and shall communicate the results of the analysis to the Nuclear Plant Entities.
- R3. The Nuclear Plant Entities and the Transmission Entities shall resolve issues identified in R2, R6, and R7, per the Agreements developed in accordance with R8.
- R4. The Transmission Entities designated in the Agreements developed in accordance with R8 shall:
  - R4.1. Incorporate the Nuclear Plant Interface Requirements into the operating reliability analysis of the electric system.
  - R4.2. Operate the electric system to meet the Nuclear Plant Interface Requirements, while respecting other System Operating Limits.
  - R4.3. Inform the Nuclear Plant Entities and coordinate mitigating actions when Nuclear Plant Interface Requirements cannot be met.
  - R4.4. Inform the Nuclear Plant Entities when the Transmission Entity loses the ability to assess the operation of the transmission system affecting Nuclear Plant Interface Requirements.
- R5. Per the Agreements developed in accordance with R8, the designated Transmission Entities and the Nuclear Plant Entities shall coordinate planned outages and maintenance activities affecting the Nuclear Plant Interface Requirements.
- R6. Per the Agreements developed in accordance with R8, the Nuclear Plant Entities shall inform the applicable Transmission Entities of any actual or proposed

changes to nuclear plant design, configuration, operations, limits, protection systems, or capabilities that may impact the ability of the transmission system to meet the Nuclear Plant Interface Requirements.

- R7.** Per the Agreements developed in accordance with R8, the Transmission Entities shall inform the Nuclear Plant Entities of any actual or proposed changes to electric system design, configuration, operations, limits, protection systems, or capabilities that may impact the ability of the transmission system to meet the Nuclear Plant Interface Requirements.
- R8.** The Transmission Entities and the Nuclear Plant Entities shall have in effect one or more Agreements<sup>1</sup> that document how Nuclear Plant Interface Requirements are addressed. The Agreement(s) shall include the following elements, which the Transmission Entities and Nuclear Plant Entities shall implement per the Agreement(s):
- R8.1.** Administrative elements:
    - R8.1.1.** Definitions of key terms used in the agreement.
    - R8.1.2.** Organizational relationships and responsibilities related to the Nuclear Plant Interface Requirements.
    - R8.1.3.** Data confidentiality requirements.
    - R8.1.4.** Provisions for suspending standards of conduct when needed to ensure grid reliability, nuclear plant safety, or personnel safety.
    - R8.1.5.** Requirements to review the agreement at least every three years for administrative elements and at least annually for technical elements.
    - R8.1.6.** Process for resolving disputes or issues.
  - R8.2.** Technical requirements and analysis:
    - R8.2.1.** Identification of parameters, limits, configurations, and operating scenarios that constitute the Nuclear Plant Interface Requirements, and, as applicable, procedures for providing any specific data not provided within the Agreement.
    - R8.2.2.** Identification of facilities, components, and configuration restrictions that are essential for meeting Nuclear Plant Interface Requirements.
    - R8.2.3.** Types of planning and operational analyses performed specifically to support Nuclear Plant Interface Requirements, including the frequency of studies and a list of contingencies and scenarios required.
  - R8.3.** Operations and maintenance coordination:

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<sup>1</sup> For the purpose of this standard, Agreements may include mutually agreed upon procedures or protocols.

- R8.3.1.** Designation and coordination of operational control of and maintenance responsibilities for electrical facilities on the interface between the electric system and the nuclear plant.
- R8.3.2.** Identification of any maintenance requirements for equipment not owned or controlled by the Nuclear Plant Entity that are necessary to meet Nuclear Plant Interface Requirements.
- R8.3.3.** Coordination of testing, calibration and maintenance of on-site and off-site power supply systems and related components.
- R8.3.4.** Provision to address actions when the electric system cannot meet the Nuclear Plant Interface Requirements, including responsibilities to notify the nuclear plant, and the development, implementation, and coordination of action plans for such conditions.
- R8.3.5.** Provision to coordinate grid and nuclear plant restoration following nuclear plant loss of Off-site Power, including consideration of nuclear plant coping times and responsibilities for developing, implementing, and coordinating restoration plans for such conditions.
- R8.3.6.** Obligations of Nuclear Plant Entities to arrange for Off-site Power supplies necessary to meet regulatory requirements for safe shutdown and operation of the plant.
- R8.3.7.** Coordination of physical and cyber security protection of the electric system-nuclear plant interface.
- R8.3.8.** Coordination of the Nuclear Plant Interface Requirements with Special Protection Systems, Underfrequency Load Shedding and Undervoltage Load Shedding programs.
- R8.4.** Communications and training:
  - R8.4.1.** Provisions for communications between the Nuclear Plant Entities and Transmission Entities, including communications protocols and definitions of terms.
  - R8.4.2.** Provisions for coordination during an off-normal or emergency events affecting the Nuclear Plant Interface Requirements, including the need to provide timely information explaining the emergency event.
  - R8.4.3.** Provisions for coordination of investigations of causes of unplanned events affecting the Nuclear Plant Interface Requirements and development of solutions to minimize future risks of such events.
  - R8.4.4.** Provisions for supplying information necessary to report to government agencies, as related to Nuclear Plant Interface Requirements.
  - R8.4.5.** Provisions for personnel training, as related to Nuclear Plant Interface Requirements.

**C. Measures**

The following measures will be used to demonstrate compliance with R1 through R8:

- M1.** Nuclear Plant Entities shall, on request by the Compliance Monitor, provide a copy of the transmittal of the Nuclear Plant Interface Requirements to the Transmission Entities.
- M2.** The Transmission Planner shall, upon request of the Compliance Monitor, provide a copy of the planning analysis results transmitted to the Nuclear Plant Entities, showing incorporation of the Nuclear Plant Interface Requirements. The Compliance Monitor shall refer to the Agreements developed in accordance with R8 for specific requirements.
- M3.** The Compliance Monitor shall interview the Nuclear Plant Entities and Transmission Entities to identify any issues encountered and whether the issues were resolved or are being resolved.
- M4.** The Transmission Entities shall provide the following upon request by the Compliance Monitor:
  - M4.1** Documentation showing the Nuclear Plant Interface Requirements have been incorporated into the current operating reliability analysis of the electric system.
  - M4.2** Evidence that the electric system is being operated to meet the Nuclear Plant Interface Requirements, to the extent practical under electric system conditions.
  - M4.3** Documentation of the process used by the Transmission Entities to inform the Nuclear Plant Entities when electric system conditions precluded meeting the Nuclear Plant Interface Requirements, including the coordination of mitigating actions; and copies of logs, or other evidence, documenting any instances the process was implemented.
  - M4.4** Documentation of the process used by the Transmission Entities to notify the Nuclear Plant Entities if the capability to assess the operation of the electric system affecting the Nuclear Plant Interface Requirements is lost; and copies of logs, or other evidence, documenting any instances that the process was implemented.
- M5.** The Transmission Entities and Nuclear Plant Entities shall, upon request of the Compliance Monitor, provide evidence of the coordination between the Transmission Entities and the Nuclear Plant Entities regarding current planned outages and maintenance activities affecting the Nuclear Plant Interface Requirements.
- M6.** The Nuclear Plant Entities shall provide evidence that they informed the applicable Transmission Entities of any changes to nuclear plant design, configuration, operations, limits, protection systems, or capabilities that would impact the ability of the Transmission Entities to meet the Nuclear Plant Interface Requirements.
- M7.** The Transmission Entities shall provide evidence that they informed the Nuclear Plant Entities of any changes to electric system design, configuration, operations, limits, protection systems, or capabilities that would impact the ability of the Nuclear Plant Entities to meet the Nuclear Plant Interface Requirements.
- M8.** The Nuclear Plant Entities and Transmission Entities shall have a copy of the executed Agreement(s) addressing the elements in R8 available for inspection upon request.

**D. Compliance**

**1. Compliance Monitoring Process**

**1.1. Compliance Monitoring Responsibility**

Regional Reliability Organization.

**1.2. Compliance Monitoring Period and Reset Timeframe**

One calendar year.

**1.3. Data Retention**

The Nuclear Plant Entities and Transmission Entities shall retain information from the most current and prior compliance verification reports.

The Compliance Monitor shall retain any audit data for three years.

**1.4. Additional Compliance Information**

The Nuclear Plant Entities and Transmission Entities shall each demonstrate compliance through self-certification or audit (periodic, as part of targeted monitoring or initiated by complaint or event), as determined by the Compliance Monitor.

**2. Levels of Non-Compliance**

- 2.1. Level 1:** Agreements exist per R8 and Nuclear Plant Interface Requirements are identified and respected in the current planning and operation of the electric system and nuclear plant, but some documentation is missing.
- 2.2. Level 2:** Agreements exist per R8 and Nuclear Plant Interface Requirements are identified and respected in the current planning and operation of the electric system and nuclear plant, but one or more elements of the Agreement per R8 are not met in coordinating the operation and planning of the electric system and nuclear plant.
- 2.3. Level 3:** One or more elements of R1 to R7 were not met.
- 2.4. Level 4:** No agreement exists per R8 or the Nuclear Plant Interface Requirements are not respected in the current operation and planning of the electric system or nuclear plant.

**E. Regional Differences**

None.

**Version History**

Version	Date	Action	Change Tracking

**Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard**

Please use this form to submit comments on Draft 1 of the Nuclear Power Plant Off-site Power Coordination standard. Comments must be submitted by **January 17, 2006**. You must submit the completed form by e-mailing it to [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the words "Nuclear Off-site Power Comments" in the subject line. If you have questions please contact Mark Ladrow at [mark.ladrow@nerc.net](mailto:mark.ladrow@nerc.net) or 609-452-8060.

**All Data On This Form Will Be Transferred Automatically To A Database.**

- DO:**     **Do** enter text only, with no formatting or styles added.  
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           **Do** use more than one form if responses do not fit in the spaces provided.  
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<b>Individual Commenter Information</b>		
<b>(Complete this page for comments from one organization or individual.)</b>		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region	<input type="checkbox"/>	<b>Registered Ballot Body Segment</b>
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> FRCC	<input type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> MAAC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> MAIN	<input type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> MRO	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> NPCC	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> SERC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> SPP	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities
<input type="checkbox"/> WECC	<input type="checkbox"/>	
<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	





## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

### **Please Enter All Comments in Simple Text Format.**

1. Does your company own or operate a nuclear power plant?

Yes

No

2. Does your company provide off-site power supply, transmission, or other services to a nuclear power plant?

Yes

No

3. If the standard was presented for approval as written, would you be inclined to:

Approve the standard

Not approve the standard

Abstain or don't know

Please provide reasons:

4. Are there any 'show-stoppers' that would prevent you from approving the standard?

Yes

No

If yes, please list them:

5. If the standard is adopted by the NERC board in May 2006, do you believe July 1, 2007 is an appropriate effective date by which all applicable entities can comply with the standard?

Yes

No

If no, please comment and state an alternative effective date that would be acceptable.

## **Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard**

6. Considering the effective date by which applicable entities must comply with the standard, is there a need to field test the standard?

Yes

No

If yes, please state your reasons why field testing is required and describe the nature of the field test you would propose.

7. Do you have any additional comments on the proposed standard? If so, please provide your comments and any specific changes you would recommend to improve the standard.

## **COMMENTS ON NERC DRAFT STANDARD NUCLEAR PLANT OFF-SITE POWER SUPPLY COORDINATION**

### Definitions of Terms

Replace the term Nuclear Plant with Nuclear Power Plant.

Under Nuclear Plant Interface Requirements, add an additional item;

- 1) Offsite power supply to enable Emergency and Normal safe shutdown...
- 3) The Offsite power supply requirements include the acceptable voltage range at a predefined point on the electric supply system and the maximum NPP shutdown load seen by the offsite power supply.

The following terms are not defined in this document nor are they defined in the NERC Glossary.

#### Planning Analyses

We would expect a planning analysis would be based on assumptions of future generation, transmission and system load requirements for a defined time period.

#### Operating Reliability Analysis

We would expect an operating reliability analysis would be based on current conditions of the transmission system which contain alarms for voltage and thermal limits. We further expect that this analysis would also be looking for contingencies such as trip of the NPP (or multiple NPPs at a common site). And finally, we would expect that this operating reliability analysis would be updated with current system status no less than once every 15 minutes. (It is our understanding that systems are in place with update times in the range of seconds.)

### Introduction

Section A4.2, lists Distribution Providers as an included subset of Transmission Entities. Please confirm this standard will include an entity that is not normally considered a member of NERC. This is important because some older NPP sites connect to the local distribution system as a source of offsite power. It is our understanding that distribution systems are not included in the reliability models because their nominal voltages are outside the normal range considered in the reliability analyses.

### Requirements

R4.1 should be supplemented with a minimum analysis updating frequency.

R4.2 should be supplemented with a minimum notification time allowance.

A new section R4.5 should require the analysis to address the contingency of loss of the NPP units.

A new notification requirement for unplanned outages and changes to planned outages in progress should be added to supplement R5.

The requirements Section may read easier if the details in R8, Agreement, were included before R1 or included as an attachment.

Note 1 should also require the protocols to provide reasonable assurance that both parties are obligated to fulfill the stated goals and requirements to the best of their ability.

Supplement R8.2.2 by giving examples of components such as ALTC, VR, SVC and capacitor banks, normally located in the local switchyard.

Supplement R8.3.4 should include a minimum notification time.

The intent of R8.3.6 should be clarified.

R8.4. need the following

" Provisions for prompt notification when contingency analysis program fails to function ....

Supplement R8.4.2 should include a minimum notification time.

#### Measures

M1, the Compliance Monitor should obtain the Nuclear (Power) Plant Interface Requirement transmittal document from the Transmission Entity.

M4.2, as presently written, implies the goals of the agreement are voluntary and should be rewritten.

Add a new section, M4.5 to require documentation to support the existence of planned compensatory measures to be used if the current operations reliability analysis can not support the NPP Interface Requirements.

Add a new section M9, similar to M8, to provide copies of existing implementing procedures to support the Agreement.

Add a new section M10 to require the transmission entity to inform NERC of any violations of the interface technical requirements, including magnitude and duration.

#### Compliance

Clarify D2.1 to identify what missing documentation would be acceptable and what missing documentation would not be acceptable. Clarify why any missing documentation would be acceptable.

Add a note to this standard that it is not the intent of this standard to provide a standard that ensures NPP licensees are meeting their licensing requirements.

Under D1.3, Data Retention, add a requirement to retain records of events where the requirements of the Agreement could not be met.

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           **Do not** submit a response in an unprotected copy of this form.

<b>Individual Commenter Information</b>		
<b>(Complete this page for comments from one organization or individual.)</b>		
Name:	<b>Maurice Casadaban</b>	
Organization:	<b>Entergy Services Inc</b>	
Telephone:	<b>601 339 2612</b>	
E-mail:	<b>mcasada@entergy.com</b>	
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> FRCC	<input type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> MAAC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> MAIN	<input checked="" type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> MRO	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> NPCC	<input type="checkbox"/>	7 — Large Electricity End Users
<input checked="" type="checkbox"/> SERC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> SPP	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities
<input type="checkbox"/> WECC	<input type="checkbox"/>	
<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	

**Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard**

**Group Comments (Complete this page if comments are from a group.)**

Group Name: **Entergy Transmission and Entergy Nuclear**  
 Lead Contact: Maurice Casadaban and Mookie Chander  
 Contact Organization: Entergy  
 Contact Segment: 1  
 Contact Telephone: 601 339 2612  
 Contact E-mail: mcasada@entergy.com

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>
Jim Case	Entergy Transmission	SERC	1
Jay Zimmerman	Entergy Transmission	SERC	1
George Bartlett	Entergy Transmission	SERC	1
Ed Davis	Entergy Transmission	SERC	1
Bill Aycock	Entergy Transmission	SERC	1
Narinder Saini	Entergy Transmission	SERC	1
Rick Riley	Entergy Transmission	SERC	1
Michael LaBiche	Entergy Transmission	SERC	1
Ed Brinson	Entergy Transmission	SERC	1
James Puska	Entergy Transmission	SERC	1
Greg Camet	Entergy Transmission	SERC	1
Tom Barnett	Entergy Nuclear	SERC	5
T.O. Moffitt	Entergy Nuclear	SERC	5
John Hotz	Entergy Nuclear	SERC	5
Singh Matharu	Entergy Nuclear	SERC	5
Ed Hester	Entergy Nuclear	SERC	5
Mookie Chander	Entergy Transmission	SERC	1
Maurice Casadaban	Entergy Transmission	SERC	1

\* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

### **Please Enter All Comments in Simple Text Format.**

1. Does your company own or operate a nuclear power plant?

Yes

No

2. Does your company provide off-site power supply, transmission, or other services to a nuclear power plant?

Yes

No

3. If the standard was presented for approval as written, would you be inclined to:

Approve the standard

Not approve the standard

Abstain or don't know

Please provide reasons:

See comments with question 7.

4. Are there any 'show-stoppers' that would prevent you from approving the standard?

Yes

No

If yes, please list them:

5. If the standard is adopted by the NERC board in May 2006, do you believe July 1, 2007 is an appropriate effective date by which all applicable entities can comply with the standard?

Yes

No

If no, please comment and state an alternative effective date that would be acceptable.

## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

6. Considering the effective date by which applicable entities must comply with the standard, is there a need to field test the standard?

Yes

No

If yes, please state your reasons why field testing is required and describe the nature of the field test you would propose.

7. Do you have any additional comments on the proposed standard? If so, please provide your comments and any specific changes you would recommend to improve the standard.

Regarding R4.4: If the Transmission Entity is not aware that it lost the ability to assess as mentioned in this requirement, how could it tell the Nuclear Plant Entity? There is another standard on situational awareness that already covers the need to be aware of the loss of assessment capability. Therefore R4.4 should state: "Inform the Nuclear Plant Entities when the Transmission Entity becomes aware that it has lost....."

Regarding R7: In real-time operations, it is unlikely that a Transmission Entity could become aware of the significance to a Nuclear Plant Entity of an actual change to the electric system configuration, operations, protection systems or capabilities if the actual change had not be previously identified as a licensing issue by the Nuclear Plant Entity. In contrast, "proposed" changes could be put through the same study process as that followed during the initial agreement between the Nuclear Plant Entity and the Transmission Entity. Therefore R7 should be modified by deleting the words, "actual or" and should only include "proposed" changes.

At times nuclear licensing requirements (nuclear safety concerns) may conflict with NERC standards. For example: Under certain contingencies the only option for Transmission Entities is to down power a Nuclear plant in 30 minutes to relieve an SOL. This requirement would conflict with a Nuclear Plants desire to down power in 2 hours in order to comply with a defense in depth philosophy. How would this be resolved?



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           **Do not** submit a response in an unprotected copy of this form.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	<b>Bill Thompson</b>	
Organization:	<b>Dominion Virginia Power</b>	
Telephone:	<b>804-273-3300</b>	
E-mail:	<b>bill_thompson@dom.com</b>	
NERC Region	<input type="checkbox"/>	Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
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## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

### **Please Enter All Comments in Simple Text Format.**

1. Does your company own or operate a nuclear power plant?

Yes

No

2. Does your company provide off-site power supply, transmission, or other services to a nuclear power plant?

Yes

No

3. If the standard was presented for approval as written, would you be inclined to:

Approve the standard

Not approve the standard

Abstain or don't know

Please provide reasons:

4. Are there any 'show-stoppers' that would prevent you from approving the standard?

Yes

No

If yes, please list them:

## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

5. If the standard is adopted by the NERC board in May 2006, do you believe July 1, 2007 is an appropriate effective date by which all applicable entities can comply with the standard?

Yes

No

If no, please comment and state an alternative effective date that would be acceptable.

6. Considering the effective date by which applicable entities must comply with the standard, is there a need to field test the standard?

Yes

No

If yes, please state your reasons why field testing is required and describe the nature of the field test you would propose.

7. Do you have any additional comments on the proposed standard? If so, please provide your comments and any specific changes you would recommend to improve the standard.

What are "related services" mentioned in the Applicability section? Could this be stated more specifically? Also, perhaps an explanation of the responsible party when there is an RTO and a Transmission Owner involved would help. I'm thinking that a requirement should state that the RTO and TO must designate who is responsible for each of the Requirements stated, and document that designation to NERC.

Under Definitions, the Nuclear Plant Off-site Power Supply should specifically state that the generator step-up transformer is included. Alternatively, it could be included under Nuclear Plant Entities, but it should be determined where it belongs since it is a very important element in this interface.

Also under Definitions, the Nuclear Plant Interface Requirements should be defined as follows: "1. Nuclear Plant Licensing Requirements for Off-site power supply to enable

## **Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard**

safe shutdown of the plant during an electric system or plant event, and (2) Avoiding preventable challenges to nuclear safety as a result of an electric system disturbance, transient, or condition." The way it is written (with "nuclear power plant licensing requirements for" applying to both (1) and (2)), it implies that BOTH (1) and (2) are limited in scope to the licensing requirements. We believe that the scope of item 2 should go beyond specific licensing requirements. Hopefully, the proposed rewording here would allow for that increase in scope.

**Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard**

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<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
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<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	



**Please Enter All Comments in Simple Text Format.**

1. Does your company own or operate a nuclear power plant?

Yes

No

2. Does your company provide off-site power supply, transmission, or other services to a nuclear power plant?

Yes

No

3. If the standard was presented for approval as written, would you be inclined to:

Approve the standard

Not approve the standard

Abstain or don't know

Please provide reasons:

Further development of compliance measures needed.

4. Are there any 'show-stoppers' that would prevent you from approving the standard?

Yes

No

If yes, please list them:

(1) What is the mechanism for resolving situations in which mutually-acceptable agreements cannot be forged, particularly for cases where no single entity is uniquely responsible for or capable of performing the given function (e.g., in meeting R8.2.2 where a variety of system configuration restrictions can be imposed in order to assure adequate NPP offsite power).

(2) The Measures and Compliance sections are not sufficiently defined and quantifiable to be the basis for legal actions and fines (see specific comments under the response to Q7). Compliance assessment methods used across the industry include Audits, which are performed by the Compliance Monitor, and Self-Certification. To ensure consistent practice across the industry, the method to be used should be specified in the Standard and not left to the Compliance Monitor's discretion.



## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

5. If the standard is adopted by the NERC board in May 2006, do you believe July 1, 2007 is an appropriate effective date by which all applicable entities can comply with the standard?

Yes

No

If no, please comment and state an alternative effective date that would be acceptable.

Unknown until compliance measures are clarified.

6. Considering the effective date by which applicable entities must comply with the standard, is there a need to field test the standard?

Yes

No

If yes, please state your reasons why field testing is required and describe the nature of the field test you would propose.

7. Do you have any additional comments on the proposed standard? If so, please provide your comments and any specific changes you would recommend to improve the standard.

(1) "Transmission Entities" should include other Generator Owner/Operators, since they ultimately provide the power that NPP uses for safe shutdown.

(2) R2: change to "...long range planning analysis..." since this is directed toward studies intended to reveal potential future problems that may require plant or system modifications and/or construction projects. This does not include "operations planning studies" that are used to coordinate scheduled transmission outages and evaluate proposed generation patterns.

(3) R3: move to after the referred requirements.

(4) R4.2: change to "Operate the electric system to the extent practicable to meet ..." so it does not appear to contradict R4.3 and recognizes that there are limits to what the Transmission Operator can do (for example, they cannot force a local generator to come online). Change "...other System Operating Limits" to "...other limits" since NPIRs are not SOLs as defined by NERC and because other types of limits may need to be recognized.

(5) R4.3 Change to "Inform the Nuclear Plant Entities within 30 minutes when Nuclear Plant Interface Requirements cannot be met and coordinate mitigating actions." This standard is a good place to codify the NRC-accepted practice of allowing some reasonable amount of time for prompt corrective actions without requiring an LCO entry.

(6) R5: Change to "...planned and emerging outage activities...". Move between R2 and R4 so the requirements flow in the same order in which they are implemented.

## **Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard**

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- (7) R8.1.5: Change to "Requirements to review the agreements and any underlying technical assumptions on a periodic basis." Recertifying all agreements with all plants on an annual basis is unnecessarily burdensome.
- (8) Change to "...parameters, limits, configurations, operating scenarios and event descriptions, and necessary plant model data..."
- (9) R8.2.2 Delete this. It is not possible to list everything needed to positively meet the requirements, given the wide range of possible grid and switchyard configuration options.
- (10) R8.2.3 Change to "... including the timing and frequency of studies..."
- (11) R8.2.4 Add requirement to complete needed assessments of impacts and coordinate mitigation requirements prior to physical implementation of plant or grid changes that could affect NPLRs or the grid's ability to support them.
- (12) R8.3.3 Change to "...on-site and offsite power supply systems and related components and other offsite-power sensitive equipment."
- (13) R8.3.4 Change to "...cannot meet or loses the ability to assess..."
- (14) R8.3.5 Change to "...station blackout coping times..."
- (15) R8.3.6 Change to "...to arrange for services necessary to meet... of the plant (e.g., securing any necessary transmission reservations and power service contracts)."
- (16) R8.3.8 Delete or clarify intent.
- (17) R8.4.1 Change to "...protocols, timeliness, grace periods and definitions..."
- (18) C. Change to "The Transmission and Nuclear Plant Entities shall have documentation demonstrating compliance with R1 through R8 and shall provide copies to the Compliance Manager within 30 days upon request."
- (19) M3 Too subjective to be the basis for fines and legal action. Should be taken care of through the dispute resolution process.
- (20) M4.2 This is too large and vague. What sort of historical system operations and monitoring data is required to be retained?
- (21) M6 and M7 Include a requirement for timeliness of the transmittals with respect to analysis deadlines and implementation schedules (reference proposed R8.2.4).
- (22) D.1.1.1 Will the Regional Reliability Organization be the correct legally-empowered authority once NERC becomes a Federal ERO?
- (23) D.1.1.2 Is every plant required to be audited or recertified every year? This would be excessively burdensome. Suggest the assessment period be every three years for consistency with other Readiness and Compliance Audits.
- (24) D.1.1.3 What is a compliance verification report, what will it contain, who issues it and how often? Editorial: change to "...most current and preceding..."
- (25) D.2 Levels of non-compliance are evaluated against the Requirements: Should they be against the Measures instead?
- (26) D.2 It is not clear that moving from Level 1 to Level 4 is more severe. How is failing to meet one or more element(s) of an agreement different from failing to meet the requirement that the agreement is based upon?

**Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard**

(27) D.2 The levels of non-compliance do not identify any penalties.

**COMMENT FORM FOR DRAFT 1 OF NUCLEAR POWER PLANT OFFSITE POWER COORDINATION STANDARD**

Please use this form to submit comments on Draft 1 of the Nuclear Power Plant Offsite Power Coordination standard. Comments must be submitted by **January 15, 2006**. You must submit the completed form by emailing it to [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the words “Nuclear Offsite Power Comments” in the subject line. If you have questions please contact Mark Ladrow at [mark.ladrow@nerc.net](mailto:mark.ladrow@nerc.net) or 609-452-8060.

ALL DATA ON THIS FORM WILL BE TRANSFERRED AUTOMATICALLY TO A DATABASE.

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**Do not** use quotation marks in any data field.  
**Do not** submit a response in an unprotected copy of this form.

<b>Individual Commenter Information</b>		
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NERC Region	<input type="checkbox"/>	Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 - Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/>	2 - RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> FRCC	<input type="checkbox"/>	3 - Load-serving Entities
<input type="checkbox"/> MAAC	<input type="checkbox"/>	4 - Transmission-dependent Utilities
<input checked="" type="checkbox"/> MAIN	<input checked="" type="checkbox"/>	5 - Electric Generators
<input type="checkbox"/> MAPP	<input type="checkbox"/>	6 - Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> NPCC	<input type="checkbox"/>	7 - Large Electricity End Users
<input type="checkbox"/> SERC	<input type="checkbox"/>	8 - Small Electricity End Users
<input type="checkbox"/> SPP	<input type="checkbox"/>	9 - Federal, State, Provincial Regulatory or other Government Entities
<input type="checkbox"/> WECC		
<input type="checkbox"/> NA - Not Applicable		



**Please Enter All Comments in Simple Text Format.**

1. Does your company own or operate a nuclear power plant?

Yes

No

2. Does your company provide offsite power supply, transmission, or other services to a nuclear power plant?

Yes

No

3. If the standard was presented for approval as written, would you be inclined to:

Approve the standard

Not approve the standard

Abstain or don't know

Please provide reasons:

4. Are there any 'show-stoppers' that would prevent you from approving the standard?

Yes

No

If yes, please list them:

5. If the standard is adopted by the NERC Board in May 2006, do you believe July 1, 2007, is an appropriate effective date by which all applicable entities can comply with the standard?

Yes

No

If no, please comment and state an alternative effective date that would be acceptable.

6. Considering the effective date by which applicable entities must comply with the standard, is there a need to field test the standard?

Yes

No

If yes, please state your reasons why field testing is required and describe the nature of the field test you would propose.

7. Do you have any additional comments on the proposed standard? If so, please provide your comments and any specific changes you would recommend to improve the standard.

No Additional Comments

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<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	<b>Kathleen Goodman</b>	
Organization:	<b>ISO New England</b>	
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E-mail:	<b>kgoodman@iso-ne.com</b>	
NERC Region	<input type="checkbox"/>	<b>Registered Ballot Body Segment</b>
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> ECAR	<input checked="" type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
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## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

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Yes

No

2. Does your company provide off-site power supply, transmission, or other services to a nuclear power plant?

Yes

No

3. If the standard was presented for approval as written, would you be inclined to:

Approve the standard

Not approve the standard

Abstain or don't know

Please provide reasons:

See answer to Question #4 below.

4. Are there any 'show-stoppers' that would prevent you from approving the standard?

Yes

No

If yes, please list them:

R 8.1.4 indicates "Provisions for suspending standards of conduct when needed to ensure grid reliability, nuclear plant safety, or personnel safety." and the standard requires that whatever information, as stated in NRC license requirements, must be given.

Requirement 8.1.4, in its present form, needs to be removed. We suggest deleting the requirement, and stating, as the third bullet point in the 'Nuclear Plant Interface Requirements,' Definition of Terms: "This standard cannot supercede any regulatory or legal obligations relative to the sharing of power system information.

5. If the standard is adopted by the NERC board in May 2006, do you believe July 1, 2007 is an appropriate effective date by which all applicable entities can comply with the standard?

## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

---

Yes

No

If no, please comment and state an alternative effective date that would be acceptable.

6. Considering the effective date by which applicable entities must comply with the standard, is there a need to field test the standard?

Yes

No

If yes, please state your reasons why field testing is required and describe the nature of the field test you would propose.

7. Do you have any additional comments on the proposed standard? If so, please provide your comments and any specific changes you would recommend to improve the standard.

Applicability section lists "Planning Authorities" twice.

NERC's reference to "Transmission Entities" is overbroad, because the standard fails to identify whether the responsible entity is the Transmission Owner or an Independent System Operator/Regional Transmission Organization, or some combination. Without specifying which entity is responsible for what, NERC will not have a standard that provides fair notice to industry participants and will not be able to fairly enforce the standard, since NERC hasn't provided clear notice for who is responsible for what.

For example, the definition of service in 4.2; what "service" is applicable to whom? Is the service provided by the Transmission Operator, Transmission Owner, some combination of the two? As written, it appears to be applicable to all reliability functions.

The second sentence of the Purpose seems to imply the standard is only applicable to entities other than Nuclear Plant Entities. We suggest it be rephrased to eliminate this unintended exclusion.

We also recommend that the definition in Section A 4.1 & A 4.2 be deleted since they appear under Definition of Terms.

Requirement R3 is redundant. It is covered by requirement R8.1.6.

In general, many of the measures are written more like requirements. Measures should be phrased such that they provide evidence for meeting the requirements.

**Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard**

We request clarification of what is meant by R8.3.7 "Coordination of physical and cyber security protection of the electric system-nuclear plant interface."

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<b>Individual Commenter Information</b>		
<b>(Complete this page for comments from one organization or individual.)</b>		
Name:	<b>Ron Falsetti</b>	
Organization:	<b>Independent Electricity System Operator, Ontario</b>	
Telephone:	<b>905 855-6187</b>	
E-mail:	<b>ron.falsetti@ieso.ca</b>	
NERC Region	<input type="checkbox"/>	<b>Registered Ballot Body Segment</b>
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> ECAR	<input checked="" type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
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Yes

No

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Yes

No

3. If the standard was presented for approval as written, would you be inclined to:

Approve the standard

Not approve the standard

Abstain or don't know

Please provide reasons:

The IESO congratulates the Standards Drafting Team for their work in the development of this standard, and is in full support of it.

4. Are there any 'show-stoppers' that would prevent you from approving the standard?

Yes

No

If yes, please list them:

5. If the standard is adopted by the NERC board in May 2006, do you believe July 1, 2007 is an appropriate effective date by which all applicable entities can comply with the standard?

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NERC's reference to "Transmission Entities" is overbroad; and fails to specifically identify which entity, the Transmission Owner, the Transmission Operator an Independent System Operator/Regional Transmission Organization, or some combination of the above as the responsible entity. Without specifying who is responsible for what, there is an inability to fairly enforce the standard.

The definition for Transmission Entities and in Section A 4.2, includes the term "Planning Authorities" twice. One should be deleted. We also recommend that the definition in Section A 4.1 & A 4.2 be deleted since they appear under Definition of Terms.

Requirement R3 is redundant. It is covered by requirement R8.1.6.

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<b>Individual Commenter Information</b>		
<b>(Complete this page for comments from one organization or individual.)</b>		
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E-mail:	<b>dan.taormina@bge.com</b>	
NERC Region	<input type="checkbox"/>	<b>Registered Ballot Body Segment</b>
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If yes, please list them:

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no

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<b>Individual Commenter Information</b>		
<b>(Complete this page for comments from one organization or individual.)</b>		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> FRCC	<input type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> MAAC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> MAIN	<input type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> MRO	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> NPCC	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> SERC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> SPP	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities
<input type="checkbox"/> WECC	<input type="checkbox"/>	
<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	



## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

### **Please Enter All Comments in Simple Text Format.**

1. Does your company own or operate a nuclear power plant?

Yes

No

2. Does your company provide off-site power supply, transmission, or other services to a nuclear power plant?

Yes

No

3. If the standard was presented for approval as written, would you be inclined to:

Approve the standard

Not approve the standard

Abstain or don't know

Please provide reasons:

4. Are there any 'show-stoppers' that would prevent you from approving the standard?

Yes

No

If yes, please list them:

"

5. If the standard is adopted by the NERC board in May 2006, do you believe July 1, 2007 is an appropriate effective date by which all applicable entities can comply with the standard?

Yes

No

If no, please comment and state an alternative effective date that would be acceptable.

## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

6. Considering the effective date by which applicable entities must comply with the standard, is there a need to field test the standard?

Yes

No

If yes, please state your reasons why field testing is required and describe the nature of the field test you would propose.

7. Do you have any additional comments on the proposed standard? If so, please provide your comments and any specific changes you would recommend to improve the standard.

R 8.1.4 indicates "Provisions for suspending standards of conduct when needed to ensure grid reliability, nuclear plant safety, or personnel safety." and the standard requires that whatever information, as stated in NRC license requirements, must be given.

Requirement 8.1.4, in its present form, needs to be removed. We suggest deleting the requirement, and stating, as the third bullet point in the 'Nuclear Plant Interface Requirements,' Definition of Terms: "This standard cannot supercede any regulatory or legal obligations relative to the sharing of power system information.

Applicability section lists "Planning Authorities" twice.

NERC's reference to "Transmission Entities" is overbroad, because the standard fails to identify whether the responsible entity is the Transmission Owner or an Independent System Operator/Regional Transmission Organization, or some combination. Without specifying which entity is responsible for what, NERC will not have a standard that provides fair notice to industry participants and will not be able to fairly enforce the standard, since NERC hasn't provided clear notice for who is responsible for what.

For example, the definition of service in 4.2; what "service" is applicable to whom? Is the service provided by the Transmission Operator, Transmission Owner, some combination of the two? As written, it appears to be applicable to all reliability functions.

The second sentence of the Purpose seems to imply the standard is only applicable to entities other than Nuclear Plant Entities. We suggest it be rephrased to eliminate this unintended exclusion.

We also recommend that the definition in Section A 4.1 & A 4.2 be deleted since they appear under Definition of Terms.

Requirement R3 is redundant. It is covered by requirement R8.1.6.



## **Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard**

In general, many of the measures are written more like requirements. Measures should be phrased such that they provide evidence for meeting the requirements.

We request clarification of what is meant by R8.3.7 "Coordination of physical and cyber security protection of the electric system-nuclear plant interface."

**Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard**

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Organization:		
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E-mail:		
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
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<input type="checkbox"/> MAIN	<input type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> MRO	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input checked="" type="checkbox"/> NPCC	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> SERC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> SPP	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities
<input type="checkbox"/> WECC	<input type="checkbox"/>	
<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	

**Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard**

**Group Comments (Complete this page if comments are from a group.)**

Group Name: **CP9, Reliability Standards Working Group**  
 Lead Contact: Guy Zito  
 Contact Organization: Northeast Power Coordinating Council  
 Contact Segment: 2  
 Contact Telephone: 212-840-1070  
 Contact E-mail: gzito@npcc.org

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>
Kathleen Goodman	ISO-New England	NPCC	2
Ralph Rufrano	New York Power Authority	NPCC	1
Peter Lebro	National Grid	NPCC	1
Alden Briggs	New Brunswick System Operator	NPCC	2
David Little	Nova Scotia Power	NPCC	1
Greg Campoli	New York ISO	NPCC	2
Bill Shemley	ISO-New England	NPCC	2
David Kiguel	Hydro One Networks	NPCC	1
John Mosier	Northeast Power Coord. Council	NPCC	2
Guy Zito	Northeast Power Coord. Council	NPCC	2
Brian Hogue	Northeast Power Coord. Council	NPCC	2

\* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

### **Please Enter All Comments in Simple Text Format.**

1. Does your company own or operate a nuclear power plant?

Yes

No

2. Does your company provide off-site power supply, transmission, or other services to a nuclear power plant?

Yes

No

3. If the standard was presented for approval as written, would you be inclined to:

Approve the standard

Not approve the standard

Abstain or don't know

Please provide reasons:

4. Are there any 'show-stoppers' that would prevent you from approving the standard?

Yes

No

If yes, please list them:

5. If the standard is adopted by the NERC board in May 2006, do you believe July 1, 2007 is an appropriate effective date by which all applicable entities can comply with the standard?

Yes

No

If no, please comment and state an alternative effective date that would be acceptable.

## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

6. Considering the effective date by which applicable entities must comply with the standard, is there a need to field test the standard?

Yes

No

If yes, please state your reasons why field testing is required and describe the nature of the field test you would propose.

7. Do you have any additional comments on the proposed standard? If so, please provide your comments and any specific changes you would recommend to improve the standard.

R 8.1.4 -Provisions for suspending standards of conduct when needed to ensure grid reliability, nuclear plant safety, or personnel safety.

(This has been identified as a possible violation of the FERC 889 Code of Conduct and information policies) This Requirement, in its present form, needs to be removed. NPCC suggests deleting the requirement, and stating, as the third bullet point in the Nuclear Plant Interface Requirements, Definition of Terms.; This standard cannot supercede any regulatory or legal obligations relative to the sharing of power system information.

The standard requires that whatever information, as stated in NRC license requirements, must be given.

Applicability section lists "Planning Authorities" twice.

NPCC Participating members request the definition of service be clarified in 4.2.

R8.3.7 Coordination of physical and cyber security protection of the electric system-nuclear plant interface. (NPCC requests clarification on what is meant by "coordination")

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           **Do not** submit a response in an unprotected copy of this form.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	<b>Peter Burke [on behalf of ATC's Operations and Planning Departments]</b>	
Organization:	<b>American Transmission Company LLC ATC</b>	
Telephone:	<b>262-506-6863</b>	
E-mail:	<b>PBurke@atcllc.com</b>	
NERC Region	<input type="checkbox"/>	<b>Registered Ballot Body Segment</b>
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 — Transmission Owners
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## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

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### Please Enter All Comments in Simple Text Format.

1. Does your company own or operate a nuclear power plant?

Yes

No

2. Does your company provide off-site power supply, transmission, or other services to a nuclear power plant?

Yes

No

3. If the standard was presented for approval as written, would you be inclined to:

Approve the standard

Not approve the standard

Abstain or don't know

Please provide reasons:

The standard as written will result in significant adverse impacts to grid reliability by allowing the Nuclear Plant Entities to unilaterally declare what constitutes a Nuclear Plant Interface Requirement without the tools and the ability to determine the impact of the NPIR on the bulk electric system. This puts the Transmission Entity in a state of reaction to not only perform the iterative study and issue resolution processes identified in R2 and R3 but also to concurrently operate the system to the NPIR (unilaterally determined by the Nuclear Entities) as identified in R4. Grid reliability will be significantly enhanced if the Transmission Entity and Nuclear Entity jointly determine the NPIR through a negotiation process. In the absence of an agreement, the Transmission Entities must determine the default NPIR to ensure reliability of the bulk electric system.

The following is recommended to address these shortcomings of the draft standard:

R1. replace the word "current" with the word "proposed".

Regarding R2, the only instance in the draft standard where Transmission Planner is specifically identified is in R2. The word "Planner" should be replaced with "Entities" to be consistent with the intent of the rest of the draft standard.

Regarding R3, R3 is too vague and should be broken up into several requirements as follows:



## **Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard**

R3. The Nuclear Plant Entities and the Transmission Entities shall:

R3.1. Ensure that all studies, results, and consequences identified in R2, R6, and R7 are fully understood by all parties and jointly addressed per the Agreements developed in accordance with R8.

R3.2. Document the mutually acceptable NPIR per the Agreements developed in accordance with R8. In the absence of an agreement, the Transmission Entities shall notify the Nuclear Plant Entities of the NPIR in effect for the planning and operation of the bulk electric system.

Regarding R4.2, R4.2 suggests that the nuclear plant has some priority of service over other types of generating plants. With the exception of the public safety obligation to maintain and/or restore offsite power adequate to supply minimum nuclear safety system requirements, this is inconsistent with NERC's ERO filing which states that all entities will be treated on a non-discriminatory basis. This requirement should be reworded as follows:

R4.2. Plan and operate the bulk electric system to meet the NPIR identified in the Agreements developed in accordance with R8 in a non-discriminatory manner.

Additionally, the NPIR represents grid operating requirements that impact reliable operation of the bulk electric system over which NERC must have authority. Both the Nuclear Plant Entities and Transmission Entities have a significant and direct impact on whether the NPIR is met. Therefore, the standard must have requirements, measures, and levels of non-compliance similar to R.4, M.4, and D.2 that apply to the Nuclear Plant Entities.

Suggest new requirements for R4a as follows:

R4a. The Nuclear Plant Entities designated in the Agreements developed in accordance with R8 shall:

R4a.1 Incorporate the Nuclear Plant Interface Requirements into the operating reliability analysis of the nuclear plant.

R4a.2. Operate the nuclear plant to meet its' Nuclear Plant Interface Requirements.

R4a.3. Inform the Transmission Entities and coordinate mitigating actions when the Nuclear Plant Interface Requirements cannot be met.

Regarding R8, R8 should generally include a description of the exchange of information and study results in both the planning horizon and real time operating horizon.

Regarding M4.3 & M4.4, the text "of logs, or other evidence" implies that there's a preference for logs. Logs do not add value above and beyond other evidence in reliably operating the bulk electric system. The text beginning with "...and copies of logs, or other evidence,..." should be replaced with "...and evidence documenting..."

M4a. The Nuclear Entities shall provide the following upon request by the Compliance Monitor:

## **Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard**

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M4.a.1. Documentation showing that the NPIR have been incorporated into the current operating reliability analysis of the nuclear plant.

M4a.2. Evidence that the nuclear plant is being operated to meet the NPIR to the extent practicable within the operating limits of the plant.

M4a.3. Documentation that a description of the mitigating actions to be taken when informed when the NPIR cannot be met have been provided to the Transmission Entities.

4. Are there any 'show-stoppers' that would prevent you from approving the standard?

Yes

No

If yes, please list them:

See response to question # 3 above.

5. If the standard is adopted by the NERC board in May 2006, do you believe July 1, 2007 is an appropriate effective date by which all applicable entities can comply with the standard?

Yes

No

If no, please comment and state an alternative effective date that would be acceptable.

January 1, 2008 to generally avoid implementation leading up to summer peak conditions.

6. Considering the effective date by which applicable entities must comply with the standard, is there a need to field test the standard?

Yes

No

If yes, please state your reasons why field testing is required and describe the nature of the field test you would propose.

7. Do you have any additional comments on the proposed standard? If so, please provide your comments and any specific changes you would recommend to improve the standard.

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<b>Individual Commenter Information</b>		
<b>(Complete this page for comments from one organization or individual.)</b>		
Name:	<b>James H. Sorrels, Jr.</b>	
Organization:	<b>American Electric Power</b>	
Telephone:	<b>(614) 716-2370</b>	
E-mail:	<b>jhsorrels@AEP.com</b>	
NERC Region	<input type="checkbox"/>	<b>Registered Ballot Body Segment</b>
<input checked="" type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 — Transmission Owners
<input checked="" type="checkbox"/> ECAR	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
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## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

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Yes

No

2. Does your company provide off-site power supply, transmission, or other services to a nuclear power plant?

Yes

No

3. If the standard was presented for approval as written, would you be inclined to:

Approve the standard

Not approve the standard

Abstain or don't know

Please provide reasons:

4. Are there any 'show-stoppers' that would prevent you from approving the standard?

Yes

No

If yes, please list them:

5. If the standard is adopted by the NERC board in May 2006, do you believe July 1, 2007 is an appropriate effective date by which all applicable entities can comply with the standard?

Yes

No

If no, please comment and state an alternative effective date that would be acceptable.

AEP would prefer a phased-in approach wherein agreements must be in place by July 1, 2007 with the requirements effective January 1, 2008.

## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

6. Considering the effective date by which applicable entities must comply with the standard, is there a need to field test the standard?

Yes

No

If yes, please state your reasons why field testing is required and describe the nature of the field test you would propose.

7. Do you have any additional comments on the proposed standard? If so, please provide your comments and any specific changes you would recommend to improve the standard.

### Definitions

-As written: "Nuclear Plant Off-site Power Supply (Off-site Power), when used in this standard, shall mean the electric power supply provided from the transmission system to the nuclear power plant distribution system as required for nuclear safety."

-Suggested: "Nuclear Plant Off-Site Power Supply (Off-Site Power), when used in this standard, shall mean the electric power supply provided from the transmission system to the nuclear power plant distribution system as required per the plant license."

### Requirements

#### R3

-As written: "R3. The Nuclear Plant Entities and the Transmission Entities shall resolve issues identified in R2, R6, and R7, per the Agreements developed in accordance with R8."

-Suggested: Strike R3 as it is unnecessary. R8.1.6 requires a process for resolving disputes and issues.

#### M3

-As written: "M3. The Compliance Monitor shall interview the Nuclear Plant Entities and Transmission Entities to identify any issues encountered and whether the issues were being resolved or are being resolved."

-Suggested: Strike M3 as it is unnecessary. Section D for Compliance empowers the compliance monitor to review adherence to agreements made in accordance with R8.

## **Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard**

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R8

·Suggested subsection add to R8.2.1 as R8.2.1.1: “R8.2.1.1 Parameters are required to include: minimum and maximum voltages coincident with required loads; minimum and maximum frequency; and stability.”

·Suggested subsection add to R8.2.1 as R8.2.1.2: “R8.2.1.2 Parameters that may be required include: maximum voltage change on unit trip; maximum frequency decay rate; and maximum short circuit strength.”

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<input type="checkbox"/> WECC	<input type="checkbox"/>	
<input type="checkbox"/> NA — Not Applicable		



**Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard**

**Group Comments (Complete this page if comments are from a group.)**

Group Name: **Southern Nuclear Grid Committee**  
 Lead Contact: Terry L. Crawley  
 Contact Organization: Southern Company Generation / Southern Nuclear  
 Contact Segment: 5  
 Contact Telephone: 205-992-6037  
 Contact E-mail: tlcrawle@southernco.com

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>
David Whitehurst	Southern Nuclear	SERC	5
Duane Brock	Southern Nuclear	SERC	5
Bill Snider	Southern Nuclear	SERC	5
Bonnie Goodwin	Southern Nuclear	SERC	5
Jeff Branum	Southern Nuclear	SERC	5
Tom Milton	Southern Nuclear	SERC	5
Roman Carter	Southern Company Generation	SERC	6
Jim Viikansalo	Southern Company Services	SERC	1
Marc Butts	Southern Company Services	SERC	1
Jim Busbin	Southern Company Services	SERC	1
Wade Pugh	Southern Company Services	SERC	1

\* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

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1. Does your company own or operate a nuclear power plant?

Yes

No

2. Does your company provide off-site power supply, transmission, or other services to a nuclear power plant?

Yes

No

3. If the standard was presented for approval as written, would you be inclined to:

Approve the standard

Not approve the standard

Abstain or don't know

Please provide reasons:

The standard overall is on target. However, we feel that the document needs some refinement and there are some scope issues and clarifications that need to be addressed. We address these issues in question 7 below.

4. Are there any 'show-stoppers' that would prevent you from approving the standard?

Yes

No

If yes, please list them:

See our response to Q3 and Q7.

5. If the standard is adopted by the NERC board in May 2006, do you believe July 1, 2007 is an appropriate effective date by which all applicable entities can comply with the standard?

Yes

No

If no, please comment and state an alternative effective date that would be acceptable.

## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

We checked the NO box because we believe May 2006 will be premature for approval of this standard. However, we agree with the effective date being set at a reasonable time period after the NERC adoption date to allow the industry to develop agreements and revise existing agreements. We feel that a minimum one year period for implementation seems appropriate.

6. Considering the effective date by which applicable entities must comply with the standard, is there a need to field test the standard?

Yes

No

If yes, please state your reasons why field testing is required and describe the nature of the field test you would propose.

7. Do you have any additional comments on the proposed standard? If so, please provide your comments and any specific changes you would recommend to improve the standard.

R3 is not needed because resolution of issues would be required to satisfy R8.

R5/M5 - We request the drafting team to provide examples of the type of documentation that would be required to show compliance with this. This comment also applies to R6/M6 and R7/M7.

R5 - R7: The nuclear plant does not know what impact some activities may have on the grid. Thus, we believe the requirement should be revised to state will [coordinate ... activities reasonably expected to affect the ability of the transmission system.....]. The appropriate Transmission Entity would then have to assess the impact on the grid and the grid's ability to meet the NPIR.

Modify R8.1.6. We have concerns with the use of the word [process]. This could be interpreted to require a formal detailed flow-charted process intended to cover any conceivable issue that could arise. We propose changing this sentence to: [ Address the resolution of disputes. ]

R8.1.5 - Revise to state [Requirements to review the agreements on an agreed upon basis. ] The standard should not specify the timeframe (overprescriptive).

R8.2.1 - We recommend changing the word [scenarios] to [conditions].

R8.2.2 - The intent of R8.2.2 is good. The wording should be more concise in terms of limiting the scope of equipment and configurations. The nuclear plant owner/operator needs to only identify the high risk or significant equipment or facilities that are known. For example, a one-line diagram should be considered adequate for defining the facilities and major components.

R8.2.3. Revise to state the following only: [Types of planning and operational analyses performed specifically to support Nuclear Plant Interface Requirements, including the

## **Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard**

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frequency of studies.] That is, delete the following phrase: [and a list of contingencies and scenarios required.]

R8.3.1 - Clarification needed. Also, this requirement should address ownership of the facilities. Suggested wording: [Designation of ownership, operational control, and maintenance responsibilities for electrical facilities on the interface between the electric system and the nuclear plant.]

R8.3.3 is too broad and should be clarified to apply only to those activities that would impact the NPIR.

R8.3.4 - Recommend deleting the 2nd part of this sentence (Not needed.)

R8.3.5 - 2nd part of this requirement is covered by other NERC standards on restoration and should be deleted. The drafting team should clarify it's intent for including consideration of nuclear plant coping times. We do not understand why this needed here.

R8.3.6 - This requirement is not clear. What is the intent of this requirement? Is this to address who would pay for any extraordinary measures to meet the NPIR? If so, please clarify.

R8.3.7 - Too broad as written. The drafting team should clarify what the intent and scope of the requirement is. The nuclear plants already have security plans that dictate the level and method of security within their plants.

R8.3.8 - Clarify SPS to mean grid SPSs, not special protection systems internal to a nuclear plant. This is a good example of a term that should be defined to ensure common understanding among plant and system personnel.

**Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard**

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**Do not** use numbering or bullets in any data field.  
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**Do not** submit a response in an unprotected copy of this form.

<b>Individual Commenter Information</b>		
<b>(Complete this page for comments from one organization or individual.)</b>		
Name:	<b>Howard Rulf</b>	
Organization:	<b>We Energies</b>	
Telephone:	<b>262-574-6046</b>	
E-mail:	<b>Howard.Rulf@we-energies.com</b>	
NERC Region	<input type="checkbox"/>	<b>Registered Ballot Body Segment</b>
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> FRCC	<input checked="" type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> MAAC	<input checked="" type="checkbox"/>	4 — Transmission-dependent Utilities
<input checked="" type="checkbox"/> MAIN	<input checked="" type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> MRO	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> NPCC	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> SERC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> SPP	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities
<input type="checkbox"/> WECC	<input type="checkbox"/>	
<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	



## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

### **Please Enter All Comments in Simple Text Format.**

1. Does your company own or operate a nuclear power plant?

Yes

No

2. Does your company provide off-site power supply, transmission, or other services to a nuclear power plant?

Yes

No

3. If the standard was presented for approval as written, would you be inclined to:

Approve the standard

Not approve the standard

Abstain or don't know

Please provide reasons:

4. Are there any 'show-stoppers' that would prevent you from approving the standard?

Yes

No

If yes, please list them:

5. If the standard is adopted by the NERC board in May 2006, do you believe July 1, 2007 is an appropriate effective date by which all applicable entities can comply with the standard?

Yes

No

If no, please comment and state an alternative effective date that would be acceptable.

## **Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard**

6. Considering the effective date by which applicable entities must comply with the standard, is there a need to field test the standard?

Yes

No

If yes, please state your reasons why field testing is required and describe the nature of the field test you would propose.

7. Do you have any additional comments on the proposed standard? If so, please provide your comments and any specific changes you would recommend to improve the standard.

“Transmission Entity” is too broad when used to identify the entity responsible for a Reliability Standard requirement. It may cause ambiguity as to who is responsible for the requirement. Rather than defining a new “super entity” that encompasses a large portion of the Functional Model, requirements should to be assigned to the Functional Model entities responsible for those tasks.



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<b>Individual Commenter Information</b>		
<b>(Complete this page for comments from one organization or individual.)</b>		
Name:	<b>John E. Sullivan</b>	
Organization:	<b>Ameren</b>	
Telephone:	<b>(314) 554-3833</b>	
E-mail:	<b>JSullivan@ameren.com</b>	
NERC Region	<input type="checkbox"/>	<b>Registered Ballot Body Segment</b>
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
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## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

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Yes

No

2. Does your company provide off-site power supply, transmission, or other services to a nuclear power plant?

Yes

No

3. If the standard was presented for approval as written, would you be inclined to:

Approve the standard

Not approve the standard

Abstain or don't know

Please provide reasons:

See comments under Question #4.

4. Are there any 'show-stoppers' that would prevent you from approving the standard?

Yes

No

If yes, please list them:

The standard, as drafted, gives Nuclear Entities unilateral authority to determine the Nuclear Plant Interface Requirements. Such unilateral authority would be detrimental to reliability of the electric system. Requirement R1 as stated in the draft standard is not acceptable. This requirement, and the standard in general, should be revised such that Nuclear Plant Interface Requirements would be determined by both the Nuclear Entities and Transmission Entities, and such that the electric system would be operated in a non-discriminatory manner towards all entities.

5. If the standard is adopted by the NERC board in May 2006, do you believe July 1, 2007 is an appropriate effective date by which all applicable entities can comply with the standard?

Yes

## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

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No

If no, please comment and state an alternative effective date that would be acceptable.

Resolution of issues in Questions #4 and #7 is needed prior to proceeding with adoption of the standard. After resolution of these issues, the effective date for the standard should be January 1, rather than mid-year.

6. Considering the effective date by which applicable entities must comply with the standard, is there a need to field test the standard?

Yes

No

If yes, please state your reasons why field testing is required and describe the nature of the field test you would propose.

It would be recommended to "walk through" the standard at least once to address any compliance issues which might occur.

7. Do you have any additional comments on the proposed standard? If so, please provide your comments and any specific changes you would recommend to improve the standard.

Requirement R1 should be reworded to read: "Nuclear Plant Entities shall provide in writing to the applicable Transmission Entities the current Nuclear Plant Interface Requirements which have been agreed to by the Nuclear Plant Entities and any applicable Transmission Entities. Nuclear Plant Entities shall provide in writing to the applicable Transmission Entities any proposed Nuclear Plant Interface Requirements for review."

Requirement R2 should be reworded to change "Transmission Planner" to "Transmission Entities" to ensure that all applicable Transmission Entities are included.

Requirement R4 as drafted states obligations only on the part of the Transmission Entities with respect to planning and operating the electric system while incorporating the Nuclear Plant Interface Requirements. Nuclear Entities would also have obligations with regards to operation of the nuclear plant in accordance with the Nuclear Plant Interface Requirements. Therefore, additional requirements as described below are needed in this section which define the obligations of the Nuclear Entities:

R4B. The Nuclear Plant Entities designated in the Agreements developed in accordance with R8 shall:

R4B.1 Incorporate the Nuclear Plant Interface Requirements into the operating reliability analysis of the nuclear plant.

R4B.2 Operate the nuclear plant in accordance with the Nuclear Plant Interface Requirements.

## **Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard**

R4B.3 Inform the Transmission Entities and coordinate mitigating actions when Nuclear Plant Interface Requirements cannot be met.

The meaning of Requirement R8.3.6 is unclear. This requirement states that it is the responsibility of the Nuclear Plant Entities to arrange for off-site power supplies to meet regulatory requirements for safe shutdown of the plant. Wouldn't responsibility for this power supply arrangement belong to the Balancing Authority?

The readability of the standard would be enhanced by placing the material in Requirement R8 at the beginning of the Requirements section.

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<b>(Complete this page for comments from one organization or individual.)</b>		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region		Registered Ballot Body Segment
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<input type="checkbox"/> ECAR	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
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<input type="checkbox"/> WECC	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities
<input checked="" type="checkbox"/> NA — Not Applicable		

**Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard**

**Group Comments (Complete this page if comments are from a group.)**

Group Name: **Midwest ISO Nuclear Plant Working Group**  
 Lead Contact: Terry Volkmann  
 Contact Organization: Midwest ISO  
 Contact Segment: Transmission Owners and Electric Generators  
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 Contact E-mail: tvolkmann@midwestiso.org

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>
Roger Parker	FirstEnergy Nuclear	RFC	5
Tim Lensmire	Nuclear Management Co	RFC	5
James Thorson	DTE Energy	RFC	5
John Gyath	Exelon	SERC	5
David Waller	Ameren	SERC	5
Steve Myres	Nuclear Management Co	RFC	5
Tom Lillehei	Nuclear Management Co	MRO	5
Ed Watzl	Nuclear Management Co	MRO	5
Steve Gocek	NPPD	MRO	5
Robert Hamm	Nuclear Management Co	RFC	5
Bill Blessie	OPPD	MRO	5
Richard Nelson	Dominion Resources	RFC	5
Gene Warnecke	Ameren	SERC	1
Mike McMullen	Xcel Energy	MRO	1
Darrel Yohnk	American Transmission Co	RFC	1
Dave Huff	First Energy	RFC	1
Robert Haas	International Transmission Co	RFC	1
Terry Wright	Michigan Electric Trans CO	RFC	1
Randy Samson	OPPD	MRO	1

\* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

### Please Enter All Comments in Simple Text Format.

1. Does your company own or operate a nuclear power plant?

Yes

No

The MISO Nuclear Plant Working Group is comprised of representatives from each of its 13 nuclear plants and their interconnected transmission operator. These comments are from the WG as a whole and do not represent the position of any single WG member.

2. Does your company provide off-site power supply, transmission, or other services to a nuclear power plant?

Yes

No

The MISO Nuclear Plant Working Group is comprised of representatives from each of its 13 nuclear plants and their interconnected transmission operator. These comments are from the WG as a whole and do not represent the position of any single WG member.

3. If the standard was presented for approval as written, would you be inclined to:

Approve the standard

Not approve the standard

Abstain or don't know

Please provide reasons:

#### Comment 1

The need for adequate off site power sources to meet Nuclear Plant Interface Requirements supports the need for this standard. This adequacy depends on the ability of analytical tools to predict the impact of unplanned events.

Requirement 8.4.3 calls for coordinated investigations for the cause of unplanned events. This requirement should be expanded and explicitly call for the benchmarking the results of any analytical tool used to predict the effects of unplanned events involving the nuclear plant.

#### Comment 2

The standard as written may result in significant adverse impacts to grid and off site power reliability by allowing the Nuclear Plant Entities to unilaterally declare what constitutes a Nuclear Plant Interface Requirement. At the point of this standard's implementation the existing Nuclear Plant Entities and Transmission Entities have collaboratively established NPIR through existing interconnection agreement or vertical integration. As written this standard allow the Nuclear Plant Entity going forward to unilaterally change the NPIR. Grid and off site power reliability can be significantly enhanced if the Transmission Entity and Nuclear Entity jointly determine the NPIR



## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

through a collaborative negotiating process. The following changes are recommended to address this concern:

Establish that R1 be the NPIR at the time of initial standard compliance.

Modify R2, R6, R7 and R8 to reflect that changes to the NPIR and the transmission system affecting NPIR to be done in a collaborative manner between the Nuclear Plant Entities and Transmission Entities.

### Comment 3

Definition of Transmission Entity lists Planning Authority twice and includes Reliability Coordinator, which is not a defined entity in the functional model. Suggest eliminating Reliability Coordinator and change the second Planning Authority to Reliability Authority.

4. Are there any 'show-stoppers' that would prevent you from approving the standard?

Yes

No

If yes, please list them:

Comment #2 is a showstopper

5. If the standard is adopted by the NERC board in May 2006, do you believe July 1, 2007 is an appropriate effective date by which all applicable entities can comply with the standard?

Yes, qualified yes; standard can be met provided the standard does not lead to requiring the establishment of an interconnection agreement or the changing the existing interconnection agreement.

No

If no, please comment and state an alternative effective date that would be acceptable.

6. Considering the effective date by which applicable entities must comply with the standard, is there a need to field test the standard?

Yes

No

If yes, please state your reasons why field testing is required and describe the nature of the field test you would propose.

## **Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard**

7. Do you have any additional comments on the proposed standard? If so, please provide your comments and any specific changes you would recommend to improve the standard.

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<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:	<b>Murale Gopinathan</b>	
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E-mail:	<b>gopinm@nu.com</b>	
NERC Region	<input type="checkbox"/>	<b>Registered Ballot Body Segment</b>
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
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<input type="checkbox"/> SPP	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities
<input type="checkbox"/> WECC	<input type="checkbox"/>	
<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	



## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

### Please Enter All Comments in Simple Text Format.

1. Does your company own or operate a nuclear power plant?

Yes

No

2. Does your company provide off-site power supply, transmission, or other services to a nuclear power plant?

Yes

No

3. If the standard was presented for approval as written, would you be inclined to:

Approve the standard

Not approve the standard

Abstain or don't know

Please provide reasons:

NU has two primary concerns

The standard must clarify the roles and responsibilities. NERC's reference to "Transmission Entities" is overly broad, because the standard fails to identify whether the responsible entity is the Transmission Owner or an Independent System Operator/Regional Transmission Organization, or some combination. Without specifying which entity is responsible for what actions, NERC will not have a standard that provides fair notice to industry participants and will not be able to fairly enforce the standard.

Cyber Security protocols are still under development. NERC's reference to cyber security protocols in section R8.3.7 are premature and undefined, as industry protocols to cyber security have not been established.

4. Are there any 'show-stoppers' that would prevent you from approving the standard?

Yes

No

If yes, please list them:

## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

See responses to question #3

5. If the standard is adopted by the NERC board in May 2006, do you believe July 1, 2007 is an appropriate effective date by which all applicable entities can comply with the standard?

Yes

No

If no, please comment and state an alternative effective date that would be acceptable.

July, 2007 is not realistic given the fact that critical items such as roles and responsibility of participants and the completion of security protocols are not yet clearly defined.

6. Considering the effective date by which applicable entities must comply with the standard, is there a need to field test the standard?

Yes

No

If yes, please state your reasons why field testing is required and describe the nature of the field test you would propose.

7. Do you have any additional comments on the proposed standard? If so, please provide your comments and any specific changes you would recommend to improve the standard.

Cyber security protocols as listed on section R8.3.7 needs to be finalized prior to being addressed.

Plant security on Section R8.3.7 needs to be more clearly defined. NERC's standard must define which transmission assets are being addressed relative to plant security. Is it solely the substation/switching station which interconnects the nuclear power plant, to the transmission grid or does it involve other elements of the transmission grid which could impact the reliability and availability of facilities and equipment at the interconnecting substation/switching station?

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Name:		
Organization:		
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NERC Region		Registered Ballot Body Segment
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<input type="checkbox"/> WECC	<input type="checkbox"/>	
<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	

**Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard**

**Group Comments (Complete this page if comments are from a group.)**

Group Name: **NERC OC Transmission Subcommittee**

Lead Contact: Raymond Vice, Vice-Chairman Transmission Subcommittee

Contact Organization: NERC OC Transmission Subcommittee

Contact Segment: Transmission Operations

Contact Telephone: 205 257 6209

Contact E-mail: rlvice@southernco.com

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>
Scott Moore, TS Chairman	American Electric Power		
Ken Donohoo	ERCOT	ERCOT	
Brad Chase	Orlando Utilities Commission	FRCC	
Steve Crutchfield	PJM Interconnection, LLC	MAAC	
Ed Pfeiffer	Ameren Corp	MAIN	
Darrick Moe	WAPA	MRO	
Doug McCracken	Northeast Utilities, Inc	NPCC	
Allen Klassen	Westar Energy	SPP	
Francis Halpin	Bonneville Power Administration	WECC	
Tom Mallinger	Midwest ISO, Inc	RTO	
Raymond Palmieri	ECAR	ECAR	
Tom Vandervort	NERC STaff		

\* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.



## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

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### Please Enter All Comments in Simple Text Format.

1. Does your company own or operate a nuclear power plant?

Yes

No

2. Does your company provide off-site power supply, transmission, or other services to a nuclear power plant?

Yes

No

3. If the standard was presented for approval as written, would you be inclined to:

Approve the standard

Not approve the standard

Abstain or don't know

Please provide reasons:

1. Applicability 4.2 Transmission Entities lists many entities that require different types of contracts addressing different or specific nuclear plant details. Additional "transmission entity" clarification of the different types of contracts for specific nuclear plant details is recommended. 2. Consider adding dispute resolution requirements that instruct the entities to include dispute resolution language in each of their contracts but that NERC not get directly involved in the dispute resolution business. 3. Recommend recognizing that most nuclear plants may already have contractual agreements with their transmission entities. Grandfathered contracts or existing contracts must be re-evaluated to ensure that the existing contracts comply with this standard's requirements. 4. The subcommittee cannot conceptualize what a field test would be for this standard. The subcommittee recommends each nuclear plant and its transmission entity be "pre-implementation audited" within a specified grace period (TS recommends 18 months) before the standard is implemented. 5. Recommend minimizing the impact on regulatory requirements and to allow time to conduct a "pre-implementation audit" period for each nuclear plant of 18 months after the NERC Board of Trustees approves the standard. 6. Will this standard be applicable to nuclear plants in Canada as well as the United States?

4. Are there any 'show-stoppers' that would prevent you from approving the standard?

Yes

No

## **Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard**

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If yes, please list them:

The TS does not see any show stoppers in the draft standard. However, the subcommittee believes the uncertainties identified in number 3 comment above, merit a second posting and comment period.

5. If the standard is adopted by the NERC board in May 2006, do you believe July 1, 2007 is an appropriate effective date by which all applicable entities can comply with the standard?

Yes

No

If no, please comment and state an alternative effective date that would be acceptable.

The TS recommends compliance be a minimum of 18 months with the minimum enforceable 'must comply' date no earlier than January 1, 2008. The TS recommends minimizing the impact on regulatory requirements and to allow time to conduct a "pre-implementation audit" period for each nuclear plant.

6. Considering the effective date by which applicable entities must comply with the standard, is there a need to field test the standard?

Yes

No

If yes, please state your reasons why field testing is required and describe the nature of the field test you would propose.

The TS cannot conceptualize what a "field test" of this standard would be for. The TS recommends that a "pre-implementation audit" would be more appropriate to ensure all documentation agreements are in place and that all the standard's requirements are met.

7. Do you have any additional comments on the proposed standard? If so, please provide your comments and any specific changes you would recommend to improve the standard.

None, refer to Comment 3

**Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard**

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           **Do not** submit a response in an unprotected copy of this form.

<b>Individual Commenter Information</b>		
<b>(Complete this page for comments from one organization or individual.)</b>		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> FRCC	<input type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> MAAC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> MAIN	<input type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> MRO	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> NPCC	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> SERC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> SPP	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities
<input type="checkbox"/> WECC	<input type="checkbox"/>	
<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	



## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

### **Please Enter All Comments in Simple Text Format.**

1. Does your company own or operate a nuclear power plant?

Yes

No

2. Does your company provide off-site power supply, transmission, or other services to a nuclear power plant?

Yes

No

3. If the standard was presented for approval as written, would you be inclined to:

Approve the standard

Not approve the standard

Abstain or don't know

Please provide reasons:

4. Are there any 'show-stoppers' that would prevent you from approving the standard?

Yes

No

If yes, please list them:

The SES recommends the SDT delete R8.1.4. In the alternative, the SDT recommends the SDT modify the definition of "Nuclear Plant Interface Requirements" to include a new "3) This standard cannot supercede any regulatory or legal obligations relative to the sharing of power system information."

5. If the standard is adopted by the NERC board in May 2006, do you believe July 1, 2007 is an appropriate effective date by which all applicable entities can comply with the standard?

Yes

No

## **Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard**

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If no, please comment and state an alternative effective date that would be acceptable.

6. Considering the effective date by which applicable entities must comply with the standard, is there a need to field test the standard?

Yes

No

If yes, please state your reasons why field testing is required and describe the nature of the field test you would propose.

7. Do you have any additional comments on the proposed standard? If so, please provide your comments and any specific changes you would recommend to improve the standard.

The NERC Standards Evaluation Subcommittee is tasked with the review of standards that meet planning or analysis needs. The SES welcomes this proposed standard from the standpoint that nuclear power plants and the neighboring transmission planner should be well coordinated in ensuring that the technical safety and regulatory requirements for nuclear power plants are met. SES is in favor of the agreement referenced in R8 that mandates that the transmission system and generator define the planning, operating, and maintenance requirements for the systems, and define responsibilities for meeting those requirements. However, R8, as drafted, is very proscriptive and may be considered all inclusive due to its detail. SES recommends that the SDT redraft R8 into a much more general statement of what objectives are to be accomplished in terms of safety and reliability within the agreement and leave the numerous details of the agreement up to the various parties involved.

In R1, Nuclear Plant Entities are required to provide the current Nuclear Plant Interface Requirements; however there is no periodicity provided for this requirement. The SES would recommend that R1 include a phrase such as...the current Nuclear Plant Interface Requirements as they may be revised from time to time per the Agreements developed in accordance with R8.

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           **Do not** submit a response in an unprotected copy of this form.

<b>Individual Commenter Information</b>		
<b>(Complete this page for comments from one organization or individual.)</b>		
Name:	<b>Gregg Reimers</b>	
Organization:	<b>PG&amp;E - Diablo Canyon Nuclear Power Plant</b>	
Telephone:	<b>805-545-6597</b>	
E-mail:	<b>gar0@pge.com</b>	
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> FRCC	<input type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> MAAC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> MAIN	<input type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> MRO	<input checked="" type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> NPCC	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> SERC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> SPP	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities
<input checked="" type="checkbox"/> WECC	<input type="checkbox"/>	
<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	





## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

### **Please Enter All Comments in Simple Text Format.**

1. Does your company own or operate a nuclear power plant?

Yes

No

2. Does your company provide off-site power supply, transmission, or other services to a nuclear power plant?

Yes

No

3. If the standard was presented for approval as written, would you be inclined to:

Approve the standard

Not approve the standard

Abstain or don't know

Please provide reasons:

As drafted, the standard does not adequately identify time limits for notifications to nuclear power plants

4. Are there any 'show-stoppers' that would prevent you from approving the standard?

Yes

No

If yes, please list them:

5. If the standard is adopted by the NERC board in May 2006, do you believe July 1, 2007 is an appropriate effective date by which all applicable entities can comply with the standard?

Yes

No

If no, please comment and state an alternative effective date that would be acceptable.

## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

6. Considering the effective date by which applicable entities must comply with the standard, is there a need to field test the standard?

Yes

No

If yes, please state your reasons why field testing is required and describe the nature of the field test you would propose.

Most nuclear power plants should already have a basic agreement in place.

7. Do you have any additional comments on the proposed standard? If so, please provide your comments and any specific changes you would recommend to improve the standard.

Yes, see separate WORD file: NERC OffsitePwrStd-Comments-DCPP.doc

# Attachment A

## Comments On NERC Nuclear Power Plant Offsite Power Draft Standard

### Definition of Terms:

Change Nuclear Plant to Nuclear Power Plant (NPP) for consistency with other government agencies. (generic comment)

Revise the Nuclear Power Plant Interface requirements to read as follows:

- 1) The NPP Operating License and Technical Specifications require two physically independent sources designed and located so as to minimize to the extent practical the likelihood of their simultaneous failure under operating and postulated accident and environmental conditions.
- 2) The basic requirement for each offsite power supply is that it provides sufficient capacity and capability for safe shutdown and design basis accident mitigation in conjunction with a trip of the unit.
- 3) Avoiding actuation of the NPP under voltage protection to preclude tripping of the unit AND actuation of the onsite emergency AC power sources due to anticipated electric system disturbances, transients, or other conditions.

### Requirements:

R4.3: Change to read as follows: The Nuclear Power Plant shall be immediately notified for actual violations of the Nuclear Power Plant Interface Requirements and within 15 minutes of determining postulated contingency violations. Continued operation outside the Nuclear Power Plant Interface Requirements may result in a shutdown of the Nuclear Power Plant.

R4.4: This notification should be immediately.

Add R4.5: Immediately notify the Nuclear Power Plant of Transmission Entity notifications from other agencies regarding imminent grid threats (e.g. fire).

Add R4.6: Immediately notify the Nuclear Power Plant when the conditions addressed in R4.3, R4.4, and R4.5 are corrected.

R7: Change “actual or proposed changes” to “proposed permanent or temporary changes”.

M4.2: Delete the phrase – to the extent practical under electric system conditions.

### Compliance:

D1.3: Add a requirement for the Transmission Entities to retain all records of events resulting in operation outside the Nuclear Power Plant Interface Requirements.

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<b>Individual Commenter Information</b>		
<b>(Complete this page for comments from one organization or individual.)</b>		
Name:	<b>Jennifer T. Sterling</b>	
Organization:	<b>Exelon Energy Delivery</b>	
Telephone:	<b>(630) 437-2764</b>	
E-mail:	<b>jennifer.sterling@exeloncorp.com</b>	
NERC Region	<input type="checkbox"/>	<b>Registered Ballot Body Segment</b>
<input checked="" type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
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<input type="checkbox"/> WECC	<input type="checkbox"/>	
<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	



## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

### **Please Enter All Comments in Simple Text Format.**

1. Does your company own or operate a nuclear power plant?

Yes

No

2. Does your company provide off-site power supply, transmission, or other services to a nuclear power plant?

Yes

No

3. If the standard was presented for approval as written, would you be inclined to:

Approve the standard

Not approve the standard

Abstain or don't know

Please provide reasons:

Our vote will be based on the final draft document.

4. Are there any 'show-stoppers' that would prevent you from approving the standard?

Yes

No

If yes, please list them:

5. If the standard is adopted by the NERC board in May 2006, do you believe July 1, 2007 is an appropriate effective date by which all applicable entities can comply with the standard?

Yes

No

If no, please comment and state an alternative effective date that would be acceptable.

## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

6. Considering the effective date by which applicable entities must comply with the standard, is there a need to field test the standard?

Yes

No

If yes, please state your reasons why field testing is required and describe the nature of the field test you would propose.

We believe field testing is needed to ensure appropriate Agreements are applied, to ensure the compliance elements are correct and to ensure all requirements/measures of the new Standard are appropriate and can be practically applied.

7. Do you have any additional comments on the proposed standard? If so, please provide your comments and any specific changes you would recommend to improve the standard.

As a general comment, the SAR lists virtually every defined functional entity as the applicable function, but the Requirements use only Transmission Entities, Transmission Planner and Generation Operator - from a compliance perspective that must be cleaned up. Each requirement must list the specific applicable entity (e.g. Transmission Planner shall..., Transmission Operator shall...). The use of Transmission Entity introduces ambiguity into the applicable entities. Functional entities that are not specifically included in the requirements should be removed from the applicability section.

Requirement R2 is overly broad and unnecessary in that the same requirement appears in R.8.2.3. We are concerned about this broad use of language might imply that the Transmission Planner would be financially responsible for incremental changes to maintain the Nuclear Plant Interface Requirements. It is our position that the responsibility for maintaining the ability of the transmission system to meet incremental requirements that exceed the Planning Criteria should be defined in the various agreements that have been or would be developed in accordance with R8.

Change the wording in R4.2 to read -Establish and utilize formal procedures or policies that facilitate the Operation of the electric system to meet the applicable requirements of the Nuclear Plant Interface Requirements.- Exelon Energy Delivery feels this wording allows for a compliance review. In addition, the requirement to respect the System Operating Limits is included in other existing Standards. Including it here is redundant.

Change the wording in R4.3 to read -Establish and utilize formal procedures or policies for notification of the NPP Generator Operator when Nuclear Plant Interface Requirements cannot be met. The procedure or policy shall include the requirement to coordinate mitigating actions and maintain appropriate documentation of circumstances leading to the event.- This wording allows for a compliance review.

Change the wording in R4.4 to read -Establish and utilize formal procedures or policies for notification of the NPP Generator Operator when the ability to assess the operation of the transmission system affecting Nuclear Plant Interface Requirements is not available.- This wording allows for a compliance review.

Change the wording of R5 to read -Per the Agreements developed in accordance with R8., the designated Transmission Operator and the NPP Generator Operator shall

## **Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard**

establish and utilize formal procedures for the coordination of planned outages and maintenance activities affecting the Nuclear Plant Interface Requirements-. This wording allows for compliance review.

In R6, substitute the phrase -establish and utilize formal procedures or policies for notification of- where the word -inform- appears. This wording allows for compliance review.

In R7, substitute the phrase -establish and utilize formal procedures or policies for notification of- where the word -inform- appears. This wording allows for compliance review. Additionally, the phrase -within bounds defined by the FERC Standards of Conduct- should be added to the end of the requirement.



**Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard**

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<b>Individual Commenter Information</b>		
<b>(Complete this page for comments from one organization or individual.)</b>		
Name:	<b>Michael Calimano</b>	
Organization:	<b>NYISO</b>	
Telephone:	<b>518-356-6129</b>	
E-mail:	<b>mcalimano@nyiso.com</b>	
NERC Region	<input type="checkbox"/>	<b>Registered Ballot Body Segment</b>
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> ECAR	<input checked="" type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> FRCC	<input type="checkbox"/>	3 — Load-serving Entities
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<input checked="" type="checkbox"/> NPCC	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> SERC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> SPP	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities
<input type="checkbox"/> WECC	<input type="checkbox"/>	
<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	



## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

### **Please Enter All Comments in Simple Text Format.**

1. Does your company own or operate a nuclear power plant?

Yes

No

2. Does your company provide off-site power supply, transmission, or other services to a nuclear power plant?

Yes

No

3. If the standard was presented for approval as written, would you be inclined to:

Approve the standard

Not approve the standard

Abstain or don't know

Please provide reasons:

4. Are there any 'show-stoppers' that would prevent you from approving the standard?

Yes

No

If yes, please list them:

The NYISO reserves the right to comment at this time.

5. If the standard is adopted by the NERC board in May 2006, do you believe July 1, 2007 is an appropriate effective date by which all applicable entities can comply with the standard?

Yes

No

If no, please comment and state an alternative effective date that would be acceptable.

July 1, 2008

## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

6. Considering the effective date by which applicable entities must comply with the standard, is there a need to field test the standard?

Yes

No

If yes, please state your reasons why field testing is required and describe the nature of the field test you would propose.

7. Do you have any additional comments on the proposed standard? If so, please provide your comments and any specific changes you would recommend to improve the standard.

1) The NYISO recommends the addition of M4.5 to balance the standard:

"Documentation of the process used by the Nuclear Plant Entities to notify the Transmission Entities if the capability to maintain the Nuclear Plant Interface is lost; and copies of logs, or other evidence, documenting the process that were implemented."

2) Applicability section lists "Planning Authorities" twice.

3) NERC's reference to "Transmission Entities" is overbroad, because the standard fails to identify whether the responsible entity is the Transmission Owner or an Independent System Operator/Regional Transmission Organization, or some combination. Without specifying which entity is responsible for what, NERC will not have a standard that provides fair notice to industry participants and will not be able to fairly enforce the standard, since NERC hasn't provided clear notice for who is responsible for what.

For example, the definition of service in 4.2; what "service" is applicable to whom? Is the service provided by the Transmission Operator, Transmission Owner, some combination of the two? As written, it appears to be applicable to all reliability functions.

4) The second sentence of the Purpose seems to imply the standard is only applicable to entities other than Nuclear Plant Entities. We suggest it be rephrased to eliminate this unintended exclusion.

5) We also recommend that the definition in Section A 4.1 & A 4.2 be deleted since they appear under Definition of Terms.

6) Requirement R3 is redundant. It is covered by requirement R8.1.6.

7) R 8.1.4 indicates "Provisions for suspending standards of conduct when needed to ensure grid reliability, nuclear plant safety, or personnel safety." and the standard requires that whatever information, as stated in NRC license requirements, must be given.

Requirement 8.1.4, in its present form, needs to be removed. We suggest deleting the requirement, and stating, as the third bullet point in the 'Nuclear Plant Interface Requirements,' Definition of Terms: "This standard cannot supercede any regulatory or legal obligations relative to the sharing of power system information."

**Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard**

8) We request clarification of what is meant by R8.3.7 "Coordination of physical and cyber security protection of the electric system-nuclear plant interface."

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<b>Individual Commenter Information</b>		
<b>(Complete this page for comments from one organization or individual.)</b>		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> FRCC	<input type="checkbox"/>	3 — Load-serving Entities
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<input type="checkbox"/> SPP	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities
<input type="checkbox"/> WECC	<input type="checkbox"/>	
<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	

**Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard**

**Group Comments (Complete this page if comments are from a group.)**  
 Group Name: **Midwest Reliability Organization (MRO)**  
 Lead Contact: Pam Oreschnick  
 Contact Organization: MRO for group (Xcel for lead contact)  
 Contact Segment: 2  
 Contact Telephone: 612-337-2376  
 Contact E-mail: pamela.j.oreschnick@xcelenergy.com

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>
Al Boesch	NPPD	MRO	2
Terry Bilke	MISO	MRO	2
Robert Coish	MHEB	MRO	2
Dennis Florum	LES	MRO	2
Ken Goldsmith	ALT	MRO	2
Todd Gosnell	OPPD	MRO	2
Wayne Guttormson	SPC	MRO	2
Darrick Moe, Chair	WAPA	MRO	2
Tom Mielnik	MEC	MRO	2
Dick Pursley	GRE	MRO	2
Dave Rudolph	BEPC	MRO	2
Joe Knight, Sceretary	MRO	MRO	2
27 Additional MRO Members	Companies not named above	MRO	2

\* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

**Please Enter All Comments in Simple Text Format.**

1. Does your company own or operate a nuclear power plant?

Yes

No

2. Does your company provide off-site power supply, transmission, or other services to a nuclear power plant?

Yes

No

3. If the standard was presented for approval as written, would you be inclined to:

Approve the standard

Not approve the standard

Abstain or don't know

Please provide reasons:

Format and sequence of requirements written in this standard all are directed to R8 which is the primary requirement of this standard. R8 should be moved to R1 with the remaining requirements sequenced after that in order of importance.

This proposed standard has potential conflicts with the recent NERC annex 2 confidentiality agreement. R8, having an agreement (or multiple agreements as allowed in the standard) that deal with all the R8 subsets. R8.1.3. says Data Confidentiality Requirements. This is where Annex 2 (and the MISO created agreement which we would probably implement) collided head on in our view. If we start making more and more agreements as NERC says you can, this will create an administrative nightmare as R8.1.5 in the standard states that you perform a technical review of the Agreement (note singular case use) annually and an administrative review every three years. If we had followed the course laid out, we would have four to five agreements (MISO's, Annex 2, The NERC ORD (even though it has little to do with Nuclear Plants, this document would have to be reviewed due to guilt by association), and the one we would have to create to fill the gaps created by this standard). When you have multiple documents or agreements for a particular item you establish a hierarchy of document ranking to avoid potential conflicts (and disputes) due to conflicting language in different documents (Remember we had no input on development of Annex 2). There is nothing in the standard that addresses this issue and should be added.

The need for adequate off site power sources to meet Nuclear Plant Interface Requirements supports the need for this standard. This adequacy depends on the ability of analytical tools to predict the impact of unplanned events.

Requirement 8.4.3 calls for coordinated investigations for the cause of unplanned events. This requirement should be expanded and be explicit to also call for



## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

benchmarking the results of any analytical tool used to predict the effects of unplanned events.

The definition of "Transmission Entities" is inappropriate and should be changed or called something else. Balancing Authorities, Distribution Providers and Load-Serving Entities are not Transmission Entities and do not have any responsibilities related to transmission. We would suggest that the definition be changed to "Off site power supply Entities". Also there is a typo because Planning Authorities are in the definition twice.

The standard as written places undue burden on TO's by allowing the Nuclear Plant Entities to unilaterally declare what constitutes a Nuclear Plant Interface Requirement without regard to the impact on the transmission system. This puts the Transmission Entity in a state of reaction to not only perform the iterative study and issue resolution processes identified in R2 and R3 but also to concurrently operate the system to the NPIR as identified in R4. The process would be much more efficient and result in a more reliable bulk power system if the Transmission Entity and Nuclear Entity jointly determine the NPIR through a negotiation process. The following is recommended to address this concern:

Create a new term, such as Nuclear Plant Study Limitation, to replace the term Nuclear Plant Interface Requirement in R1 and R2. Expand R3 to read "The Nuclear Plant Entities and the Transmission Entities shall resolve issues identified in R2, R6, and R7, and agree to the Nuclear Plant Interface Requirements and document the NPIR in the Agreements developed in accordance with R8.

4. Are there any 'show-stoppers' that would prevent you from approving the standard?

Yes

No

If yes, please list them:

As noted in item 3 above.

It's inappropriate to ask whether the standard is ready for ballot when it is just going out for comments for the first time.

5. If the standard is adopted by the NERC board in May 2006, do you believe July 1, 2007 is an appropriate effective date by which all applicable entities can comply with the standard?

Yes

No

If no, please comment and state an alternative effective date that would be acceptable.

This question seems premature. It is too early to tell. Assuming the requirements are similar, it would be appropriate to have an effective date one year out from the date the standard is adopted. There may be requirements that are physically impossible to meet.

## **Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard**

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Mitigation plans may be necessary if requirements are found that are physically impossible to meet.

6. Considering the effective date by which applicable entities must comply with the standard, is there a need to field test the standard?

Yes

No

If yes, please state your reasons why field testing is required and describe the nature of the field test you would propose.

Field testing could help uncover problems with the requirements. Test audit of any nuclear facilities that were not involved in developing the standard.

7. Do you have any additional comments on the proposed standard? If so, please provide your comments and any specific changes you would recommend to improve the standard.

Roles of the various applicable entities, including the compliance monitor, need to be defined.

Data retention requirements need to follow the standards process manual. The requirement should be more specific and measurable. The standard should be clearer as to what data is required. Data should be retained that shows you consistently meet requirements. Compliance data retention does not show this. Level 1 noncompliance is assigned if "some" data is missing, but there is no definition of what "some" is. M4.2 - What data is needed and for how long?

**Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard**

Please use this form to submit comments on Draft 1 of the Nuclear Power Plant Off-site Power Coordination standard. Comments must be submitted by **January 17, 2006**. You must submit the completed form by e-mailing it to [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the words "Nuclear Off-site Power Comments" in the subject line. If you have questions please contact Mark Ladrow at [mark.ladrow@nerc.net](mailto:mark.ladrow@nerc.net) or 609-452-8060.

**All Data On This Form Will Be Transferred Automatically To A Database.**

- DO:**     **Do** enter text only, with no formatting or styles added.  
           **Do** use punctuation and capitalization as needed (except quotations).  
           **Do** use more than one form if responses do not fit in the spaces provided.  
           **Do** submit any formatted text or markups in a separate WORD file.

- DO NOT:** **Do not** insert tabs or paragraph returns in any data field.  
           **Do not** use numbering or bullets in any data field.  
           **Do not** use quotation marks in any data field.  
           **Do not** submit a response in an unprotected copy of this form.

<b>Individual Commenter Information</b>		
<b>(Complete this page for comments from one organization or individual.)</b>		
Name:	<b>Dan Goldston</b>	
Organization:	<b>SCANA, SCE&amp;G, V.C. Summer Nuclear Station</b>	
Telephone:	<b>803-345-4657</b>	
E-mail:	<b>dgoldston@scana.com</b>	
NERC Region	<input type="checkbox"/>	<b>Registered Ballot Body Segment</b>
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> ECAR	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> FRCC	<input type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> MAAC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> MAIN	<input checked="" type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> MRO	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> NPCC	<input type="checkbox"/>	7 — Large Electricity End Users
<input checked="" type="checkbox"/> SERC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> SPP	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities
<input type="checkbox"/> WECC	<input type="checkbox"/>	
<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	



## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

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### Please Enter All Comments in Simple Text Format.

1. Does your company own or operate a nuclear power plant?

Yes

No

2. Does your company provide off-site power supply, transmission, or other services to a nuclear power plant?

Yes

No

3. If the standard was presented for approval as written, would you be inclined to:

Approve the standard

Not approve the standard

Abstain or don't know

Please provide reasons:

It tends to cover pretty well many of the basic issues, without being overly specific. It would suffice as a vehicle to collate and address many issues that the NRC, INPO, SERC, FERC, ANS, EPRI and other's are now bringing up. I think it is a strength that this document will question and address both the NPE and the TE during the same audit. Most of the other entities mentioned above deal only with one or the other. I like the fact that this document tends to make it clearer than most that in some ways the NPE is the TE's customer, and in other ways the TE is the NPE's customer. This reflects the real world necessity.

4. Are there any 'show-stoppers' that would prevent you from approving the standard?

Yes

No

If yes, please list them:

5. If the standard is adopted by the NERC board in May 2006, do you believe July 1, 2007 is an appropriate effective date by which all applicable entities can comply with the standard?

Yes

## Comment Form for Draft 1 of Nuclear Power Plant Off-site Power Coordination Standard

No

If no, please comment and state an alternative effective date that would be acceptable.

6. Considering the effective date by which applicable entities must comply with the standard, is there a need to field test the standard?

Yes

No

If yes, please state your reasons why field testing is required and describe the nature of the field test you would propose.

7. Do you have any additional comments on the proposed standard? If so, please provide your comments and any specific changes you would recommend to improve the standard.

Would it improve the standard to specifically assert the Nuclear Plant Entities will reduce power, or go off-line, at the direction of the Transmission Entity? This could be covered by the agreement, and the Transmission Entity must know the limitations of the NPE's controllable downpower rates. The NPE will come off line immediately (trip) at the direction of the TE. My understanding is these were issues during the August 2003 Northeast Blackout. Our TE has this authority over the NPE. This may be worthy of special mention, instead of leaving it buried in the agreements. In our situation the NPE will respond to uppower requests from the TE after discussion with NPE management, but will respond to downpower requests from the TE immediately. The fact that the NPE is baseloaded and one of the last to reduce power is covered in the document and in training at the TE.

## Consideration of Comments on 1<sup>st</sup> Draft of Nuclear Power Plant Off-site Power Coordination Standard

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The Nuclear Off-site Power Standard Drafting Team thanks all commenters who submitted comments on the first draft of the standard. This standard was posted for a 45-day public comment period from December 1, 2005 through January 17, 2006. The drafting team asked stakeholders to provide feedback on the standard through a Comment Form. There were 24 sets of comments, including comments from more than 115 different people from approximately 60 companies representing 6 of the 9 Industry Segments as shown in the table on the following pages.

After the drafting team completed its consideration of these comments, NERC staff asked the drafting team to add 'Violation Risk Factors' to each requirement — and asked the drafting team to add more details to the Data Retention section of the standard. The drafting team made these conforming changes and they are reflected in the second draft of the standard.

Based on the comments received, the drafting team is posting this standard for another comment period.

In this 'Consideration of Comments' document stakeholder comments have been organized so that it is easier to see the responses associated with each question. All comments received on the standard can be viewed in their original format at:

<http://www.nerc.com/~filez/standards/Nuclear-Offsite-Supply.html>

If you feel that your comment has been overlooked, please let us know immediately. Our goal is to give every comment serious consideration in this process! If you feel there has been an error or omission, you can contact the Vice President and Director of Standards, Gerry Cauley at 609-452-8060 or at [gerry.cauley@nerc.net](mailto:gerry.cauley@nerc.net). In addition, there is a NERC Reliability Standards Appeals Process.<sup>1</sup>

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<sup>1</sup> The appeals process is in the Reliability Standards Process Manual: <http://www.nerc.com/standards/newstandardsprocess.html>.

## ***Executive Summary***

The Standard Drafting Team, in response to stakeholder comments, made several key changes to the draft standard. The following summarizes those changes and associated supporting rationale:

- **Title**  
The drafting team changed the standard title to “Nuclear Plant Interface Coordination” to more accurately reflect the content of the standard.
- **Sequence of Requirements**  
The drafting team revised the requirements and rearranged the order for better flow and readability. New requirement R2 was inserted to state “up front” that the Transmission Entities and Nuclear Plant Generator Operator shall have the necessary agreements in place. Requirements R3 and above, when referring to the agreements, are now referring back to R2. However, the standard drafting team feels the details of what should be included in the agreements are appropriately placed as R9 (after the more general requirements contained in R3 through R8).
- **FERC Standards/Codes of Conduct**  
Stakeholders expressed concern about the initial requirement that included a provision to “suspend the standards of conduct”. This requirement has been deleted from the revised standard. The drafting team notes that the FERC issued an Interpretive Order that addresses this issue.
- **Transmission Concerns about Nuclear Plant Interface Requirements being dictated to them**  
The definition of *Nuclear Plant Interface Requirements* (NPIR) has been changed and the term, *Nuclear Plant Licensing Requirements* (NPLR) has been added to help make the distinction between requirements mandated by the jurisdictional nuclear regulatory agency for the nuclear plant (NPLR) and the mutually agreed upon interface requirements (NPIR) that support the nuclear power plant in meeting its licensing requirements. The standard is intended to establish a collaborative effort between the nuclear plant owner/operator and the applicable transmission entities that provide those necessary services. The NPIR will vary depending on such specifics as plant licensing commitments, plant-grid interconnection design, plant design itself, and location. The details of how the NPIR are addressed will be set forth in the agreement(s) required by this standard.
- **Transmission Entity Term**  
A number of respondents expressed concerns that the term “Transmission Entities” is too broad, making it difficult to determine which transmission entities are responsible, and making it difficult for NERC to enforce compliance. Based on input from NERC Staff, the standard drafting team made changes to the draft standard to address these concerns. The revised draft standard establishes a single nuclear entity (the Nuclear Plant Generator Operator). The Nuclear Plant Generator Operator must work with the appropriate transmission authorities to identify the applicable Transmission Entities. The Nuclear Plant Generator Operator must provide the plant’s proposed nuclear interface requirements (NPIR) to the identified Transmission Entities (see R1 and M1). The specific Transmission Entities involved will be contingent on that plant’s physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant’s specific licensing requirements (NPLR).

Next, the standard requires the Nuclear Plant Generator Operators and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs shall be addressed and implemented (see R2 and M2). The names of the responsible Transmission Entities must be clearly identified in these agreements (see R9.1.2 and A4.2).



## Consideration of Comments on 1<sup>st</sup> Draft of Nuclear Power Plant Off-site Power Coordination Standard

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- **Standard's Effective Date**

In response to industry comments the standard drafting team modified the standard's effective date from July 1, 2007 to 18 months after NERC's Board of Trustee approval. This will allow entities more time to establish or revise the agreements needed to comply with the standard.

**Consideration of Comments on 1<sup>st</sup> Draft of Nuclear Power Plant Off-site Power Coordination Standard**

	Commenter	Organization	Industry Segment								
			1	2	3	4	5	6	7	8	9
1.	James H. Sorrels, Jr.	AEP	x				x	x			
2.	Anita Lee	AESO		x							
3.	Ken Goldsmith	ALT		x							
4.	John E. Sullivan	Ameren	x								
5.	David Waller	Ameren					x				
6.	Gene Warnecke	Ameren	x								
7.	Ed Pfeiffer	Ameren									
8.	Peter Burke	ATC	x								
9.	Darrel Yonck	ATC	x								
10.	Dave Rudolph	BEPC		x							
11.	Dan Taormina	BG&E	x								
12.	Francis Halpin	BPA									
13.	Lisa Szot	CAISO		x							
14.	James Thorson	DET					x				
15.	Bill Thompson	Dominion	x								
16.	Richard Nelson	Dominion					x				
17.	Bill Thompson	Dominion	x								
18.	Ray Palmieri	ECAR									
19.	Tom Barnett	Energy Nuclear					x				
20.	T.O. Moffitt	Energy Nuclear					x				
21.	John Hotz	Energy Nuclear					x				
22.	Singh Matharu	Energy Nuclear					x				
23.	Ed Hester	Energy Nuclear					x				
24.	Maurice Casadaban	Energy Transmission	x								
25.	Mookie Chander	Energy Transmission	x								
26.	Jay Zimmerman	Energy Transmission	x								
27.	George Bartlett	Energy Transmission	x								
28.	Jim Case	Energy Transmission	x								
29.	Ed Davis	Energy Transmission	x								
30.	Bill Aycock	Energy Transmission	x								
31.	Narinder Saini	Energy Transmission	x								
32.	Rick Riley	Energy Transmission	x								
33.	Michael LaBiche	Energy Transmission	x								
34.	Ed Brinson	Energy Transmission	x								
35.	James Puska	Energy Transmission	x								
36.	Greg Camet	Energy Transmission	x								

**Consideration of Comments on 1<sup>st</sup> Draft of Nuclear Power Plant Off-site Power Coordination Standard**

Commenter		Organization	Industry Segment									
			1	2	3	4	5	6	7	8	9	
37.	Sam Jones	ERCOT		x								
38.	Ken Donohoo	ERCOT										
39.	John Gyraath	Exelon					x					
40.	Jennifer T. Sterling	Exelon Energy Delivery	x		x							
41.	Roger Parker	FirstEnergy					x					
42.	Dave Huff	FirstEnergy	x									
43.	Dick Pursley	GRE		x								
44.	David Kiguel	Hydro One	x									
45.	Ron Falsetti	IESO		x								
46.	Bruce Balmat	ISO/RTO Council		x								
47.	Kathleen Goodman	ISONE		x								
48.	Bill Shemley	ISONE		x								
49.	Pete Brandien	ISONE		x								
50.	Robert Haas	ITC	x									
51.	Dennis Florom	LES		x								
52.	Tom Mielnik	MEC		x								
53.	Terry Wright	METC	x									
54.	Robert Coish	MHEB		x								
55.	Bill Phillips	MISO		x								
56.	Tom Mallinger	MISO										
57.	Terry Bilke	MISO		x								
58.	Terry Volkmann (MISO)	MISO Nuclear Plant WG										
59.	Joe Knight	MRO		x								
60.	Alden Briggs	NBSO		x								
61.	Tom Vandervort	NERC										
62.	Bill Bojorquez (ERCOT)	NERC Standards Evaluation Cmte.										
63.	Scott Moore (AEP)	NERC Transmission Subc.										
64.	Peter Lebro	Ngrid	x									
65.	Steve Myres	NMC					x					
66.	Tom Lillehel	NMC					x					
67.	Robert Hamm	NMC					x					
68.	John Mosier	NPCC		x								
69.	Brian Hogue	NPCC		x								
70.	Guy Zito	NPCC CP9 RSWG	x									
71.	Ed Watzl	NPPD					x					
72.	Steve Gocek	NPPD					x					

**Consideration of Comments on 1<sup>st</sup> Draft of Nuclear Power Plant Off-site Power Coordination Standard**

Commenter		Organization	Industry Segment									
			1	2	3	4	5	6	7	8	9	
73.	Al Boesch	NPPD		x								
74.	George Morris	NRC										
75.	David Little	NS Power	x									
76.	Doug McCracken	NU										
77.	Murale Gopinathan	NU	x									
78.	Timothy Lensmire	Nuclear Mgmt. Co. – Point Beach						x				
79.	Greg Campoli	NYISO	x									
80.	Michael Calimano	NYISO		x								
81.	Ralph Rufrano	NYPA	x									
82.	Bill Blessie	OPPD						x				
83.	Randy Samson	OPPD	x									
84.	Todd Gosnell	OPPD		x								
85.	Brad Chase	OUC										
86.	Gregg Reimers	PG&E – Diablo Canyon Nuclear										
87.	Steve Crutchfield	PJM										
88.	Ian Grant	PSO/ESP	x									
89.	Tom Ballew	PSO/TOM	x									
90.	Larry Akens	PSO/TRO	x									
91.	Doug Bailey	PSO/TRO		x								
92.	Jennifer Weber	PSO/TRO		x								
93.	Jerry Landers	PSO/TRO	x									
94.	Dan Goldston	SCANA, SCE&G, V.C. Summer Nuclear Station						x				
95.	Jim Viikansalo	SOCO	x									
96.	Marc Butts	SOCO	x									
97.	Jim Busbin	SOCO	x									
98.	Wade Pugh	SOCO	x									
99.	Roman Carter	Southern Generation							x			
100.	David Whitehurst	Southern Nuclear						x				
101.	Duane Brock	Southern Nuclear						x				
102.	Bill Snider	Southern Nuclear						x				
103.	Bonnie Goodwin	Southern Nuclear						x				
104.	Jeff Branum	Southern Nuclear						x				
105.	Tim Milton	Southern Nuclear						x				
106.	Terry L. Crawley	Southern Nuclear Grid Committee						x				

**Consideration of Comments on 1<sup>st</sup> Draft of Nuclear Power Plant Off-site Power Coordination Standard**

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Commenter		Organization	Industry Segment								
			1	2	3	4	5	6	7	8	9
107.	Wayne Guttormson	SPC		x							
108.	Charles Yeung	SPP		x							
109.	Kathy Davis	TVA	x								
110.	Jerry Nicely	TVA Nuclear					x				
111.	Darrick Moe	WAPA									
112.	Howard Rulf	We Energies			x	x	x				
113.	Allen Klassen	Westar									
114.	Mike McMullen	Xcel	x								
115.	Pam Oreschnick	Xcel									

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7.	Do you have any additional comments on the proposed standard? If so, please provide your comments and any specific changes you would recommend. ....	44

1. Does your company own or operate a nuclear power plant?

**Summary Consideration:** All but five of the commenters (representing more than 50 different entities) indicated that they do own a nuclear power plant.

Commenter	Yes	No	Comment
Independent Electricity System Operator (2) Ron Falsetti		✓	
Baltimore Gas & Electric (1) Daniel Taormina		✓	
American Transmission Co. (1) Peter Burke		✓	
Northeast Utilities (1) Murale Gopinathan		✓	
New York ISO (2) Michael Calimano		✓	
Dominion Virginia Power (1) Bill Thompson	✓		
Nuclear Management Company, Point Beach Nuclear Plant (5) Timothy Lensmire	✓		
PG&E – Diablo Canyon Nuclear Power Plant Gregg Reimers	✓		
Northeast Power Coordinating Council CP9 Reliability Standards Working Group Guy Zito Kathleen Goodman – ISO-NE (2) Ralph Rufrano – NYPA (1) Peter Lebro – Nat'l Grid (1) Alden Briggs – NBSO (2) David Little – NS Power (1) Greg Campoli – NYISO (2) Bill Shemley – ISO-NE (2) David Kiguel – Hydro One (1) John Mosier – NPCC (2) Brian Hogue – NPCC (2)	✓		
Tennessee Valley Authority (1) Kathy Davis Larry Akens – PSO/TRO (1) Jerry Nicely – TVAN (5)	✓		

**Consideration of Comments on 1<sup>st</sup> Draft of Nuclear Power Plant Off-site Power Coordination Standard**

Commenter	Yes	No	Comment
Doug Bailey – PSO/TRO (2) Jennifer Weber – PSO/TRO (2) Tom Ballew – PSO-TOM (1) Ian Grant – PSO/ESP (1) Jerry Landers – PSO/TRO (1)			
American Electric Power (1, 5, 6) James H. Sorrels, Jr.	✓		
Exelon Energy Delivery (1, 3) Jennifer T. Sterling	✓		
Ameren (1) John E. Sullivan	✓		
Dominion Virginia Power (1) Bill Thompson	✓		
Midwest Reliability Organization (2) Pam Oreschnick – Xcel Al Boesch – NPPD (2) Terry Bilke – MISO (2) Robert Coish – MHEB (2) Dennis Florom – LES (2) Ken Goldsmith – ALT (2) Todd Gosnell – OPPD (2) Wayne Guttormson – SPC (2) Darrick Moe (Chr.) – WAPA (2) Tom Mielnik – MEC (2) Dick Pursley – GRE (2) Dave Rudolph – BEPC (2) Joe Knight (Secy.) – MRO (2) 27 add'l MRO members no named above	✓		
Entergy Services, Inc. (1, 5) Entergy Transmission (ET) and Entergy Nuclear (EN) Maurice Casadaban – ET (1) and Mookie Chander – ET (1) Jim Case – ET (1) Jay Zimmerman – ET (1) George Bartlett – ET (1) Ed Davis – ET (1) Bill Aycock – ET (1) Narinder Saini – ET (1) Rick riley – ET (1) Michael LaBiche – ET (1)	✓		



**Consideration of Comments on 1<sup>st</sup> Draft of Nuclear Power Plant Off-site Power Coordination Standard**

Commenter	Yes	No	Comment
Ed Brinson – ET (1) James Puska – ET (1) Greg Camet – ET (1) Tom Barnett – EN (5) T.O. Moffitt – EN (5) John Hotz – EN (5) Singh Matharu – EN (5) Ed Hester – EN (5)			
Southern Nuclear (SN) Grid Committee (5) Terry L. Crawley David Whitehurst – SN (5) Duane Brock – SN (5) Bill Snider – SN (5) Bonnie Goodwin – SN (5) Jeff Branum – SN (5) Tim Milton – SN (5) Roman Carter – SCG (6) Jim Viikansalo – SOCO (1) Marc Butts – SOCO (1) Jim Busbin – SOCO (1) Wade Pugh – SOCO (1)	✓		
We Energies (3, 4, 5) Howard Rulf	✓		
SCANA, SCE&G, V.C. Summer Nuclear Station (5) Dan Goldston	✓		

**2. Does your company provide off-site power supply, transmission, or other services to a nuclear power plant?**

**Summary Consideration:** All but one of the commenters who answered this question indicated that his/her company does provide off-site power supply to a nuclear power plant. Several commenters did not provide a response to this question.

Commenter	Yes	No	Comment
Nuclear Management Company, Point Beach Nuclear Plant (5) Timothy Lensmire		✓	
Dominion Virginia Power (1) Bill Thompson	✓		
Independent Electricity System Operator (2) Ron Falsetti	✓		
PG&E – Diablo Canyon Nuclear Power Plant Gregg Reimers	✓		
Baltimore Gas & Electric (1) Daniel Taormina	✓		
American Transmission Co. (1) Peter Burke	✓		
Northeast Power Coordinating Council CP9 Reliability Standards Working Group Guy Zito Kathleen Goodman – ISO-NE (2) Ralph Rufrano – NYPA (1) Peter Lebro – Nat'l Grid (1) Alden Briggs – NBSO (2) David Little – NS Power (1) Greg Campoli – NYISO (2) Bill Shemley – ISO-NE (2) David Kiguel – Hydro One (1) John Mosier – NPCC (2) Brian Hogue – NPCC (2)	✓		
Tennessee Valley Authority (1) Kathy Davis Larry Akens – PSO/TRO (1) Jerry Nicely – TVAN (5) Doug Bailey – PSO/TRO (2) Jennifer Weber – PSO/TRO (2) Tom Ballew – PSO-TOM (1)	✓		

**Consideration of Comments on 1<sup>st</sup> Draft of Nuclear Power Plant Off-site Power Coordination Standard**

Commenter	Yes	No	Comment
Ian Grant – PSO/ESP (1) Jerry Landers –PSO/TRO (1)			
American Electric Power (1, 5, 6) James H. Sorrels, Jr.	✓		
Exelon Energy Delivery (1, 3) Jennifer T. Sterling	✓		
Ameren (1) John E. Sullivan	✓		
Dominion Virginia Power (1) Bill Thompson	✓		
Northeast Utilities (1) Murale Gopinathan	✓		
MRO Organization (2) Pam Oreschnick – Xcel Al Boesch – NPPD (2) Terry Bilke – MISO (2) Robert Coish – MHEB (2) Dennis Florom – LES (2) Ken Goldsmith – ALT (2) Todd Gosnell – OPPD (2) Wayne Guttormson – SPC (2) Darrick Moe (Chr.) – WAPA (2) Tom Mielnik – MEC (2) Dick Pursley – GRE (2) Dave Rudolph – BEPC (2) Joe Knight (Secy.) – MRO (2) 27 add'l MRO members no named above	✓		
Entergy Services, Inc. (1, 5) Entergy Transmission – (ET) and Entergy Nuclear (EN) Maurice Casadaban – ET (1) and Mookie Chander – ET (1) Jim Case – ET (1) Jay Zimmerman – ET (1) George Bartlett – ET (1) Ed Davis – ET (1) Bill Aycock – ET (1) Narinder Saini – ET (1) Rick riley – ET (1) Michael LaBiche – ET (1) Ed Brinson – ET (1)	✓		

**Consideration of Comments on 1<sup>st</sup> Draft of Nuclear Power Plant Off-site Power Coordination Standard**

Commenter	Yes	No	Comment
James Puska – ET (1) Greg Camet – ET (1) Tom Barnett – EN (5) T.O. Moffitt – EN (5) John Hotz – EN (5) Singh Matharu – EN (5) Ed Hester – EN (5)			
Southern Nuclear (SN) Grid Committee (5) Terry L. Crawley David Whitehurst – SN (5) Duane Brock – SN (5) Bill Snider – SN (5) Bonnie Goodwin – SN (5) Jeff Branum – SN (5) Tim Milton – SN (5) Roman Carter – SCG (6) Jim Viikansalo – SOCO (1) Marc Butts – SOCO (1) Jim Busbin – SOCO (1) Wade Pugh – SOCO (1)	✓		
New York ISO (2) Michael Calimano	✓		
We Energies (3, 4, 5) Howard Rulf	✓		
SCANA, SCE&G, V.C. Summer Nuclear Station (5) Dan Goldston	✓		

3. If the standard was presented for approval as written, would you be inclined to?

**Summary Consideration:** Most commenters indicated they think the standard needs additional work before it is ready for approval. The drafting team made several revisions to the standard, as noted in the Executive Overview at the front of this document.

Commenter	Approve	Not approve	Abstain or don't know	Comment
PG&E – Diablo Canyon Nuclear Power Plant Gregg Reimers		✓		As drafted, the standard does not adequately identify time limits for notifications to nuclear power plants.
<p>Response: The standard drafting team believes the notification times should be agreed upon between the entities and has modified the standard to include notification time requirements within the agreement.</p>				
American Transmission Co. (1) Peter Burke		✓		<p>(1) The standard as written will result in significant adverse impacts to grid reliability by allowing the Nuclear Plant Entities to unilaterally declare what constitutes a Nuclear Plant Interface Requirement without the tools and the ability to determine the impact of the NPIR on the bulk electric system. This puts the Transmission Entity in a state of reaction to not only perform the iterative study and issue resolution processes identified in R2 and R3 but also to concurrently operate the system to the NPIR (unilaterally determined by the Nuclear Entities) as identified in R4. Grid reliability will be significantly enhanced if the Transmission Entity and Nuclear Entity jointly determine the NPIR through a negotiation process. In the absense of an agreement, the Transmission Entities must determine the default NPIR to ensure reliability of the bulk electric system.</p> <p>The following is recommended to address these shortcomings of the draft standard:</p> <p>(2) R1. replace the word “current” with the word “proposed”.</p> <p>(3) Regarding R2, the only instance in the draft standard where Transmission Planner is specifically identified is in R2. The word “Planner” should be replaced with “Entities” to be consistent with the intent of the rest of the draft standard.</p> <p>(4) Regarding R3, R3 is too vague and should be broken up into several</p>

Commenter	Approve	Not approve	Abstain or don't know	Comment
				<p>requirements as follows:</p> <p>R3. The Nuclear Plant Entities and the Transmission Entities shall:</p> <p>R3.1. Ensure that all studies, results, and consequences identified in R2, R6, and R7 are fully understood by all parties and jointly addressed per the Agreements developed in accordance with R8.</p> <p>(5) R3.2. Document the mutually acceptable NPIR per the Agreements developed in accordance with R8. In the absence of an agreement, the Transmission Entities shall notify the Nuclear Plant Entities of the NPIR in effect for the planning and operation of the bulk electric system.</p> <p>(6) Regarding R4.2, R4.2 suggests that the nuclear plant has some priority of service over other types of generating plants. With the exception of the public safety obligation to maintain and/or restore offsite power adequate to supply minimum nuclear safety system requirements, this is inconsistent with NERC's ERO filing which states that all entities will be treated on a non-discriminatory basis. This requirement should be reworded as follows:</p> <p>R4.2. Plan and operate the bulk electric system to meet the NPIR identified in the Agreements developed in accordance with R8 in a non-discriminatory manner.</p> <p>(7) Additionally, the NPIR represents grid operating requirements that impact reliable operation of the bulk electric system over which NERC must have authority. Both the Nuclear Plant Entities and Transmission Entities have a significant and direct impact on whether the NPIR is met. Therefore, the standard must have requirements, measures, and levels of non-compliance similar to R.4, M.4, and D.2 that apply to the Nuclear Plant Entities.</p> <p>Suggest new requirements for R4a as follows:</p> <p>R4a. The Nuclear Plant Entities designated in the Agreements developed in accordance with R8 shall:</p> <p>R4a.1 Incorporate the Nuclear Plant Interface Requirements into the operating reliability analysis of the nuclear plant.</p> <p>R4a.2. Operate the nuclear plant to meet its' Nuclear Plant Interface</p>

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Commenter	Approve	Not approve	Abstain or don't know	Comment
				Requirements. R4a.3. Inform the Transmission Entities and coordinate mitigating actions when the Nuclear Plant Interface Requirements cannot be met.
<p>Response:</p> <p>(1) The standard has been revised to address this concern. This standard was not intended to allow any entity to unilaterally determine the NPIR. Rather, it was intended to require a collaborative effort to establish the NPIR. Therefore, the definition of NPIR has been changed accordingly and NPLR has been added to clarify that the NPLR are the requirements included in the design basis of the nuclear plant and are mandatory in order for the operation of the plant.</p> <p>(2) The standard has been revised to reflect this comment. See the definitions of NPIR and NPLR.</p> <p>(3) The standard has been revised to reflect this comment.</p> <p>(4) The standard was revised to rearrange the requirements presentation as a result of industry comments and old R3 has been deleted.</p> <p>(5) The standard has been revised to reflect coordination between the applicable Nuclear Plant Generator Operator and Transmission Entities in establishment of the appropriate mutually acceptable NPIR and agreements. If the appropriate agreements are not established and/or implemented this would represent a Level 4 non-compliance and should motivate the applicable entities to work together. A Transmission Entity is not able to establish NPIR on its own since the NPIR are plant specific.</p> <p>(6) The standard drafting team believes the current R4.2 wording is acceptable when taken within the context of the other changes made to the standard as noted in response to your comments above. The scope of this standard does not include ensuring the operation of the Bulk Electric System is operated in a non-discriminatory manner beyond public safety concerns. This would need to be addressed during establishment of the NPIR and in the development of the individual agreement(s) between the Transmission Entities and Nuclear Plant Generator Operator on how the agreed upon NPIR will be met.</p> <p>(7) The standard drafting team agrees that the Nuclear Plant Generator Operator should operate per the agreements established to ensure the NPIR are met and has modified the standard by adding new requirement R5 and corresponding Measure M5 for the Nuclear Plant Generator Operator. However, the content of requirements R4.1, R4.3, and R4.4 are transmission-specific and corresponding requirements are not considered applicable to the Nuclear Plant Generator Operator.</p>				
Tennessee Valley Authority (1) Kathy Davis Larry Akens – PSO/TRO (1) Jerry Nicely – TVAN (5) Doug Bailey – PSO/TRO (2) Jennifer Weber – PSO/TRO (2)		✓		Further development of compliance measures needed.

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Commenter	Approve	Not approve	Abstain or don't know	Comment
Tom Ballew – PSO-TOM (1) Ian Grant – PSO/ESP) (1) Jerry Landers –PSO/TRO (1)				
<p><a href="#">Response:</a>  <a href="#">The standard drafting team has revised the standard with the appropriate compliance measures.</a></p>				
Ameren (1) John E. Sullivan		✓		See comments under question #4.
<p><a href="#">Response:</a> <a href="#">See the response to the comments under question #4.</a></p>				
Midwest ISO Nuclear Plant Working Group Terry Volkmann Roger Parker – FE (5) Tim Lensmire – NMC (5) James Thorson – DTE (5) John Gyath – Exelon (5) David Waller – Ameren (5) Steve Myres – NMC (5) Tom Lillehel – NMC (5) – NMC (5) Ed Watzl – NPPD (5) Steve Gocek – NPPD (5) Robert Hamm – NMC (5) Bill Blessie – OPPD (5) Richard Nelson – Dominion (5) Gene Warnecke – Ameren (1) Mike McMullen – Xcel (1) Darrel Yohnk – ATC (1) Dave Huff – FE (1) Robert Haas – ITC (1) Terry Wright – METC (1) Randy Samson – OPPD (1)		✓		<p>(1) Comment 1</p> <p>The need for adequate off site power sources to meet Nuclear Plant Interface Requirements supports the need for this standard. This adequacy depends on the ability of analytical tools to predict the impact of unplanned events.</p> <p>Requirement 8.4.3 calls for coordinated investigations for the cause of unplanned events. This requirement should be expanded and explicitly call for the benchmarking the results of any analytical tool used to predict the effects of unplanned events involving the nuclear plant.</p> <p>(2) Comment 2</p> <p>The standard as written may result in significant adverse impacts to grid and off site power reliability by allowing the Nuclear Plant Entities to unilaterally declare what constitutes a Nuclear Plant Interface Requirement. At the point of this standard's implementation the existing Nuclear Plant Entities and Transmission Entities have collaboratively established NPIR through existing interconnection agreement or vertical integration. As written this standard allow the Nuclear Plant Entity going forward to unilaterally change the NPIR. Grid and off site power reliability can be significantly enhanced if the Transmission Entity and Nuclear Entity jointly determine the NPIR through a collaborative negotiating process. The following changes are recommended to address this concern:</p> <p>Establish that R1 be the NPIR at the time of initial standard compliance.</p> <p>Modify R2, R6, R7 and R8 to reflect that changes to the NPIR and the</p>



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Commenter	Approve	Not approve	Abstain or don't know	Comment
				<p>transmission system affecting NPIR to be done in a collaborative manner between the Nuclear Plant Entities and Transmission Entities.</p> <p>(3) Comment 3</p> <p>Definition of Transmission Entity lists Planning Authority twice and includes Reliability Coordinator, which is not a defined entity in the functional model. Suggest eliminating Reliability Coordinator and change the second Planning Authority to Reliability Authority.</p>
<p><b>Response:</b></p> <p>(1) The standard drafting team agrees with the need for appropriate analytical tools.</p> <p>The intent of this requirement is not to perform validation and verification of the analytical tools used by the transmission organizations but to require provisions for reviewing data necessary to understand unplanned events and take appropriate actions to minimize future events.</p> <p>(2) The definition of NPIR has been changed accordingly and a separate definition for nuclear plant licensing requirements (NPLR) has been added. The NPLR are the requirements included in the design basis of the nuclear plant and are mandatory in order for the operation of the plant. These changes acknowledge that a collaborative effort is involved in determining how to meet the NPIR during the development of the agreements. In addition, changes to the NPIR will result in revisions to the agreement between each entity.)</p> <p>(3) The standard drafting team has corrected this error in A.4.2 under the Applicability section. The drafting team decided to retain the term "Reliability Coordinator" in A.4.2 instead of "Reliability Authority" because this is the term used in the current Draft 3 of the Functional Model. Also, the term "Transmission Entities" is no longer being stated as a definition since its usage and applicability as stated in A.4.2 are unique to this standard and, therefore, cannot be added to the NERC Glossary of Terms.</p>				
<p>NERC Transmission Subcommittee                      Scott Moore (Chr.) – AEP                      Ken Donohoo – ERCOT                      Brad Chase – OUC                      Steve Crutchfield – PJM                      Ed Pfeiffer – Ameren                      Darrick Moe – WAPA                      Doug McCracken – NU                      Allen Klassen – Westar                      Francis Halpin – BPA                      Tom Mallinger – MISO                      Ray Palmieri – ECAR</p>		<p>✓</p>		<p>1. Applicability 4.2 Transmission Entities lists many entities that require different types of contracts addressing different or specific nuclear plant details. Additional "transmission entity" clarification of the different types of contracts for specific nuclear plant details is recommended.</p> <p>2. Consider adding dispute resolution requirements that instruct the entities to include dispute resolution language in each of their contracts but that NERC not get directly involved in the dispute resolution business.</p> <p>3. Recommend recognizing that most nuclear plants may already have contractual agreements with their transmission entities. Grandfathered contracts or existing contracts must be re-evaluated to ensure that the existing contracts comply with this standard's requirements.</p> <p>4. The subcommittee cannot conceptualize what a field test would be for</p>

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Commenter	Approve	Not approve	Abstain or don't know	Comment
Tom Vandervort – NERC				<p>this standard. The subcommittee recommends each nuclear plant and its transmission entity be "pre-implementation audited" within a specified grace period (TS recommends 18 months) before the standard is implemented.</p> <p>5. Recommend minimizing the impact on regulatory requirements and to allow time to conduct a "pre-implementation audit" period for each nuclear plant of 18 months after the NERC Board of Trustees approves the standard.</p> <p>6. Will this standard be applicable to nuclear plants in Canada as well as the United States?</p>
<p>Response:</p> <p>(1) The standard drafting team has identified the elements to be included in the agreements between the Transmission Entities and the Nuclear Plant Generator Operator. The type of contracts required to establish the agreements is the responsibility of the Nuclear Plant Generator Operator and the Transmission Entities.</p> <p>(2) The requirement for dispute resolution language is in R9.1.4. The SDT does not believe it is appropriate to expand this wording to preclude NERC from getting involved.</p> <p>(3) The SDT believes existing agreements should be re-evaluated to ensure applicable requirements are addressed. Entities will have 18 months to comply once the standard is approved.</p> <p>(4) The standard drafting has modified the standard implementation date to 18 months from board approval.</p> <p>(5) The standard drafting has modified the standard implementation date to 18 months from board approval</p> <p>(6) The Standard will apply to the NERC footprint. The standard drafting team recognizes there are differences in the design basis and subsequent licensing requirements between US and Canadian nuclear plants. This has been addressed in section E.</p>				
Northeast Utilities (1) Murale Gopinathan		✓		<p>NU has two primary concerns</p> <p>(1) The standard must clarify the roles and responsibilities. NERC's reference to "Transmission Entities" is overly broad, because the standard fails to identify whether the responsible entity is the Transmission Owner or an Independent System Operator/Regional Transmission Organization, or some combination. Without specifying which entity is responsible for what actions, NERC will not have a standard that provides fair notice to industry participants and will not be</p>

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Commenter	Approve	Not approve	Abstain or don't know	Comment
				<p>able to fairly enforce the standard.</p> <p>(2) Cyber Security protocols are still under development. NERC's reference to cyber security protocols in section R8.3.7 are premature and undefined, as industry protocols to cyber security have not been established.</p>
<p><b>Response:</b></p> <p>(1) The standard drafting team, with input from NERC Staff, has made changes to the draft standard to address these concerns. Please refer to the discussion under "Transmission Entity Term" in the Executive Summary.</p> <p>(2) An existing NERC standard already covers cyber security. It is not the intent of this standard to address details on cyber security such as protocols. See R9.3.6 in the revised draft standard. The wording has been revised to clarify that coordination of physical and cyber security protection of the bulk electric system should occur at the nuclear plant interface to ensure each asset is covered under at least one entity's plan.</p>				
<p>Organization (2)                      Pam Oreschnick – Xcel                      Al Boesch – NPPD (2)                      Terry Bilke – MISO (2)                      Robert Coish – MHEB (2)                      Dennis Florum – LES (2)                      Ken Goldsmith – ALT (2)                      Todd Gosnell – OPPD (2)                      Wayne Guttormson – SPC (2)                      Darrick Moe (Chr.) – WAPA (2)                      Tom Mielnik – MEC (2)                      Dick Pursley – GRE (2)                      Dave Rudolph – BEPC (2)                      Joe Knight (Secy.) – MRO (2)                      27 add'l MRO members no named above</p>		<p>✓</p>		<p>(1) Format and sequence of requirements written in this standard all are directed to R8 which is the primary requirement of this standard. R8 should be moved to R1 with the remaining requirements sequenced after that in order of importance.</p> <p>(2) This proposed standard has potential conflicts with the recent NERC annex 2 confidentiality agreement. R8, having an agreement (or multiple agreements as allowed in the standard) that deal with all the R8 subsets. R8.1.3. says Data Confidentiality Requirements. This is where Annex 2 (and the MISO created agreement which we would probably implement) collided head on in our view. If we start making more and more agreements as NERC says you can, this will create an administrative nightmare as R8.1.5 in the standard states that you perform a technical review of the Agreement (note singular case use) annually and an administrative review every three years. If we had followed the course laid out, we would have four to five agreements (MISO's, Annex 2, The NERC ORD (even though it has little to do with Nuclear Plants, this document would have to be reviewed due to guilt by association), and the one we would have to create to fill the gaps created by this standard). When you have multiple documents or agreements for a particular item you establish a hierarchy of document ranking to avoid potential conflicts (and disputes) due to conflicting language in different documents (Remember we had no input on development of Annex 2). There is nothing in the standard that</p>

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Commenter	Approve	Not approve	Abstain or don't know	Comment
				<p>addresses this issue and should be added.</p> <p>(3) The need for adequate off site power sources to meet Nuclear Plant Interface Requirements supports the need for this standard. This adequacy depends on the ability of analytical tools to predict the impact of unplanned events.</p> <p>(4) Requirement 8.4.3 calls for coordinated investigations for the cause of unplanned events. This requirement should be expanded and be explicit to also call for benchmarking the results of any analytical tool used to predict the effects of unplanned events.</p> <p>(5) The definition of "Transmission Entities" is inappropriate and should be changed or called something else. Balancing Authorities, Distribution Providers and Load-Serving Entities are not Transmission Entities and do not have any responsibilities related to transmission. We would suggest that the definition be changed to "Off site power supply Entities". Also there is a typo because Planning Authorities are in the definition twice.</p> <p>(6) The standard as written places undue burden on TO's by allowing the Nuclear Plant Entities to unilaterally declare what constitutes a Nuclear Plant Interface Requirement without regard to the impact on the transmission system. This puts the Transmission Entity in a state of reaction to not only perform the iterative study and issue resolution processes identified in R2 and R3 but also to concurrently operate the system to the NPIR as identified in R4. The process would be much more efficient and result in a more reliable bulk power system if the Transmission Entity and Nuclear Entity jointly determine the NPIR through a negotiation process. The following is recommended to address this concern:</p> <p>(7) Create a new term, such as Nuclear Plant Study Limitation, to replace the term Nuclear Plant Interface Requirement in R1 and R2. Expand R3 to read "The Nuclear Plant Entities and the Transmission Entities shall resolve issues identified in R2, R6, and R7, and agree to the Nuclear Plant Interface Requirements and document the NPIR in the Agreements developed in accordance with R8.</p>
<p><a href="#">Response:</a></p>				

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Commenter	Approve	Not approve	Abstain or don't know	Comment
<p>(1) The standard was revised to rearrange the requirements presentation as a result of industry comments. To provide better flow in the standard, new requirement R2 was inserted to state the Transmission Entities and Nuclear Entities shall have agreements in place. However, the standard drafting team feels the details of what should be included in the agreements are appropriately placed as R9.</p> <p>(2) The standard drafting team believes the standard as revised addresses your concerns. The requirement for the agreements to address data confidentiality requirements has been removed. Regarding the problem of the multiple documents, the standard allows for compliance using existing agreements, procedures or protocols, but allows for multiple agreements as necessary since multiple entities in varying industry structures will occur from one NPP to another.</p> <p>(3) The standard drafting team agrees with the need for appropriate analytical tools.</p> <p>(4) The intent of this requirement is not to perform validation and verification of the analytical tools used by the transmission organizations but to require provisions for reviewing data necessary to understand unplanned events and take appropriate actions to minimize future events.</p> <p>(5) The standard drafting team, with input from NERC Staff, has made changes to the draft standard to address the concerns in your first statement. Please refer to the discussion under "Transmission Entity Term" in the Executive Summary. Regarding your second statement, the drafting team elected to retain the term "Transmission Entities", because the agreements are typically made with entities involved with transmission related responsibilities and services. There are a few instances where a distribution provider may provide a service such as a backup offsite power and, thus, distribution provider is listed under A.4.2.</p> <p>The standard drafting team agrees that Planning Authorities was listed twice and has revised the draft standard accordingly.</p> <p>(6) The definition of nuclear plant interface requirements (NPIR) has been changed and a separate definition for nuclear plant licensing requirements (NPLR) has been added to address this concern. The NPLR are the requirements included in the design basis of the nuclear plant and are mandatory in order for the operation of the plant. The NPIR requirements are the agreed upon criteria between the Nuclear Plant Owner/Operator and the applicable Transmission Entities.</p> <p>(7) See (6)</p>				
Southern Nuclear (SN) Grid Committee (5) Terry L. Crawley David Whitehurst – SN (5) Duane Brock – SN (5) Bill Snider – SN (5) Bonnie Goodwin – SN (5) Jeff Branum – SN (5) Tim Milton – SN (5)		✓		The standard overall is on target. However, we feel that the document needs some refinement and there are some scope issues and clarifications that need to be addressed. We address these issues in question 7 below.

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Commenter	Approve	Not approve	Abstain or don't know	Comment
Roman Carter – SCG (6) Jim Viikansalo – SOCO (1) Marc Butts – SOCO (1) Jim Busbin – SOCO (1) Wade Pugh – SOCO (1)				
<p><b>Response:</b>                      The standard drafting team agrees based on comments provided on the draft standard that refinements are required. The standard has been modified, as necessary. See responses to Question 7 below.</p>				
ISO New England (2) Kathleen Goodman		✓		See answer to question #4 below.
<p><b>Response:</b> See the response to question #4.</p>				
NERC Standards Evaluation Committee Bill Bojorquez (ERCOT)		✓		
SCANA, SCE&G, V.C. Summer Nuclear Station (5) Dan Goldston	✓			It tends to cover pretty well many of the basic issues, without being overly specific. It would suffice as a vehicle to collate and address many issues that the NRC, INPO, SERC, FERC, ANS, EPRI and other's are now bringing up. I think it is a strength that this document will question and address both the NPE and the TE during the same audit. Most of the other entities mentioned above deal only with one or the other. I like the fact that this document tends to make it clearer than most that in some ways the NPE is the TE's customer, and in other ways the TE is the NPE's customer. This reflects the real world necessity.
<p><b>Response:</b>                      The standard drafting team agrees with the comment provided.</p>				
Independent Electricity System Operator (2) Ron Falsetti	✓			The IESO congratulates the Standards Drafting Team for their work in the development of this standard, and is in full support of it.
<p><b>Response:</b>                      Thank you.</p>				
Baltimore Gas & Electric (1) Daniel Taormina	✓			
Dominion Virginia Power (1) Bill Thompson	✓			
Nuclear Management Company, Point Beach Nuclear Plant (5) Timothy Lensmire	✓			

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Commenter	Approve	Not approve	Abstain or don't know	Comment
We Energies (3, 4, 5) Howard Rulf	✓			
Dominion Virginia Power (1) Bill Thompson	✓			
American Electric Power (1, 5, 6) James H. Sorrels, Jr.	✓			
ISO/RTO Council (2) Bruce Balmat Anita Lee – AESO (2) Lisa Szot – CAISO (2) Sam Jones – ERCOT (2) Ron Falsetti – IESO (2) Pete Brandien – ISO-NE (2) Bill Phillips – MISO (2) Mike Calimano – NYISO (2) Charles Yeung – SPP (2)			✓	
Exelon Energy Delivery (1, 3) Jennifer T. Sterling			✓	Our vote will be based on the final draft document.
New York ISO (2) Michael Calimano			✓	
Entergy Services, Inc. (1, 5) Entergy Transmission (ET) and Entergy Nuclear (EN) Maurice Casadaban – ET (1) and Mookie Chander – ET (1) Jim Case – ET (1) Jay Zimmerman – ET (1) George Bartlett – ET (1) Ed Davis – ET (1) Bill Aycock – ET (1) Narinder Saini – ET (1) Rick riley – ET (1) Michael LaBiche – ET (1) Ed Brinson – ET (1) James Puska – ET (1) Greg Camet – ET (1) Tom Barnett – EN (5)			✓	

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<b>Commenter</b>	<b>Approve</b>	<b>Not approve</b>	<b>Abstain or don't know</b>	<b>Comment</b>
T.O. Moffitt – EN (5) John Hotz – EN (5) Singh Matharu – EN (5) Ed Hester – EN (5)				



4. Are there any ‘show-stoppers’ that would prevent you from approving the standard?

**Summary Consideration:** Many commenters indicated that there were show-stoppers in the standard. The drafting team made modifications to the standard based on the specific comments submitted. The drafting team made several revisions to the standard and is reposting it for another comment period.

Commenter	Yes	No	Comment
Midwest ISO Nuclear Plant Working Group Terry Volkmann Roger Parker – FE (5) Tim Lensmire – NMC (5) James Thorson – DTE (5) John Gyraath – Exelon (5) David Waller – Ameren (5) Steve Myres – NMC (5) Tom Lillehel – NMC (5) – NMC (5) Ed Watzl – NPPD (5) Steve Gocek – NPPD (5) Robert Hamm – NMC (5) Bill Blessie – OPPD (5) Richard Nelson – Dominion (5) Gene Warnecke – Ameren (1) Mike McMullen – Xcel (1) Darrel Yohnk – ATC (1) Dave Huff – FE (1) Robert Haas – ITC (1) Terry Wright – METC (1) Randy Samson – OPPD (1)	✓		Comment #2 is a showstopper.
<a href="#">Response: See the response to comment #2 in the response to question #3.</a>			
Southern Nuclear (SN) Grid Committee (5) Terry L. Crawley David Whitehurst – SN (5) Duane Brock – SN (5) Bill Snider – SN (5) Bonnie Goodwin – SN (5) Jeff Branum – SN (5)			See our response to questions #3 and #7.

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Commenter	Yes	No	Comment
Tim Milton – SN (5) Roman Carter – SCG (6) Jim Viikansalo – SOCO (1) Marc Butts – SOCO (1) Jim Busbin – SOCO (1) Wade Pugh – SOCO (1)			
<a href="#">Response: See the response to comments on questions #3 and #7.</a>			
Entergy Services, Inc. (1, 5) Entergy Transmission (ET) and Entergy Nuclear (EN) Maurice Casadaban – ET (1) and Mookie Chander – ET (1) Jim Case – ET (1) Jay Zimmerman – ET (1) George Bartlett – ET (1) Ed Davis – ET (1) Bill Aycock – ET (1) Narinder Saini – ET (1) Rick Riley – ET (1) Michael LaBiche – ET (1) Ed Brinson – ET (1) James Puska – ET (1) Greg Camet – ET (1) Tom Barnett – EN (5) T.O. Moffitt – EN (5) John Hotz – EN (5) Singh Matharu – EN (5) Ed Hester – EN (5)			See comments with question #7.
<a href="#">Response: See the response to comments on question #7.</a>			
American Transmission Co. (1) Peter Burke	✓		See response to question # 3 above.
<a href="#">Response: See response to comments on question #3.</a>			
Northeast Utilities (1) Murale Gopinathan	✓		See responses to question #3
<a href="#">Response: See response to comments on question #3.</a>			
Tennessee Valley Authority (1) Kathy Davis Larry Akens – PSO/TRO (1) Jerry Nicely – TVAN (5)	✓		(1) What is the mechanism for resolving situations in which mutually-acceptable agreements cannot be forged, particularly for cases where no single entity is uniquely responsible for or capable of performing the given function (e.g., in meeting R8.2.2 where a variety of system

**Consideration of Comments on 1<sup>st</sup> Draft of Nuclear Power Plant Off-site Power Coordination Standard**

Commenter	Yes	No	Comment
Doug Bailey – PSO/TRO (2) Jennifer Weber – PSO/TRO (2) Tom Ballew – PSO-TOM (1) Ian Grant – PSO/ESP) (1) Jerry Landers –PSO/TRO (1)			configuration restrictions can be imposed in order to assure adequate NPP offsite power).  (2) The Measures and Compliance sections are not sufficiently defined and quantifiable to be the basis for legal actions and fines (see specific comments under the response to Q7).  (3) Compliance assessment methods used across the industry include Audits, which are performed by the Compliance Monitor, and Self-Certification. To ensure consistent practice across the industry, the method to be used should be specified in the Standard and not left to the Compliance Monitor's discretion.
<p><b>Response:</b>                      (1) See requirement R2 in the revised draft of the standard. Failure to have such agreements would result in a non-compliance with R2 of this standard and appropriate mitigation plans would be required to rectify this. The standard drafting team believes the NPP owner and operator must identify the appropriate entities with whom agreements are needed and work through the process of establishing the appropriate agreements.                       (2) The standard drafting team has revised the standard to provide measures to match the appropriate requirements and feels the measures are sufficient to allow the Compliance Monitor to determine if the requirements are met.                       (3) Upon further review, the drafting team believes the current wording is appropriate. If you still disagree, please provide specific recommendations for the compliance assessment method and your justification.</p>			
NERC Standards Evaluation Committee Bill Bojorquez (ERCOT)	✓		The SES recommends the SDT delete R8.1.4. In the alternative, the SDT recommends the SDT modify the definition of "Nuclear Plant Interface Requirements" to include a new "3) This standard cannot supercede any regulatory or legal obligations relative to the sharing of power system information."
<p><b>Response:</b>                      This requirement has been deleted. Clarifications related to application of the standards of conduct are being addressed directly by FERC.</p>			
Ameren (1) John E. Sullivan	✓		The standard, as drafted, gives Nuclear Entities unilateral authority to determine the Nuclear Plant Interface Requirements. Such unilateral authority would be detrimental to reliability of the electric system. Requirement R1 as stated in the draft standard is not acceptable. This requirement, and the standard in general, should be revised such that Nuclear Plant Interface Requirements would be determined by both the Nuclear Entities and Transmission Entities, and such that the electric system would be operated in a non-discriminatory manner towards all entities.
<p><b>Response:</b>                      This standard was not intended to allow any entity to unilaterally determine the NPIR. Rather, it was intended to require a collaborative effort to establish the NPIR. Therefore, the definition of NPIR has been changed accordingly and NPLR has been added to clarify that the NPLR are the requirements included in the design basis of the nuclear plant and are mandatory in order for the operation of the plant.</p>			
ISO New England (2)	✓		R 8.1.4 indicates "Provisions for suspending standards of conduct when needed to ensure grid

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Commenter	Yes	No	Comment
Kathleen Goodman			<p>reliability, nuclear plant safety, or personnel safety." and the standard requires that whatever information, as stated in NRC license requirements, must be given.</p> <p>Requirement 8.1.4, in its present form, needs to be removed. We suggest deleting the requirement, and stating, as the third bullet point in the 'Nuclear Plant Interface Requirements,' Definition of Terms: "This standard cannot supercede any regulatory or legal obligations relative to the sharing of power system information.</p>
<p><b>Response:</b>                      The requirement in question has been deleted. Clarifications related to application of the standards of conduct are being addressed directly by FERC.</p>			
Organization (2) Pam Oreschnick – Xcel Al Boesch – NPPD (2) Terry Bilke – MISO (2) Robert Coish – MHEB (2) Dennis Florom – LES (2) Ken Goldsmith – ALT (2) Todd Gosnell – OPPD (2) Wayne Guttormson – SPC (2) Darrick Moe (Chr.) – WAPA (2) Tom Mielnik – MEC (2) Dick Pursley – GRE (2) Dave Rudolph – BEPC (2) Joe Knight (Secy.) – MRO (2) 27 add'l MRO members no named above	✓		<p>As noted in item 3 above.</p> <p>It's inappropriate to ask whether the standard is ready for ballot when it is just going out for comments for the first time.</p>
<p><b>Response</b>                      The standard drafting team intended the question to identify areas of serious concern.</p>			
Independent Electricity System Operator (2) Ron Falsetti	✓		
ISO/RTO Council (2) Bruce Balmat Anita Lee – AESO (2) Lisa Szot – CAISO (2) Sam Jones – ERCOT (2) Ron Falsetti – IESO (2) Pete Brandien – ISO-NE (2) Bill Phillips – MISO (2)		✓	

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<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
Mike Calimano – NYISO (2) Charles Yeung – SPP (2)			
American Electric Power (1, 5, 6) James H. Sorrels, Jr.		✓	
Baltimore Gas & Electric (1) Daniel Taormina		✓	
Nuclear Management Company, Point Beach Nuclear Plant (5) Timothy Lensmire		✓	
Dominion Virginia Power (1) Bill Thompson		✓	
We Energies (3, 4, 5) Howard Rulf		✓	
SCANA, SCE&G, V.C. Summer Nuclear Station (5) Dan Goldston		✓	
New York ISO (2) Michael Calimano			The NYISO reserves the right to comment at this time.

**5. If the standard is adopted by the NERC board in May 2006, do you believe July 1, 2007 is an appropriate effective date by which all applicable entities can comply with the standard?**

**Summary Consideration:** While many commenters agreed with the proposed effective date, many commenters indicated a later date would be more applicable. The drafting team changed the effective date (the date on which entities are expected to be fully compliant) to be 18 months after the Board of Trustee approval. This will allow entities time to establish or revise the agreements needed to comply with the standard.

Commenter	Yes	No	Comment
American Electric Power (1, 5, 6) James H. Sorrels, Jr.		✓	AEP would prefer a phased-in approach wherein agreements must be in place by July 1, 2007 with the requirements effective January 1, 2008.
<p><a href="#">Response</a> The standard drafting team has modified the standard implementation date to 18 months from board approval.</p>			
Tennessee Valley Authority (1) Kathy Davis Larry Akens – PSO/TRO (1) Jerry Nicely – TVAN (5) Doug Bailey – PSO/TRO (2) Jennifer Weber – PSO/TRO (2) Tom Ballew – PSO-TOM (1) Ian Grant – PSO/ESP (1) Jerry Landers –PSO/TRO (1)		✓	Unknown until compliance measures are clarified.
<p><a href="#">Response</a> The standard drafting team has modified the standard implementation date to 18 months from board approval.</p>			
Ameren (1) John E. Sullivan		✓	Resolution of issues in Questions #4 and #7 is needed prior to proceeding with adoption of the standard. After resolution of these issues, the effective date for the standard should be January 1, rather than mid-year.
<p><a href="#">Response:</a> The standard drafting team has modified the standard implementation date to 18 months from board approval.</p>			

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<p>NERC Transmission Subcommittee                  Scott Moore (Chr.) – AEP                  Ken Donohoo – ERCOT                  Brad Chase – OUC                  Steve Crutchfield – PJM                  Ed Pfeiffer – Ameren                  Darrick Moe – WAPA                  Doug McCracken – NU                  Allen Klassen – Westar                  Francis Halpin – BPA                  Tom Mallinger – MISO                  Ray Palmieri – ECAR                  Tom Vandervort – NERC</p>		✓	<p>The TS recommends compliance be a minimum of 18 months with the minimum enforceable 'must comply' date no earlier than January 1, 2008. The TS recommends minimizing the impact on regulatory requirements and to allow time to conduct a "pre-implementation audit" period for each nuclear plant.</p>
<p><b>Response:</b>  <a href="#">The standard drafting team has modified the standard implementation date to 18 months from board approval.</a></p>			
<p>Northeast Utilities (1)                  Murale Gopinathan</p>		✓	<p>July 2007 is not realistic given the fact that critical items such as roles and responsibility of participants and the completion of security protocols are not yet clearly defined.</p>
<p><b>Response:</b>  <a href="#">The standard drafting team has modified the standard implementation date to 18 months from board approval.</a></p>			
<p>Organization (2)                  Pam Oreschnick – Xcel                  Al Boesch – NPPD (2)                  Terry Bilke – MISO (2)                  Robert Coish – MHEB (2)                  Dennis Florum – LES (2)                  Ken Goldsmith – ALT (2)                  Todd Gosnell – OPPD (2)                  Wayne Guttormson – SPC (2)                  Darrick Moe (Chr.) – WAPA (2)                  Tom Mielnik – MEC (2)                  Dick Pursley – GRE (2)                  Dave Rudolph – BEPC (2)                  Joe Knight (Secy.) – MRO (2)                  27 add'l MRO members no named above</p>		✓	<p>This question seems premature. It is too early to tell. Assuming the requirements are similar, it would be appropriate to have an effective date one year out from the date the standard is adopted. There may be requirements that are physically impossible to meet. Mitigation plans may be necessary if requirements are found that are physically impossible to meet.</p>
<p><b>Response:</b>  <a href="#">The standard drafting team has modified the standard implementation date to 18 months from board approval.</a></p>			

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Southern Nuclear (SN) Grid Committee (5) Terry L. Crawley David Whitehurst – SN (5) Duane Brock – SN (5) Bill Snider – SN (5) Bonnie Goodwin – SN (5) Jeff Branum – SN (5) Tim Milton – SN (5) Roman Carter – SCG (6) Jim Viikansalo – SOCO (1)		✓	We checked the NO box because we believe May 2006 will be premature for approval of this standard. However, we agree with the effective date being set at a reasonable time period after the NERC adoption date to allow the industry to develop agreements and revise existing agreements. We feel that a minimum one year period for implementation seems appropriate
Response: The standard drafting team has modified the standard implementation date to 18 months from board approval.			
American Transmission Co. (1) Peter Burke	✓		January 1, 2008 to generally avoid implementation leading up to summer peak conditions
Response: The standard drafting team has modified the standard implementation date to 18 months from board approval.			
Midwest ISO Nuclear Plant Working Group Terry Volkmann Roger Parker – FE (5) Tim Lensmire – NMC (5) James Thorson – DTE (5) John Gyath – Exelon (5) David Waller – Ameren (5) Steve Myres – NMC (5) Tom Lillehel – NMC (5) – NMC (5) Ed Watzl – NPPD (5) Steve Gocek – NPPD (5) Robert Hamm – NMC (5) Bill Blessie – OPPD (5) Richard Nelson – Dominion (5) Gene Warnecke – Ameren (1) Mike McMullen – Xcel (1) Darrel Yohnk – ATC (1) Dave Huff – FE (1) Robert Haas – ITC (1) Terry Wright – METC (1) Randy Samson – OPPD (1)	✓		Yes, qualified yes; standard can be met provided the standard does not lead to requiring the establishment of an interconnection agreement or the changing the existing interconnection agreement.



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<p><b>Response:</b>                  The standard does not require that existing agreements be modified as long as the requirements of the standard are satisfied. The standard drafting team has also modified the standard implementation date to 18 months from board approval.</p>			
New York ISO (2) Michael Calimano	✓		July 1, 2008
<p><b>Response</b>                  The standard drafting team has modified the standard implementation date to 18 months from board approval.</p>			
Dominion Virginia Power (1) Bill Thompson	✓		
Independent Electricity System Operator (2) Ron Falsetti	✓		
PG&E – Diablo Canyon Nuclear Power Plant Gregg Reimers	✓		
Baltimore Gas & Electric (1) Daniel Taormina	✓		
Nuclear Management Company, Point Beach Nuclear Plant (5) Timothy Lensmire	✓		
ISO/RTO Council (2) Bruce Balmat Anita Lee – AESO (2) Lisa Szot – CAISO (2) Sam Jones – ERCOT (2) Ron Falsetti – IESO (2) Pete Brandien – ISO-NE (2) Bill Phillips – MISO (2) Mike Calimano – NYISO (2) Charles Yeung – SPP (2)	✓		
Exelon Energy Delivery (1, 3) Jennifer T. Sterling	✓		

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NERC Standards Evaluation Committee Bill Bojorquez (ERCOT)	✓		
Dominion Virginia Power (1) Bill Thompson	✓		
ISO New England (2) Kathleen Goodman	✓		
Entergy Services, Inc. (1, 5) Entergy Transmission (ET) and Entergy Nuclear (EN) Maurice Casadaban – ET (1) and Mookie Chander – ET (1) Jim Case – ET (1) Jay Zimmerman – ET (1) George Bartlett – ET (1) Ed Davis – ET (1) Bill Aycock – ET (1) Narinder Saini – ET (1) Rick Riley – ET (1) Michael LaBiche – ET (1) Ed Brinson – ET (1) James Puska – ET (1) Greg Carnet – ET (1) Tom Barnett – EN (5) T.O. Moffitt – EN (5) John Hotz – EN (5) Singh Matharu – EN (5) Ed Hester – EN (5)	✓		

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<p>Response                  The standard drafting team has modified the standard implementation date to 18 months from board approval.</p>			
New York ISO (2) Michael Calimano	✓		July 1, 2008
<p>Response                  The standard drafting team has modified the standard implementation date to 18 months from board approval.</p>			
We Energies (3, 4, 5) Howard Rulf	✓		
SCANA, SCE&G, V.C. Summer Nuclear Station (5) Dan Goldston	✓		

**6. Considering the effective date by which applicable entities must comply with the standard, is there a need to field test the standard? If yes, please state your reasons why field testing is required and describe the nature of the field test you would propose.**

**Summary Consideration:** Most commenters indicated that field testing is not needed. The drafting team will forward all comments on field testing to the VP, Director of Compliance for reference when making a recommendation to the SAC regarding field testing of this standard.

Committer	Yes	No	Comment
PG&E – Diablo Canyon Nuclear Power Plant Gregg Reimers		✓	Most nuclear power plants should already have a basic agreement in place.
<b>Response:</b> The standard drafting team agrees.			
NERC Transmission Subcommittee Scott Moore (Chr.) – AEP Ken Donohoo – ERCOT Brad Chase – OUC Steve Crutchfield – PJM Ed Pfeiffer – Ameren Darrick Moe – WAPA Doug McCracken – NU Allen Klassen – Westar Francis Halpin – BPA Tom Mallinger – MISO Ray Palmieri – ECAR Tom Vandervort – NERC		✓	The TS cannot conceptualize what a "field test" of this standard would be for. The TS recommends that a "pre-implementation audit" would be more appropriate to ensure all documentation agreements are in place and that all the standard's requirements are met.
<b>Response:</b> The standard drafting team and most of the commenters do not believe field testing would be appropriate for this standard. The standard drafting team believes the extended 18 month implementation period will allow time to address any issues uncovered for the individual agreements. All nuclear facilities were afforded the opportunity to participate in the drafting either through the standard drafting team or the commenting process.			
Dominion Virginia Power (1) Bill Thompson		✓	
Independent Electricity System Operator (2) Ron Falsetti		✓	
Baltimore Gas & Electric (1) Daniel Taormina		✓	

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Committer	Yes	No	Comment
Nuclear Management Company, Point Beach Nuclear Plant (5) Timothy Lensmire		✓	
American Transmission Co. (1) Peter Burke		✓	
Northeast Power Coordinating Council CP9 Reliability Standards Working Group Guy Zito Kathleen Goodman – ISO-NE (2) Ralph Rufrano – NYPA (1) Peter Lebro – Nat'l Grid (1) Alden Briggs – NBSO (2) David Little – NS Power (1) Greg Campoli – NYISO (2) Bill Shemley – ISO-NE (2) David Kiguel – Hydro One (1) John Mosier – NPCC (2) Brian Hogue – NPCC (2)		✓	
Tennessee Valley Authority (1) Kathy Davis Larry Akens – PSO/TRO (1) Jerry Nicely – TVAN (5) Doug Bailey – PSO/TRO (2) Jennifer Weber – PSO/TRO (2) Tom Ballew – PSO-TOM (1) Ian Grant – PSO/ESP (1) Jerry Landers – PSO/TRO (1)		✓	
ISO/RTO Council (2) Bruce Balmat Anita Lee – AESO (2)		✓	

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Committer	Yes	No	Comment
Lisa Szot – CAISO (2) Sam Jones – ERCOT (2) Ron Falsetti – IESO (2) Pete Brandien – ISO-NE (2) Bill Phillips – MISO (2) Mike Calimano – NYISO (2) Charles Yeung – SPP (2)			
American Electric Power (1, 5, 6) James H. Sorrels, Jr.		✓	
NERC Standards Evaluation Committee Bill Bojorquez (ERCOT)		✓	
Dominion Virginia Power (1) Bill Thompson		✓	
Northeast Utilities (1) Murale Gopinathan		✓	
ISO New England (2) Kathleen Goodman		✓	
Midwest ISO Nuclear Plant Working Group Terry Volkmann Roger Parker – FE (5) Tim Lensmire – NMC (5) James Thorson – DTE (5) John Gyath – Exelon (5) David Waller – Ameren (5) Steve Myres – NMC (5) Tom Lillehel – NMC (5) – NMC (5) Ed Watzl – NPPD (5) Steve Gocek – NPPD (5) Robert Hamm – NMC (5) Bill Blessie – OPPD (5) Richard Nelson – Dominion (5) Gene Warnecke – Ameren (1) Mike McMullen – Xcel (1)		✓	

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Committer	Yes	No	Comment
Darrel Yohnk – ATC (1) Dave Huff – FE (1) Robert Haas – ITC (1) Terry Wright – METC (1) Randy Samson – OPPD (1)			
New York ISO (2) Michael Calimano		✓	
We Energies (3, 4, 5) Howard Rulf		✓	
SCANA, SCE&G, V.C. Summer Nuclear Station (5) Dan Goldston		✓	
Entergy Services, Inc. (1, 5) Entergy Transmission (ET) and Entergy Nuclear (EN) Maurice Casadaban – ET (1) and Mookie Chander – ET (1) Jim Case – ET (1) Jay Zimmerman – ET (1) George Bartlett – ET (1) Ed Davis – ET (1) Bill Aycock – ET (1) Narinder Saini – ET (1) Rick riley – ET (1) Michael LaBiche – ET (1) Ed Brinson – ET (1) James Puska – ET (1) Greg Camet – ET (1) Tom Barnett – EN (5) T.O. Moffitt – EN (5) John Hotz – EN (5) Singh Matharu – EN (5) Ed Hester – EN (5)		✓	
Southern Nuclear (SN) Grid Committee (5) Terry L. Crawley David Whitehurst – SN (5)		✓	

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Committer	Yes	No	Comment
Duane Brock – SN (5) Bill Snider – SN (5) Bonnie Goodwin – SN (5) Jeff Branum – SN (5) Tim Milton – SN (5) Roman Carter – SCG (6) Jim Viikansalo – SOCO (1) Marc Butts – SOCO (1) Jim Busbin – SOCO (1) Wade Pugh – SOCO (1)			
Exelon Energy Delivery (1, 3) Jennifer T. Sterling	✓		We believe field testing is needed to ensure appropriate Agreements are applied, to ensure the compliance elements are correct and to ensure all requirements/measures of the new Standard are appropriate and can be practically applied.
<p><b>Response:</b>                      The standard drafting team and most of the commenters do not believe field testing would be appropriate for this standard. The standard drafting team believes the extended 18 month implementation period will allow time to address any issues uncovered for the individual agreements. All nuclear facilities were afforded the opportunity to participate in the drafting either through the standard drafting team or the commenting process.</p>			
Ameren (1) John E. Sullivan	✓		It would be recommended to "walk through" the standard at least once to address any compliance issues which might occur.
<p><b>Response:</b>                      The standard drafting team and most of the commenters do not believe field testing would be appropriate for this standard. The standard drafting team believes the extended 18 month implementation period will allow time to address any issues uncovered for the individual agreements. All nuclear facilities were afforded the opportunity to participate in the drafting either through the standard drafting team or the commenting process.</p>			
Organization (2) Pam Oreschnick – Xcel Al Boesch – NPPD (2) Terry Bilke – MISO (2) Robert Coish – MHEB (2) Dennis Florom – LES (2) Ken Goldsmith – ALT (2) Todd Gosnell – OPPD (2) Wayne Guttormson – SPC (2) Darrick Moe (Chr.) – WAPA (2) Tom Mielnik – MEC (2) Dick Pursley – GRE (2) Dave Rudolph – BEPC (2) Joe Knight (Secy.) – MRO	✓		Field testing could help uncover problems with the requirements. Test audit of any nuclear facilities that were not involved in developing the standard.



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Commenter	Yes	No	Comment
(2) 27 add'l MRO members no named above			
<p><b>Response:</b>                      The standard drafting team and most of the commenters do not believe field testing would be appropriate for this standard. The standard drafting team believes the extended 18 month implementation period will allow time to address any issues uncovered for the individual agreements. All nuclear facilities were afforded the opportunity to participate in the drafting either through the standard drafting team or the commenting process.</p>			

**7. Do you have any additional comments on the proposed standard? If so, please provide your comments and any specific changes you would recommend.**

Commenter	Comment
Dominion Virginia Power (1) Bill Thompson	<p>(1) What are "related services" mentioned in the Applicability section? Could this be stated more specifically? Also, perhaps an explanation of the responsible party when there is an RTO and a Transmission Owner involved would help. I'm thinking that a requirement should state that the RTO and TO must designate who is responsible for each of the Requirements stated, and document that designation to NERC.</p> <p>(2) Under Definitions, the Nuclear Plant Off-site Power Supply should specifically state that the generator step-up transformer is included. Alternatively, it could be included under Nuclear Plant Entities, but it should be determined where it belongs since it is a very important element in this interface.</p> <p>(3) Also under Definitions, the Nuclear Plant Interface Requirements should be defined as follows: "1. Nuclear Plant Licensing Requirements for Off-site power supply to enable Safe shutdown of the plant during an electric system or plant event, and (2) Avoiding preventable challenges to nuclear safety as a result of an electric system disturbance, transient, or condition." The way it is written (with "nuclear power plant licensing requirements for" applying to both (1) and (2)), it implies that BOTH (1) and (2) are limited in scope to the licensing requirements. We believe that the scope of item 2 should go beyond specific licensing requirements. Hopefully, the proposed rewording here would allow for that increa in scope.</p>
Response:	<p>(1) The standard Requirements convey the necessary services at a general level. Additional specifics related to services to meet the NPIR and who will provide those services are to be addressed within the agreement(s). The standard drafting team, with input from NERC Staff, has made changes to the draft standard to ensure the responsible entities are identified and named in the agreements. Please refer to the discussion under "Transmission Entity Term" in the Executive Summary.</p> <p>(2) The SDT does not believe it is necessary to spell out specific equipment in the standard. The GSU is important, but other equipment is as well.</p> <p>(3) The definition of nuclear plant interface requirements (NPIR) has been changed and a separate definition for nuclear plant licensing requirements (NPLR) has been added to address this concern. The NPLR are the requirements included in the design basis of the nuclear plant and are mandatory in order for the operation of the plant. The NPIR requirements are the agreed upon criteria between the Nuclear Plant Owner/Operator and the applicable Transmission Entities.</p> <p>The intent was to cover the minimum licensing requirements but does not preclude the entities from exceeding the minimum.</p>
Independent Electricity System Operator (2) Ron Falsetti	<p>(1) The second sentence of the Purpose seems to imply the standard is only applicabe to entities other than Nuclear Plant Entities. We suggest it be rephrased to eliminate this unintended exclusion.</p> <p>(2) NERC's reference to "Transmission Entities" is overbroad; and fails to specifically identify which entity, the</p>

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Commenter	Comment
	<p>Transmission Owner, the Transmission Operator an Independent System Operator/Regional Transmission Organization, or some combination of the above as the responsible entity. Without specifying who is responsible for what, there is an inability to fairly enforce the standard.</p> <p>(3) The definition for Transmission Entities and in Section A 4.2, includes the term “Planning Authorities” twice. One should be deleted. We also recommend that the definition in Section A 4.1 &amp; A 4.2 be deleted since they appear under Definition of Terms.</p> <p>(4) Requirement R3 is redundant. It is covered by requirement R8.1.6.</p> <p>(5) In general, many of the measures are written more like requirements. Measures should be phrased such that they provide evidence for meeting the requirements.</p>
<p><b>Response:</b></p>	<p>(1) The purpose has been revised to address this concern.</p> <p>(2) The standard drafting team, with input from NERC Staff, has made changes to the draft standard to address these concerns. Please refer to the discussion under “Transmission Entity Term” in the Executive Summary.</p> <p>(3) The standard drafting team has addressed these duplications. However, the term “Transmission Entities” is being retained under the Applicability section and removed as a definition since its usage and applicability (as stated in A.4.2) are unique to this standard and, therefore, cannot be added to the NERC Glossary of Terms.</p> <p>(4) This requirement has been deleted.</p> <p>(5) The standard drafting team has revised the standard to provide measures to match the appropriate requirements and feels the measures are sufficient to allow the Compliance Monitor to determine if the requirements are met.</p>
<p>PG&amp;E – Diablo Canyon Nuclear Power Plant Gregg Reimers</p>	<p>Specific Comments: <b>Definition of Terms:</b></p> <p>(1) Change Nuclear Plant to Nuclear Power Plant (NPP) for consistency with other government agencies. (generic comment)</p> <p>(2) Revise the Nuclear Power Plant Interface requirements to read as follows:                      1) The NPP Operating License and Technical Specifications require two physically independent sources designed and located so as to minimize to the extent practical the likelihood of their simultaneous failure under operating and postulated accident and environmental conditions.                      2) The basic requirement for each offsite power supply is that it provides sufficient capacity and capability for safe shutdown and design basis accident mitigation in conjunction with a trip of the unit.                      3) Avoiding actuation of the NPP under voltage protection to preclude tripping of the unit AND actuation of the</p>

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Commenter	Comment
	<p>onsite emergency AC power sources due to anticipated electric system disturbances, transients, or other conditions.</p> <p><b>(3) Requirements:</b>                      R4.3: Change to read as follows: The Nuclear Power Plant shall be immediately notified for actual violations of the Nuclear Power Plant Interface Requirements and within 15 minutes of determining postulated contingency violations. Continued operation outside the Nuclear Power Plant Interface Requirements may result in a shutdown of the Nuclear Power Plant.</p> <p>R4.4: This notification should be immediately.</p> <p>Add R4.5: Immediately notify the Nuclear Power Plant of Transmission Entity notifications from other agencies regarding imminent grid threats (e.g. fire).</p> <p>Add R4.6: Immediately notify the Nuclear Power Plant when the conditions addressed in R4.3, R4.4, and R4.5 are corrected.</p> <p>(4) R7: Change “actual or proposed changes” to “proposed permanent or temporary changes”.</p> <p>(5) M4.2: Delete the phrase – to the extent practical under electric system conditions.</p> <p><b>(6) Compliance:</b>                      D1.3: Add a requirement for the Transmission Entities to retain all records of events resulting in operation outside the Nuclear Power Plant Interface Requirements.</p>
	<p><b>Response:</b></p> <p>(1) The SDT chose the term “Nuclear Plant” for brevity. The definition for Nuclear Plant Generator Operator specifies “any Nuclear Plant Licensee responsible for operation of a <a href="#">nuclear facility licensed to produce commercial power.</a>”</p> <p>(2) The specific Nuclear Plant Interface Requirements vary from plant to plant. The appropriate level of detail for each site will be covered in the specific agreement.</p> <p>(3) The standard drafting team believes it is appropriate that specific time limit for notification should be addressed in the individual agreements and the standard has been revised accordingly. See R9.4.1.</p> <p>Requirement R9.4.2 (old R8.4.2) covers communication during off-normal and emergency events. The standard drafting team believes that specific details about certain events and notifications should be addressed in the individual agreements.</p> <p>(4) The standard drafting team believes the current standard already covers permanent and temporary changes. Therefore no changes are required to requirement R8 (old R7).</p>

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Commenter	Comment
	<p>(5) The standard drafting team believes the system should be operated to meet the NPIR, however it is recognized that there are circumstances where the transmission entity can not comply with that directive. R4.3 and M4.2 recognize the circumstances where the NPIR can not be met. The standard drafting team believes the phrase should be retained, but changed the term “practical” to “practicable”.</p> <p>(6) Record retention requirements will be consistent with compliance audit intervals. Any additional record requirements would be addressed under Requirement R9.4.4, “provision of information necessary to report to government agencies”.</p>
<p>Northeast Power Coordinating Council            CP9 Reliability Standards Working Group            Guy Zito            Kathleen Goodman – ISO-NE (2)            Ralph Rufrano – NYPA (1)            Peter Lebro – Nat’l Grid (1)            Alden Briggs – NBSO (2)            David Little – NS Power (1)            Greg Campoli – NYISO (2)            Bill Shemley – ISO-NE (2)            David Kiguel – Hydro One (1)            John Mosier – NPCC (2)            Brian Hogue – NPCC (2)</p>	<p>(1) R 8.1.4 -Provisions for suspending standards of conduct when needed to ensure grid reliability, nuclear plant safety, or personnel safety.</p> <p>(This has been identified as a possible violation of the FERC 889 Code of Conduct and information policies) This Requirement, in its present form, needs to be removed. NPCC suggests deleting the requirement, and stating, as the third bullet point in the Nuclear Plant Interface Requirements, Definition of Terms.; This standard cannot supercede any regulatory or legal obligations relative to the sharing of power system information.</p> <p>The standard requires that whatever information, as stated in NRC license requirements, must be given.</p> <p>(2) Applicability section lists "Planning Authorities" twice.</p> <p>(3) NPCC Participating members request the definition of service be clarified in 4.2.</p> <p>(4) R8.3.7 Coordination of physical and cyber security protection of the electric system-nuclear plant interface. (NPCC requests clarification on what is meant by "coordination")</p>
	<p><b>Response:</b></p> <p>(1) The requirement related to codes of conduct has been deleted. Clarifications related to application of the standards of conduct are being addressed directly by FERC. .</p> <p>(2) The duplication has been removed.</p> <p>(3) The standard drafting team believes that services should be defined in the individual interface agreements.</p> <p>(4) See R9.3.6 in the revised draft standard. The wording has been revised to clarify that coordination of physical and cyber security protection of the bulk electric system should occur at the nuclear plant interface to ensure each asset is covered under at least one entity’s plan.</p>
<p>Tennessee Valley Authority (1)            Kathy Davis            Larry Akens – PSO/TRO (1)</p>	<p>(1) "Transmission Entities" should include other Generator Owner/Operators, since they ultimately provide the power that NPP uses for safe shutdown.</p> <p>(2) R2: change to "...long range planning analysis..." since this is directed toward studies intended to reveal</p>

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Commenter	Comment
Jerry Nicely – TVAN (5) Doug Bailey – PSO/TRO (2) Jennifer Weber – PSO/TRO (2) Tom Ballew – PSO-TOM (1) Ian Grant – PSO/ESP (1) Jerry Landers –PSO/TRO (1)	<p>potential future problems that may requires plant or system modifications and/or construction projects. This does not include "operations planning studies" that are used to coordinate scheduled transmission outages and evaluate proposed generation patterns.</p> <p>(3) R3: move to after the referred requirements.</p> <p>(4) R4.2: change to "Operate the electric system to the extent practicable to meet ..." so it does not appear to contradict R4.3 and recognizes that there are limits to what the Transmission Operator can do (for example, they cannot force a local generator to come online). Change "...other System Operating Limits" to "...other limits" since NPIRs are not SOLs as defined by NERC and because other types of limits may need to be recognized.</p> <p>(5) R4.3 Change to "Inform the Nuclear Plant Entities within 30 minutes when Nuclear Plant Interface Requirements cannot be met and coordinate mitigating actions." This standard is a good place to codify the NRC-accepted practice of allowing some reasonable amount of time for prompt corrective actions without requiring an LCO entry.</p> <p>(6) R5: Change to "...planned and emerging outage activities...". Move between R2 and R4 so the requirements flow in the same order in which they are implemented.</p> <p>(7) R8.1.5: Change to "Requirements to review the agreements and any underlying technical assumptions on a periodic basis." Recertifying all agreements with all plants on an annual basis is unnecessarily burdensome.</p> <p>(8) Change to "...parameters, limits, configurations, operating scenarios and event descriptions, and necessary plant model data..."</p> <p>(9) R8.2.2 Delete this. It is not possible to list everything needed to positively meet the requirements, given the wide range of possible grid and switchyard configuration options.</p> <p>(10) R8.2.3 Change to "... including the timing and frequency of studies..."</p> <p>(11) R8.2.4 Add requirement to complete needed assessments of impacts and coordinate mitigation requirements prior to physical implementation of plant or grid changes that could affect NPLRs or the grid's ability to support them.</p> <p>(12) R8.3.3 Change to "...on-site and offsite power supply systems and related components and other offsite-power sensitive equipment."</p> <p>(13) R8.3.4 Change to "...cannot meet or loses the ability to assess..."</p> <p>(14) R8.3.5 Change to "...station blackout coping times..."</p> <p>(15) R8.3.6 Change to "...to arrange for services necessary to meet... of the plant (e.g., securing any necessary transmission reservations and power service contracts)."</p> <p>(16) R8.3.8 Delete or clarify intent.</p>

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Commenter	Comment
	<p>(17) R8.4.1 Change to "...protocols, timeliness, grace periods and definitions..."</p> <p>(18) C. Change to "The Transmission and Nuclear Plant Entities shall have documentation demonstrating compliance with R1 through R8 and shall provide copies to the Compliance Manager within 30 days upon request."</p> <p>(19) M3 Too subjective to be the basis for fines and legal action. Should be taken care of through the dispute resolution process.</p> <p>(20) M4.2 This is too large and vague. What sort of historical system operations and monitoring data is required to be retained?</p> <p>(21) M6 and M7 Include a requirement for timeliness of the transmittals with respect to analysis deadlines and implementation schedules (reference proposed R8.2.4).</p> <p>(22) D.1.1.1 Will the Regional Reliability Organization be the correct legally-empowered authority once NERC becomes a Federal ERO?</p> <p>(23) D.1.1.2 Is every plant required to be audited or recertified every year? This would be excessively burdensome. Suggest the assessment period be every three years for consistency with other Readiness and Compliance Audits.</p> <p>(24) D.1.1.3 What is a compliance verification report, what will it contain, who issues it and how often? Editorial: change to "...most current and preceding..."</p> <p>(25) D.2 Levels of non-compliance are evaluated against the Requirements: Should they be against the Measures instead?</p> <p>(26) D.2 It is not clear that moving from Level 1 to Level 4 is more severe. How is failing to meet one or more element(s) of an agreement different from failing to meet the requirement that the agreement is based upon?</p> <p>(27) D.2 The levels of non-compliance do not identify any penalties.</p>
<p><b>Response:</b></p>	<p>(1) There are no requirements associated with non-nuclear generators in this standard. Therefore they have not been included.</p> <p>(2) The standard drafting team believes that standard is acceptable as is, because the types of planning analyses the NPIR should be documented in the agreement between the entities involved which may include long range and operations planning studies.</p> <p>(3) The standard was revised to rearrange the requirements presentation as a result of industry comments and, as a result of these changes, old R3 has been deleted. To provide better flow in the standard, new requirement R2 was inserted to state up front that the Transmission Entities and Nuclear Plant Generator Operator shall have agreements in place. Thus, when referring to the agreements, Requirements R3 and above are now pointing back to R2. However, the standard drafting team feels the details of what should be included in the agreements are appropriately placed as R9 (<u>after</u> the more general requirements contained in R3 through R8).</p>

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Commenter	Comment
	<p>(4) The standard drafting team believes the system should be operated to meet the NPIR, however it is recognized that there are circumstances where the transmission entity can not comply with that directive. R4.3 and M4.2 recognize the circumstances where the NPIR can not be met. The standard drafting team has removed the term “other” to reduce the confusion with system operating limits and the NPIR.</p> <p>(5) The standard drafting team believes that specific time limit for notification should be addressed in the individual interface agreements and the standard has been revised accordingly.</p> <p>(6) After extensive discussion on outages and maintenance, the standard drafting team decided to reword this requirement to simply require coordination of “outages and maintenance activities which affect the NPIRs. This goal is for the Nuclear Plant Generator Operator and the responsible Transmission Entities to work together to identify the appropriate scope of equipment and conditions necessary to ensure the NPIR continue to be met during outage and maintenance evolutions. The intent of the generic wording is to cover planned activities as well as emergent activities that can be managed (i.e., sufficient time exists to coordinate and manage the emergent activities). The drafting team believes use of terms such as “planned” and “planned and emerging” with the “outages” may introduce confusion in interpretations and could result in unintended limitations being applied. The drafting team also believes the placement of this requirement within the standard is appropriate.</p> <p>(7) The standard drafting team believes the agreements need periodic review that should be specified. The standard has been modified to reflect a three-year periodicity of review as a minimum.</p> <p>(Note: For standard drafting team responses to your following comments on R8, please note that R8 is now R9 in the revised draft standard.)</p> <p>(8) The standard drafting team believes plant model data is covered under “parameters”.</p> <p>(9) The standard drafting team notes these as the minimum items required to meet the NPIR. The intent here is to ensure during establishment of the NPIR, there is some focus on specific equipment and configurations that are essential in meeting the NPIR and that all entities involved are on the same page in terms of what those are.</p> <p>(10) The standard drafting team agrees that the timing requirements need to be defined in the agreements, but believes this is covered by R9.2.3 as stated.</p> <p>(11) The standard drafting team believes this situation would be covered by R.4.2, R.8, and R.9.</p> <p>(12) The standard drafting team believes the proposed change is redundant to the current wording in requirement R9.3.3 “Related Components”; therefore, the suggested wording isn’t needed.</p> <p>(13) The standard drafting team has incorporated the proposed change. See R9.3.4 in the revised draft standard.</p> <p>(14) The terminology “station blackout” is specific to US nuclear plants and not applicable to Canadian reactors. Therefore, the standard drafting team has used the wording “nuclear plant coping time” in R9.3.5.</p>



Commenter	Comment
	<p>(15) The standard drafting team has deleted this requirement since it represents a normal commercial responsibility of the NPP owner/operator and is outside the scope of this standard.</p>
	<p>(16) The standard drafting team believes this requirement should be retained. It is the intent of this requirement (now numbered as R9.3.7) to ensure that the implementation of in-plant systems (generator underfrequency settings, RPS trips, etc.) and grid systems (transmission Special Protection Systems, Underfrequency Load Shedding, Undervoltage Load Shedding, etc.) are coordinated and that the implementation of these systems do not result in operation outside of the NPIR.</p>
	<p>(17) The comment to add reference to “timeliness” has been incorporated to include “notification time requirements”. The addition of “grace periods” is considered by the standard drafting team to be included in time notifications. Defining grace periods can be done in the agreements when applicable to those organizations.</p>
	<p>(18) The standard drafting team has revised the standard to remove the introductory sentence to “C. Measures.” This aligns with other NERC standards and the standard drafting team feels it was not necessary.</p>
	<p>(19) The standard drafting team has deleted this requirement in the current draft to address this concern.</p>
	<p>(20) The standard drafting team believes the Measure is acceptable as written. The Measure allows for various types of evidence to demonstrate compliance.</p>
	<p>(21) The standard drafting team agrees that a time requirement for R6 and R7 is appropriate for response to a Proposed Change, from either party. However that time frame should be included in the Agreement(s) to determine the appropriate timeframe for each Entity. Requirement R9.4.1 has been revised to specifically require notification time requirements as part of the interface agreement, which would apply to these two measures.</p>
	<p>(22) This question is outside the scope of the standard drafting team’s charge.</p>
	<p>(23) One year is a typical monitoring and reset period used in other NERC standards. Typically, this will involve annual self-certification to the RRO. Audit would typically occur no more than once every 3 years.</p>
	<p>(24) The standard drafting team deleted the term “verification report”. The team also concurs with your proposed editorial change and has updated the draft standard accordingly.</p>
	<p>(25) No. One is either compliant or non-compliant with the REQUIREMENT. The MEASURE is what the compliance monitor uses to determine if an entity is compliant with the REQUIREMENT.</p>
	<p>(26) The levels of non-compliance reflect the severity level. Failing to meet an element of an agreement is less severe than failing to meet the entire requirement. This section has been revised to better document the levels of non-compliance.</p>

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Commenter	Comment
<p>(27) NERC/ERO will have a standard penalty matrix applicable to all NERC standards.</p>	
<p>ISO/RTO Council (2)                      Bruce Balmat                      Anita Lee – AESO (2)                      Lisa Szot – CAISO (2)                      Sam Jones – ERCOT (2)                      Ron Falsetti – IESO (2)                      Pete Brandien – ISO-NE (2)                      Bill Phillips – MISO (2)                      Mike Calimano – NYISO (2)                      Charles Yeung – SPP (2)</p>	<p>(1) R 8.1.4 indicates "Provisions for suspending standards of conduct when needed to ensure grid reliability, nuclear plant safety, or personnel safety." and the standard requires that whatever information, as stated in NRC license requirements, must be given.</p> <p>Requirement 8.1.4, in its present form, needs to be removed. We suggest deleting the requirement, and stating, as the third bullet point in the 'Nuclear Plant Interface Requirements,' Definition of Terms: "This standard cannot supercede any regulatory or legal obligations relative to the sharing of power system information.</p> <p>(2) Applicability section lists "Planning Authorities" twice.</p> <p>(3) NERC's reference to "Transmission Entities" is overbroad, because the standard fails to identify whether the responsible entity is the Transmission Owner or an Independent System Operator/Regional Transmission Organization, or some combination. Without specifying which entity is responsible for what, NERC will not have a standard that provides fair notice to industry participants and will not be able to fairly enforce the standard, since NERC hasn't provided clear notice for who is responsible for what.</p> <p>For example, the definition of service in 4.2; what "service" is applicable to whom? Is the service provided by the Transmission Operator, Transmission Owner, some combination of the two? As written, it appears to be applicable to all reliability functions.</p> <p>(4) The second sentence of the Purpose seems to imply the standard is only applicable to entities other than Nuclear Plant Entities. We suggest it be rephrased to eliminate this unintended exclusion.</p> <p>(5) We also recommend that the definition in Section A 4.1 &amp; A 4.2 be deleted since they appear under Definition of Terms.</p> <p>(6) Requirement R3 is redundant. It is covered by requirement R8.1.6.</p> <p>(7) In general, many of the measures are written more like requirements. Measures should be phrased such that they provide evidence for meeting the requirements.</p> <p>(8) We request clarification of what is meant by R8.3.7 "Coordination of physical and cyber security protection of the electric system-nuclear plant interface."</p>
<p>Response:</p> <p>(1) This requirement has been deleted. Clarifications related to application of the standards of conduct are being addressed directly by FERC.</p> <p>(2) This error was addressed in the revised draft.</p> <p>(3) The standard drafting team, with input from NERC Staff, has made changes to the draft standard to address these concerns. Please refer to the discussion under "Transmission Entity Term" in the Executive Summary.</p>	

Commenter	Comment
	<p>(4) The drafting team agrees and the standard’s Purpose has been revised to address this concern.</p> <p>(5) The standard drafting team has addressed these duplications. However, the term “Transmission Entities” is being retained under the Applicability section and removed as a definition since its usage and applicability (as stated in A.4.2) are unique to this standard and, therefore, cannot be added to the NERC Glossary of Terms.</p> <p>(6) The standard has been revised and this requirement (formerly R3) has been deleted as a result of industry comments.</p> <p>(7) The standard drafting team has revised the Measures accordingly.</p> <p>(8) See R9.3.6 in the revised draft standard. The wording has been revised to clarify that coordination of physical and cyber security protection of the bulk electric system should occur at the nuclear plant interface to ensure each asset is covered under at least one entity’s plan.</p>
<p>American Electric Power (1, 5, 6) James H. Sorrels, Jr.</p>	<p>(1) <b>Definitions</b> As written: “Nuclear Plant Off-site Power Supply (Off-site Power), when used in this standard, shall mean the electric power supply provided from the transmission system to the nuclear power plant distribution system as required for nuclear safety.” Suggested: “Nuclear Plant Off-Site Power Supply (Off-Site Power), when used in this standard, shall mean the electric power supply provided from the transmission system to the nuclear power plant distribution system as required per the plant license.”</p> <p><b>Requirements</b></p> <p>(2) <b>R3</b> As written: “R3. The Nuclear Plant Entities and the Transmission Entities shall resolve issues identified in R2, R6, and R7, per the Agreements developed in accordance with R8.” Suggested: Strike R3 as it is unnecessary. R8.1.6 requires a process for resolving disputes and issues.</p> <p>(3) <b>M3</b> As written: “M3. The Compliance Monitor shall interview the Nuclear Plant Entities and Transmission Entities to identify any issues encountered and whether the issues were being resolved or are being resolved.” -Suggested: Strike M3 as it is unnecessary. Section D for Compliance empowers the compliance monitor to review adherence to agreements made in accordance with R8.</p> <p>(4) <b>R8</b> Suggested subsection add to R8.2.1 as R8.2.1.1: “R8.2.1.1 Parameters are required to include: minimum and</p>

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	<p>maximum voltages coincident with required loads; minimum and maximum frequency; and stability.”</p> <p>Suggested subsection add to R8.2.1 as R8.2.1.2: “R8.2.1.2 Parameters that may be required include: maximum voltage change on unit trip; maximum frequency decay rate; and maximum short circuit strength.”</p>
<p>Response:</p>	<p>(1) The standard drafting team concurs and has modified the current draft consistent with your comment.</p> <p>(2) The standard was revised to rearrange the requirements presentation as a result of industry comments and old R3 has been deleted.</p> <p>(3) The standard drafting team has deleted this requirement in the current draft to address this concern.</p> <p>(4) The standard drafting team feels this would be too prescriptive.</p>
<p>Exelon Energy Delivery (1, 3) Jennifer T. Sterling</p>	<p>(1) As a general comment, the SAR lists virtually every defined functional entity as the applicable function, but the Requirements use only Transmission Entities, Transmission Planner and Generation Operator - from a compliance perspective that must be cleaned up. Each requirement must list the specific applicable entity (e.g. Transmission Planner shall..., Transmission Operator shall...). The use of Transmission Entity introduces ambiguity into the applicable entities. Functional entities that are not specifically included in the requirements should be removed from the applicability section.</p> <p>(2) Requirement R2 is overly broad and unnecessary in that the same requirement appears in R.8.2.3. We are concerned about this broad use of language might imply that the Transmission Planner would be financially responsible for incremental changes to maintain the Nuclear Plant Interface Requirements. It is our position that the responsibility for maintaining the ability of the transmission system to meet incremental requirements that exceed the Planning Criteria should be defined in the various agreements that have been or would be developed in accordance with R8.</p> <p>(3) Change the wording in R4.2 to read -Establish and utilize formal procedures or policies that facilitate the Operation of the electric system to meet the applicable requirements of the Nuclear Plant Interface Requirements.- Exelon Energy Delivery feels this wording allows for a compliance review. In addition, the requirement to respect the System Operating Limits is included in other existing Standards. Including it here is redundant.</p> <p>(4) Change the wording in R4.3 to read -Establish and utilize formal procedures or policies for notification of the NPP Generator Operator when Nuclear Plant Interface Requirements cannot be met. The procedure or policy shall include the requirement to coordinate mitigating actions and maintain appropriate documentation of circumstances leading to the event.- This wording allows for a compliance review.</p> <p>(5) Change the wording in R4.4 to read -Establish and utilize formal procedures or policies for notification of the NPP Generator Operator when the ability to assess the operation of the transmission system affecting Nuclear</p>

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Commenter	Comment
	<p>Plant Interface Requirements is not available.- This wording allows for a compliance review.</p> <p>(6) Change the wording of R5 to read -Per the Agreements developed in accordance with R8., the designated Transmission Operator and the NPP Generator Operator shall establish and utilize formal procedures for the coordination of planned outages and maintenance activities affecting the Nuclear Plant Interface Requirements-. This wording allows for compliance review.</p> <p>(7) In R6, substitute the phrase -establish and utilize formal procedures or policies for notification of- where the word -inform- appears. This wording allows for compliance review.</p> <p>(8) In R7, substitute the phrase -establish and utilize formal procedures or policies for notification of- where the word -inform- appears. This wording allows for compliance review. Additionally, the phrase -within bounds defined by the FERC Standards of Conduct- should be added to the end of the requirement.</p>
<p>Response:</p>	<p>(1) The standard drafting team, with input from NERC Staff, has made changes to the draft standard to address these concerns. Please refer to the discussion under “Transmission Entity Term” in the Executive Summary.</p> <p>(2) The intent of the requirements is to ensure a summary of the results of the planning studies are provided to the Nuclear Power plant based on the planning analysis required to be performed per R9.2.3 (formerly R8.2.3). The standard drafting team believes the transmittal of the results of the planning analysis is important enough to have its own requirement. Additionally, it is not the intent of the standard to assign financial responsibility.</p> <p>(3) The drafting team believes that effective procedures, protocols, guidelines, etc., are already in use in many cases and would satisfy the intent of this standard. This was the purpose of adding Footnote 1 in R.9. It is the intent of R9 (old R8) that the particular format and content of the implementing documents would be established in the agreements to ensure the requirements are met. The current language is consistent with other NERC standards in regards to System Operating Limits.</p> <p>(4) (5) (6) The standard drafting team believes the Entities should determine the appropriate implementation process which may include procedures, protocols, guidelines, etc. The standard drafting teams feels the appropriate type of implementation process should be included in the individual agreements between the entities.</p> <p>(7) (8) The standard drafting team believes the exchange of information would be within the bounds defined by the FERC standards of conduct and further assumes the parties would act within the bounds of their legal responsibilities and therefore is not required to be included within the standard.</p>
<p>NERC Standards Evaluation Committee Bill Bojorquez (ERCOT)</p>	<p>(1) The NERC Standards Evaluation Subcommittee is tasked with the review of standards that meet planning or analysis needs. The SES welcomes this proposed standard from the standpoint that nuclear power plants and the neighboring transmission planner should be well coordinated in ensuring that the technical safety and regulatory requirements for nuclear power plants are met. SES is in favor of the agreement referenced in R8 that mandates that the transmission system and generator define the planning, operating, and maintenance requirements for the systems, and define responsibilities for meeting those requirements. However, R8, as</p>

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	<p>drafted, is very proscriptive and may be considered all inclusive due to its detail. SES recommends that the SDT redraft R8 into a much more general statement of what objectives are to be accomplished in terms of safety and reliability within the agreement and leave the numerous details of the agreement up to the various parties involved.</p> <p>(2) In R1, Nuclear Plant Entities are required to provide the current Nuclear Plant Interface Requirements; however there is no periodicity provided for this requirement. The SES would recommend that R1 include a phrase such as...the current Nuclear Plant Interface Requirements as they may be revised from time to time per the Agreements developed in accordance with R8.</p>
<p><b>Response:</b></p>	<p>(1) The standard drafting team notes that there is a minimum list of elements that must be included within the agreements. The standard has been modified so that it indicates the listing would be the minimum required elements.</p> <p>(2) The standard drafting team has modified the standard to revisit the agreements at least every three years and requires notification of any changes that might affect the ability of either party to meet the NPIR.</p>
<p>Ameren (1) John E. Sullivan</p>	<p>(1) Requirement R1 should be reworded to read: "Nuclear Plant Entities shall provide in writing to the applicable Transmission Entities the current Nuclear Plant Interface Requirements which have been agreed to by the Nuclear Plant Entities and any applicable Transmission Entities. Nuclear Plant Entities shall provide in writing to the applicable Transmission Entities any proposed Nuclear Plant Interface Requirements for review."</p> <p>(2) Requirement R2 should be reworded to change "Transmission Planner" to "Transmission Entities" to ensure that all applicable Transmission Entities are included.</p> <p>(3) Requirement R4 as drafted states obligations only on the part of the Transmission Entities with respect to planning and operating the electric system while incorporating the Nuclear Plant Interface Requirements. Nuclear Entities would also have obligations with regards to operation of the nuclear plant in accordance with the Nuclear Plant Interface Requirements. Therefore, additional requirements as described below are needed in this section which define the obligations of the Nuclear Entities:</p> <p>R4B. The Nuclear Plant Entities designated in the Agreements developed in accordance with R8 shall:</p> <p>R4B.1 Incorporate the Nuclear Plant Interface Requirements into the operating reliability analysis of the nuclear plant.</p> <p>R4B.2 Operate the nuclear plant in accordance with the Nuclear Plant Interface Requirements.</p> <p>R4B.3 Inform the Transmission Entities and coordinate mitigating actions when Nuclear Plant Interface Requirements cannot be met.</p> <p>(4) The meaning of Requirement R8.3.6 is unclear. This requirement states that it is the responsibility of the Nuclear Plant Entities to arrange for off-site power supplies to meet regulatory requirements for safe shutdown of the plant. Wouldn't responsibility for this power supply arrangement belong to the Balancing Authority?</p> <p>(5) The readability of the standard would be enhanced by placing the material in Requirement R8 at the</p>

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Commenter	Comment
	beginning of the Requirements section.
	<p>Response:</p> <p>(1) The definition of NPIR has been changed accordingly and NPLR has been added. The NPLR are the requirements included in the design basis of the nuclear plant and are mandatory in order for the operation of the plant. The NPIR are now defined as the “agreed upon criteria to meet the NPLR” recognizing that a collaborative effort in determining HOW to meet these requirements must occur during the development of the agreements.</p> <p>(2) The standard has been revised to reflect this comment.</p> <p>(3) The standard drafting team agrees that the Nuclear Plant Generator Operator should operate per the agreements established to ensure the NPIR are met and has modified the standard by adding new requirement R5 and corresponding Measure M5 for the Nuclear Plant Generator Operator. However, the content of requirements R4.1, R4.3, and R4.4 are transmission-specific and corresponding requirements are not considered applicable to the Nuclear Plant Generator Operator.</p> <p>(4) This requirement has been deleted from the draft standard.</p> <p>(5) The standard was revised to rearrange the requirements presentation as a result of industry comments. To provide better flow in the standard, new requirement R2 was inserted to state the Transmission Entities and Nuclear Entities shall have agreements in place. However, the standard drafting team feels the details of what should be included in the agreement are appropriately placed as R9.</p>
NERC Transmission Subcommittee Scott Moore (Chr.) – AEP Ken Donohoo – ERCOT Brad Chase – OUC Steve Crutchfield – PJM Ed Pfeiffer – Ameren Darrick Moe – WAPA Doug McCracken – NU Allen Klassen – Westar Francis Halpin – BPA Tom Mallinger – MISO Ray Palmieri – ECAR Tom Vandervort – NERC	None, refer to Comment 3
	<p>Response:</p> <p>Please see the drafting team’s response to Comment 3.</p>
Northeast Utilities (1) Murale Gopinathan	<p>(1) Cyber security protocols as listed on section R8.3.7 needs to be finalized prior to being addressed.</p> <p>(2) Plant security on Section R8.3.7 needs to be more clearly defined. NERC’s standard must define which transmission assets are being addressed relative to plant security. Is it solely the substation/switching station</p>

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	<p>which interconnects the nuclear power plant, to the transmission grid or does it involve other elements of the transmission grid which could impact the reliability and availability of facilities and equipment at the interconnecting substation/switching station?</p>
<p>Response:</p>	<p>(1) This requirement has been revised based on the industry comments received. An existing NERC standard already covers cyber security. It is not the intent of this standard to address details on cyber security such as protocols.</p> <p>(2) See R9.3.6 in the revised draft standard. The wording has been revised to clarify that coordination of physical and cyber security protection of the bulk electric system should occur at the nuclear plant interface to ensure each asset is covered under at least one entity's plan.</p>
<p>ISO New England (2) Kathleen Goodman</p>	<p>(1) Applicability section lists "Planning Authorities" twice.</p> <p>(2) NERC's reference to "Transmission Entities" is overbroad, because the standard fails to identify whether the responsible entity is the Transmission Owner or an Independent System Operator/Regional Transmission Organization, or some combination. Without specifying which entity is responsible for what, NERC will not have a standard that provides fair notice to industry participants and will not be able to fairly enforce the standard, since NERC hasn't provided clear notice for who is responsible for what.</p> <p>For example, the definition of service in 4.2; what "service" is applicable to whom? Is the service provided by the Transmission Operator, Transmission Owner, some combination of the two? As written, it appears to be applicable to all reliability functions.</p> <p>(3) The second sentence of the Purpose seems to imply the standard is only applicable to entities other than Nuclear Plant Entities. We suggest it be rephrased to eliminate this unintended exclusion.</p> <p>(4) We also recommend that the definition in Section A 4.1 &amp; A 4.2 be deleted since they appear under Definition of Terms.</p> <p>(5) Requirement R3 is redundant. It is covered by requirement R8.1.6.</p> <p>(6) In general, many of the measures are written more like requirements. Measures should be phrased such that they provide evidence for meeting the requirements.</p> <p>(7) We request clarification of what is meant by R8.3.7 "Coordination of physical and cyber security protection of the electric system-nuclear plant interface."</p>
<p>Response:</p>	<p>(1) This error was addressed in the revised draft.</p> <p>(2) The standard drafting team, with input from NERC Staff, has made changes to the draft standard to address these concerns. Please refer to the discussion under "Transmission Entity Term" in the Executive Summary.</p> <p>(3) The Purpose has been revised to address this concern.</p>



**Consideration of Comments on 1<sup>st</sup> Draft of Nuclear Power Plant Off-site Power Coordination Standard**

Commenter	Comment
	<p>(4) The standard drafting team has addressed these duplications. However, the term “Transmission Entities” is being retained under the Applicability section and removed as a definition since its usage and applicability (as stated in A.4.2) are unique to this standard and, therefore, cannot be added to the NERC Glossary of Terms.</p> <p>(5) The standard has been revised and this requirement (formerly R3) has been deleted as a result of industry’s comment.</p> <p>(6) The standard drafting team has revised the Measures accordingly.</p> <p>(7) See R9.3.6 in the revised draft standard. The wording has been revised to clarify that coordination of physical and cyber security protection of the bulk electric system should occur at the nuclear plant interface to ensure each asset is covered under at least one entity’s plan.</p>
<p>Midwest Reliability Organization (2)  Pam Oreschnick – Xcel  Al Boesch – NPPD (2)  Terry Bilke – MISO (2)  Robert Coish – MHEB (2)  Dennis Florom – LES (2)  Ken Goldsmith – ALT (2)  Todd Gosnell – OPPD (2)  Wayne Guttormson – SPC (2)  Darrick Moe (Chr.) – WAPA (2)  Tom Mielnik – MEC (2)  Dick Pursley – GRE (2)  Dave Rudolph – BEPC (2)  Joe Knight (Secy.) – MRO (2)  27 add’l MRO members no named above</p>	<p>(1) Roles of the various applicable entities, including the compliance monitor, need to be defined.</p> <p>(2) Data retention requirements need to follow the standards process manual. The requirement should be more specific and measurable. The standard should be clearer as to what data is required. Data should be retained that shows you consistently meet requirements. Compliance data retention does not show this.</p> <p>(3) Level 1 noncompliance is assigned if "some" data is missing, but there is no definition of what "some" is.</p> <p>(4) M4.2 - What data is needed and for how long?</p>
	<p><b>Response:</b></p> <p>(1) The standard drafting team, with input from NERC Staff, has made changes to the draft standard to address concerns related to use of the term entities. Please refer to the discussion under “Transmission Entity Term” in the Executive Summary. The compliance monitor’s role is being addressed by NERC during establishment of the ERO.</p> <p>(2) Record retention requirements will be consistent with compliance audit intervals. Any additional record requirements would be addressed under Requirement R9.4.4, “provision of information necessary to report to government agencies”.</p> <p>(3) The standard drafting team revised the wording to delete the term “some” and clarify that missing documentation constitutes a Level 1 non-</p>

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Commenter	Comment
	<p>compliance. Documentation requirements are specified in the Measures but are generally non-prescriptive to allow entities some flexibility in determining how to comply, since most already have agreements, processes, procedures, etc. in place that would meet the intent of the draft standard.</p> <p>(4) Any documentation that supports compliance with this requirement should be acceptable. Data retention requirements are provided in D.1.3 and state, "The Nuclear Plant Generation Operators and Transmission Entities shall each retain information from the most current and immediately preceding audit periods."</p>
<p>Entergy Services, Inc. (1, 5)                      Entergy Transmission (ET) and Entergy Nuclear (EN)                      Maurice Casadaban – ET (1)                      and Mookie Chander – ET (1)                      Jim Case – ET (1)                      Jay Zimmerman – ET (1)                      George Bartlett – ET (1)                      Ed Davis – ET (1)                      Bill Aycock – ET (1)                      Narinder Saini – ET (1)                      Rick Riley – ET (1)                      Michael LaBiche – ET (1)                      Ed Brinson – ET (1)                      James Puska – ET (1)                      Greg Camet – ET (1)                      Tom Barnett – EN (5)                      T.O. Moffitt – EN (5)                      John Hotz – EN (5)                      Singh Matharu – EN (5)                      Ed Hester – EN (5)</p>	<p>(1) Regarding R4.4: If the Transmission Entity is not aware that it lost the ability to assess as mentioned in this requirement, how could it tell the Nuclear Plant Entity? There is another standard on situational awareness that already covers the need to be aware of the loss of assessment capability. Therefore R4.4 should state: "Inform the Nuclear Plant Entities when the Transmission Entity becomes aware that it has lost....."</p> <p>(2) Regarding R7: In real-time operations, it is unlikely that a Transmission Entity could become aware of the significance to a Nuclear Plant Entity of an actual change to the electric system configuration, operations, protection systems or capabilities if the actual change had not been previously identified as a licensing issue by the Nuclear Plant Entity. In contrast, "proposed" changes could be put through the same study process as that followed during the initial agreement between the Nuclear Plant Entity and the Transmission Entity. Therefore R7 should be modified by deleting the words, "actual or" and should only include "proposed" changes.</p> <p>(3) At times nuclear licensing requirements (nuclear safety concerns) may conflict with NERC standards. For example: Under certain contingencies the only option for Transmission Entities is to down power a Nuclear plant in 30 minutes to relieve an SOL. This requirement would conflict with a Nuclear Plant's desire to down power in 2 hours in order to comply with a defense in depth philosophy. How would this be resolved?</p>
	<p>Response:</p> <p>(1) The standard drafting team believes that it is understood that an entity cannot fundamentally take action until they "become aware" and did not need to state this in the Requirement itself. However, this level of detail is more appropriate for the Measures, so the standard has been revised to reflect the comment (see M4.4).</p> <p>(2) The standard drafting team believes that both actual and proposed changes are appropriate to be listed. For example, in some cases an actual change may have occurred and initially determined that it does not affect the NPIR. However, subsequent evaluation determined that the NPIR is affected. Therefore, the standard drafting team feels the standard is acceptable as written.</p>

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Commenter	Comment
	<p>(3) The standard drafting team believes this issue is outside the scope of this standard. However, note that TOP-001-0 R3 recognizes that such situations can occur and contains the following provision:                      R3. Each Transmission Operator, Balancing Authority, and Generator Operator shall comply with reliability directives issued by the Reliability Coordinator, and each Balancing Authority and Generator Operator shall comply with reliability directives issued by the Transmission Operator, unless such actions would violate safety, equipment, regulatory or statutory requirements. Under these circumstances the Transmission Operator, Balancing Authority or Generator Operator shall immediately inform the Reliability Coordinator or Transmission Operator of the inability to perform the directive so that the Reliability Coordinator or Transmission Operator can implement alternate remedial actions.</p>
<p>Southern Nuclear (SN) Grid Committee (5)                      Terry L. Crawley                      David Whitehurst – SN (5)                      Duane Brock – SN (5)                      Bill Snider – SN (5)                      Bonnie Goodwin – SN (5)                      Jeff Branum – SN (5)                      Tim Milton – SN (5)                      Roman Carter – SCG (6)                      Jim Viikansalo – SOCO (1)                      Marc Butts – SOCO (1)                      Jim Busbin – SOCO (1)                      Wade Pugh – SOCO (1)</p>	<p>(1) R3 is not needed because resolution of issues would be required to satisfy R8.                      (2) R5/M5 - We request the drafting team to provide examples of the type of documentation that would be required to show compliance with this. This comment also applies to R6/M6 and R7/M7.                      (3) R5 - R7: The nuclear plant does not know what impact some activities may have on the grid. Thus, we believe the requirement should be revised to state will [coordinate ... activities reasonably expected to affect the ability of the transmission system.....]. The appropriate Transmission Entity would then have to assess the impact on the grid and the grid's ability to meet the NPIR.                      (4) Modify R8.1.6. We have concerns with the use of the word [process]. This could be interpreted to require a formal detailed flow-charted process intended to cover any conceivable issue that could arise. We propose changing this sentence to: [Address the resolution of disputes. ]                      (5) R8.1.5 - Revise to state [Requirements to review the agreements on an agreed upon basis. ] The standard should not specify the timeframe (over prescriptive).                      (6) R8.2.1 - We recommend changing the word [scenarios] to [conditions].                      (7) R8.2.2 - The intent of R8.2.2 is good. The wording should be more concise in terms of limiting the scope of equipment and configurations. The nuclear plant owner/operator needs to only identify the high risk or significant equipment or facilities that are known. For example, a one-line diagram should be considered adequate for defining the facilities and major components.                      (8) R8.2.3. Revise to state the following only: [Types of planning and operational analyses performed specifically to support Nuclear Plant Interface Requirements, including the frequency of studies.] That is, delete the following phrase: [and a list of contingencies and scenarios required.]                      (9) R8.3.1 - Clarification needed. Also, this requirement should address ownership of the facilities. Suggested wording: [Designation of ownership, operational control, and maintenance responsibilities for electrical facilities on the interface between the electric system and the nuclear plant.]                      (10) R8.3.3 is too broad and should be clarified to apply only to those activities that would impact the NPIR.                      (11) R8.3.4 - Recommend deleting the 2nd part of this sentence (Not needed.)                      (12) R8.3.5 - 2nd part of this requirement is covered by other NERC standards on restoration and should be</p>

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Commenter	Comment
	<p>deleted. The drafting team should clarify its intent for including consideration of nuclear plant coping times. We do not understand why this needed here.</p> <p>(13) R8.3.6 - This requirement is not clear. What is the intent of this requirement? Is this to address who would pay for any extraordinary measures to meet the NPIR? If so, please clarify.</p> <p>(14) R8.3.7 - Too broad as written. The drafting team should clarify what the intent and scope of the requirement is. The nuclear plants already have security plans that dictate the level and method of security within their plants.</p> <p>(15) R8.3.8 - Clarify SPS to mean grid SPSs, not special protection systems internal to a nuclear plant. This is a good example of a term that should be defined to ensure common understanding among plant and system personnel.</p>
	<p>(1) The standard drafting team agrees and has removed the old R3.</p> <p>(2) Documentation will vary depending on the Nuclear Plant and Transmission Entities specific communication agreements and communication protocols for planned work and emerging issues/potential outages. Any method that is auditable in demonstrating communication by both parties for such work activities listed in Requirement 5, 6, and 7 is acceptable. The standard drafting team expects that examples of emails, logs, and written notices would be acceptable in demonstrating coordination. The intent of this standard is not to be overly prescriptive in defining specific methods used for communication between the various Transmission Entities and Nuclear Plant Generator Operators.</p> <p>(3) The standard drafting team believes that requirements R6, R7 and R8 (formerly R5, R6 and R7) would require the Transmission Entities to re-evaluate the NIPR based on requirement R3 and would initiate a revision to the agreements in a collaborative effort to determine HOW the requirements will be implemented. The examples of evidence may be providing the process used which may include procedures, operator logs, guidelines, etc. Additionally, the documentation of notifying the other Entities may be by correspondence, record of conversation, operator logs, etc.</p> <p>(4) The standard drafting team understands the concern and has revised the wording to say, “dispute resolution <u>mechanism</u>”.</p> <p>(5) The standard drafting team believes the agreements need periodic review and that a reasonable maximum review period should be specified. The standard has been modified to reflect a three-year periodicity of review (see R9.1.3).</p> <p>(6) The standard drafting team believes the words are similar and changing would not materially change the requirement.</p> <p>(7) The standard drafting team agrees the scope of equipment may be limited, however the team feels this should be done in the agreements.</p> <p>(8) The standard drafting team believes these specific studies are required to adequately assess the system but has changed the word “list” to “type”.</p> <p>(9) This requirement has been revised to include “Ownership”.</p>

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Commenter	Comment
	<p>(10) Requirement R2 in the revised draft standard provides clarification that the requirements listed under R9 (formerly R8) are intended to address the impact to the NPIR.</p> <p>(11) The current draft of the standard has been revised accordingly. The standard drafting team believes the wording in R9.3.4 (formerly R8.3.4) "address actions" already covers the 2<sup>nd</sup> part of this sentence.</p> <p>(12) NERC standards already address offsite power restoration for nuclear plants. However, no existing NERC standards address consideration for the nuclear plants coping time with the restoration plans for offsite power. Therefore, this requirement has been revised to require consideration of the nuclear plant coping time with the offsite power restoration plans.</p> <p>(13) The standard drafting team has deleted this requirement since it represents a normal commercial responsibility of the NPP owner/operator and is outside the scope of this standard.</p> <p>(14) See R9.3.6 in the revised draft standard. The wording has been revised to clarify that coordination of physical and cyber security protection of the bulk electric system should occur at the nuclear plant interface to ensure each asset is covered under at least one entity's plan.</p> <p>(15) The standard drafting team agrees and has added "transmission" in-front of Special Protection Systems (SPS) which is now capitalized because the term SPS is already defined in other NERC standards; therefore, this term will not be defined in this standard.</p>
<p>New York ISO (2) Michael Calimano</p>	<p>1) The NYISO recommends the addition of M4.5 to balance the standard: "Documentation of the process used by the Nuclear Plant Entities to notify the Transmission Entities if the capability to maintain the Nuclear Plant Interface is lost; and copies of logs, or other evidence, documenting the process that were implemented."</p> <p>2) Applicability section lists "Planning Authorities" twice.</p> <p>3)NERC's reference to "Transmission Entities" is overbroad, because the standard fails to identify whether the responsible entity is the Transmission Owner or an Independent System Operator/Regional Transmission Organization, or some combination. Without specifying which entity is responsible for what, NERC will not have a standard that provides fair notice to industry participants and will not be able to fairly enforce the standard, since NERC hasn't provided clear notice for who is responsible for what.  For example, the definition of service in 4.2; what "service" is applicable to whom? Is the service provided by the Transmission Operator, Transmission Owner, some combination of the two? As written, it appears to be applicable to all reliability functions.</p> <p>4)The second sentence of the Purpose seems to imply the standard is only applicabe to entities other than Nuclear Plant Entities. We suggest it be rephrased to eliminate this unintended exclusion.</p> <p>5) We also recommend that the definition in Section A 4.1 &amp; A 4.2 be deleted since they appear under Definition of Terms.</p>

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Commenter	Comment
	<p>6) Requirement R3 is redundant. It is covered by requirement R8.1.6.</p> <p>7) R 8.1.4 indicates "Provisions for suspending standards of conduct when needed to ensure grid reliability, nuclear plant safety, or personnel safety." and the standard requires that whatever information, as stated in NRC license requirements, must be given.</p> <p>Requirement 8.1.4, in its present form, needs to be removed. We suggest deleting the requirement, and stating, as the third bullet point in the 'Nuclear Plant Interface Requirements,' Definition of Terms: "This standard cannot supercede any regulatory or legal obligations relative to the sharing of power system information.</p> <p>8) We request clarification of what is meant by R8.3.7 "Coordination of physical and cyber security protection of the electric system-nuclear plant interface."</p>
<p>Response:</p>	<p>(1) The standard drafting team agrees that the Nuclear Plant Generator Operator should operate per the agreements established to ensure the NPIR are met and has modified the standard by adding new requirement R5 and corresponding Measure M5 for the Nuclear Plant Generator Operator. However, requirements related to notification to the nuclear plant when capability to meet the NPIR is lost or cannot be met are transmission-specific and a corresponding requirement is not considered applicable to the Nuclear Plant Generator Operator.</p> <p>(2) This error was addressed in the revised draft.</p> <p>(3) The standard drafting team, with input from NERC Staff, has made changes to the draft standard to address these concerns. Please refer to the discussion under "Transmission Entity Term" in the Executive Summary.</p> <p>(4) The Purpose has been revised to address this concern.</p> <p>(5) The standard drafting team has addressed these duplications. However, the term "Transmission Entities" is being retained under the Applicability section and removed as a definition since its usage and applicability (as stated in A.4.2) are unique to this standard and, therefore, cannot be added to the NERC Glossary of Terms.</p> <p>(6) The standard has been revised and this requirement (formerly R3) has been deleted as a result of industry's comment.</p> <p>(7) This requirement has been deleted. Clarifications related to application of the standards of conduct are being addressed directly by FERC.</p> <p>(8) See R9.3.6 in the revised draft standard. The wording has been revised to clarify that coordination of physical and cyber security protection of the bulk electric system should occur at the nuclear plant interface to ensure each asset is covered under at least one entity's plan.</p>
<p>We Energies (3, 4, 5) Howard Rulf</p>	<p>"Transmission Entity" is too broad when used to identify the entity responsible for a Reliability Standard requirement. It may cause ambiguity as to who is responsible for the requirement. Rather than defining a new "super entity" that encompasses a large portion of the Functional Model, requirements should to be assigned to the Functional Model entities responsible for those tasks.</p>
<p>Response:</p>	

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Commenter	Comment
	<p>The standard drafting team, with input from NERC Staff, has made changes to the draft standard to address these concerns. Please refer to the discussion under "Transmission Entity Term" in the Executive Summary.</p>
<p>SCANA, SCE&amp;G, V.C. Summer Nuclear Station (5) Dan Goldston</p>	<p>Would it improve the standard to specifically assert the Nuclear Plant Entities will reduce power, or go off-line, at the direction of the Transmission Entity? This could be covered by the agreement, and the Transmission Entity must know the limitations of the NPE's controllable downpower rates. The NPE will come off line immediately (trip) at the direction of the TE. My understanding is these were issues during the August 2003 Northeast Blackout. Our TE has this authority over the NPE. This may be worthy of special mention, instead of leaving it buried in the agreements. In our situation the NPE will respond to uppower requests from the TE after discussion with NPE management, but will respond to downpower requests from the TE immediately. The fact that the NPE is baseloaded and one of the last to reduce power is covered in the document and in training at the TE.</p>
<p><b>Response:</b> The standard drafting team believes the nuclear plant must follow the directives of the transmission operator or the reliability coordinator as addressed in TOP-001-0 R3 and should not be duplicated with this standard. The remaining points are not within the scope of this standard.</p>	
<p>Nuclear Regulatory Commission George Morris</p>	<p><b><u>Definitions of Terms</u></b></p> <p>Replace the term Nuclear Plant with Nuclear Power Plant.</p> <p>Under Nuclear Plant Interface Requirements, add an additional item;</p> <ol style="list-style-type: none"> <li>1) Offsite power supply to enable Emergency and Normal safe shutdown....</li> <li>3) The Offsite power supply requirements include the acceptable voltage range at a predefined point on the electric supply system and the maximum NPP shutdown load seen by the offsite power supply.</li> </ol> <p>The following terms are not defined in this document nor are they defined in the NERC Glossary.</p> <p><i>Planning Analyses</i> We would expect a planning analysis would be based on assumptions of future generation, transmission and system load requirements for a defined time period.</p> <p><i>Operating Reliability Analysis</i> We would expect an operating reliability analysis would be based on current conditions of the transmission system which contain alarms for voltage and thermal limits. We further expect that this analysis would also be looking for contingencies such as trip of the NPP (or multiple NPPs at a common site). And finally, we would expect that this operating reliability analysis would be updated with current system status no less than once every 15 minutes. (It is our understanding that systems are in place with update times in the range of seconds.)</p> <p><b><u>Introduction</u></b> Section A4.2, lists Distribution Providers as an included subset of Transmission Entities. Please confirm this standard will include an entity that is not normally considered a member of NERC. This is important because</p>

Commenter	Comment
	<p>some older NPP sites connect to the local distribution system as a source of offsite power. It is our understanding that distribution systems are not included in the reliability models because their nominal voltages are outside the normal range considered in the reliability analyses.</p> <p><b><u>Requirements</u></b></p> <p>R4.1 should be supplemented with a minimum analysis updating frequency.</p> <p>R4.2 should be supplemented with a minimum notification time allowance.</p> <p>A new section R4.5 should require the analysis to address the contingency of loss of the NPP units.</p> <p>A new notification requirement for unplanned outages and changes to planned outages in progress should be added to supplement R5.</p> <p>The requirements Section may read easier if the details in R8, Agreement, were included before R1 or included as an attachment.</p> <p>Note 1 should also require the protocols to provide reasonable assurance that both parties are obligated to fulfill the stated goals and requirements to the best of their ability.</p> <p>Supplement R8.2.2 by giving examples of components such as ALTC, VR, SVC and capacitor banks, normally located in the local switchyard.</p> <p>Supplement R8.3.4 should include a minimum notification time.</p> <p>The intent of R8.3.6 should be clarified.</p> <p>R8.4. need the following "Provisions for prompt notification when contingency analysis program fails to function ....</p> <p>Supplement R8.4.2 should include a minimum notification time.</p> <p><b><u>Measures</u></b></p> <p>M1, the Compliance Monitor should obtain the Nuclear (Power) Plant Interface Requirement transmittal document from the Transmission Entity.</p> <p>M4.2, as presently written, implies the goals of the agreement are voluntary and should be rewritten.</p> <p>Add a new section, M4.5 to require documentation to support the existence of planned compensatory measures</p>



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Commenter	Comment
	<p>to be used if the current operations reliability analysis can not support the NPP Interface Requirements.</p> <p>Add a new section M9, similar to M8, to provide copies of existing implementing procedures to support the Agreement.</p> <p>Add a new section M10 to require the transmission entity to inform NERC of any violations of the interface technical requirements, including magnitude and duration.</p> <p><b><u>Compliance</u></b>            Clarify D2.1 to identify what missing documentation would be acceptable and what missing documentation would not be acceptable. Clarify why any missing documentation would be acceptable.</p> <p>Add a note to this standard that it is not the intent of this standard to provide a standard that ensures NPP licensees are meeting their licensing requirements.</p> <p>Under D1.3, Data Retention, add a requirement to retain records of events where the requirements of the Agreement could not be met.</p>
<p><b>Response:</b></p> <p><u>Definitions of Terms</u></p> <p>The SDT chose the term “Nuclear Plant” for brevity. The definition for Nuclear Plant Generator Operator specifies “any Nuclear Plant Licensee responsible for operation of a <u>nuclear facility licensed to produce commercial power.</u>”</p> <p>1) The standard drafting team believes this is implicit with the current text.</p> <p>3) Plant specific voltage requirements will be stated in the NPIR and will be addressed in the interface agreement.</p> <p>The necessary details would be covered in the agreement for each type of analysis. It is not the intent of the standard to define the types of planning and operating analysis to be performed, rather the purpose of the standard is to ensure that the transmission entity and nuclear entity agree to the planning and operating reliability analysis required to meet the NPIR.</p> <p><u>Introduction</u></p> <p>This standard is applicable to Distribution Providers that are responsible for providing services related to the NPIR.</p> <p><u>Requirements</u></p> <p>The standard drafting team believes the standard addresses the comment by requiring the agreement to document the frequency of the analysis and feel it is appropriate to be included within the agreements. (See R9.2.3.)</p>	

Commenter	Comment
	<p>The standard drafting team believes the standard addresses the comment by requiring the agreement to include the notification time requirements and feel it is appropriate to be included in the individual agreements. (See R9.3.4.)</p> <p>The standard drafting team believes this detail should be included within the agreements, that is, to include loss of the NPP units as a contingency that would be required to be evaluated to satisfy R9.2.3.</p> <p>After extensive discussion on outages and maintenance, the standard drafting team decided to reword this requirement to simply require coordination of “outages and maintenance activities which affect the NPIRs. This intent is for the Nuclear Plant Generator Operator and the responsible Transmission Entities to work together to identify the appropriate scope of equipment and conditions necessary to ensure the NPIR continue to be met during outage and maintenance evolutions. The drafting team believes use of terms such as “planned” and “planned and emerging” with the “outages” introduces confusion in interpretations and could imply unintended limitations. The intent of the generic wording is to cover planned activities as well as emergent activities that can be managed (i.e., sufficient time exists to coordinate and manage the emergent activities).</p> <p>The standard was revised to rearrange the requirements presentation as a result of industry comments. To provide better flow in the standard, new requirement R2 was inserted to state the Transmission Entities and Nuclear Entities shall have agreements in place. The standard drafting team feels the details of what should be included in the agreements are appropriately placed as R9.</p> <p>The SDT believes that the requirement to comply with NERC requirements is implicit.</p> <p>The standard drafting team feels this would be too prescriptive for this requirement; however, it may be acceptable for the agreements.</p> <p>Requirement R9.3.4 (formerly R8.3.4) has been revised to state “This provision shall include responsibility to notify the Nuclear Plant Generation Operator within a specified time frame.” The standard drafting team believes the specific notification times should be agreed upon between the Entities and addressed in the agreements.</p> <p>This requirement (formerly R8.3.6) has been deleted from the standard.</p> <p>This notification is covered in R9.3.4.</p> <p>Time notifications requirements for communications have been added to R9.4.1 (formerly R8.4.1). Time notification requirements will vary by region. It is expected the agreements would contain the specific time notification requirements applicable.</p> <p><u>Measures</u></p> <p>The standard drafting team has modified the standard to require the Nuclear Power Plant provide a copy of a receipt by the applicable Transmission Entities of the transmittal of the proposed NPIR.</p> <p>The standard drafting team believes the requirement should be to operate to the Agreement and the Measure should allow the flexibility to</p>

Commenter	Comment
	<p>consider extenuating circumstances. The transmission entity will operate the grid to the NPIR, but under certain circumstances when the NPIR cannot be met, the Transmission Entity will notify the Nuclear Plant per R.9.3.4.</p> <p>R9.3.4 requires the appropriate agreement to identify the actions to be taken when NPIR can not be met. The standard drafting team feels the standard addresses the concerns.</p> <p>The standard drafting team believes the standard as currently drafted is adequate. Each measure is associated with one of the requirements.</p> <p>Implementing procedures used to support the Agreements would be made available upon request to help meet M9 and also could be used as evidence required in M4 through M8.</p> <p>The standard drafting team believes Section D.1.4 sufficiently covers reporting requirements.</p> <p><u>Compliance</u></p> <p>The levels of non compliance have been revised. Missing documentation represents a Level 1 non-compliance.</p> <p>The standard drafting team does not intend that meeting the requirements of this standard would ensure the NPP meets their licensing requirements (NPLR). The NPP Licensee is required to ensure that all its NPLR are satisfied and that is required within the NPP Licensing Basis itself. The focus of this standard is coordination between the NPP Entities and the Transmission Entities to ensure appropriate support to the NPP. The standard drafting team acknowledges that it still is the NPP Licensee's responsibility that all licensing requirements are met and has elected to not try to state this within the standard. For future reference, this written response to your comment will serve as documentation of the standard's intent.</p> <p>The self certification and on-site audits would identify cases where the agreement has not been met. Record retention requirements will be consistent with compliance audit intervals. Any additional record requirements would be addressed under Requirement R9.4.4, "Provisions for supplying information necessary to report to government agencies..."</p>

## Standard Development Roadmap

*This section is maintained by the drafting team during the development of the standard and will be removed when the standard becomes effective.*

### Development Steps Completed:

1. A SAR was received on October 20, 2004 from the Nuclear Energy Institute Grid Reliability Task Force.
2. The SAR was posted for comment from December 1, 2004 to January 7, 2005.
3. Nominations for a SAR drafting team were solicited from December 1 to December 21, 2004. The nomination period was extended to January 28, 2005 to solicit additional nominations.
4. The SAR was revised and draft 2 was posted from April 1 to April 30, 2005. The comment period was extended to May 16, 2005.
5. On May 25, 2005, the Standards Authorization Committee authorized development of a standard and appointed the SAR drafting team to serve as the standard drafting team, while soliciting additional members.
6. The first draft of the standard was posted for comment for the period December 1, 2005 through January 15, 2006

### Description of Current Draft:

The drafting team has prepared a second draft of the proposed standard on nuclear power plant off-site power supply coordination for the purpose of soliciting public comment. The requested comment period is September 15, 2006 through October 16, 2006.

### Future Development Plan:

Anticipated Actions	Anticipated Date
1. The drafting team plans to review stakeholder comments from the posting and make a recommendation whether to proceed to ballot or to a third draft of the standard.	November 3, 2006
2. 30-day pre-ballot posting.	November 15, 2006
3. Ballot.	December 15, 2006
4. 30-day board notice.	December 15, 2006
5. Adoption by board.	February 12, 2007

### Definitions of Terms Used in Standard

*This section includes all newly defined or revised terms used in the proposed standard. Terms already defined in the Reliability Standards Glossary of Terms are not repeated here. New or revised definitions listed below become approved when the proposed standard is approved. When the standard becomes effective, these defined terms will be removed from the individual standard and added to the Glossary.*

**Nuclear Plant Generator Operator:** Any Nuclear Plant Licensee responsible for operation of a nuclear facility licensed to produce commercial power.

**Nuclear Plant Off-site Power Supply (Off-site Power):** The electric power supply provided from the transmission system to the nuclear power plant distribution system as required per the nuclear power plant license.

**Nuclear Plant Licensing Requirements (NPLRs):** Requirements included in the design basis of the nuclear plant and statutorily mandated for the operation of the plant, including nuclear power plant licensing requirements for:

- 1) Off-site power supply to enable safe shutdown of the plant during an electric system or plant event; and
- 2) Avoiding preventable challenges to nuclear safety as a result of an electric system disturbance, transient, or condition.

**Nuclear Plant Interface Requirements (NPIRs):** The agreed upon criteria to meet the NPLRs.

## A. Introduction

1. **Title:** Nuclear Plant Interface Coordination
2. **Number:** NUC-001-1
3. **Purpose:** This standard requires coordination between Nuclear Plant Generator Operators and Transmission Entities for the purpose of ensuring nuclear plant safe operation and shutdown.
4. **Applicability**
  - 4.1. Nuclear Plant Generator Operator.
  - 4.2. Transmission Entities, shall mean all entities that are responsible for providing services related to Nuclear Plant Interface Requirements (NPIRs) in accordance with the terms of the Agreements developed in this standard. Such entities may include one or more of the following:
    - 4.2.1 Transmission Operators
    - 4.2.2 Transmission Owners
    - 4.2.3 Transmission Planners
    - 4.2.4 Transmission Service Providers
    - 4.2.5 Balancing Authorities
    - 4.2.6 Reliability Coordinators
    - 4.2.7 Planning Authorities
    - 4.2.8 Distribution Providers
    - 4.2.9 Load-serving Entities
5. **Proposed Effective Date:** Eighteen months after BOT adoption.

## B. Requirements

- R1.** The Nuclear Plant Generator Operator shall provide the proposed NPIRs in writing to the applicable Transmission Entities and shall verify receipt of the NPIRs. [Risk Factor: Lower]
- R2.** The Nuclear Plant Generator Operator and the Transmission Entities shall have in effect one or more Agreements<sup>1</sup> that document how NPIRs shall be addressed and implemented. [Risk Factor: Lower]
- R3.** Per the Agreements developed in accordance with this standard, the Transmission Entity shall incorporate the NPIRs into the planning analyses of the electric system and shall communicate the results of the analyses to the Nuclear Plant Generator Operator. [Risk Factor: Medium]
- R4.** Per the Agreements developed in accordance with this standard, the Transmission Entities shall: [Risk Factor: Medium]
  - R4.1.** Incorporate the NPIRs into the operating reliability analysis of the electric system.

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Agreements may include mutually agreed upon procedures or protocols.

- R4.2.** Operate the electric system to meet the NPIRs, while respecting System Operating Limits (SOL).
- R4.3.** Inform the Nuclear Plant Generator Operator and coordinate mitigating actions when NPIRs cannot be met.
- R4.4.** Inform the Nuclear Plant Generator Operator when the Transmission Entity loses the ability to assess the operation of the transmission system affecting NPIRs.
- R5.** The Nuclear Plant Generator Operator shall operate per the Agreements developed in accordance with this standard. [Risk Factor: Medium]
- R6.** Per the Agreements developed in accordance with this standard, the designated Transmission Entities and the Nuclear Plant Generator Operator shall coordinate outages and maintenance activities which affect the NPIRs. [Risk Factor: Medium]
- R7.** The Nuclear Plant Generator Operator shall inform the applicable Transmission Entities of actual or proposed changes to nuclear plant design, configuration, operations, limits, protection systems, or capabilities that may impact the ability of the transmission system to meet the NPIRs. [Risk Factor: Medium]
- R8.** The Transmission Entities shall inform the Nuclear Plant Generator Operator of actual or proposed changes to electric system design, configuration, operations, limits, protection systems, or capabilities that may impact the ability of the transmission system to meet the NPIRs. [Risk Factor: Medium]
- R9.** The Nuclear Plant Generator Operator and the Transmission Entities shall include the following elements within the agreement(s) identified in R2: [Risk Factor: Lower]
  - R9.1.** Administrative elements:
    - R9.1.1.** Definitions of key terms used in the agreement.
    - R9.1.2.** Names of the responsible entities, organizational relationships, and responsibilities related to the NPIRs.
    - R9.1.3.** A requirement to review the agreement(s) at least every three years.
    - R9.1.4.** A dispute resolution mechanism.
  - R9.2.** Technical requirements and analysis:
    - R9.2.1.** Identification of parameters, limits, configurations, and operating scenarios that constitute the NPIR and, as applicable, procedures for providing any specific data not provided within the agreement.
    - R9.2.2.** Identification of facilities, components, and configuration restrictions that are essential for meeting NPIR.
    - R9.2.3.** Types of planning and operational analyses performed specifically to support NPIR, including the frequency of studies and types of Contingencies and scenarios required.
  - R9.3.** Operations and maintenance coordination:
    - R9.3.1.** Designation of ownership of electrical facilities at the interface between the electric system and the nuclear plant and responsibilities for operational control coordination and maintenance of these facilities.

- R9.3.2.** Identification of any maintenance requirements for equipment not owned or controlled by the Nuclear Plant Generator Operator that are necessary to meet NPIRs.
  - R9.3.3.** Coordination of testing, calibration and maintenance of on-site and off-site power supply systems and related components.
  - R9.3.4.** Provision to address actions when the electric system cannot meet NPIRs or the responsible Transmission Entity loses the ability to assess the capability of the electric system to meet the NPIRs. This provision shall include responsibility to notify the Nuclear Plant Generator Operator within a specified time frame.
  - R9.3.5.** Provision to consider nuclear plant coping times as required by the NPLR in coordination of grid and nuclear plant restoration following a nuclear plant loss of Off-site Power.
  - R9.3.6.** Coordination of physical and cyber security protection of the bulk electric system at the nuclear plant interface to ensure each asset is covered under at least one entity's plan.
  - R9.3.7.** Coordination of the NPIRs with transmission system Special Protection Systems and under-frequency and under-voltage load shedding programs.
- R9.4.** Communications and training:
- R9.4.1.** Provisions for communications between the Nuclear Plant Generator Operator and Transmission Entities, including communications protocols, notification time requirements, and definitions of terms.
  - R9.4.2.** Provisions for coordination during an off-normal or emergency event affecting the NPIRs, including the need to provide timely information explaining the event, an estimate of when the system will be returned to a normal state, and the actual time the system is returned to normal.
  - R9.4.3.** Provisions for coordinating investigations of causes of unplanned events affecting the NPIRs and developing solutions to minimize future risk of such events.
  - R9.4.4.** Provisions for supplying information necessary to report to government agencies, as related to NPIRs.
  - R9.4.5.** Provisions for personnel training, as related to NPIRs.

### **C. Measures**

- M1.** The Nuclear Plant Generator Operator shall, upon request of the Compliance Monitor, provide a copy of the transmittal and receipt of transmittal of the proposed NPIRs to the responsible Transmission Entities. (Requirement 1)
- M2.** The Nuclear Plant Generator Operator and each Transmission Entity shall each have a copy of the Agreement(s) addressing the elements in Requirement 9 available for inspection upon request of the Compliance Monitor. (Requirement 2 and 9)
- M3.** Each Transmission Entity responsible for planning analyses in accordance with the Agreement shall, upon request of the Compliance Monitor, provide a copy of the planning analyses results transmitted to the Nuclear Plant Generator Operator, showing incorporation of the NPIRs. The



Compliance Monitor shall refer to the Agreements developed in accordance with this standard for specific requirements. (Requirement 3)

- M4.** Each Transmission Entity responsible for operating the electric system in accordance with the Agreement shall demonstrate or provide evidence of the following, upon request of the Compliance Monitor:
  - M4.1** The NPIRs have been incorporated into the current operating reliability analysis of the electric system. (Requirement 4.1)
  - M4.2** The electric system is being operated to meet the NPIR, to the extent practicable under electric system conditions. (Requirement 4.2)
  - M4.3** When NPIRs could not be met, the Transmission Entity informed the Nuclear Plant Generator Operator and coordinated the mitigating actions. (Requirement 4.3)
  - M4.4** The Transmission Entity informed the Nuclear Plant Generator Operator when it became aware it lost the capability to assess the operation of the electric system affecting the NPIRs. (Requirement 4.4)
- M5.** The Nuclear Plant Generator Operator shall, upon request of the Compliance Monitor, demonstrate or provide evidence that the Nuclear Power Plant is being operated consistent with the Agreements developed in accordance with this standard. (Requirement 5)
- M6.** The Transmission Entities and Nuclear Plant Generator Operator shall, upon request of the Compliance Monitor, provide evidence of the coordination between the Transmission Entities and the Nuclear Plant Generator Operator regarding outages and maintenance activities which affect the NPIRs. (Requirement 6)
- M7.** The Nuclear Plant Generator Operator shall provide evidence that it informed the applicable Transmission Entities of changes to nuclear plant design, configuration, operations, limits, protection systems, or capabilities that would impact the ability of the Transmission Entities to meet the NPIRs. (Requirement 7)
- M8.** The Transmission Entities shall each provide evidence that it informed the Nuclear Plant Generator Operator of changes to electric system design, configuration, operations, limits, protection systems, or capabilities that would impact the ability of the Nuclear Plant Generator Operator to meet the NPIRs. (Requirement 8)

## **D. Compliance**

### **1. Compliance Monitoring Process**

#### **1.1. Compliance Monitoring Responsibility**

Regional Reliability Organization.

#### **1.2. Compliance Monitoring Period and Reset Time Frame**

One calendar year.

#### **1.3. Data Retention**

For Measure 1, the Nuclear Plant Generator Operator shall keep its latest transmittals and receipts.

For Measure 2, the Nuclear Plant Generator Operator and each Transmission Entity shall have its current, in-force agreement.

For Measure 3, the Transmission Entity shall have the latest planning analysis results.

For Measures 4.3, 4.4, 6 and 7, the Transmission Entity shall keep evidence for two years plus current.

For Measures 5, 6 and 8, the Nuclear Plant Generator Operator shall keep evidence for two years plus current.

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor.

The Compliance Monitor shall keep the last periodic audit report and all requested and submitted subsequent compliance records.

**1.4. Additional Compliance Information**

The Nuclear Plant Generator Operator and Transmission Entities shall each demonstrate compliance through self-certification or audit (periodic, as part of targeted monitoring or initiated by complaint or event), as determined by the Compliance Monitor.

**2. Levels of Non-Compliance**

- 2.1. **Level 1:** Agreement(s) exist per this standard and NPIRs are identified and implemented, but documentation is missing.
- 2.2. **Level 2:** Agreement(s) exist per R2 and NPIRs are identified and implemented, but one or more elements of the Agreement in R9 are not met.
- 2.3. **Level 3:** One or more requirements of R3 to R8 were not met.
- 2.4. **Level 4:** No proposed NPIRs were submitted per R1, no Agreement exists per this standard, or the Agreements are not implemented.

**E. Regional Differences**

The design basis for Canadian (CANDU) NPPs does not result in the same licensing requirements as U.S. NPPs. NRC design criteria specifies that in addition to emergency on-site electrical power, electrical power from the transmission network also be provided to permit safe shutdown. This requirement is specified in such NRC Regulations as *10 CFR 50 Appendix A - General Design Criterion 17* and *10 CFR 50.63 Loss of all alternating current power*. There are no equivalent Canadian Regulatory requirements for *Station Blackout (SBO)* or *coping times* as they do not form part of the licensing basis for CANDU NPPs

Therefore the definition of NPLR for Canadian CANDU units will be as follows:

**Nuclear Plant Licensing Requirements (NPLR)**, are requirements included in the design basis of the nuclear plant and are statutorily mandated for the operation of the plant; when used in this standard, NPLR shall mean nuclear power plant licensing requirements for avoiding preventable challenges to nuclear safety as a result of an electric system disturbance, transient, or condition.

**Version History**

Version	Date	Action	Change Tracking

**Standard Development Roadmap**

*This section is maintained by the drafting team during the development of the standard and will be removed when the standard becomes effective.*

**Development Steps Completed:**

1. A SAR was received on October 20, 2004 from the Nuclear Energy Institute Grid Reliability Task Force.
2. The SAR was posted for comment from December 1, 2004 to January 7, 2005.
3. Nominations for a SAR drafting team were solicited from December 1 to December 21, 2004. The nomination period was extended to January 28, 2005 to solicit additional nominations.
4. The SAR was revised and draft 2 was posted from April 1 to April 30, 2005. The comment period was extended to May 16, 2005.
5. On May 25, 2005, the Standards Authorization Committee authorized development of a standard and appointed the SAR drafting team to serve as the standard drafting team, while soliciting additional members.
6. The first draft of the standard was posted for comment for the period December 1, 2005 through January 15, 2006

**Description of Current Draft:**

The drafting team has prepared a second draft of the proposed standard on nuclear power plant off-site power supply coordination for the purpose of soliciting public comment. The requested comment period is September 15, 2006 through October 16, 2006.

**Future Development Plan:**

<u>Anticipated Actions</u>	<u>Anticipated Date</u>
<u>1. The drafting team plans to review stakeholder comments from the posting and make a recommendation whether to proceed to ballot or to a third draft of the standard.</u>	<u>November 3, 2006</u>
<u>2. 30-day pre-ballot posting.</u>	<u>November 15, 2006</u>
<u>3. Ballot.</u>	<u>December 15, 2006</u>
<u>4. 30-day board notice.</u>	<u>December 15, 2006</u>
<u>5. Adoption by board.</u>	<u>February 12, 2007</u>

### Definitions of Terms Used in Standard

*This section includes all newly defined or revised terms used in the proposed standard. Terms already defined in the Reliability Standards Glossary of Terms are not repeated here. New or revised definitions listed below become approved when the proposed standard is approved. When the standard becomes effective, these defined terms will be removed from the individual standard and added to the Glossary.*

~~Nuclear Plant Entities, when used in this standard, shall mean any~~ **Operator:** Any Nuclear Plant Licensee Owners and/or Generator Operators responsible for operation of a nuclear facility licensed to produce commercial power.

~~Nuclear Plant Off-site Power Supply (Off-site Power): The ), when used in this standard, shall mean the~~ electric power supply provided from the transmission system to the nuclear power plant distribution system as required per the for nuclear power plant licensessafety.

~~Transmission Entities, when used in this standard, shall mean Transmission Operators, Transmission Owners, Transmission Planners, Transmission Service Providers, Planning Authorities, Balancing Authorities, Reliability Coordinators, Planning Authorities, Distribution Providers, Load-serving Entities that are responsible for providing services related to Nuclear Plant Off-site Power Supply.~~

~~Nuclear Plant Licensing~~**Interface Requirements (NPLRs):** Requirements included in the design basis of the nuclear plant and statutorily mandated for the operation of the plant, including, when used in this standard, shall mean nuclear power plant licensing requirements for:

- 1) Off-site power supply to enable safe shutdown of the plant during an electric system or plant event; and
- 2) Avoiding preventable challenges to nuclear safety as a result of an electric system disturbance, transient, or condition.

~~Nuclear Plant Interface Requirements (NPIRs):~~ The agreed upon criteria to meet the NPLRs.

## A. Introduction

1. **Title:** Nuclear Plant ~~Interface~~Off-site Power Supply Coordination
2. **Number:** ~~NUC-001-1~~To be determined.
3. **Purpose:** This standard requires coordination between Nuclear Plant ~~Generator Operator~~Entities and Transmission Entities for the purpose of ensuring nuclear plant safe operation and shutdown. ~~The standard applies only to those entities that interface with or provide services to a nuclear plant.~~
4. **Applicability**
  - 4.1. **Nuclear Plant ~~Entities, meaning~~** Generator ~~Operator, Owners and/or Generator~~Operators responsible for a nuclear facility licensed to produce commercial power
  - 4.2. **Transmission Entities, shall mean all entities that are responsible for providing services related to Nuclear Plant Interface Requirements (NPIRs) in accordance with the terms of the Agreements developed in this standard. Such entities may include one or more of the following:**
    - 4.2.1 ~~meaning~~Transmission Operators
    - 4.2.2 ~~;~~Transmission Owners
    - 4.2.3 ~~;~~Transmission Planners
    - 4.2.4 ~~;~~Transmission Service Providers
    - 4.2.5 ~~;~~Planning Authorities, Balancing Authorities
    - 4.2.6 ~~;~~Reliability Coordinators
    - 4.2.7 ~~;~~Planning Authorities
    - 4.2.8 ~~;~~Distribution Providers
  - 4.3. ~~;~~Load-serving Entities ~~that are responsible for providing services related to Nuclear Plant Off-site Power Supply.~~
5. **Proposed Effective Date:** ~~Eighteen months after Board of Trustee~~BOT adoption. ~~July 1, 2007~~

## B. Requirements

- R1. ~~The~~ Nuclear Plant ~~Generator Operator~~Entities shall provide ~~the proposed NPIRs~~ in writing to the applicable Transmission Entities ~~and shall verify receipt of the NPIRs. [Risk Factor: Lower]~~~~the current Nuclear Plant Interface Requirements.~~
- ~~R2. The Transmission Planner, per the Agreements developed in accordance with Requirement 8 (R8), shall incorporate the Nuclear Plant Interface Requirements into the planning analysis of the electric system and shall communicate the results of the analysis to the Nuclear Plant Entities.~~
- R2. The Nuclear Plant ~~Generator Operator~~Entities and the Transmission Entities shall ~~have in effect one or more Agreements<sup>1</sup> that document how NPIRs shall be addressed~~resolve issues identified in R2, R6, and ~~implemented. [Risk Factor: Lower]~~

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~~Agreements may include mutually agreed upon procedures or protocols.~~

- R3.** ~~Per the Agreements developed in accordance with this standard, the Transmission Entity shall incorporate the NPIRs into the planning analyses of the electric system and shall communicate the results of the analyses to the Nuclear Plant Generator Operator. [Risk Factor: Medium]~~
- R4.** ~~Per R7, per the Agreements developed in accordance with this standard, the Transmission Entities shall: [Risk Factor: Medium]R8:~~
- ~~R4.— The Transmission Entities designated in the Agreements developed in accordance with R8 shall:~~
- R4.1.** Incorporate the ~~NPIRs~~~~Nuclear Plant Interface Requirements~~ into the operating reliability analysis of the electric system.
- R4.2.** Operate the electric system to meet the ~~NPIRs~~~~Nuclear Plant Interface Requirements~~, while respecting ~~other~~ System Operating Limits (SOL). ~~.~~
- R4.3.** Inform the Nuclear Plant ~~Generator Operator Entities~~ and coordinate mitigating actions when ~~NPIRs~~~~Nuclear Plant Interface Requirements~~ cannot be met.
- R4.4.** Inform the Nuclear Plant ~~Generator Operator Entities~~ when the Transmission Entity loses the ability to assess the operation of the transmission system affecting ~~NPIRs~~~~Nuclear Plant Interface Requirements~~.
- R5.** ~~The Nuclear Plant Generator Operator shall operate per the Agreements developed in accordance with this standard. [Risk Factor: Medium]~~
- R6.** Per the Agreements developed in accordance with ~~this standard~~~~R8~~, the designated Transmission Entities and the Nuclear Plant ~~Generator Operator Entities~~ shall coordinate ~~planned~~ outages and maintenance activities ~~which affect the NPIRs. [Risk Factor: Medium]~~~~affecting the Nuclear Plant Interface Requirements:~~
- R7.** ~~The~~~~Per the Agreements developed in accordance with R8, the~~ Nuclear Plant ~~Generator Operator Entities~~ shall inform the applicable Transmission Entities of ~~any~~ actual or proposed changes to nuclear plant design, configuration, operations, limits, protection systems, or capabilities that may impact the ability of the transmission system to meet the ~~NPIRs. [Risk Factor: Medium]~~~~Nuclear Plant Interface Requirements:~~
- R8.** ~~The~~~~Per the Agreements developed in accordance with R8, the~~ Transmission Entities shall inform the Nuclear Plant ~~Generator Operator of Entities of any~~ actual or proposed changes to electric system design, configuration, operations, limits, protection systems, or capabilities that may impact the ability of the transmission system to meet the ~~NPIRs. [Risk Factor: Medium]~~~~Nuclear Plant Interface Requirements:~~
- R9.** ~~The Nuclear Plant Generator Operator and the Transmission Entities shall include the following elements within the agreement(s) identified in R2: [Risk Factor: Lower]~~
- ~~R8.— The Transmission Entities and the Nuclear Plant Entities shall have in effect one or more Agreements<sup>2</sup> that document how Nuclear Plant Interface Requirements are addressed. The Agreement(s) shall include the following elements, which the Transmission Entities and Nuclear Plant Entities shall implement per the Agreement(s):~~
- R9.1.** Administrative elements:

<sup>2</sup> ~~For the purpose of this standard, Agreements may include mutually agreed upon procedures or protocols.~~

- R9.1.1. Definitions of key terms used in the agreement.
- R9.1.2. Names of the responsible entities, organizational~~Organizational~~ relationships, and responsibilities related to the NPIRs~~Nuclear Plant Interface Requirements~~.
- ~~R8.1.3.—A requirement~~~~Data confidentiality requirements.~~
- ~~R8.1.4.—Provisions for suspending standards of conduct when needed to ensure grid reliability, nuclear plant safety, or personnel safety.~~
- R9.1.3. ~~Requirements~~ to review the agreement(s) at least every three years ~~for administrative elements and at least annually for technical elements.~~
- R9.1.4. A dispute resolution mechanism.
- ~~R8.1.6.—Process for resolving disputes or issues.~~
- R9.2. Technical requirements and analysis:
  - R9.2.1. Identification of parameters, limits, configurations, and operating scenarios that constitute the NPIR~~Nuclear Plant Interface Requirements~~, and, as applicable, procedures for providing any specific data not provided within the agreement~~Agreement~~.
  - R9.2.2. Identification of facilities, components, and configuration restrictions that are essential for meeting NPIR~~Nuclear Plant Interface Requirements~~.
  - R9.2.3. Types of planning and operational analyses performed specifically to support NPIR~~Nuclear Plant Interface Requirements~~, including the frequency of studies and ~~types~~a list of Contingencie~~scontingencies~~ and scenarios required.
- R9.3. Operations and maintenance coordination:
  - R9.3.1. Designation ~~and coordination~~ of ownership operational control of ~~and maintenance responsibilities for~~ electrical facilities ~~at~~on the interface between the electric system and the nuclear plant ~~and responsibilities for operational control coordination and maintenance of these facilities.~~
  - R9.3.2. Identification of any maintenance requirements for equipment not owned or controlled by the Nuclear Plant ~~Generator Operator Entity~~ that are necessary to meet NPIRs. ~~Nuclear Plant Interface Requirements.~~
  - R9.3.3. Coordination of testing, calibration and maintenance of on-site and off-site power supply systems and related components.
  - R9.3.4. Provision to address actions when the electric system cannot meet NPIRs or the responsible Transmission Entity loses the ability to assess the capability of the electric system to meet the NPIRs. This provision shall include responsibility to notify the Nuclear Plant Generator Operator within a specified time frame.
  - ~~R8.3.4.—Provision to address actions when the electric system cannot meet the Nuclear Plant Interface Requirements, including responsibilities to notify the nuclear plant, and the development, implementation, and coordination of action plans for such conditions.~~
  - R9.3.5. Provision to consider nuclear plant coping times as required by the NPLR in coordination of ~~coordinate~~ grid and nuclear plant restoration

following a nuclear plant loss of Off-site Power. ~~including consideration of nuclear plant coping times and responsibilities for developing, implementing, and coordinating restoration plans for such conditions.~~

~~R8.3.6. Obligations of Nuclear Plant Entities to arrange for Off-site Power supplies necessary to meet regulatory requirements for safe shutdown and operation of the plant.~~

R9.3.6. Coordination of physical and cyber security protection of the bulk electric system at the nuclear plant interface to ensure each asset is covered under at least one entity's plan.

R9.3.7. Coordination of the ~~NPIRs~~Nuclear Plant Interface Requirements with transmission system Special Protection Systems and under-frequency and under-voltage load shedding, Underfrequency Load Shedding and Undervoltage Load Shedding programs.

R9.4. Communications and training:

R9.4.1. Provisions for communications between the Nuclear Plant Generator Operator~~Entities~~ and Transmission Entities, including communications protocols, notification time requirements, and definitions of terms.

R9.4.2. Provisions for coordination during an off-normal or emergency ~~event~~events affecting the ~~NPIRs~~Nuclear Plant Interface Requirements, including the need to provide timely information explaining the event, an estimate of when the system will be returned to a normal state, and the actual time the system is returned to normal~~emergency event.~~

R9.4.3. Provisions for coordinating ~~coordination of~~ investigations of causes of unplanned events affecting the ~~NPIRs and developing~~ Nuclear Plant Interface Requirements and development of solutions to minimize future ~~risk~~risks of such events.

R9.4.4. Provisions for supplying information necessary to report to government agencies, as related to ~~NPIRs~~Nuclear Plant Interface Requirements.

R9.4.5. Provisions for personnel training, as related to ~~NPIRs~~Nuclear Plant Interface Requirements.



### C. Measures

The ~~following measures will be used to demonstrate compliance with R1 through R8:~~

~~M1.~~ Nuclear Plant Generator OperatorEntities shall, upon request ~~of~~by the Compliance Monitor, provide a copy of the transmittal and receipt of transmittal of the proposed NPIRs to the responsible Nuclear Plant Interface Requirements to the Transmission Entities.

~~M1.~~ ~~The~~Transmission Entities. (Requirement 1)

~~M2.~~ The Nuclear Plant Generator Operator and each Transmission Entity shall each have a copy of the Agreement(s) addressing the elements in Requirement 9 available for inspection upon request of the Compliance Monitor. (Requirement 2 and 9)

~~M3.~~ Each Transmission Entity responsible for planning analyses in accordance with the Agreement~~Planner~~ shall, upon request of the Compliance Monitor, provide a copy of the planning analyses ~~analysis~~-results transmitted to the Nuclear Plant Generator OperatorEntities, showing incorporation of the NPIRs.Nuclear Plant Interface Requirements. The Compliance Monitor shall refer to the Agreements developed in accordance with this standard~~R8~~ for specific requirements. (Requirement 3)

~~M3.~~ Each Transmission Entity responsible for operating the electric system in accordance with the Agreement shall demonstrate or ~~The Compliance Monitor shall interview the Nuclear Plant Entities and Transmission Entities to identify any issues encountered and whether the issues were resolved or are being resolved.~~

~~M4.~~ ~~The Transmission Entities shall~~ provide evidence of the following, upon request ~~of~~by the Compliance Monitor:

~~M4.1~~ The NPIRs~~Documentation showing the Nuclear Plant Interface Requirements~~ have been incorporated into the current operating reliability analysis of the electric system. (Requirement 4.1)

~~M4.2~~ The Evidence that the electric system is being operated to meet the NPIR~~Nuclear Plant Interface Requirements~~, to the extent practicable~~practical~~ under electric system conditions. (Requirement 4.2)

~~M4.3~~ When NPIRs could not be met, the Transmission Entity informed the Nuclear Plant Generator Operator and coordinated the mitigating actions. (Requirement 4.3)

~~M4.3~~ The Transmission Entity informed the Nuclear Plant Generator Operator when it became aware it lost~~Documentation of the process used by the Transmission Entities to inform the Nuclear Plant Entities when electric system conditions precluded meeting the Nuclear Plant Interface Requirements, including the coordination of mitigating actions; and copies of logs, or other evidence, documenting any instances the process was implemented.~~

~~M4.4~~ Documentation of the process used by the Transmission Entities to notify the Nuclear Plant Entities if the capability to assess the operation of the electric system affecting the NPIRs. (Requirement 4.4)

~~M4.5~~ The Nuclear Plant Generator Operator shall, upon request~~Nuclear Plant Interface Requirements is lost; and copies of the Compliance Monitor, demonstrate~~logs, or provide~~other~~ evidence that the Nuclear Power Plant is being operated consistent with the Agreements developed in accordance with this standard. (Requirement 5); ~~documenting any instances that the process was implemented.~~

- M5. The Transmission Entities and Nuclear Plant ~~Generator Operator~~Entities shall, upon request of the Compliance Monitor, provide evidence of the coordination between the Transmission Entities and the Nuclear Plant ~~Generator Operator~~Entities regarding ~~current-planned~~ outages and maintenance activities ~~which affect the NPIRs. (Requirement 6)~~ affecting the Nuclear Plant ~~Interface Requirements~~.
- M6. The Nuclear Plant ~~Generator Operator~~Entities shall provide evidence that ~~it~~they informed the applicable Transmission Entities of ~~any~~ changes to nuclear plant design, configuration, operations, limits, protection systems, or capabilities that would impact the ability of the Transmission Entities to meet the ~~NPIRs. (Requirement 7)~~ Nuclear Plant ~~Interface Requirements~~.
- M7. The Transmission Entities shall ~~each~~ provide evidence that ~~it~~they informed the Nuclear Plant ~~Generator Operator~~Entities of ~~any~~ changes to electric system design, configuration, operations, limits, protection systems, or capabilities that would impact the ability of the Nuclear Plant ~~Generator Operator~~Entities to meet the ~~NPIRs. (Requirement 8)~~ Nuclear Plant ~~Interface Requirements~~.
- ~~M8. The Nuclear Plant Entities and Transmission Entities shall have a copy of the executed Agreement(s) addressing the elements in R8 available for inspection upon request.~~

## D. Compliance

### 1. Compliance Monitoring Process

#### 1.1. Compliance Monitoring Responsibility

Regional Reliability Organization.

#### 1.2. Compliance Monitoring Period and Reset Time Frame

One calendar year.

#### 1.3. Data Retention

For Measure 1, the Nuclear Plant Generator Operator shall keep its latest transmittals and receipts.

For Measure 2, the Nuclear Plant Generator Operator and each Transmission Entity shall have its current, in-force agreement.

For Measure 3, the Transmission Entity shall have the latest planning analysis results.

For Measures 4.3, 4.4, 6 and 7, the Transmission Entity shall keep evidence for two years plus current.

For Measures 5, 6 and 8, the Nuclear Plant Generator Operator shall keep evidence for two years plus current.

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor.

The Compliance Monitor shall keep the last periodic audit report and all requested and submitted subsequent compliance records.

~~The Nuclear Plant Entities and Transmission Entities shall retain information from the most current and prior compliance verification reports.~~

~~The Compliance Monitor shall retain any audit data for three years.~~

**1.4. Additional Compliance Information**

The Nuclear Plant ~~Generator Operator Entities~~ and Transmission Entities shall each demonstrate compliance through self-certification or audit (periodic, as part of targeted monitoring or initiated by complaint or event), as determined by the Compliance Monitor.

**2.1. Levels of Non-Compliance**

~~**2.1.1.1. Level 1:** Agreement(s) exist per this standard R8 and NPIRs Nuclear Plant Interface Requirements are identified and implemented ~~respected in the current planning and operation of the electric system and nuclear plant~~, but ~~some~~ documentation is missing.~~

~~**2.2.1.2. Level 2:** Agreement(s) exist per R2R8 and NPIRs Nuclear Plant Interface Requirements are identified and implemented ~~respected in the current planning and operation of the electric system and nuclear plant~~, but one or more elements of the Agreement in R9 per R8 are not met ~~in coordinating the operation and planning of the electric system and nuclear plant~~.~~

~~**2.3.1.3. Level 3:** One or more requirements of R3 ~~elements of R1 to R8 R7~~ were not met.~~

~~**1.4. Level 4:** No proposed NPIRs were submitted per R1, no Agreement exists per this standard, or the Agreements are not implemented.~~

~~**2.4. Level 4:** No agreement exists per R8 or the Nuclear Plant Interface Requirements are not respected in the current operation and planning of the electric system or nuclear plant.~~

**E. Regional Differences**

~~The design basis for Canadian (CANDU) NPPs does not result in the same licensing requirements as U.S. NPPs. NRC design criteria specifies that in addition to emergency on-site electrical power, electrical power from the transmission network also be provided to permit safe shutdown. This requirement is specified in such NRC Regulations as *10 CFR 50 Appendix A - General Design Criterion 17* and *10 CFR 50.63 Loss of all alternating current power*. There are no equivalent Canadian Regulatory requirements for Station Blackout (SBO) or coping times as they do not form part of the licensing basis for CANDU NPPs~~

~~Therefore the definition of NPLR for Canadian CANDU units will be as follows:~~

~~**Nuclear Plant Licensing Requirements (NPLR)**, are requirements included in the design basis of the nuclear plant and are statutorily mandated for the operation of the plant; when used in this standard, NPLR shall mean nuclear power plant licensing requirements for avoiding preventable challenges to nuclear safety as a result of an electric system disturbance, transient, or condition.~~

~~None.~~

**Version History**

Version	Date	Action	Change Tracking





September 15, 2006

TO: REGISTERED BALLOT BODY

Ladies and Gentlemen:

**Announcement: Nuclear Plant Interface Coordination Comment Period Opens September 15, 2006**

**The Standards Committee (SC) announces the following standards action:**

**Nuclear Plant Interface Coordination Standard Posted for Comment (September 15–October 16, 2006)**

The [Nuclear Plant Interface Coordination](#) Standard Drafting Team posted draft two of its standard for a 30-day comment period. This standard requires coordination between Nuclear Plant Generator Operators and Transmission Entities for the purpose of ensuring nuclear plant safe operation and shutdown.

Please use this [comment form](#) to provide comments on this proposed standard.

**Standards Development Process**

The NERC posting and balloting procedures are described in the [Reliability Standards Development Procedure](#), which contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate.

Please send questions to Maureen Long at [maureen.long@nerc.net](mailto:maureen.long@nerc.net) or call 813-468-5998.

Sincerely,

*Maureen E. Long*

Maureen E. Long  
Standards Process Manager

cc: Registered Ballot Body Registered Users  
Standards Group  
NERC Roster

## **Implementation Plan — Nuclear Plant Interface Coordination Standard**

### **Effective Date**

The proposed effective date for the standard is July 1, 2008. The drafting team believes that if the standard is approved by its Ballot Pool in December 2006 and the standard is adopted by the Board of Trustees in January 2007, this will provide sufficient time for agreements to be developed or modified and implemented by July 1, 2008 (18 months after approval). Should the standard's approval be delayed, the effective date would be delayed accordingly.

### **Impact on Existing Standards and Other Standards in Development**

The drafting team has determined that no existing standards or standards in development need to be modified as a result of this proposed standard.

### **Applicability**

The proposed standard is intended to apply only to entities that own or operate nuclear power plants licensed to provide commercial power and the entities that provide off-site power, transmission, or related services for a nuclear power plant. The standard would not apply to other entities.

**Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

Please use this form to submit comments on Draft 2 of the Nuclear Power Plant Off-site Power Coordination standard. Comments must be submitted by **October 16, 2006**. You must submit the completed form e-mail to [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the words "Nuclear Off-site Power Comments" in the subject line. If you have questions please contact Craig Lawrence at [craig.lawrence@nerc.net](mailto:craig.lawrence@nerc.net) or 609-452-8060.

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Do not use quotation marks in any data field.  
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> RF	<input type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> SERC	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities





## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

### Please Enter All Comments in Simple Text Format.

1. Which of the following describes your organization:

- We own or operate a nuclear power plant.
- We provide transmission services to a nuclear power plant.
- Other:

2. In response to stakeholder comments, the drafting team modified the title and altered the sequence of requirements. Do you agree with the changes the new title and the revised sequence of requirements?

- Yes
- No

Comments:

3. In response to stakeholder comments, the drafting team modified the definition of 'Nuclear Plant Interface Requirements (NPIR)' and added the term, 'Nuclear Plant Licensing Requirements (NPLR)'. These changes were made to help make the distinction between requirements **mandated** by the jurisdictional nuclear regulatory agency for the nuclear plant (NPLR) and the **mutually agreed upon interface requirements** (NPIR) that support the nuclear power plant in meeting its licensing requirements. The standard is intended to establish a **collaborative effort** between the nuclear plant owner/operator and the transmission entities that provide those necessary services. The NPIR will vary depending on such specifics as plant licensing commitments, plant-grid interconnection design, plant design itself, and location. The details of how the NPIR are addressed will be set forth in the agreement(s) required by this standard.

Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

- Yes
- No

Comments:

4. Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement?

- Yes
- No

Comments:

5. The revised draft standard establishes a single nuclear entity (the Nuclear Plant Generator Operator) that must work with the appropriate transmission authorities to identify the applicable transmission entities. The Nuclear Plant Generator Operator must provide its proposed nuclear interface requirements (NPIR) to the applicable

## **Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

transmission entities (see R1 and M1). The specific entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR). The standard requires the Nuclear Plant Generator Operator and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs will be addressed and implemented (see R2 and M2). The names of the responsible entities must be clearly identified in these agreements (see R9.1.2 and A4.2).

Do you agree that the changes made by the drafting team address stakeholder concerns that 'transmission entities' is too broad a term?

Yes

No

Comments:

6. Are you aware of any regional differences that would be required as a result of this standard?

Yes

No

If yes, please explain:

7. If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here:

**Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

Please use this form to submit comments on Draft 2 of the Nuclear Power Plant Off-site Power Coordination standard. Comments must be submitted by **October 16, 2006**. You must submit the completed form e-mail to [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the words "Nuclear Off-site Power Comments" in the subject line. If you have questions please contact Craig Lawrence at [craig.lawrence@nerc.net](mailto:craig.lawrence@nerc.net) or 609-452-8060.

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**Do not** use quotation marks in any data field.  
**Do not** submit a response in an unprotected copy of this form.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input checked="" type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
<input checked="" type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> RF	<input type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> SERC	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities

**Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

**Group Comments (Complete this page if comments are from a group.)**

Group Name: **NPCC CP9 Reliability Standards Working Group**  
 Lead Contact: **Guy V. Zito**  
 Contact Organization: **NPCC**  
 Contact Segment: **2**  
 Contact Telephone: **212-840-1070**  
 Contact E-mail: **gzito@npcc.org**

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>
Ralph Rufrano	New York Power Authority	NPCC	1
Ben Li	The IESO (Ontario)	NPCC	2
Ron Falsetti	The IESO (Ontario)	NPCC	2
Kathleen Goodman	ISO-New England	NPCC	2
Bill Shemley	ISO-New England	NPCC	2
David Kiguel	Hydro One Networks (Ontario)	NPCC	1
Dave Little	Nova Scotia Power	NPCC	1
Roger Champagne	TransEnergie HydroQuebec	NPCC	1
Ed Thompson	ConEd	NPCC	1
Don Nelson	MA. Dept. of Tele. and Energy	NPCC	9
John Bonner	Entergy	NPCC	5
Guy V. Zito	Northeast Power Coord. Council	NPCC	2
Alden Briggs	New Brunswick System Operator	NPCC	2

\* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

### Please Enter All Comments in Simple Text Format.

1. Which of the following describes your organization:

- We own or operate a nuclear power plant.
- We provide transmission services to a nuclear power plant.
- Other:

2. In response to stakeholder comments, the drafting team modified the title and altered the sequence of requirements. Do you agree with the changes the new title and the revised sequence of requirements?

- Yes
- No

Comments: **NPCC has a recommendation in the response to Question 7 below that may affect the sequence of requirements.**

3. In response to stakeholder comments, the drafting team modified the definition of 'Nuclear Plant Interface Requirements (NPIR)' and added the term, 'Nuclear Plant Licensing Requirements (NPLR)'. These changes were made to help make the distinction between requirements **mandated** by the jurisdictional nuclear regulatory agency for the nuclear plant (NPLR) and the **mutually agreed upon interface requirements** (NPIR) that support the nuclear power plant in meeting its licensing requirements. The standard is intended to establish a **collaborative effort** between the nuclear plant owner/operator and the transmission entities that provide those necessary services. The NPIR will vary depending on such specifics as plant licensing commitments, plant-grid interconnection design, plant design itself, and location. The details of how the NPIR are addressed will be set forth in the agreement(s) required by this standard.

Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

- Yes
- No

Comments: **NPCC has a recommendation in the response to Question 7 below that may affect the sequence of requirements.**

4. Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement?

- Yes
- No

Comments:

5. The revised draft standard establishes a single nuclear entity (the Nuclear Plant Generator Operator) that must work with the appropriate transmission authorities to

## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

identify the applicable transmission entities. The Nuclear Plant Generator Operator must provide its proposed nuclear interface requirements (NPIR) to the applicable transmission entities (see R1 and M1). The specific entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR). The standard requires the Nuclear Plant Generator Operator and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs will be addressed and implemented (see R2 and M2). The names of the responsible entities must be clearly identified in these agreements (see R9.1.2 and A4.2).

Do you agree that the changes made by the drafting team address stakeholder concerns that 'transmission entities' is too broad a term?

Yes

No

Comments: **NPCC has a recommendation in the response to Question 7 below that may affect the sequence of requirements.**

6. Are you aware of any regional differences that would be required as a result of this standard?

Yes

No

If yes, please explain:

7. If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here: **NPCC participating members believe that any requirements must be assigned to entities that are part of and recognized in the NERC Functional Model. As such, the "Transmission Entity" that appears in the posted draft does not meet this criterion. NPCC recommends instead of the generic Transmission Entity designation in the draft, the TOP and the Nuclear Plant should jointly identify with whom the Nuclear plant needs to establish the indicated agreement with that addresses the NPIRs. These entities could be the TOP itself, a TO or any other appropriate Functional Model entity as necessary.**

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Please use this form to submit comments on Draft 2 of the Nuclear Power Plant Off-site Power Coordination standard. Comments must be submitted by **October 16, 2006**. You must submit the completed form e-mail to [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the words "Nuclear Off-site Power Comments" in the subject line. If you have questions please contact Craig Lawrence at [craig.lawrence@nerc.net](mailto:craig.lawrence@nerc.net) or 609-452-8060.

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Do not submit a response in an unprotected copy of this form.

Individual Commenter Information		
(Complete this page for comments from one organization or individual.)		
Name:	Ron Falsetti	
Organization:	IESO	
Telephone:	905-855-6187	
E-mail:	ron.falsetti@ieso.ca	
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input checked="" type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
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<input type="checkbox"/> RF	<input type="checkbox"/>	5 — Electric Generators
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<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities





## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

### Please Enter All Comments in Simple Text Format.

1. Which of the following describes your organization:

- We own or operate a nuclear power plant.
- We provide transmission services to a nuclear power plant.
- Other:

2. In response to stakeholder comments, the drafting team modified the title and altered the sequence of requirements. Do you agree with the changes the new title and the revised sequence of requirements?

- Yes
- No

Comments: We agree with the changes. However, please see additional comment in Q7.

3. In response to stakeholder comments, the drafting team modified the definition of 'Nuclear Plant Interface Requirements (NPIR)' and added the term, 'Nuclear Plant Licensing Requirements (NPLR)'. These changes were made to help make the distinction between requirements **mandated** by the jurisdictional nuclear regulatory agency for the nuclear plant (NPLR) and the **mutually agreed upon interface requirements** (NPIR) that support the nuclear power plant in meeting its licensing requirements. The standard is intended to establish a **collaborative effort** between the nuclear plant owner/operator and the transmission entities that provide those necessary services. The NPIR will vary depending on such specifics as plant licensing commitments, plant-grid interconnection design, plant design itself, and location. The details of how the NPIR are addressed will be set forth in the agreement(s) required by this standard.

Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

- Yes
- No

Comments: Yes, we agree. However, please also see our additional comment in Q7.

4. Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement?

- Yes
- No

Comments:

5. The revised draft standard establishes a single nuclear entity (the Nuclear Plant Generator Operator) that must work with the appropriate transmission authorities to identify the applicable transmission entities. The Nuclear Plant Generator Operator must

## **Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

---

provide its proposed nuclear interface requirements (NPIR) to the applicable transmission entities (see R1 and M1). The specific entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR). The standard requires the Nuclear Plant Generator Operator and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs will be addressed and implemented (see R2 and M2). The names of the responsible entities must be clearly identified in these agreements (see R9.1.2 and A4.2).

Do you agree that the changes made by the drafting team address stakeholder concerns that 'transmission entities' is too broad a term?

Yes

No

Comments: Please see our additional comments in Q7.

6. Are you aware of any regional differences that would be required as a result of this standard?

Yes

No

If yes, please explain:

7. If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here: IESO believes that all requirements must be assigned to specific entities that are part of and recognized in the NERC Functional Model. As such, the "Transmission Entity" that appears in the posted draft does not meet this criterion. We recommend that instead of the generic Transmission Entity designation in the draft, the TOP and the Nuclear Plant Operator be designated as the responsible entities to jointly identify with whom the nuclear plant needs to establish the indicated agreement with that addresses the NPIRs. These entities could be the TOP itself, a TO or any other appropriate Functional Model entity as necessary.

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Individual Commenter Information		
(Complete this page for comments from one organization or individual.)		
Name:	Jim Cyrulewski	
Organization:	JDRJC Associates	
Telephone:	248-515-1109	
E-mail:	jdrjcassociates@cs.com	
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
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<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities



## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

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### Please Enter All Comments in Simple Text Format.

1. Which of the following describes your organization:

- We own or operate a nuclear power plant.
- We provide transmission services to a nuclear power plant.
- Other: Consultant who formerly worked for Transmission Entity

2. In response to stakeholder comments, the drafting team modified the title and altered the sequence of requirements. Do you agree with the changes the new title and the revised sequence of requirements?

- Yes
- No

Comments: Agree with the title change. Disagree with revised sequence. Requirements 2 and 9 should be combined. New Requirement 5 is unnecessary since covered in Requirement 2. Requirement 6 unnecessary since also covered in Requirement 2. Items identified in these requirements are always included in agreements/protocols between generation operators and transmission entities as well as many other operation items. Items in Requirements 5 and 6 are not unique enough to justify special recognition.

3. In response to stakeholder comments, the drafting team modified the definition of 'Nuclear Plant Interface Requirements (NPIR)' and added the term, 'Nuclear Plant Licensing Requirements (NPLR)'. These changes were made to help make the distinction between requirements **mandated** by the jurisdictional nuclear regulatory agency for the nuclear plant (NPLR) and the **mutually agreed upon interface requirements** (NPIR) that support the nuclear power plant in meeting its licensing requirements. The standard is intended to establish a **collaborative effort** between the nuclear plant owner/operator and the transmission entities that provide those necessary services. The NPIR will vary depending on such specifics as plant licensing commitments, plant-grid interconnection design, plant design itself, and location. The details of how the NPIR are addressed will be set forth in the agreement(s) required by this standard.

Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

- Yes
- No

Comments:

4. Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement?

- Yes
- No

## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

Comments:

5. The revised draft standard establishes a single nuclear entity (the Nuclear Plant Generator Operator) that must work with the appropriate transmission authorities to identify the applicable transmission entities. The Nuclear Plant Generator Operator must provide its proposed nuclear interface requirements (NPIR) to the applicable transmission entities (see R1 and M1). The specific entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR). The standard requires the Nuclear Plant Generator Operator and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs will be addressed and implemented (see R2 and M2). The names of the responsible entities must be clearly identified in these agreements (see R9.1.2 and A4.2).

Do you agree that the changes made by the drafting team address stakeholder concerns that 'transmission entities' is too broad a term?

Yes

No

Comments: This is a reliability standard. There are no relationships identified with the Transmission Service Provider, Planning Authority, Distribution Providers and Load Serving Entities. Thus the first three entities should be eliminated from Section A Item 4.2. Likewise Section A Item 4.3 should be eliminated.

6. Are you aware of any regional differences that would be required as a result of this standard?

Yes

No

If yes, please explain:

7. If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here: The risk factors for Requirements 1-4 should be high. Transmission entities need to know all the NRC requirements to properly plan and operate the system. In Section C Measures the following comments are made: 1) Eliminate Measure 4.2 since the requirement is not needed and "to the extent practical" is not measurable, 2) Incorporate Measure 4.5 in Measure 2 as a bullet and 3) Eliminate Measure 5 since incorporation of Measure 4.5 into Measure 2 would address this requirement.

**Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

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Individual Commenter Information		
(Complete this page for comments from one organization or individual.)		
Name:	David L. Folk	
Organization:	FirstEnergy Corp.	
Telephone:	330-336-9063	
E-mail:	folkd@firstenergycorp.com	
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> MRO	<input checked="" type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input checked="" type="checkbox"/> RF	<input checked="" type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> SERC	<input checked="" type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities





## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

### Please Enter All Comments in Simple Text Format.

1. Which of the following describes your organization:

- We own or operate a nuclear power plant.
- We provide transmission services to a nuclear power plant.
- Other:

2. In response to stakeholder comments, the drafting team modified the title and altered the sequence of requirements. Do you agree with the changes the new title and the revised sequence of requirements?

- Yes
- No

Comments:

3. In response to stakeholder comments, the drafting team modified the definition of 'Nuclear Plant Interface Requirements (NPIR)' and added the term, 'Nuclear Plant Licensing Requirements (NPLR)'. These changes were made to help make the distinction between requirements **mandated** by the jurisdictional nuclear regulatory agency for the nuclear plant (NPLR) and the **mutually agreed upon interface requirements** (NPIR) that support the nuclear power plant in meeting its licensing requirements. The standard is intended to establish a **collaborative effort** between the nuclear plant owner/operator and the transmission entities that provide those necessary services. The NPIR will vary depending on such specifics as plant licensing commitments, plant-grid interconnection design, plant design itself, and location. The details of how the NPIR are addressed will be set forth in the agreement(s) required by this standard.

Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

- Yes
- No

Comments:

4. Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement?

- Yes
- No

Comments: **M-6 is very open ended. Some how the Modification process would have to ask a question, "Does the Mod affect the ability to meet an NPIR?" and then be able to screen out those that have some impact so we could alert the transmission authorities. It would seem we would have to alter the mod process or something else to accomplish this requirement. While this process can be changed, the change may require regulatory activity to get it accomplished.**

**Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

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5. The revised draft standard establishes a single nuclear entity (the Nuclear Plant Generator Operator) that must work with the appropriate transmission authorities to identify the applicable transmission entities. The Nuclear Plant Generator Operator must provide its proposed nuclear interface requirements (NPIR) to the applicable transmission entities (see R1 and M1). The specific entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR). The standard requires the Nuclear Plant Generator Operator and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs will be addressed and implemented (see R2 and M2). The names of the responsible entities must be clearly identified in these agreements (see R9.1.2 and A4.2).

Do you agree that the changes made by the drafting team address stakeholder concerns that 'transmission entities' is too broad a term?

Yes

No

Comments:

6. Are you aware of any regional differences that would be required as a result of this standard?

Yes

No

If yes, please explain:

If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here: **R9.3.6 - the last part of sentence - "to ensure each asset is covered under at least one entity's plan." There is no context/specificity provided. What is an asset, a generating station or a component in that station? What is an entity, a station operator or a grid operator?**

**R9.4.5 - FE would expect some definition of who should be trained. The training is only required on the NPIR's. Nothing is mentioned on training personnel on the other important factors such as Operations and Maintenance requirements, Communication requirements, required protocols, etc.**

**Measures M-1 - Compliance Monitor should be a defined term. This "person" has many responsibilities in this document, but even after reading, FE is unsure as to who this is.**

**Page 3 Footnote (below B. R4.1)- should read "Agreements between nuclear plant generator operator and transmission entities may include mutually agreed upon procedures or protocols."**

**R9.4.5 - Include comment that training should happen at lease every 3 years.**

**M4 - Remove the words "demonstrate or".**

## **Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

**M4.4 - Change to: "The Transmission Entity shall inform the Nuclear Plant Generator Operator when it becomes aware it lost the capability to assess the operation of the electric system affecting the NPIRs. (Requirement 4.4)"**

**In Section D of the standard, item 1.2, it makes more sense to perform compliance monitoring based on refuel cycles (2 years at some plants and 18 mos. at others).**

**On the "draft" Standard NUC-001-1 pg 7, we cannot discern the meaning of the edited statement which reads "The Transmission Entity informed the Nuclear Plan Generator Operator when it became aware it lost." Lost what? Some confusion arose in that everything is crossed out in this section except for "The Transmission Entity informed the Nuclear Plan Generator Operator when it became aware it lost." We believe this means that only the remaining portion of this section is to be considered in the draft; however this portion, does not appear at all in the "clean" version.**

- 7. Overall, there appears to be a glaring lack of one or more statements involving fault recorders or disturbance monitoring equipment. A quick word search on this document and returned no hits on the words "recorder," "fault," or "monitor"(other than compliance monitor). FE would propose that when loss of off-site power events or any event involving power disturbances in the nuclear plant-transmission system interface occurs, event evaluations and investigations be based upon real time recording made available with fault and event recording equipment. This equipment is invaluable for determining the root causes of the event in the areas of equipment failure and personnel error on both sides of the nuclear power plant switchyard. In other words, there should be "high-level" statements added that speak to required programs which encompasses systematic and coordinated (coordinated between Nuclear Plants and relevant Transmission Entities) investigation of power disturbance events utilizing fault and event recording equipment. In addition, a statement should be included that this fault and events recording equipment shall be verified as installed, maintained, and continuously operational at ALL nuclear power generation stations as well as ALL major transmission substations**

**Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

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Do submit any formatted text or markups in a separate WORD file.

- DO NOT:** Do not insert tabs or paragraph returns in any data field.  
Do not use numbering or bullets in any data field.  
Do not use quotation marks in any data field.  
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
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<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities

**Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

**Group Comments (Complete this page if comments are from a group.)**

Group Name: **Tennessee Valley Authority**  
 Lead Contact: **Kathy Davis**  
 Contact Organization: **Compliance & Analysis**  
 Contact Segment: **1**  
 Contact Telephone: **423-751-8023**  
 Contact E-mail: **kadavis@tva.gov**

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>
Doug Bailey	TVA	SERC	1
Jennifer Weber	TVA	SERC	1
David Johnston	TVA	SERC	1
Robbie Bottoms	TVA	SERC	1
Mitch Needham	TVA	SERC	1
Billy Tiller	TVA	SERC	1
Chris Donilon	TVA	SERC	1
Tom Bellew	TVA	SERC	1

\* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

### Please Enter All Comments in Simple Text Format.

1. Which of the following describes your organization:

- We own or operate a nuclear power plant.
- We provide transmission services to a nuclear power plant.
- Other: **These comments were gathered by TVA's Compliance organization and coordinated with our Nuclear Generator Owner**

2. In response to stakeholder comments, the drafting team modified the title and altered the sequence of requirements. Do you agree with the changes the new title and the revised sequence of requirements?

- Yes
- No

Comments:

3. In response to stakeholder comments, the drafting team modified the definition of 'Nuclear Plant Interface Requirements (NPIR)' and added the term, 'Nuclear Plant Licensing Requirements (NPLR)'. These changes were made to help make the distinction between requirements **mandated** by the jurisdictional nuclear regulatory agency for the nuclear plant (NPLR) and the **mutually agreed upon interface requirements** (NPIR) that support the nuclear power plant in meeting its licensing requirements. The standard is intended to establish a **collaborative effort** between the nuclear plant owner/operator and the transmission entities that provide those necessary services. The NPIR will vary depending on such specifics as plant licensing commitments, plant-grid interconnection design, plant design itself, and location. The details of how the NPIR are addressed will be set forth in the agreement(s) required by this standard.

Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

- Yes
- No

Comments:

4. Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement?

- Yes
- No

Comments:

5. The revised draft standard establishes a single nuclear entity (the Nuclear Plant Generator Operator) that must work with the appropriate transmission authorities to identify the applicable transmission entities. The Nuclear Plant Generator Operator must

## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

provide its proposed nuclear interface requirements (NPIR) to the applicable transmission entities (see R1 and M1). The specific entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR). The standard requires the Nuclear Plant Generator Operator and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs will be addressed and implemented (see R2 and M2). The names of the responsible entities must be clearly identified in these agreements (see R9.1.2 and A4.2).

Do you agree that the changes made by the drafting team address stakeholder concerns that 'transmission entities' is too broad a term?

Yes

No

Comments:

6. Are you aware of any regional differences that would be required as a result of this standard?

Yes

No

If yes, please explain:

7. If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here: **In sections R4.1 and M4.1 the word "reliability" should be struck. These are not Reliability Coordinator requirements. Also, add the entites "Generator Operator" & "Generator Owner" to the list of Transmission Entities in 4.2 because neighboring generators can affect or be affected by NPIRs.**

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Do not use numbering or bullets in any data field.  
Do not use quotation marks in any data field.  
Do not submit a response in an unprotected copy of this form.

<b>Individual Commenter Information</b>	
(Complete this page for comments from one organization or individual.)	
Name:	<b>Milap Shah (on behalf of CEHE's Transmission &amp; Substation Operations Department)</b>
Organization:	<b>CenterPoint Energy</b>
Telephone:	<b>713-207-2757</b>
E-mail:	<b>milap.shah@centerpointenergy.com</b>
NERC Region	Registered Ballot Body Segment
<input checked="" type="checkbox"/> ERCOT	<input checked="" type="checkbox"/> 1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/> 2 — RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> MRO	<input type="checkbox"/> 3 — Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/> 4 — Transmission-dependent Utilities
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<input type="checkbox"/> SPP	<input type="checkbox"/> 7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/> 8 — Small Electricity End Users
<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/> 9 — Federal, State, Provincial Regulatory, or other Government Entities





## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

### Please Enter All Comments in Simple Text Format.

1. Which of the following describes your organization:

- We own or operate a nuclear power plant.
- We provide transmission services to a nuclear power plant.
- Other:

2. In response to stakeholder comments, the drafting team modified the title and altered the sequence of requirements. Do you agree with the changes the new title and the revised sequence of requirements?

- Yes
- No

Comments:

3. In response to stakeholder comments, the drafting team modified the definition of 'Nuclear Plant Interface Requirements (NPIR)' and added the term, 'Nuclear Plant Licensing Requirements (NPLR)'. These changes were made to help make the distinction between requirements **mandated** by the jurisdictional nuclear regulatory agency for the nuclear plant (NPLR) and the **mutually agreed upon interface requirements** (NPIR) that support the nuclear power plant in meeting its licensing requirements. The standard is intended to establish a **collaborative effort** between the nuclear plant owner/operator and the transmission entities that provide those necessary services. The NPIR will vary depending on such specifics as plant licensing commitments, plant-grid interconnection design, plant design itself, and location. The details of how the NPIR are addressed will be set forth in the agreement(s) required by this standard.

Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

- Yes
- No

Comments:

4. Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement?

- Yes
- No

Comments:

5. The revised draft standard establishes a single nuclear entity (the Nuclear Plant Generator Operator) that must work with the appropriate transmission authorities to identify the applicable transmission entities. The Nuclear Plant Generator Operator must provide its proposed nuclear interface requirements (NPIR) to the applicable

## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

transmission entities (see R1 and M1). The specific entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR). The standard requires the Nuclear Plant Generator Operator and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs will be addressed and implemented (see R2 and M2). The names of the responsible entities must be clearly identified in these agreements (see R9.1.2 and A4.2).

Do you agree that the changes made by the drafting team address stakeholder concerns that 'transmission entities' is too broad a term?

Yes

No

Comments:

6. Are you aware of any regional differences that would be required as a result of this standard?

Yes

No

If yes, please explain:

7. If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here: **R6 - As written, R6 covers coordination of outages and maintenance activities, however it does not cover the last minute cancellation of coordinated activities on the basis of nuclear operating license violations. Add R6.1 as follows to address this concern:**

**Suggested wording for R6.1: Nuclear Plant Generator Operator shall provide written notification to the Transmission Service Provider and Transmission Operator whenever the Transmission Service Provider is denied access to a nuclear plant switchyard for nuclear operating license reasons. This notification shall occur within 30 days following such an event and shall include the specific nuclear operating requirement that would have been violated had access been granted.**

**Suggested wording for M6.1: The Nuclear Plant Generator Operator shall produce evidence that it provided written explanation to the Transmission Service Provider and Transmission Operator within 30 days following denial of access to a nuclear plant switchyard by a Transmission Service Provider. (Requirement 6.1)**

**R7 - As written, R7 covers notification for actual or proposed changes to the nuclear plant design, configuration.....that may impact the ability of the transmission system to meet the NPIRs, this notification however needs to be tied to the outage and maintenance notification requirement applied to the other transmission facilities within the Reliability Organization. Add R7.1 as follows to address this concern:**

**Suggested wording for R7.1: The Nuclear Plant Generator Operator shall inform the applicable Transmission Entities, in accordance with Transmission Entities' planned outage and maintenance outage protocols, of proposed or actual nuclear plant operations that require restriction of (a) access to, (b) switching of, or (c) work on Off-site Power supply facilities as stipulated in the NPIRs.**

**Suggested wording for M7.1: The Nuclear Plant Generator Operator shall provide evidence that it informed the applicable Transmission Entities, in accordance with Transmission Entities'**

## **Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

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planned outage and maintenance outage protocols, of proposed or actual nuclear plant operations that require restriction of (a) access to, (b) switching of, or (c) work on Off-site Power supply facilities as required by the NPIRs. (Requirement 7.1)

Violation Risk Factors for R3 through R8: These requirements should be assigned LOW violation risk factor as this standard is specific to Nuclear Plant Interface Coordination. Yes, some requirements are important but they are common to all generators and are covered under other NERC standards.

Audit timing - NERC audit for this standard should be combined with the NERC readiness audit.

R9.1.3. (A requirement to review the agreement(s) at least every three years) is a "contract" issue that has no impact on reliability. Most agreements are evergreen in nature so a forced periodic review is unnecessary and against common practice.

R9.1.4. (A dispute resolution mechanism) is a "contract" issue that has no impact on reliability. Most Reliability Organizations have a mechanism in place (ERCOT has one) and therefore a contractual provision is unnecessary.

R9.3.4 should specify the specific time frame for this requirement as this could be generalized for all the plants whereas some other requirements cannot be generalized.

R9.4.3 & R9.4.4 deal with issues that have no impact on reliability and as such are not needed in this standard.

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Do not submit a response in an unprotected copy of this form.

Individual Commenter Information		
(Complete this page for comments from one organization or individual.)		
Name:	George Attarian	
Organization:	Progress Energy	
Telephone:	919-546-4573	
E-mail:	george.attarian@pgnmail.com	
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 — Transmission Owners
<input checked="" type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
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## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

### Please Enter All Comments in Simple Text Format.

1. Which of the following describes your organization:

We own or operate a nuclear power plant.

We provide transmission services to a nuclear power plant.

Other: Progress Energy Carolinas, Inc. (PEC), nuclear power plants and transmission system operations are conducted under a vertically integrated utility business model. Under PEC's vertically integrated utility business model, the System Operator (Grid Operations) operates the transmission system and provides guidance for the operation of generation systems (nuclear and non-nuclear). The System Operator is in the same company that holds the licenses to operate the nuclear power plants. Nuclear power plant offsite power reliability is managed by the System Operators through communications with licensed Nuclear Plant Operators and Work Control Management personnel at the plants as governed by a formal interface agreement.

2. In response to stakeholder comments, the drafting team modified the title and altered the sequence of requirements. Do you agree with the changes the new title and the revised sequence of requirements?

Yes

No

Comments:

3. In response to stakeholder comments, the drafting team modified the definition of 'Nuclear Plant Interface Requirements (NPIR)' and added the term, 'Nuclear Plant Licensing Requirements (NPLR)'. These changes were made to help make the distinction between requirements **mandated** by the jurisdictional nuclear regulatory agency for the nuclear plant (NPLR) and the **mutually agreed upon interface requirements** (NPIR) that support the nuclear power plant in meeting its licensing requirements. The standard is intended to establish a **collaborative effort** between the nuclear plant owner/operator and the transmission entities that provide those necessary services. The NPIR will vary depending on such specifics as plant licensing commitments, plant-grid interconnection design, plant design itself, and location. The details of how the NPIR are addressed will be set forth in the agreement(s) required by this standard.

Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

Yes

No

Comments: Good change, but we will still need to ensure that the NPLR are always met. If any commitments are made through NPIR, these will need to be clearly identified in site procedures that the nuclear plant operators use.

4. Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement?

## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

Yes

No

Comments: Under the Applicability Section 4., "Nuclear Plant Generator Operator" is currently not a recognized entity by NERC for which a certification is being developed. "Generator Operator" is currently a recognized NERC entity. Do you want NERC to pursue a "Nuclear Plant Generator Operator" certification standard?

5. The revised draft standard establishes a single nuclear entity (the Nuclear Plant Generator Operator) that must work with the appropriate transmission authorities to identify the applicable transmission entities. The Nuclear Plant Generator Operator must provide its proposed nuclear interface requirements (NPIR) to the applicable transmission entities (see R1 and M1). The specific entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR). The standard requires the Nuclear Plant Generator Operator and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs will be addressed and implemented (see R2 and M2). The names of the responsible entities must be clearly identified in these agreements (see R9.1.2 and A4.2).

Do you agree that the changes made by the drafting team address stakeholder concerns that 'transmission entities' is too broad a term?

Yes

No

Comments: See 4. From a nuclear plant operator perspective, we should only have to be concerned with one single point of contact off-site with respect to the transmission entities. Anything related to the host of transmission entities should come through that one single point of contact to us.

6. Are you aware of any regional differences that would be required as a result of this standard?

Yes

No

If yes, please explain:

7. If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here: The statement "documentation is missing" associated with Section D.2.1, Non-Compliance Level 1, is too vague to be enforceable. Revise to: "documentation described in Measures M1 - M8 is not available or cannot be provided for inspection".  
Page 4 Requirement R7: Change to ... actual or planned changes... (change "proposed" to "planned"). This change is needed because "proposed" changes are typically too early in their development to warrant cross organizational interactions. However, "planned" changes typically indicate a more developed conceptual design that can be discussed in a



## **Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

meaningful way.

Page 4 Requirement R8: Change to ... actual or planned changes... (change "proposed" to "planned"). This change is needed because "proposed" changes are typically too early in their development to warrant cross organizational interactions. However, "planned" changes typically indicate a more developed conceptual design that can be discussed in a meaningful way.

M6 has two periods at the end of the paragraph

D.2.4 has two periods at the end of the paragraph

E has no period at the end of the first paragraph)

**Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

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Do not submit a response in an unprotected copy of this form.

Individual Commenter Information		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
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<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities

**Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

**Group Comments (Complete this page if comments are from a group.)**

Group Name: **Public Service Commission of South Carolina**  
 Lead Contact: **Phil Riley**  
 Contact Organization: **Public Service Commission of South Carolina**  
 Contact Segment: **9**  
 Contact Telephone: **803-896-5154**  
 Contact E-mail: **philip.riley@psc.sc.gov**

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>
Mignon L. Clyburn	Public Service Commission of SC	SERC	9
Elizabeth B. "Lib" Fleming	Public Service Commission of SC	SERC	9
G. O'Neal Hamilton	Public Service Commission of SC	SERC	9
John E. "Butch" Howard	Public Service Commission of SC	SERC	9
Randy Mitchell	Public Service Commission of SC	SERC	9
C. Robert "Bob" Moseley	Public Service Commission of SC	SERC	9
David A. Wright	Public Service Commission of SC	SERC	9

\* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

### Please Enter All Comments in Simple Text Format.

1. Which of the following describes your organization:

- We own or operate a nuclear power plant.
- We provide transmission services to a nuclear power plant.
- Other: **A state public service commission.**

2. In response to stakeholder comments, the drafting team modified the title and altered the sequence of requirements. Do you agree with the changes the new title and the revised sequence of requirements?

- Yes
- No

Comments:

3. In response to stakeholder comments, the drafting team modified the definition of 'Nuclear Plant Interface Requirements (NPIR)' and added the term, 'Nuclear Plant Licensing Requirements (NPLR)'. These changes were made to help make the distinction between requirements **mandated** by the jurisdictional nuclear regulatory agency for the nuclear plant (NPLR) and the **mutually agreed upon interface requirements** (NPIR) that support the nuclear power plant in meeting its licensing requirements. The standard is intended to establish a **collaborative effort** between the nuclear plant owner/operator and the transmission entities that provide those necessary services. The NPIR will vary depending on such specifics as plant licensing commitments, plant-grid interconnection design, plant design itself, and location. The details of how the NPIR are addressed will be set forth in the agreement(s) required by this standard.

Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

- Yes
- No

Comments:

4. Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement?

- Yes
- No

Comments:

5. The revised draft standard establishes a single nuclear entity (the Nuclear Plant Generator Operator) that must work with the appropriate transmission authorities to identify the applicable transmission entities. The Nuclear Plant Generator Operator must provide its proposed nuclear interface requirements (NPIR) to the applicable

## **Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

transmission entities (see R1 and M1). The specific entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR). The standard requires the Nuclear Plant Generator Operator and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs will be addressed and implemented (see R2 and M2). The names of the responsible entities must be clearly identified in these agreements (see R9.1.2 and A4.2).

Do you agree that the changes made by the drafting team address stakeholder concerns that 'transmission entities' is too broad a term?

Yes

No

Comments:

6. Are you aware of any regional differences that would be required as a result of this standard?

Yes

No

If yes, please explain:

7. If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here:

**Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

Please use this form to submit comments on Draft 2 of the Nuclear Power Plant Off-site Power Coordination standard. Comments must be submitted by **October 16, 2006**. You must submit the completed form e-mail to [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the words "Nuclear Off-site Power Comments" in the subject line. If you have questions please contact Craig Lawrence at [craig.lawrence@nerc.net](mailto:craig.lawrence@nerc.net) or 609-452-8060.

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Do not use numbering or bullets in any data field.  
Do not use quotation marks in any data field.  
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information		
(Complete this page for comments from one organization or individual.)		
Name:	Walter Adams	
Organization:	Constellation Generation	
Telephone:	410-897-5161	
E-mail:	walter.adams@constellation.com	
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
<input checked="" type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> RF	<input type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> SERC	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities



## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

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1. Which of the following describes your organization:

- We own or operate a nuclear power plant.
- We provide transmission services to a nuclear power plant.
- Other:

2. In response to stakeholder comments, the drafting team modified the title and altered the sequence of requirements. Do you agree with the changes the new title and the revised sequence of requirements?

- Yes
- No

Comments:

3. In response to stakeholder comments, the drafting team modified the definition of 'Nuclear Plant Interface Requirements (NPIR)' and added the term, 'Nuclear Plant Licensing Requirements (NPLR)'. These changes were made to help make the distinction between requirements **mandated** by the jurisdictional nuclear regulatory agency for the nuclear plant (NPLR) and the **mutually agreed upon interface requirements** (NPIR) that support the nuclear power plant in meeting its licensing requirements. The standard is intended to establish a **collaborative effort** between the nuclear plant owner/operator and the transmission entities that provide those necessary services. The NPIR will vary depending on such specifics as plant licensing commitments, plant-grid interconnection design, plant design itself, and location. The details of how the NPIR are addressed will be set forth in the agreement(s) required by this standard.

Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

- Yes
- No

Comments:

4. Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement?

- Yes
- No

Comments: **However, in section R8 a clause should be added to the requirements to ensure that any changes to the electric system that would impact the NPIR are not implemented until the NPGO has performed a review in accordance with 10 CFR 50.59. This is important because being informed by the TE does not necessarily constitute a hold point, and if the change does impact the NPGO design or licensing bases, then a review under 50.59 is required prior to implementation.**



## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

5. The revised draft standard establishes a single nuclear entity (the Nuclear Plant Generator Operator) that must work with the appropriate transmission authorities to identify the applicable transmission entities. The Nuclear Plant Generator Operator must provide its proposed nuclear interface requirements (NPIR) to the applicable transmission entities (see R1 and M1). The specific entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR). The standard requires the Nuclear Plant Generator Operator and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs will be addressed and implemented (see R2 and M2). The names of the responsible entities must be clearly identified in these agreements (see R9.1.2 and A4.2).

Do you agree that the changes made by the drafting team address stakeholder concerns that 'transmission entities' is too broad a term?

Yes

No

Comments:

6. Are you aware of any regional differences that would be required as a result of this standard?

Yes

No

If yes, please explain:

7. If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here: **In section R9, an element should be added covering transmittal of maintenance records and test results from the TE to the NPGO. This has been a weakness identified in several INPO Switchyard reviews. In section R9.3 there should be an additional requirement: R.9.3.8 Coordination of real load changes (in MWe) such that load change requests to nuclear plants will occur only after exhausting all other efforts to cure the issue/condition. Section R9.3.2 It is unclear how far out into the network this element covers. For example, some plants may be impacted by equipment 2 or 3 stations away and that may end up being a huge population of equipment. It is suggested that this element be more specific. For example, it should limit the scope to transmission equipment covered by Maintenance Rule. In the definition for NPLRs the requirements are mandated not only by statute, but by regulations as well.**

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Do not submit a response in an unprotected copy of this form.

Individual Commenter Information		
(Complete this page for comments from one organization or individual.)		
Name:	Jerry L Nicely	
Organization:	Tennessee Valley Authority-Nuclear	
Telephone:	423-751-8236	
E-mail:	glnicely@tva.gov	
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> RF	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input checked="" type="checkbox"/> SERC	<input checked="" type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> SPP	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> WECC	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	8 — Small Electricity End Users
	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities



## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

### Please Enter All Comments in Simple Text Format.

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- We own or operate a nuclear power plant.
- We provide transmission services to a nuclear power plant.
- Other:

2. In response to stakeholder comments, the drafting team modified the title and altered the sequence of requirements. Do you agree with the changes the new title and the revised sequence of requirements?

- Yes
- No

Comments: **A more appropriate title might have been "Nuclear Plant/Grid Interface Coordination"**

3. In response to stakeholder comments, the drafting team modified the definition of 'Nuclear Plant Interface Requirements (NPIR)' and added the term, 'Nuclear Plant Licensing Requirements (NPLR)'. These changes were made to help make the distinction between requirements **mandated** by the jurisdictional nuclear regulatory agency for the nuclear plant (NPLR) and the **mutually agreed upon interface requirements** (NPIR) that support the nuclear power plant in meeting its licensing requirements. The standard is intended to establish a **collaborative effort** between the nuclear plant owner/operator and the transmission entities that provide those necessary services. The NPIR will vary depending on such specifics as plant licensing commitments, plant-grid interconnection design, plant design itself, and location. The details of how the NPIR are addressed will be set forth in the agreement(s) required by this standard.

Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

- Yes
- No

Comments:

4. Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement?

- Yes
- No

Comments:

5. The revised draft standard establishes a single nuclear entity (the Nuclear Plant Generator Operator) that must work with the appropriate transmission authorities to identify the applicable transmission entities. The Nuclear Plant Generator Operator must

## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

provide its proposed nuclear interface requirements (NPIR) to the applicable transmission entities (see R1 and M1). The specific entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR). The standard requires the Nuclear Plant Generator Operator and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs will be addressed and implemented (see R2 and M2). The names of the responsible entities must be clearly identified in these agreements (see R9.1.2 and A4.2).

Do you agree that the changes made by the drafting team address stakeholder concerns that 'transmission entities' is too broad a term?

Yes

No

Comments: **Section B. Requirements refer to coordination with the applicable transmission entities. Since section 4.2 lists 8 different entities, the NPP will most likely be confused to which ones they have to coordinate with. As a result, probably some will be missed. This will be a confusion factor for the NPP.**

6. Are you aware of any regional differences that would be required as a result of this standard?

Yes

No

If yes, please explain:

7. If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here: **Section R4.2 has the term "System Operating Limits". Most NPP's would not know what this means. Any terms not readily familiar should have either the definition or reference to where the definition can be found. Sections R4.3, 4.4, R9.3.7, and R9.4.1 address notification time frames. Would recommend that the NERC 30 minute requirement be listed as a maximum guideline. Section R9.2.3 should require the agreement to provide documentation requirements for the studies (i.e. an issued study, letter, informal study, retrievability, etc.). Section R9.3.2 should not extend past the NPP switchyard. Section R9.3.5 the transmission entities most likely will not know the NPP coping times. Should tailor more like the NRC GL 2006-02 responses. Section R9.4.5 should be expanded to clarify what training is required.**

**Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

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Individual Commenter Information		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> RF	<input type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> SERC	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities

**Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

<b>Group Comments (Complete this page if comments are from a group.)</b>			
Group Name:	<b>FPLE</b>		
Lead Contact:	John Ragan		
Contact Organization:	FPL Energy L.L.C.		
Contact Segment:	Generation		
Contact Telephone:	561-304-5343		
Contact E-mail:	john_ragan@fpl.com		
<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>
Ron Scheirer – VP and Business General Manager	FPL Energy Duane Arnold L.L.C.	RFC	5
Matt Handel – VP and Business General Manager	FPL Energy Seabrook L.L.C.	NPCC	5
Harold Adams – Director Market Policy	Dominion Resources Services	MRO	5
Juan Villar – Director Transmission	FPL Energy L.L.C.	NPCC	5
David Applebaum _ Director Market Policy (PJM and NY)	FPL Energy L.L.C.	NPCC	5
Fernando DaSilva – Director Market Policy (New England)	FPL Energy L.L.C.	NPCC	5
Lou Nunes – Project Manager	Dominion Nuclear Connecticut, Inc	NPCC	5
Lou Oberski – Director Market Policy (RTO)	Dominion Energy Marketing, Inc.	NPCC	5
James Peschel	FPL Energy Seabrook L.L.C.	NPCC	5
Brian Gooder – Regulatory Affairs	Ontario Power Generation	NPCC	5

**Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**


\* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.



## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

### Please Enter All Comments in Simple Text Format.

1. Which of the following describes your organization:

- We own or operate a nuclear power plant.
- We provide transmission services to a nuclear power plant.
- Other:

2. In response to stakeholder comments, the drafting team modified the title and altered the sequence of requirements. Do you agree with the changes the new title and the revised sequence of requirements?

- Yes
- No

Comments:

3. In response to stakeholder comments, the drafting team modified the definition of 'Nuclear Plant Interface Requirements (NPIR)' and added the term, 'Nuclear Plant Licensing Requirements (NPLR)'. These changes were made to help make the distinction between requirements **mandated** by the jurisdictional nuclear regulatory agency for the nuclear plant (NPLR) and the **mutually agreed upon interface requirements** (NPIR) that support the nuclear power plant in meeting its licensing requirements. The standard is intended to establish a **collaborative effort** between the nuclear plant owner/operator and the transmission entities that provide those necessary services. The NPIR will vary depending on such specifics as plant licensing commitments, plant-grid interconnection design, plant design itself, and location. The details of how the NPIR are addressed will be set forth in the agreement(s) required by this standard.

Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

- Yes
- No

Comments:

4. Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement?

- Yes
- No

Comments:

5. The revised draft standard establishes a single nuclear entity (the Nuclear Plant Generator Operator) that must work with the appropriate transmission authorities to identify the applicable transmission entities. The Nuclear Plant Generator Operator must provide its proposed nuclear interface requirements (NPIR) to the applicable

## **Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

transmission entities (see R1 and M1). The specific entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR). The standard requires the Nuclear Plant Generator Operator and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs will be addressed and implemented (see R2 and M2). The names of the responsible entities must be clearly identified in these agreements (see R9.1.2 and A4.2).

Do you agree that the changes made by the drafting team address stakeholder concerns that 'transmission entities' is too broad a term?

Yes

No

Comments:

6. Are you aware of any regional differences that would be required as a result of this standard?

Yes

No

If yes, please explain:

7. If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here: FPL Energy (FPLE) requests that the Nuclear Plant Interface Coordination standard be modified by adding the following provision as R9.3.8:

Provisions to utilize all other available measures to preserve/restore the reliability of the transmission system prior to cycling nuclear plants.

FPLE provides the following statement in support of this proposed requirement:

FPLE agrees with the overall purpose of the proposed standard in that coordination between Nuclear Plant Generator Operators and Transmission Entities is required to ensure nuclear plant safety. Nuclear power plants should be considered as a solution to resolve system problems only when all other available actions have been considered and implemented. Nuclear plants are designed as base load units. Frequent cycling and rapid ramping are not advisable. Therefore, involvement of a nuclear facility in the mitigation of electric system problems should occur only after all other available actions have been considered and implemented. The existing NERC Reliability Standards on Emergency Preparedness and Operations (EOP-005-0 and EOP-005-1), which deal with system restoration plans, require that the affected Transmission Operators shall give high priority to restoration of off-site power to nuclear stations. Similarly, cycling nuclear plants should be considered the solution of last resort when actions are required to re-establish transmission system reliability. In this regard, FPLE would note the comments on this subject of

## **Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

the Commissioners of the Nuclear Regulatory Commission at a joint meeting with the Federal Energy Regulatory Commission on April 24, 2006 (FERC Docket No. AD06-6-000).

NRC Chairman Diaz stated at transcript page 10:

... nuclear power plants are big producers of electricity, and they also in many ways, anchor part[s] of the grids in which they are. They are also not very good machines for moving up and down in power. They were really designed and operated as base power units, and that's the way they really work best. We like to keep them like that, like to keep them safe and operating.

NRC Commissioner McGaffigan supported Chairman Diaz remarks at transcript pages 13-14:

And I would echo the Chairman's point. I know this is an issue before you and we're not going to discuss it today, but, in public, it's fair for me to say that it is not good for nuclear power plants to go up and down, and so the particular issue in New England that I think is before you in some way, where Seabrook is currently going up and down, because it's the first contingency for some agreement between New England and New York, is not a good idea. There's got to be a coal plant somewhere that can go up and down, but I say that -- you have two of us now saying that going up and down is not a good idea for nuclear power plants.

NRC Commissioner Merrifield elaborated on these concerns at transcript pages 16-17):

I would add, in recognizing the sensitivities from your Commission in ongoing issues, as originally hailing from New Hampshire, issues associated with the Seabrook Station and its operation, are very important to the folks who I hold near and dear. That activity, in terms of bringing that plant up and down, is of, in my particular concern, significant. There have been a total, I believe, at this point, of 20 instances in which that plant has been brought up or down, averaging nine over the course of the last three months. So that is certainly one that, although I know you're limited in terms of your getting into it, certainly I want to use the opportunity to express my concern and to agree with Commissioner McGaffigan.

We don't believe and I don't believe it's a safety issue at the plant. It is an ongoing challenge to the operations by the individuals who are in the control room, and certainly with our maintenance activities, our allowance for online maintenance, that makes that issue even more difficult, where a utility is attempting to do online maintenance and plan on that, to have facing them, multiple down-powers through the course of a week, and in some cases, multiple down-powers during the course of a day.

As a general matter, I think that's imprudent, and it's certainly something I would recommend that the Commission, your Commission take a look at, because, certainly from my standpoint -- and I agree with Commissioner McGaffigan -- that is not the direction you would want to see it.

## **Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

NRC Commissioner Jaczko noted his concerns in this area as well at transcript pages 18-19, requested that the FERC work with the NRC on these concerns:

... there are areas in which I think there is a nexus between the work that you do and the work that we do. Certainly, Seabrook is one case in which I think there is that nexus and I think this is a good opportunity for us to be able get together and discuss those issues.

These comments by the NRC Commissioners provide a reasonable basis for the proposed provision, which requires that the agreement between the nuclear plant owner and the transmission entity utilize other available measures prior to cycling a nuclear plant.

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Organization:		
Telephone:		
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NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
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- We provide transmission services to a nuclear power plant.
- Other: Reliability Coordinator

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- Yes
- No

Comments:

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Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

- Yes
- No

Comments:

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- Yes
- No

Comments:

5. The revised draft standard establishes a single nuclear entity (the Nuclear Plant Generator Operator) that must work with the appropriate transmission authorities to identify the applicable transmission entities. The Nuclear Plant Generator Operator must provide its proposed nuclear interface requirements (NPIR) to the applicable

## **Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

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transmission entities (see R1 and M1). The specific entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR). The standard requires the Nuclear Plant Generator Operator and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs will be addressed and implemented (see R2 and M2). The names of the responsible entities must be clearly identified in these agreements (see R9.1.2 and A4.2).

Do you agree that the changes made by the drafting team address stakeholder concerns that 'transmission entities' is too broad a term?

Yes

No

Comments: It remains unclear what Transmission Entities would be required to be involved in an agreement with a nuclear power plant. In cases where the Reliability Coordinator is distinct from other Transmission Entity, the Reliability Coordinator should not be required to negotiate individual nuclear plant interface coordination agreements. These agreements, instead, should be with the Transmission Entity, distinct from the Reliability Coordinator, interfacing with the individual Nuclear Plant Generator Operator. The Reliability Coordinator should be aware of any existing agreement between the Transmission Entity and the Nuclear Plant Generator Operator, but should not be required to be a party to the agreement. That said, participation in the agreement would be at the Reliability Coordinator's option. The Reliability Coordinator will oversee the operation of the power system in accordance with the agreement between the Transmission Entity and the Nuclear Plant Generator Operator.

6. Are you aware of any regional differences that would be required as a result of this standard?

Yes

No

If yes, please explain:

7. If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here: The Nuclear Plant Generator Operator could end up with multiple agreements that may conflict and make relationships and requirements less clear or difficult to manage. The 4.2 requirement and measurement need to provide better linkage. There might not be SOL's, but instead other limitations that impact the ability to meet NPIRs. Requirement 4.2 and measure 4.2 should be rewritten. Suggested language is: "... to the extent practicable under electric system conditions, while adhering to system operating limits (SOL)".



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Do not use quotation marks in any data field.  
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> RF	<input type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> SERC	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities

**Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

**Group Comments (Complete this page if comments are from a group.)**

Group Name: **Midwest Reliability Organization (MRO)**  
 Lead Contact: Martin Trence  
 Contact Organization: MRO for group (Xcel Energy -NSP for lead contact)  
 Contact Segment: 2  
 Contact Telephone: (612) - 337 - 2152  
 Contact E-mail: martin.s.trence@xcelenergy.com

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>
Alan Boesch	NPPD	MRO	2
Terry Bilke	MISO	MRO	2
Robert Coish	MHEB	MRO	2
Ken Goldsmith	ALT	MRO	2
Carol Gerou	MP	MRO	2
Todd Gosnell	OPPD	MRO	2
Jim Maenner	WPS	MRO	2
Tom Mielnik	MEC	MRO	2
Darrick Moe, Chair	WAPA	MRO	2
Dick Pursley	GRE	MRO	2
Dave Rudolph	BEPC	MRO	2
Joe Knight, Secretary	MRO	MRO	2
27 Additonal MRO Members	Not Named Above	MRO	2

\* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

### Please Enter All Comments in Simple Text Format.

1. Which of the following describes your organization:

- We own or operate a nuclear power plant.
- We provide transmission services to a nuclear power plant.
- Other: Members of this group providing a response either own and/or operate nuclear plants or provide transmission services to a nuclear power plant.

2. In response to stakeholder comments, the drafting team modified the title and altered the sequence of requirements. Do you agree with the changes the new title and the revised sequence of requirements?

- Yes
- No

Comments:

3. In response to stakeholder comments, the drafting team modified the definition of 'Nuclear Plant Interface Requirements (NPIR)' and added the term, 'Nuclear Plant Licensing Requirements (NPLR)'. These changes were made to help make the distinction between requirements **mandated** by the jurisdictional nuclear regulatory agency for the nuclear plant (NPLR) and the **mutually agreed upon interface requirements** (NPIR) that support the nuclear power plant in meeting its licensing requirements. The standard is intended to establish a **collaborative effort** between the nuclear plant owner/operator and the transmission entities that provide those necessary services. The NPIR will vary depending on such specifics as plant licensing commitments, plant-grid interconnection design, plant design itself, and location. The details of how the NPIR are addressed will be set forth in the agreement(s) required by this standard.

Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

- Yes
- No

Comments: Requirement 9 contains elements that become prescriptive, which removes the "collaborative effort" concept between the nuclear plant owner/operator and the transmission entities that provide those necessary services. The elements listed in Requirement 9 should be reviewed and revisions made to clearly demonstrate the "collaborative intent" concept the Standards Drafting Team wishes to convey. An example of retaining the collaborative spirit of the standard, would be to insert language to the effect that the Nuclear Plant Generator Operator and the Transmission Entities shall jointly develop....in Requirement 9. In addition, a number of the requirement subsections should be revised i.e. R9.1.3 revise to say: a requirement to review the agreement(s) on a periodic basis not to exceed three (3) years. The NSRS feels that the requirement as written does not give the parties the freedom to put in a statement to review the agreement(s) more frequently.

## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

4. Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement?

Yes

No

Comments: This group cannot answer this question due to the multitude of regulations present and insufficient time allotted in the commenting period to perform adequate research to provide a correct answer.

5. The revised draft standard establishes a single nuclear entity (the Nuclear Plant Generator Operator) that must work with the appropriate transmission authorities to identify the applicable transmission entities. The Nuclear Plant Generator Operator must provide its proposed nuclear interface requirements (NPIR) to the applicable transmission entities (see R1 and M1). The specific entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR). The standard requires the Nuclear Plant Generator Operator and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs will be addressed and implemented (see R2 and M2). The names of the responsible entities must be clearly identified in these agreements (see R9.1.2 and A4.2).

Do you agree that the changes made by the drafting team address stakeholder concerns that 'transmission entities' is too broad a term?

Yes

No

Comments: It is recognized in today's world, many different parties may become involved in interface coordination on the transmission side of the world, however, the concern arises as there is nothing in the Standard that suggests consideration of establishing an order of ranking these different transmission entities in relation to respective Nuclear Power Plant Operator. If all transmission entities were treated equally in relation to the Nuclear Power Plant Operator, the potential for conflicts in administration and execution of the Agreements established is significantly higher. The standard should address when multiple Transmission Entities are involved with a Nuclear Plant Generator Operator, who will be the prevailing entity. For example, the Transmission Entity with the most stringent requirements shall prevail in the event of a conflict.

6. Are you aware of any regional differences that would be required as a result of this standard?

Yes

No

If yes, please explain:

**Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

7. If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here:

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Do not use quotation marks in any data field.  
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information		
(Complete this page for comments from one organization or individual.)		
Name:	Michael Calimano	
Organization:	New York Independent System Operator	
Telephone:	518-356-6159	
E-mail:	mcalimano@nyiso.com	
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input checked="" type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
<input checked="" type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> RF	<input type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> SERC	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities



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1. Which of the following describes your organization:

- We own or operate a nuclear power plant.
- We provide transmission services to a nuclear power plant.
- Other:

2. In response to stakeholder comments, the drafting team modified the title and altered the sequence of requirements. Do you agree with the changes the new title and the revised sequence of requirements?

- Yes
- No

Comments:

3. In response to stakeholder comments, the drafting team modified the definition of 'Nuclear Plant Interface Requirements (NPIR)' and added the term, 'Nuclear Plant Licensing Requirements (NPLR)'. These changes were made to help make the distinction between requirements **mandated** by the jurisdictional nuclear regulatory agency for the nuclear plant (NPLR) and the **mutually agreed upon interface requirements** (NPIR) that support the nuclear power plant in meeting its licensing requirements. The standard is intended to establish a **collaborative effort** between the nuclear plant owner/operator and the transmission entities that provide those necessary services. The NPIR will vary depending on such specifics as plant licensing commitments, plant-grid interconnection design, plant design itself, and location. The details of how the NPIR are addressed will be set forth in the agreement(s) required by this standard.

Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

- Yes
- No

Comments:

4. Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement?

- Yes
- No

Comments:

5. The revised draft standard establishes a single nuclear entity (the Nuclear Plant Generator Operator) that must work with the appropriate transmission authorities to identify the applicable transmission entities. The Nuclear Plant Generator Operator must



## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

provide its proposed nuclear interface requirements (NPIR) to the applicable transmission entities (see R1 and M1). The specific entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR). The standard requires the Nuclear Plant Generator Operator and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs will be addressed and implemented (see R2 and M2). The names of the responsible entities must be clearly identified in these agreements (see R9.1.2 and A4.2).

Do you agree that the changes made by the drafting team address stakeholder concerns that 'transmission entities' is too broad a term?

Yes

No

Comments:

6. Are you aware of any regional differences that would be required as a result of this standard?

Yes

No

If yes, please explain:

7. If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here: **The NYISO believes that any requirement must be assigned to entities that are part of and recognized in the NERC Functional Model. As such, the "Transmission Entity" that appears in the posted draft does not meet this criterion. NYISO recommends instead of the generic Transmission Entity designation in the draft, the TOP and the Nuclear Plant should jointly identify with whom the Nuclear plant needs to establish the indicated agreement with that addresses the NPIRs. These entities could be the TOP itself, a TO or any other appropriate Functional Model entity as necessary.**

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Individual Commenter Information		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> RF	<input type="checkbox"/>	5 — Electric Generators
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<input type="checkbox"/> SPP	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities



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- We provide transmission services to a nuclear power plant.
- Other:

2. In response to stakeholder comments, the drafting team modified the title and altered the sequence of requirements. Do you agree with the changes the new title and the revised sequence of requirements?

- Yes
- No

Comments:

3. In response to stakeholder comments, the drafting team modified the definition of 'Nuclear Plant Interface Requirements (NPIR)' and added the term, 'Nuclear Plant Licensing Requirements (NPLR)'. These changes were made to help make the distinction between requirements **mandated** by the jurisdictional nuclear regulatory agency for the nuclear plant (NPLR) and the **mutually agreed upon interface requirements** (NPIR) that support the nuclear power plant in meeting its licensing requirements. The standard is intended to establish a **collaborative effort** between the nuclear plant owner/operator and the transmission entities that provide those necessary services. The NPIR will vary depending on such specifics as plant licensing commitments, plant-grid interconnection design, plant design itself, and location. The details of how the NPIR are addressed will be set forth in the agreement(s) required by this standard.

Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

- Yes
- No

Comments:

4. Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement?

- Yes

**Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

---

No

Comments: See comments to Q7

5. The revised draft standard establishes a single nuclear entity (the Nuclear Plant Generator Operator) that must work with the appropriate transmission authorities to identify the applicable transmission entities. The Nuclear Plant Generator Operator must provide its proposed nuclear interface requirements (NPIR) to the applicable transmission entities (see R1 and M1). The specific entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR). The standard requires the Nuclear Plant Generator Operator and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs will be addressed and implemented (see R2 and M2). The names of the responsible entities must be clearly identified in these agreements (see R9.1.2 and A4.2).

Do you agree that the changes made by the drafting team address stakeholder concerns that 'transmission entities' is too broad a term?

Yes

No

Comments: A new requirement shall be added to the Standard stating on how to resolve a dispute between the entities in case they can't meet R2.

6. Are you aware of any regional differences that would be required as a result of this standard?

Yes

No

If yes, please explain:

7. If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here: (1) A webcast would be helpful to discuss the wording of the requirements. This may help clarify the interpretation of the requirements (2) There is a certain amount of overlap between this standard and other NERC standards with GO/GOP applicability. For example: R6 - See IRO-005-0, TOP-001-1, R7 - See FAC-002-0, FAC-009-1, MOD-0010-0, MOD-011-0, MOD-012-0, MOD-024-1, MOD-025-1, PRC-001-1, R9.3.7 - See PRC-015-0, PRC-016-0, PRC-017-0. To clarify the requirements the Standard Development Team may reference the NUC-001-1 requirements to the other standards. (3) R9 shall be an attachment to the standard but not a

**Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

requirement. Entities may already have Interface Agreements drafted amongst each other and may not follow the same format.

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Individual Commenter Information		
(Complete this page for comments from one organization or individual.)		
Name:	Thomas W. Leeming	
Organization:	Exelon Energy Delivery	
Telephone:	(630) 437-3428	
E-mail:	thomas.leeming@exeloncorp.com	
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
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## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

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1. Which of the following describes your organization:

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- We provide transmission services to a nuclear power plant.
- Other:

2. In response to stakeholder comments, the drafting team modified the title and altered the sequence of requirements. Do you agree with the changes the new title and the revised sequence of requirements?

- Yes
- No

Comments:

3. In response to stakeholder comments, the drafting team modified the definition of 'Nuclear Plant Interface Requirements (NPIR)' and added the term, 'Nuclear Plant Licensing Requirements (NPLR)'. These changes were made to help make the distinction between requirements **mandated** by the jurisdictional nuclear regulatory agency for the nuclear plant (NPLR) and the **mutually agreed upon interface requirements** (NPIR) that support the nuclear power plant in meeting its licensing requirements. The standard is intended to establish a **collaborative effort** between the nuclear plant owner/operator and the transmission entities that provide those necessary services. The NPIR will vary depending on such specifics as plant licensing commitments, plant-grid interconnection design, plant design itself, and location. The details of how the NPIR are addressed will be set forth in the agreement(s) required by this standard.

Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

- Yes
- No

Comments: The NPIR definition should be changed to -The criteria to meet the NPLRs as mutually agreed to by the Nuclear Plant Generator Operator and the applicable Transmission Entity.

4. Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement?

- Yes
- No

Comments:

**Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

---

5. The revised draft standard establishes a single nuclear entity (the Nuclear Plant Generator Operator) that must work with the appropriate transmission authorities to identify the applicable transmission entities. The Nuclear Plant Generator Operator must provide its proposed nuclear interface requirements (NPIR) to the applicable transmission entities (see R1 and M1). The specific entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR). The standard requires the Nuclear Plant Generator Operator and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs will be addressed and implemented (see R2 and M2). The names of the responsible entities must be clearly identified in these agreements (see R9.1.2 and A4.2).

Do you agree that the changes made by the drafting team address stakeholder concerns that 'transmission entities' is too broad a term?

Yes

No

Comments: The Standard Development Procedure requires a standard to be applicable to a functional entity as defined in the functional model. There is no Nuclear Plant Generator Operator or Transmission Entities in the model. The clarification as to applicability is handled in CIP -002-009. Consider staying with this approved convention.

At a minimum, the term should be qualified in each instance as - the designated Transmission Entity - or - the applicable Transmission Entity.

6. Are you aware of any regional differences that would be required as a result of this standard?

Yes

No

If yes, please explain:

7. If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here:

Change the wording in R3 to read - Per the Agreements developed with this standard, the applicable Transmission Entity shall perform planning analysis to evaluate the electric system with regard to the NPIRs and communicate these results to the Nuclear Plant Generator Operator. This wording indicates that the NPIR studies could potentially be separate from the normal reinforcement planning analysis.

Change the wording in R4.2 to read -Establish and utilize formal procedures or policies that facilitate the Operation of the electric system to meet the applicable Nuclear Plant Interface Requirements.- Exelon Energy Delivery feels this wording allows for a compliance review. In addition, the requirement to respect

## **Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

the System Operating Limits is included in other existing Standards. Including it here is redundant.

Change the wording in R4.3 to read -Establish and utilize formal procedures or policies for notification of the NPP Generator Operator when Nuclear Plant Interface Requirements cannot be met. The procedure or policy shall include the requirement to develop mutually agreed upon mitigating actions.- This wording allows for a compliance review and reflects the fact that the Transmission Entity cannot be totally responsible for mitigating actions when there are options that may involve the Nuclear Plant.

Change the wording in R4.4 to read -Establish and utilize formal procedures or policies for notification of the NPP Generator Operator when the ability to assess the operation of the transmission system affecting Nuclear Plant Interface Requirements is not available.- This wording allows for a compliance review.

Change R5 to - The Nuclear Plant Generator Operator shall operate, and provide relevant data and information, per the Agreements developed in accordance with this standard.

Change the wording of R6 to read -the designated Transmission Operator and the NPP Generator Operator shall establish and utilize formal procedures for the coordination of planned outages and maintenance activities affecting the Nuclear Plant Interface Requirements-. This wording allows for compliance review.

In R7, substitute the phrase -establish and utilize formal procedures or policies for notification of- where the word -inform- appears. This wording allows for compliance review.

In R8, substitute the phrase -establish and utilize formal procedures or policies for notification of- where the word -inform- appears. This wording allows for compliance review. Additionally, the phrase -within bounds defined by the FERC Standards of Conduct- should be added to the end of the requirement.

Under R9.2, add a new requirement R.9.2.4 - Timelines for the provision of data necessary to perform planning and operational analysis.

M4.3, change to - When NPIRs could not be met, the applicable Transmission Operator informed the Nuclear Plant Generator Operator and both parties developed a mutually agreed upon action plan to mitigate the situation.

Change M6 and M7, add ending phrase -within the timelines as specified in the Agreements-

Under 1.3 Data Retention 4<sup>th</sup> item down - For Measures 4.3, 4.4, 6, and 7- should read -For measures 4.3,4.4,6, and 8-

Under 1.3 Data Retention 5<sup>th</sup> item down - For Measures 5,6, and 8- should read

**Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

-For Measures 5,6, and 7-

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Do not use numbering or bullets in any data field.  
Do not use quotation marks in any data field.  
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information		
(Complete this page for comments from one organization or individual.)		
Name:	Robert Penny, Program Engineering Manager	
Organization:	Entergy Nuclear Northeast	
Telephone:	917-272-3510	
E-mail:	rpenny@entergy.com	
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
<input checked="" type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> RF	<input checked="" type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> SERC	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities



## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

### Please Enter All Comments in Simple Text Format.

1. Which of the following describes your organization:

- We own or operate a nuclear power plant.
- We provide transmission services to a nuclear power plant.
- Other:

2. In response to stakeholder comments, the drafting team modified the title and altered the sequence of requirements. Do you agree with the changes the new title and the revised sequence of requirements?

- Yes
- No

Comments:

3. In response to stakeholder comments, the drafting team modified the definition of 'Nuclear Plant Interface Requirements (NPIR)' and added the term, 'Nuclear Plant Licensing Requirements (NPLR)'. These changes were made to help make the distinction between requirements **mandated** by the jurisdictional nuclear regulatory agency for the nuclear plant (NPLR) and the **mutually agreed upon interface requirements** (NPIR) that support the nuclear power plant in meeting its licensing requirements. The standard is intended to establish a **collaborative effort** between the nuclear plant owner/operator and the transmission entities that provide those necessary services. The NPIR will vary depending on such specifics as plant licensing commitments, plant-grid interconnection design, plant design itself, and location. The details of how the NPIR are addressed will be set forth in the agreement(s) required by this standard.

Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

- Yes
- No

Comments:

4. Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement?

- Yes
- No

Comments:

5. The revised draft standard establishes a single nuclear entity (the Nuclear Plant Generator Operator) that must work with the appropriate transmission authorities to identify the applicable transmission entities. The Nuclear Plant Generator Operator must provide its proposed nuclear interface requirements (NPIR) to the applicable

## **Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

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transmission entities (see R1 and M1). The specific entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR). The standard requires the Nuclear Plant Generator Operator and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs will be addressed and implemented (see R2 and M2). The names of the responsible entities must be clearly identified in these agreements (see R9.1.2 and A4.2).

Do you agree that the changes made by the drafting team address stakeholder concerns that 'transmission entities' is too broad a term?

Yes

No

Comments: See comments provided by NPCC.

6. Are you aware of any regional differences that would be required as a result of this standard?

Yes

No

If yes, please explain:

7. If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here: Entergy Nuclear Northeast support FPL, LLC comments relating for the need to add an additional provision as R9.3.8. "All other available measures to preserve/restore the reliability of the transmission system prior to cycling a nuclear unit." This comment is based on the potential of a unit trip during an unplanned power changes. The unplanned loss of a nuclear unit can have a significant adverse impact on grid reliability, as well as challenging the unit safe shutdown system .



**Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

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Individual Commenter Information		
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Organization:		
Telephone:		
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NERC Region		Registered Ballot Body Segment
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<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities

**Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

**Group Comments (Complete this page if comments are from a group.)**

Group Name: **ISO/RTO Council**  
Lead Contact: Charles Yeung  
Contact Organization: SPP  
Contact Segment: 2  
Contact Telephone: 832-724-6142  
Contact E-mail: cyeung@spp.org

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>
Tom Bowe	PJM	RFC	2
Peter Brandien	ISO-NE	NPCC	2
Mike Calimano	NYISO	NPCC	2
Ron Falsetti	IESO	NPCC	2
Brent Kingsford	CAISO	WECC	2
Anita Lee	Alberta	WECC	2
Steve Meyers	ERCOT	ERCOT	2
Bill Phillips	MISO	RFC	2

\* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

---

### Please Enter All Comments in Simple Text Format.

1. Which of the following describes your organization:

- We own or operate a nuclear power plant.
- We provide transmission services to a nuclear power plant.
- Other: (except Alberta)

2. In response to stakeholder comments, the drafting team modified the title and altered the sequence of requirements. Do you agree with the changes the new title and the revised sequence of requirements?

- Yes
- No

Comments: The title properly reflects the object of the standard. Regarding the requirements see response to question 7.

3. In response to stakeholder comments, the drafting team modified the definition of 'Nuclear Plant Interface Requirements (NPIR)' and added the term, 'Nuclear Plant Licensing Requirements (NPLR)'. These changes were made to help make the distinction between requirements **mandated** by the jurisdictional nuclear regulatory agency for the nuclear plant (NPLR) and the **mutually agreed upon interface requirements** (NPIR) that support the nuclear power plant in meeting its licensing requirements. The standard is intended to establish a **collaborative effort** between the nuclear plant owner/operator and the transmission entities that provide those necessary services. The NPIR will vary depending on such specifics as plant licensing commitments, plant-grid interconnection design, plant design itself, and location. The details of how the NPIR are addressed will be set forth in the agreement(s) required by this standard.

Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

- Yes
- No

Comments: Yes - The clarification provides a clearer statement of the SDT's focus.

No - the changes themselves are not likely to achieve the intended goal. The NIPRs as defined are independent agreements between and among a variety of entities. Those requirements are not standard, nor are the entities involved a standized group.

The FERC has informed NERC that the NERC standards must not be ambiguous with respect to specificity of requirements, measureability and degree of compliance. And further, the standards must not create undue negative impact on competition, and the applicability must be clear.

The proposed requirements as written do not focus on a specific outcome (they may intend to focus on a specific outcome, but in their effort to efficiently cover their objective,

## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

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they effectively propose a one-size-fits-all standard - one that lacks specificity and clarity).

4. Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement?

Yes

No

Comments: Because this standard does not propose any specific requirement of its own (it only requires that entities meet requirements set forth by others), it can't conflict with anyone else's requirements.

Because the SDT adopted a broad brush term (Transmission Entities) and uses that term causally - the requirements cannot be assigned a one-to-one relationship. This standard imposes indirect obligations (if it applies to you then you must do .....; if it doesn't apply then don't worry). As noted in response to Q3 above, FERC has suggested that such ill-defined obligations will be challenged. The question becomes, who decides who is responsible? The Plant operator? The license? The NRC? NERC? This issue must be resolved before the standard is approved - not after.

5. The revised draft standard establishes a single nuclear entity (the Nuclear Plant Generator Operator) that must work with the appropriate transmission authorities to identify the applicable transmission entities. The Nuclear Plant Generator Operator must provide its proposed nuclear interface requirements (NPIR) to the applicable transmission entities (see R1 and M1). The specific entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR). The standard requires the Nuclear Plant Generator Operator and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs will be addressed and implemented (see R2 and M2). The names of the responsible entities must be clearly identified in these agreements (see R9.1.2 and A4.2).

Do you agree that the changes made by the drafting team address stakeholder concerns that 'transmission entities' is too broad a term?

Yes

No

Comments: See comments to question 7.

6. Are you aware of any regional differences that would be required as a result of this standard?

Yes

No

If yes, please explain: See comments to question 7.

## **Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

7. If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here:

This standard lacks the transparency, and clarity required of a NERC standard. For example:

1. The use of the generic Transmission Entities does nothing for clarity. From a reading of the standard, no one can be certain who the requirement applies to. Responsibility is not assigned it is implied - and NERC mandatory standards should not be so ill-defined.
2. There is no standard of behavior being mandated. The only "standard" is that everyone respects the agreements that they agree to.

What seems to be the issue?

1. From a health and welfare perspective all relevant nuclear reliability issues must be identified and enforced. The 'common good' needs of the general public must be respected at all costs. From the NERC Standards perspective the most important issue is how to assure that NERC mandatory standards clearly and unambiguously mandate those reliability needs not already covered by other standards.
2. From the plant operator's perspective the issue seems to be that the operator wants to ensure that it can get/maintain its operating license. Where these requirements are common to any resource, the requirements should be covered. Where the requirements represent an added (i.e. not common) expense, then those requirements are not reliability issues as much as they are market issues. Distinguishing between the two is critical to this standard.
3. From a NERC standards perspective, the proposed requirements must comply with the rules and processes submitted in the NERC Compliance Filing to FERC.

The Standard Drafting Team proposes that a common set of requirements be imposed on each member of a predefined set of entities - even though the SDT recognizes that each requirement does not apply to each and every entity in the set. The SDT is urged first to identify specific common reliability requirements:

- That off-site power to nuclear power plants must be ensured
- That all identified and agreed to operating limits are met
- others?

The SDT must ensure that proposed requirements are not redundant with other NERC standards.

- NUC-001, R1 – R5, R7 may already be covered by FAC-005 R1 and R2 (that requires facility ratings (using the entity's own methodology) be developed. FAC-008 & 009 requires the information be exchanged and respected. FAC-012 requires the system limits be respected in both operations and planning. Plant integration assessments are already mandated by FAC-002 R1. R1.3 already requires evidence of coordination and cooperation.

## **Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

Seemingly the one issue that is not specifically covered in NERC's current Standards is the obligation to explicitly notify the plant operator of maintenance plans and to coordinate those plans with the plant operator. As written NUC-001, R6 could be seen as providing commercial information to another corporate entity. The need to provide market safeguards must be recognized by the SDT. The intent may be appropriate but the specific requirement may be questionable.

The Reliability Coordinators and Transmission Operators are already obligated to meet the agreed to limits. The outstanding question is what happens when one of the party has reservations about the commercial aspects of the proposed requirement? The SDT must provide a clear direction. Does it require all disputed requirements be submitted to an independent Board of Review (within FERC?, within NERC?, within the RRO?); or are the current standards (as noted above) sufficient?

The SDT is asked to reconsider NUC-001 R9 as a NERC Guide or Technical paper as opposed to a list of administrative elements that may or may not apply.

The bottom line is:

1. The terminology must be changed to agree with the Functional Model Terms and the requirements be specific to each entity; and
2. The nuclear plant needs to ensure the specific plant nuclear licensing requirements associated with the offsite circuits are not violated. This standard is an attempt to REQUIRE this kind of coordination and communication. More work is needed to ensure the standard is properly written.

It is suggested that the SDT conduct a technical workshop among the Nuclear Plant Operators, NERC Standards Manager(s), NERC's Functional Model Working Group to address the structural issues, and then conduct another open workshop to drive consensus on the issues of concern.

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NERC Region		Registered Ballot Body Segment
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<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities





## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

### Please Enter All Comments in Simple Text Format.

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- We own or operate a nuclear power plant.
- We provide transmission services to a nuclear power plant.
- Other:

2. In response to stakeholder comments, the drafting team modified the title and altered the sequence of requirements. Do you agree with the changes the new title and the revised sequence of requirements?

- Yes
- No

Comments:

3. In response to stakeholder comments, the drafting team modified the definition of 'Nuclear Plant Interface Requirements (NPIR)' and added the term, 'Nuclear Plant Licensing Requirements (NPLR)'. These changes were made to help make the distinction between requirements **mandated** by the jurisdictional nuclear regulatory agency for the nuclear plant (NPLR) and the **mutually agreed upon interface requirements** (NPIR) that support the nuclear power plant in meeting its licensing requirements. The standard is intended to establish a **collaborative effort** between the nuclear plant owner/operator and the transmission entities that provide those necessary services. The NPIR will vary depending on such specifics as plant licensing commitments, plant-grid interconnection design, plant design itself, and location. The details of how the NPIR are addressed will be set forth in the agreement(s) required by this standard.

Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

- Yes
- No

Comments:

4. Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement?

- Yes
- No

Comments:

5. The revised draft standard establishes a single nuclear entity (the Nuclear Plant Generator Operator) that must work with the appropriate transmission authorities to identify the applicable transmission entities. The Nuclear Plant Generator Operator must provide its proposed nuclear interface requirements (NPIR) to the applicable

## **Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

transmission entities (see R1 and M1). The specific entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR). The standard requires the Nuclear Plant Generator Operator and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs will be addressed and implemented (see R2 and M2). The names of the responsible entities must be clearly identified in these agreements (see R9.1.2 and A4.2).

Do you agree that the changes made by the drafting team address stakeholder concerns that 'transmission entities' is too broad a term?

Yes

No

Comments:

6. Are you aware of any regional differences that would be required as a result of this standard?

Yes

No

If yes, please explain:

7. If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here: FPL Nuclear requests that the Nuclear Plant Interface Coordination standard be modified by adding the following provision as R9.3.8:

Provisions to utilize all other available measures to preserve/restore the reliability of the transmission system prior to cycling nuclear plants.

FPL Nuclear provides the following statement in support of this proposed requirement:

FPL Nuclear agrees with the overall purpose of the proposed standard in that coordination between Nuclear Plant Generator Operators and Transmission Entities is required to ensure nuclear plant safety. Nuclear power plants should be considered as a solution to resolve system problems only when all other available actions have been considered and implemented. Nuclear plants are designed as base load units. Frequent cycling and rapid ramping are not advisable. Therefore, involvement of a nuclear facility in the mitigation of electric system problems should occur only after all other available actions have been considered and implemented. The existing NERC Reliability Standards on Emergency Preparedness and Operations (EOP-005-0 and EOP-005-1), which deal with system restoration plans, require that the affected Transmission Operators shall give high priority to restoration of off-site power to nuclear stations. Similarly, cycling nuclear plants should be considered the solution of last resort when actions are required to re-establish transmission system reliability. In this regard, FPL Nuclear would note the comments on this subject of the Commissioners of the Nuclear Regulatory Commission at a joint

## **Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

meeting with the Federal Energy Regulatory Commission on April 24, 2006 (FERC Docket No. AD06-6-000).

NRC Chairman Diaz stated at transcript page 10:

... nuclear power plants are big producers of electricity, and they also in many ways, anchor part[s] of the grids in which they are. They are also not very good machines for moving up and down in power. They were really designed and operated as base power units, and that's the way they really work best. We like to keep them like that, like to keep them safe and operating.

NRC Commissioner McGaffigan supported Chairman Diaz remarks at transcript pages 13-14:

And I would echo the Chairman's point. I know this is an issue before you and we're not going to discuss it today, but, in public, it's fair for me to say that it is not good for nuclear power plants to go up and down, and so the particular issue in New England that I think is before you in some way, where Seabrook is currently going up and down, because it's the first contingency for some agreement between New England and New York, is not a good idea. There's got to be a coal plant somewhere that can go up and down, but I say that -- you have two of us now saying that going up and down is not a good idea for nuclear power plants.

NRC Commissioner Merrifield elaborated on these concerns at transcript pages 16-17):

I would add, in recognizing the sensitivities from your Commission in ongoing issues, as originally hailing from New Hampshire, issues associated with the Seabrook Station and its operation, are very important to the folks who I hold near and dear. That activity, in terms of bringing that plant up and down, is of, in my particular concern, significant. There have been a total, I believe, at this point, of 20 instances in which that plant has been brought up or down, averaging nine over the course of the last three months. So that is certainly one that, although I know you're limited in terms of your getting into it, certainly I want to use the opportunity to express my concern and to agree with Commissioner McGaffigan.

We don't believe and I don't believe it's a safety issue at the plant. It is an ongoing challenge to the operations by the individuals who are in the control room, and certainly with our maintenance activities, our allowance for online maintenance, that makes that issue even more difficult, where a utility is attempting to do online maintenance and plan on that, to have facing them, multiple down-powers through the course of a week, and in some cases, multiple down-powers during the course of a day.

As a general matter, I think that's imprudent, and it's certainly something I would recommend that the Commission, your Commission take a look at, because, certainly from my standpoint -- and I agree with Commissioner McGaffigan -- that is not the direction you would want to see it.

## **Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

NRC Commissioner Jaczko noted his concerns in this area as well at transcript pages 18-19, requested that the FERC work with the NRC on these concerns:

... there are areas in which I think there is a nexus between the work that you do and the work that we do. Certainly, Seabrook is one case in which I think there is that nexus and I think this is a good opportunity for us to be able get together and discuss those issues.

These comments by the NRC Commissioners provide a reasonable basis for the proposed provision, which requires that the agreement between the nuclear plant owner and the transmission entity utilize other available measures prior to cycling a nuclear plant.

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**Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

**Group Comments (Complete this page if comments are from a group.)**

Group Name: **Southern Company**  
 Lead Contact: **J T Wood**  
 Contact Organization: **Southern Company Services**  
 Contact Segment: **1**  
 Contact Telephone: **205-257-6238**  
 Contact E-mail: **jtwood@southernco.com**

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>
<b>Marc Butts</b>	<b>Southern Company Services</b>	<b>SERC</b>	<b>1</b>
<b>Roman Carter</b>	<b>Southern Company Services</b>	<b>SERC</b>	<b>1</b>
<b>Jim Busbin</b>	<b>Southern Company Services</b>	<b>SERC</b>	<b>1</b>
<b>William Pope</b>	<b>Gulf Power Company</b>	<b>SERC</b>	<b>3</b>
<b>Tom Sims</b>	<b>Southern Company Services</b>	<b>SERC</b>	<b>1</b>
<b>Terry Crawley</b>	<b>Southern Company Services</b>	<b>SERC</b>	<b>5</b>
<b>Jim Viikinsalo</b>	<b>Southern Company Services</b>	<b>SERC</b>	<b>1</b>
<b>Raymond Vice</b>	<b>Southern Company Services</b>	<b>SERC</b>	<b>1</b>
<b>Ben Pilleteri</b>	<b>Alabama Power Company</b>	<b>SERC</b>	<b>3</b>
<b>Phil Winston</b>	<b>Georgia Power Company</b>	<b>SERC</b>	<b>3</b>

\* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

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- Yes
- No

Comments:

3. In response to stakeholder comments, the drafting team modified the definition of 'Nuclear Plant Interface Requirements (NPIR)' and added the term, 'Nuclear Plant Licensing Requirements (NPLR)'. These changes were made to help make the distinction between requirements **mandated** by the jurisdictional nuclear regulatory agency for the nuclear plant (NPLR) and the **mutually agreed upon interface requirements** (NPIR) that support the nuclear power plant in meeting its licensing requirements. The standard is intended to establish a **collaborative effort** between the nuclear plant owner/operator and the transmission entities that provide those necessary services. The NPIR will vary depending on such specifics as plant licensing commitments, plant-grid interconnection design, plant design itself, and location. The details of how the NPIR are addressed will be set forth in the agreement(s) required by this standard.

Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

- Yes
- No

Comments:

4. Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement?

- Yes
- No

Comments:

5. The revised draft standard establishes a single nuclear entity (the Nuclear Plant Generator Operator) that must work with the appropriate transmission authorities to identify the applicable transmission entities. The Nuclear Plant Generator Operator must provide its proposed nuclear interface requirements (NPIR) to the applicable

## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

transmission entities (see R1 and M1). The specific entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR). The standard requires the Nuclear Plant Generator Operator and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs will be addressed and implemented (see R2 and M2). The names of the responsible entities must be clearly identified in these agreements (see R9.1.2 and A4.2).

Do you agree that the changes made by the drafting team address stakeholder concerns that 'transmission entities' is too broad a term?

Yes

No

Comments:

6. Are you aware of any regional differences that would be required as a result of this standard?

Yes

No

If yes, please explain:

7. If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here: **It is difficult to refer to a Load Serving Entity or a Distribution Provider as a Transmission Entity. Maybe the group described under 4.2 should be named "Power Supply Entities". The intent of Requirement R 9.3.5 "Provision to consider nuclear plant coping times as required by the NPLR in coordination of grid and nuclear plant restoration following a nuclear plant loss of Off-site Power." is not clear. Requirement 9 outlines the items that should be covered in an interface agreement between a Nuclear Plant Operator and the Transmission Entity. Requirement 9.3.5 falls under the section titled "Operations and maintenance". The intent is to make sure that Transmission Entity is aware of the impact that loss of Off-site Power has on the calculations used in determination of a plant's coping time. The concern is that as worded there may be some confusion that following the unexpected LOSP there is an expectation to have off-site power returned within the coping time. The layman's understanding of coping time is that it represents the maximum probabilistic time that would be expected, based on station design and historical events, to return off-site or on-site (diesels) AC power to at least one of the nuclear plant's emergency trains of AC equipment. Our understanding is that the critical event that requires recovery within the coping time is a Station Blackout (SBO) which is the total loss of all off-site and on-site ac supply. It seems confusing that the NERC requirement mixes coping time and grid restoration with an LOSP. What the agreement required in section 9 needs to accomplish is the following: 1)Clearly define the off-site power supplies (R 9.2.2), 2)inform the Transmission Entity on the severity of either a partial or total LOSP for a unit's operation, 3)inform the Transmission Entity on the long term impact of LOSPs (frequency and duration) being a possible increase in the required coping time (plant modifications), 4)inform the Transmission Entity of the severity of an actual SBO event compared to a LOSP event. Proposed rewording: "Documentation of the Transmission Entity's priority for restoration of nuclear plant off-site power in overall grid restoration plans. The agreement should clearly provide an understanding of the severity of a LOSP and a SBO condition. The agreement should state the plant's SBO coping times and the cumulative impact that LOSPs have on the coping time**



## **Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

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**determination." We suggest that the Drafting Team consider changing the Risk Factor of Requirement R4 from "Medium" to "High". It seems that failure to incorporate NPIRs into real-time reliability analysis, failure to operate the electric system to meet NPIRs while respecting SOLs, and failure to inform the Nuclear Plant Generator Operator and coordinate mitigating actions when NPIRs cannot be met could collectively result in a very serious threat to continued safe nuclear plant operation.**

**Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

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Do submit any formatted text or markups in a separate WORD file.

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Do not use numbering or bullets in any data field.  
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Do not submit a response in an unprotected copy of this form.

<b>Individual Commenter Information</b>		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> RF	<input type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> SERC	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities

**Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

**Group Comments (Complete this page if comments are from a group.)**

Group Name: **SCE&G ERO Working Group**  
 Lead Contact: **Sally Ballentine Wofford**  
 Contact Organization: **South Carolina Electric & Gas, Company**  
 Contact Segment: **Transmission Owner**  
 Contact Telephone: **803-217-9343**  
 Contact E-mail: **sbwofford@scana.com**

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>
Lee Xanthakos	South Carolina Electric & Gas Co	SERC	1
Hubert C. Young	South Carolina Electric & Gas Co	SERC	3
Richard Jones	South Carolina Electric & Gas Co	SERC	5
Henry Delk	South Carolina Electric & Gas Co	SERC	
Jonh T. Blalock	South Carolina Electric & Gas Co	SERC	
Dan Goldston	South Carolina Electric & Gas Co	SERC	
Todd Johnson	South Carolina Electric & Gas Co	SERC	
Jay Hammond	South Carolina Electric & Gas Co	SERC	
Phil Kleckley	South Carolina Electric & Gas Co	SERC	
Pat Longshore	South Carolina Electric & Gas Co	SERC	
Simon Shealy	South Carolina Electric & Gas Co	SERC	
Bob Smith	South Carolina Electric & Gas Co	SERC	
Andy Bowden	South Carolina Electric & Gas Co	SERC	
Arnie Cribb	South Carolina Electric & Gas Co	SERC	
Marion Frick	South Carolina Electric & Gas Co	SERC	
Ernie Gibbons	South Carolina Electric & Gas Co	SERC	
Jerry Lindler	South Carolina Electric & Gas Co	SERC	
Wayne Stuart	South Carolina Electric & Gas Co	SERC	
Brad Stokes	South Carolina Electric & Gas Co	SERC	
Shawn McCarthy	South Carolina Electric & Gas Co	SERC	
Terrence J. Harris	South Carolina Electric & Gas Co	SERC	

\* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

### Please Enter All Comments in Simple Text Format.

1. Which of the following describes your organization:

- We own or operate a nuclear power plant.
- We provide transmission services to a nuclear power plant.
- Other:

2. In response to stakeholder comments, the drafting team modified the title and altered the sequence of requirements. Do you agree with the changes the new title and the revised sequence of requirements?

- Yes
- No

Comments:

3. In response to stakeholder comments, the drafting team modified the definition of 'Nuclear Plant Interface Requirements (NPIR)' and added the term, 'Nuclear Plant Licensing Requirements (NPLR)'. These changes were made to help make the distinction between requirements **mandated** by the jurisdictional nuclear regulatory agency for the nuclear plant (NPLR) and the **mutually agreed upon interface requirements** (NPIR) that support the nuclear power plant in meeting its licensing requirements. The standard is intended to establish a **collaborative effort** between the nuclear plant owner/operator and the transmission entities that provide those necessary services. The NPIR will vary depending on such specifics as plant licensing commitments, plant-grid interconnection design, plant design itself, and location. The details of how the NPIR are addressed will be set forth in the agreement(s) required by this standard.

Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

- Yes
- No

Comments:

4. Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement?

- Yes
- No

Comments:

5. The revised draft standard establishes a single nuclear entity (the Nuclear Plant Generator Operator) that must work with the appropriate transmission authorities to identify the applicable transmission entities. The Nuclear Plant Generator Operator must provide its proposed nuclear interface requirements (NPIR) to the applicable

## **Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

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Do you agree that the changes made by the drafting team address stakeholder concerns that 'transmission entities' is too broad a term?

Yes

No

Comments:

6. Are you aware of any regional differences that would be required as a result of this standard?

Yes

No

If yes, please explain:

7. If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here:

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Do not submit a response in an unprotected copy of this form.

Individual Commenter Information		
(Complete this page for comments from one organization or individual.)		
Name:	Jason Shaver	
Organization:	American Transmission Complany LLC	
Telephone:	262 506 6885	
E-mail:	jshaver@atcllc.com	
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
<input checked="" type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
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## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

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1. Which of the following describes your organization:

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- We provide transmission services to a nuclear power plant.
- Other:

2. In response to stakeholder comments, the drafting team modified the title and altered the sequence of requirements. Do you agree with the changes the new title and the revised sequence of requirements?

- Yes
- No

Comments:

3. In response to stakeholder comments, the drafting team modified the definition of 'Nuclear Plant Interface Requirements (NPIR)' and added the term, 'Nuclear Plant Licensing Requirements (NPLR)'. These changes were made to help make the distinction between requirements **mandated** by the jurisdictional nuclear regulatory agency for the nuclear plant (NPLR) and the **mutually agreed upon interface requirements** (NPIR) that support the nuclear power plant in meeting its licensing requirements. The standard is intended to establish a **collaborative effort** between the nuclear plant owner/operator and the transmission entities that provide those necessary services. The NPIR will vary depending on such specifics as plant licensing commitments, plant-grid interconnection design, plant design itself, and location. The details of how the NPIR are addressed will be set forth in the agreement(s) required by this standard.

Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

- Yes
- No

Comments:

4. Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement?

- Yes
- No

Comments:

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## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

transmission entities (see R1 and M1). The specific entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR). The standard requires the Nuclear Plant Generator Operator and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs will be addressed and implemented (see R2 and M2). The names of the responsible entities must be clearly identified in these agreements (see R9.1.2 and A4.2).

Do you agree that the changes made by the drafting team address stakeholder concerns that 'transmission entities' is too broad a term?

Yes

No

**Comments: The Standard Drafting Team has introduced a new sub-entity titled "Nuclear Plant Generator Operator" into the NERC Functional Model. ATC does not agree with the introduction of this new sub-entity category.**

**Concern:**

**ATC is uncertain of the consequence of this new sub-entity on existing standards. Would a Nuclear Plant Generator Operator have to be listing in other standards that are applicable to them and other Generator Operators?**

**If this term is accepted by the Industry it will effectively split the Generator Operator group into two camps. Those that operate a nuclear facility and those that do not. This type of work should not be done without the input of the Functional Model Task Force Group and the NERC compliance group.**

**Suggested Solution:**

**1) Delete the term Nuclear Plant Generator Operator.**

**2) In the applicability section of the document use the following language:**

**Generator Operator: Those Generator Operators that have a Nuclear Plant License and are responsible for operation of a nuclear facility licensed to produce commercial power.**

**ATC is also concerned with the term Transmission Entity.**

**First, applicability will be determined by a subsequent agreement document not by the Applicability Section of the standard. This situation is unique in NERC standards. Some entities that are listed in the Applicability section may not know that they are required to meet this agreement unless the Generator Operator informs them. What steps has the STD done to discuss this topic with NERC? ATC would strongly suggest that NERC clarify the auditability of this standard and post that information with the standards next posting.**

**Overall ATC is reluctant to support a standard where Applicability is determined by an alternate agreement. Lastly, this situation seems to go against NERC's "Essential Attributes for Technically Excellent Reliability Standards". These attributes are identified in NERC's FERC filing SECTION 300 Reliability Standards Development".**

6. Are you aware of any regional differences that would be required as a result of this standard?

Yes

## **Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

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No

If yes, please explain:

7. If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here:
8. **Requirement 1 ATC suggest that the word "proposed" is added in front of the term "NPIR".**
9. **Requirement 1: "...Transmission Entities and shall verify receipt of the "proposed" NPIRs."**

**The standard drafting team uses the words "electric system" and "transmission system" through out the standard. ATC strongly suggest that the STD uses defined NERC terms or writes a definitions for each of the above mentioned terms.**

### **Requirement 9.3.4**

**This requirement has two parts ATC suggest that the second part of the requirment be placed in a sub-sub category.**

#### **Proposed change**

#### **Requirement 9.3.4.1**

**This provision shall included reponsibility to notify the Nuclear Plant Generator Operator within a specified time frame. "The standard drafting team should consider entering a not to exceed time frame."**

### **Requirement 9.3.6**

**ATC believes that this requirement goes beyond the intent of the standard and should be removed. The intent of this standard is to coordinate the physical interface between nuclear plants and the transmission system. This requirement seems to have been thrown into requirements with out being completely thought out.**

**ATC's other concern is that this requirement is too broad to comply with. It seems that the STD is attempting to require these facilities to be included in the CIP-002 standards without specifically mentioning that standard. When the CIP standards were written it's our recollection that that STD specificall aviod nuclear facilities because of respect for the NRC.**

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Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
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- We own or operate a nuclear power plant.  
 We provide transmission services to a nuclear power plant.  
 Other:

2. In response to stakeholder comments, the drafting team modified the title and altered the sequence of requirements. Do you agree with the changes the new title and the revised sequence of requirements?

- Yes  
 No

Comments:

3. In response to stakeholder comments, the drafting team modified the definition of 'Nuclear Plant Interface Requirements (NPIR)' and added the term, 'Nuclear Plant Licensing Requirements (NPLR)'. These changes were made to help make the distinction between requirements **mandated** by the jurisdictional nuclear regulatory agency for the nuclear plant (NPLR) and the **mutually agreed upon interface requirements** (NPIR) that support the nuclear power plant in meeting its licensing requirements. The standard is intended to establish a **collaborative effort** between the nuclear plant owner/operator and the transmission entities that provide those necessary services. The NPIR will vary depending on such specifics as plant licensing commitments, plant-grid interconnection design, plant design itself, and location. The details of how the NPIR are addressed will be set forth in the agreement(s) required by this standard.

Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

- Yes  
 No

Comments: **The standard, as written, places too much emphasis on the transmission system being operated to meet the needs of (in our case) a single generator. It states, in R4.2. , that the transmission entity “ ... shall operate the electric system to meet the Nuclear Plant Interface Requirements (NPIR), while respecting the System Operating Limits.” BPA must put the safety and reliability of the entire system first, while respecting the NIPRs**

**While we agree that nuclear plants have a unique subset of requirements to ensure safe and reliable operation, these requirements should be addressed in the individual interconnection agreements between the plants and the transmission provider – not in a “special” standard that goes beyond the needs of other types of generation.**

4. Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement?

- Yes

**Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

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No

Comments: **Unsure. Without a full understanding of the NPIR requirements and an opportunity to compare those requirements with standards, statutes, tariffs, rates, legislative requirements or other agreements it is not possible at this point to determine if conflicts exist. This would be an important element of work to complete to assure we don't increase operational, financial or legal risks for Transmission system operators or NPPs. We recommend the committee not implement this standard until that level of analyses can be completed by affected Transmission Operators, Balancing Authorities and Load Serving Entities.**

5. The revised draft standard establishes a single nuclear entity (the Nuclear Plant Generator Operator) that must work with the appropriate transmission authorities to identify the applicable transmission entities. The Nuclear Plant Generator Operator must provide its proposed nuclear interface requirements (NPIR) to the applicable transmission entities (see R1 and M1). The specific entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR). The standard requires the Nuclear Plant Generator Operator and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs will be addressed and implemented (see R2 and M2). The names of the responsible entities must be clearly identified in these agreements (see R9.1.2 and A4.2).

Do you agree that the changes made by the drafting team address stakeholder concerns that 'transmission entities' is too broad a term?

Yes

No

Comments: **The term "Transmission Entities" as previously defined was too broad, but now it is too vague in that it is not defined at all. If the term is going to be used in this standard, it must be defined to avoid confusion.**

6. Are you aware of any regional differences that would be required as a result of this standard?

Yes

No

If yes, please explain:

7. If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here: **The Drafting Team has stated that the need for this standard is supported by an increase in the number of times NPPs have lost offsite power in 2003 and 2004 compared to the last 10-year average. It has also stated that these events may not be directly related to violations of NPP requirements, yet this standard clearly places the "fix" with the Transmission Owners. Since it is not certain that violations of NPP requirements has caused the increase in interruptions, it is not clear how this standard, as written, will reverse that trend. If there is an upward trend in the number interruptions of offsite supply to NPPs, then the NPPs should be addressing their needs on a plant-by-plant basis in their Interconnection Agreements; not in a new NERC standard.**

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Organization:		
Telephone:		
E-mail:		
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## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

### Please Enter All Comments in Simple Text Format.

1. Which of the following describes your organization:

- We own or operate a nuclear power plant.
- We provide transmission services to a nuclear power plant.
- Other: **Regional Reliability Council and Reliability Coordinator which includes five operating nuclear units within its Reliability footprint.**

2. In response to stakeholder comments, the drafting team modified the title and altered the sequence of requirements. Do you agree with the changes the new title and the revised sequence of requirements?

- Yes
- No

Comments: **We appreciate the significant time and effort of the DT at developing this important standard.**

3. In response to stakeholder comments, the drafting team modified the definition of 'Nuclear Plant Interface Requirements (NPIR)' and added the term, 'Nuclear Plant Licensing Requirements (NPLR)'. These changes were made to help make the distinction between requirements **mandated** by the jurisdictional nuclear regulatory agency for the nuclear plant (NPLR) and the **mutually agreed upon interface requirements** (NPIR) that support the nuclear power plant in meeting its licensing requirements. The standard is intended to establish a **collaborative effort** between the nuclear plant owner/operator and the transmission entities that provide those necessary services. The NPIR will vary depending on such specifics as plant licensing commitments, plant-grid interconnection design, plant design itself, and location. The details of how the NPIR are addressed will be set forth in the agreement(s) required by this standard.

Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

- Yes
- No

Comments:

4. Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement?

- Yes
- No

Comments: **We would suggest the addition of requirement R4.5 to state that (transmission entities shall)....**

**"Utilize all other available measures / resources to preserve / restore the reliability of the transmission system prior to re-dispatching a Nuclear unit's real and reactive power output." In our opinion, this is a critical element for preserving the stability of the nuclear**

## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

plants as base load units. These units are not accustomed to load following or regulation and should be protected as reliable base load resources. This position is consistent with several opinions and positions expressed by the NRC. Dispatch changes on Nuclear units are much more complex than conventional fossil fuel units and rapid dispatch changes usually involve exposing the local system to an increased risk of a large unplanned outage with a much more involved return to service process than other unit recoveries.

**Requirement R5, "The Nuclear Plant Generator Operator shall operate per the Agreements developed in accordance with this standard. " This requirement may introduce unintentional conflicts or mis-understanding across the industry (between transmission and nuclear generation) and the various regulator segments, especially with regard to Compliance metrics. We believe the DT understands that the Nuclear facilities "shall" operate in accordance with their much more formalized Nuclear Licensing requirements as mandated by the jurisdictional nuclear regulatory agency for the plant (NRC or Canadian equivalent). Where conflicts or room for interpretation exists, between licensing requirements and NPIR Agreement requirements, the plants must operate in accordance with their licenses and not the Agreements. The requirement is therefore redundant to a plants licensing basis and could be deleted from the standard.**

**If the requirement is there to address a concern by the DT (that the plants operate in a manner consistent with the Agreements), the requirement may be more effective if it is written to require the Nuclear Plant Generator Operator to validate that the appropriate operating licensing procedures (or bases) are accurately incorporated into the NPIRs and resulting Agreements.**

**This would leave the appropriate accountabilities (to the jurisdictional nuclear regulatory agency) for the operations and accountability to the ERO for deviations from NPIR agreements. (the standard requirement language would be consistent with proper enforcement protocol).**

5. The revised draft standard establishes a single nuclear entity (the Nuclear Plant Generator Operator) that must work with the appropriate transmission authorities to identify the applicable transmission entities. The Nuclear Plant Generator Operator must provide its proposed nuclear interface requirements (NPIR) to the applicable transmission entities (see R1 and M1). The specific entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR). The standard requires the Nuclear Plant Generator Operator and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs will be addressed and implemented (see R2 and M2). The names of the responsible entities must be clearly identified in these agreements (see R9.1.2 and A4.2).

Do you agree that the changes made by the drafting team address stakeholder concerns that 'transmission entities' is too broad a term?

Yes

No

Comments: **Is it the intention of the DT that the " Nuclear Plant Generator Operator" (NPGO) will become a new "registered" entity with regards to standards development and compliance?**

## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

**If so, the implementation plan may need to address integrating / adding (NPGO) to the applicability of other standards that have only been identified as applicable to Generator Operators (GOPs).**

6. Are you aware of any regional differences that would be required as a result of this standard?

Yes

No

If yes, please explain:

7. If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here: **Requirement R9.3.3, "Coordination of testing, calibration and maintenance of on-site and off-site power supply systems and related components" is in our opinion much too broad as written. The requirement should be clearly separated into the three areas ( testing, calibration, maintenance ) and the applicable equipment should be more clearly defined. We recommend that the DT more clearly define the bounds for this requirement so that the desires of the DT are more clearly conveyed to the industry and so that the requirement is measurable.**

8. **i.e. as written I could state that a 230kv line outage, six transmission stations away from a nuclear plant switchyard should be coordinated with the plant since it is part of its "off-site" power supply. Does the test equipment used to validate settings and perform maintenance on the relays at this hypothetical transmission station need to have the same rigorous traceability requirements as far as calibration, as the test equipment used to calibrate the undervoltage relays on the nuclear plants on-site distribution busses.**

**These are the types of interpretations that can and would be made unless the requirement is more clearly defined.**

**R9.3.5...The terms, "plant coping times" should become a defined term since this is not a common term for non-nuclear personnel. This is especially important if the term and times will be used in any way to provide relevance and severity of NPLRs and NPIRs to the responsible transmission entity.**

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Individual Commenter Information		
(Complete this page for comments from one organization or individual.)		
Name:		
Organization:		
Telephone:		
E-mail:		
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
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<input type="checkbox"/> SERC	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities

**Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

**Group Comments (Complete this page if comments are from a group.)**

Group Name: **Midwest ISO Nuclear Plant Working Group**  
 Lead Contact: **Terry Volkman**  
 Contact Organization: **Midwest ISO**  
 Contact Segment: **Transmission Owners and Electric Generators**  
 Contact Telephone: **612-419-0672**  
 Contact E-mail: **tvolkmann@midwestiso.org**

<b>Additional Member Name</b>	<b>Additional Member Organization</b>	<b>Region*</b>	<b>Segment*</b>
Tim Lensmire	Nuclear Management Co	RFC	5
James Thorson	DTE Energy	RFC	5
John Gyath	Exelon	SERC	5
David Waller	Ameren	SERC	5
Tom Lillehei	Nuclear Management Co	MRO	5
Ed Watzl	Nuclear Management Co	MRO	5
Steve Myres	FPL	MRO	5
Robert Deppi	First Energy	RFC	5
Robert Hamm	Nuclear Management Co	RFC	5
Steve Gocek	NPPD	MRO	5
Bill Blessie	OPPD	MRO	5
Richard Nelson	Dominion Resources	MRO	5
Michael McMullen	Xcel Energy	MRO	1
Darrell Yohnk	American Transmission Co	RFC	1
Eugene Warnecke	Ameren	SERC	1
Robert Hass	International Transmission Co	RFC	1
Randy Samson	OPPD	MRO	1
David Huff	First Energy	RFC	1
Terry Wright	Michigan Electric Trans CO	RFC	1
Ron Gunderson	NPPD	MRO	1

\* If more than one Region or Segment applies, indicate the best fit for the purpose of these comments. Regional acronyms and segment numbers are shown on prior page.

## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

### Please Enter All Comments in Simple Text Format.

1. Which of the following describes your organization:

- We own or operate a nuclear power plant.
- We provide transmission services to a nuclear power plant.
- Other: **The MISO Nuclear Plant Working Group is comprised of representatives from each of its 13 nuclear plants and their interconnected transmission operator. These comments are from the WG as a whole and do not represent the position of any single WG member.**

2. In response to stakeholder comments, the drafting team modified the title and altered the sequence of requirements. Do you agree with the changes the new title and the revised sequence of requirements?

- Yes
- No

Comments:

3. In response to stakeholder comments, the drafting team modified the definition of 'Nuclear Plant Interface Requirements (NPIR)' and added the term, 'Nuclear Plant Licensing Requirements (NPLR)'. These changes were made to help make the distinction between requirements **mandated** by the jurisdictional nuclear regulatory agency for the nuclear plant (NPLR) and the **mutually agreed upon interface requirements** (NPIR) that support the nuclear power plant in meeting its licensing requirements. The standard is intended to establish a **collaborative effort** between the nuclear plant owner/operator and the transmission entities that provide those necessary services. The NPIR will vary depending on such specifics as plant licensing commitments, plant-grid interconnection design, plant design itself, and location. The details of how the NPIR are addressed will be set forth in the agreement(s) required by this standard.

Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

- Yes
- No

Comments: **Separating the requirements into Licensing and Interface requirements is a major improvement. However, the standard still lacks language around the NPIR being mutually agreed to. The definition of NPIR states agreed upon criteria. It does not state mutual agreement or who the agreement is with. R1 is still one way, the Nuclear Plant Generator proposing NPIR. In many cases even developing a proposed set of NPIR requires mutual analysis between transmission entity and generator operator. Recommended change to R1 - The Nuclear Plant Generator Operator shall provide the NPLRs in writing to the applicable transmission entities, shall verify receipt of the NPLRs, and mutually develop and agree on the NPIRs. Without mutual development of NPIRs, no agreed on NPIRs can exist.**

**R7 and R8 are communicative in nature, not action steps to ensure the proper coordination. Recommend changing R7 and R8 to provide language to ensure coordination prior to implementation of the changes.**

## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

4. Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement?

Yes

No

Comments:

5. The revised draft standard establishes a single nuclear entity (the Nuclear Plant Generator Operator) that must work with the appropriate transmission authorities to identify the applicable transmission entities. The Nuclear Plant Generator Operator must provide its proposed nuclear interface requirements (NPIR) to the applicable transmission entities (see R1 and M1). The specific entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR). The standard requires the Nuclear Plant Generator Operator and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs will be addressed and implemented (see R2 and M2). The names of the responsible entities must be clearly identified in these agreements (see R9.1.2 and A4.2).

Do you agree that the changes made by the drafting team address stakeholder concerns that 'transmission entities' is too broad a term?

Yes

No

Comments: **The changes are an improvement. However, when it comes to compliance, it is uncertain how to identify which transmission entities are subject to this standard for each nuclear plant. The MISO NPWG recommends the addition of a new requirement that would be the first requirement. This requirement would be for the Nuclear Plant generator operator to identify the applicable transmission entities which are required to support NPLRs. This would begin the process for developing applicable agreements. This identification should be only a Nuclear Plant generator operator compliance issue. Once identified the transmission entities can be held responsible for compliance with this standard.**

6. Are you aware of any regional differences that would be required as a result of this standard?

Yes

No

If yes, please explain:

7. If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here: **Recommend the addition of R9.3.8 Provisions to establish protocols that address cycling of nuclear plants to preserve/restore the reliability of the transmission system.**

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Do not submit a response in an unprotected copy of this form.

Individual Commenter Information		
(Complete this page for comments from one organization or individual.)		
Name:	B.L.Gooder	
Organization:	Ontario Power Generation Inc.	
Telephone:	416-592-7712	
E-mail:	brian.gooder@opg.com	
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
<input checked="" type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> RF	<input checked="" type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> SERC	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities





## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

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- We provide transmission services to a nuclear power plant.
- Other:

2. In response to stakeholder comments, the drafting team modified the title and altered the sequence of requirements. Do you agree with the changes the new title and the revised sequence of requirements?

- Yes
- No

Comments:

3. In response to stakeholder comments, the drafting team modified the definition of 'Nuclear Plant Interface Requirements (NPIR)' and added the term, 'Nuclear Plant Licensing Requirements (NPLR)'. These changes were made to help make the distinction between requirements **mandated** by the jurisdictional nuclear regulatory agency for the nuclear plant (NPLR) and the **mutually agreed upon interface requirements** (NPIR) that support the nuclear power plant in meeting its licensing requirements. The standard is intended to establish a **collaborative effort** between the nuclear plant owner/operator and the transmission entities that provide those necessary services. The NPIR will vary depending on such specifics as plant licensing commitments, plant-grid interconnection design, plant design itself, and location. The details of how the NPIR are addressed will be set forth in the agreement(s) required by this standard.

Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

- Yes
- No

Comments:

4. Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement?

- Yes
- No

Comments:

5. The revised draft standard establishes a single nuclear entity (the Nuclear Plant Generator Operator) that must work with the appropriate transmission authorities to identify the applicable transmission entities. The Nuclear Plant Generator Operator must provide its proposed nuclear interface requirements (NPIR) to the applicable

## **Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

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Do you agree that the changes made by the drafting team address stakeholder concerns that 'transmission entities' is too broad a term?

Yes

No

Comments:

6. Are you aware of any regional differences that would be required as a result of this standard?

Yes

No

If yes, please explain: We strongly support the inclusion of Section E - Regional Differences

7. If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here: OPG has reviewed Standard NUC-001-1 and supports the current version.

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NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/>	1 — Transmission Owners
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- Other:

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- Yes
- No

Comments:

3. In response to stakeholder comments, the drafting team modified the definition of 'Nuclear Plant Interface Requirements (NPIR)' and added the term, 'Nuclear Plant Licensing Requirements (NPLR)'. These changes were made to help make the distinction between requirements **mandated** by the jurisdictional nuclear regulatory agency for the nuclear plant (NPLR) and the **mutually agreed upon interface requirements** (NPIR) that support the nuclear power plant in meeting its licensing requirements. The standard is intended to establish a **collaborative effort** between the nuclear plant owner/operator and the transmission entities that provide those necessary services. The NPIR will vary depending on such specifics as plant licensing commitments, plant-grid interconnection design, plant design itself, and location. The details of how the NPIR are addressed will be set forth in the agreement(s) required by this standard.

Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

- Yes
- No

Comments:

4. Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement?

- Yes
- No

Comments:

5. The revised draft standard establishes a single nuclear entity (the Nuclear Plant Generator Operator) that must work with the appropriate transmission authorities to identify the applicable transmission entities. The Nuclear Plant Generator Operator must provide its proposed nuclear interface requirements (NPIR) to the applicable

## **Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

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Do you agree that the changes made by the drafting team address stakeholder concerns that 'transmission entities' is too broad a term?

Yes

No

Comments:

6. Are you aware of any regional differences that would be required as a result of this standard?

Yes

No

If yes, please explain:

7. If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here:

**FPL requests that the Nuclear Plant Interface Coordination standard be modified by adding the following provision as**

**R9.3.8: Provisions to utilize all other available measures to preserve/restore the reliability of the transmission system prior to adjusting the dispatch of a nuclear plant.**

**FPL provides the following statement in support of this proposed requirement:**

**FPL agrees with the overall purpose of the proposed standard in that coordination between Nuclear Plant Generator Operators and Transmission Entities is required to ensure nuclear plant safety. Nuclear power plants should be considered as a solution to resolve system problems only when all other reasonable actions have been considered and implemented. Nuclear plants are designed as base load units. Frequent cycling and rapid ramping is not advisable. Cycling of a nuclear unit requires [highly orchestrated and complex deviation from normal operations.] Frequent cycling significantly increases the likelihood of unplanned outages. Therefore, involving a nuclear facility in the mitigation of electric system problems should occur only after all other reasonable actions have been considered and implemented. The existing NERC Reliability Standards on Emergency Preparedness and Operations (EOP-005-0 and EOP-005-1), which deal with system restoration plans, require that the affected Transmission Operators shall give high priority to restoration of off-site power to nuclear stations. Similarly, cycling nuclear plants should be considered the solution of last resort when actions are required to re-establish transmission system reliability. In this regard, FPL would note the comments on this subject of**

## **Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

the Commissioners of the Nuclear Regulatory Commission at a joint meeting with the Federal Energy Regulatory Commission on April 24, 2006 (FERC Docket No. AD06-6-000).

NRC Chairman Diaz stated at transcript page 10:

... nuclear power plants are big producers of electricity, and they also in many ways, anchor part[s] of the grids in which they are. They are also not very good machines for moving up and down in power. They were really designed and operated as base power units, and that's the way they really work best. We like to keep them like that, like to keep them safe and operating.

NRC Commissioner McGaffigan supported Chairman Diaz remarks at transcript pages 13-14:

And I would echo the Chairman's point. I know this is an issue before you and we're not going to discuss it today, but, in public, it's fair for me to say that it is not good for nuclear power plants to go up and down, and so the particular issue in New England that I think is before you in some way, where Seabrook is currently going up and down, because it's the first contingency for some agreement between New England and New York, is not a good idea. There's got to be a coal plant somewhere that can go up and down, but I say that -- you have two of us now saying that going up and down is not a good idea for nuclear power plants.

NRC Commissioner Merrifield elaborated on these concerns at transcript pages 16-17):

I would add, in recognizing the sensitivities from your Commission in ongoing issues, as originally hailing from New Hampshire, issues associated with the Seabrook Station and its operation, are very important to the folks who I hold near and dear. That activity, in terms of bringing that plant up and down, is of, in my particular concern, significant. There have been a total, I believe, at this point, of 20 instances in which that plant has been brought up or down, averaging nine over the course of the last three months. So that is certainly one that, although I know you're limited in terms of your getting into it, certainly I want to use the opportunity to express my concern and to agree with Commissioner McGaffigan.

We don't believe and I don't believe it's a safety issue at the plant. It is an ongoing challenge to the operations by the individuals who are in the control room, and certainly with our maintenance activities, our allowance for online maintenance, that makes that issue even more difficult, where a utility is attempting to do online maintenance and plan on that, to have facing them, multiple down-powers through the course of a week, and in some cases, multiple down-powers during the course of a day.

As a general matter, I think that's imprudent, and it's certainly something I would recommend that the Commission, your Commission take a look at, because, certainly from my standpoint -- and I agree with Commissioner McGaffigan -- that is not the direction you would want to see it.

NRC Commissioner Jaczko noted his concerns in this area as well at transcript pages 18-19, requested that the FERC work with the NRC on these concerns:

... there are areas in which I think there is a nexus between the work that you do and the work that we do. Certainly, Seabrook is one case in which I think there is that nexus and I think this is a good opportunity for us to be able get together and discuss those issues.

These comments by the NRC Commissioners provide a reasonable basis for the proposed provision, which simply requires that the agreement between the nuclear plant owner and the transmission entity consider the impacts on the nuclear plant when the transmission entity contemplates nuclear plant cycling as a reliability measure.



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Individual Commenter Information		
(Complete this page for comments from one organization or individual.)		
Name:	John E. Sullivan	
Organization:	Ameren	
Telephone:	(314) 554-3833	
E-mail:	JSullivan@ameren.com	
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
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Comments:

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Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

- Yes  
 No

Comments: **While the separation of Nuclear Plant Licensing Requirements and Nuclear Plant Interface Requirements is a step in the right direction, there should be more emphasis in the standard on the mutual development of the Nuclear Plant Interface Requirements (NPIRs) between both the Nuclear Plant Generator Operator and Transmission Entities. For example, R1 states that the Nuclear Plant Generator Operator provides the proposed NPIRs to the Transmission Entities. Rather, this requirement should be revised to show both the Nuclear Plant Generator Operator and Transmission Entities participating in developing the NPIR's at the outset.**

**In R7 and R8, the meaning of the terms 'limits' and 'capabilities' in this context is not clear. Suggested modifications to narrow the scope and make the meaning of these two terms clearer would be ' generator limits' and 'generator system capabilities'.**

4. Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement?

## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

Yes

No

Comments: **We are not aware of any conflicts from a transmission perspective.**

5. The revised draft standard establishes a single nuclear entity (the Nuclear Plant Generator Operator) that must work with the appropriate transmission authorities to identify the applicable transmission entities. The Nuclear Plant Generator Operator must provide its proposed nuclear interface requirements (NPIR) to the applicable transmission entities (see R1 and M1). The specific entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR). The standard requires the Nuclear Plant Generator Operator and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs will be addressed and implemented (see R2 and M2). The names of the responsible entities must be clearly identified in these agreements (see R9.1.2 and A4.2).

Do you agree that the changes made by the drafting team address stakeholder concerns that 'transmission entities' is too broad a term?

Yes

No

Comments:

6. Are you aware of any regional differences that would be required as a result of this standard?

Yes

No

If yes, please explain:

7. If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here:

**Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

Please use this form to submit comments on Draft 2 of the Nuclear Power Plant Off-site Power Coordination standard. Comments must be submitted by **October 16, 2006**. You must submit the completed form e-mail to [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the words "Nuclear Off-site Power Comments" in the subject line. If you have questions please contact Craig Lawrence at [craig.lawrence@nerc.net](mailto:craig.lawrence@nerc.net) or 609-452-8060.

**All Data On This Form Will Be Transferred Automatically To A Database.**

- DO:** Do enter text only, with no formatting or styles added.  
Do use punctuation and capitalization as needed (except quotations).  
Do use more than one form if responses do not fit in the spaces provided.  
Do submit any formatted text or markups in a separate WORD file.

- DO NOT:** Do not insert tabs or paragraph returns in any data field.  
Do not use numbering or bullets in any data field.  
Do not use quotation marks in any data field.  
Do not submit a response in an unprotected copy of this form.

Individual Commenter Information		
(Complete this page for comments from one organization or individual.)		
Name:	Ron Gunderson	
Organization:	Nebraska Public Power District	
Telephone:	(402) 845-5252	
E-mail:	rogunde@nppd.com	
NERC Region		Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input checked="" type="checkbox"/>	1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/>	2 — RTOs, ISOs, Regional Reliability Councils
<input checked="" type="checkbox"/> MRO	<input type="checkbox"/>	3 — Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/>	4 — Transmission-dependent Utilities
<input type="checkbox"/> RF	<input type="checkbox"/>	5 — Electric Generators
<input type="checkbox"/> SERC	<input type="checkbox"/>	6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/>	7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/>	8 — Small Electricity End Users
<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/>	9 — Federal, State, Provincial Regulatory, or other Government Entities



## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

### Please Enter All Comments in Simple Text Format.

1. Which of the following describes your organization:

- We own or operate a nuclear power plant.
- We provide transmission services to a nuclear power plant.
- Other:

2. In response to stakeholder comments, the drafting team modified the title and altered the sequence of requirements. Do you agree with the changes the new title and the revised sequence of requirements?

- Yes
- No

Comments:

3. In response to stakeholder comments, the drafting team modified the definition of 'Nuclear Plant Interface Requirements (NPIR)' and added the term, 'Nuclear Plant Licensing Requirements (NPLR)'. These changes were made to help make the distinction between requirements **mandated** by the jurisdictional nuclear regulatory agency for the nuclear plant (NPLR) and the **mutually agreed upon interface requirements** (NPIR) that support the nuclear power plant in meeting its licensing requirements. The standard is intended to establish a **collaborative effort** between the nuclear plant owner/operator and the transmission entities that provide those necessary services. The NPIR will vary depending on such specifics as plant licensing commitments, plant-grid interconnection design, plant design itself, and location. The details of how the NPIR are addressed will be set forth in the agreement(s) required by this standard.

Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

- Yes
- No

Comments: **The definition of NPIR does not make it clear that they are a collaborative effort between the nuclear plant and the transmission entities. The standard doesn't help clarify that either. A clearer definition for NPIR would be The criteria to meet the NPLR that are mutually agreed upon by the nuclear plant and the transmission entities. R1 is also very unclear and leads to the assumption that the nuclear plant develops the NPIR and simply presents them to the transmission entities. R1 should be revised to require the nuclear plant and transmission entities to mutually agree to a set of NPIRs to meet the NPLRs of the nuclear plant. In many cases even developing a proposed set of NPIR requires mutual analysis between transmission entity and generator operator. A better requirement is for the agreement to document how the NPIR are developed and implemented. In addition R1 as currently written is ambiguous about who has to acknowledge receipt of the NPIRs. As written it seems to be be a requirement that the nuclear plant provides them and then acknowledges their receipt. This needs to be clarified. R7 and R8 are communicative in nature, not action steps to ensure the proper coordination is performed to develop, re-affirm or modify the NPIRs. The requirements should require coordination of changes between the NP operator and the transmission**

## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

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**entity prior to implementing the changes instead of just informing the other entity of the changes.**

4. Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement?

Yes

No

Comments:

5. The revised draft standard establishes a single nuclear entity (the Nuclear Plant Generator Operator) that must work with the appropriate transmission authorities to identify the applicable transmission entities. The Nuclear Plant Generator Operator must provide its proposed nuclear interface requirements (NPIR) to the applicable transmission entities (see R1 and M1). The specific entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR). The standard requires the Nuclear Plant Generator Operator and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs will be addressed and implemented (see R2 and M2). The names of the responsible entities must be clearly identified in these agreements (see R9.1.2 and A4.2).

Do you agree that the changes made by the drafting team address stakeholder concerns that 'transmission entities' is too broad a term?

Yes

No

Comments: **There is no guidance on how to identify those transmission entities with which agreements are required. How will a nuclear plant or transmission entity be determined to be in compliance? There is no definition of services provided to the nuclear plant. Again R1 indicates the nuclear plant develops the NPIR instead of them being a collaborative effort as indicated in question 3. It needs to be a collaborative effort between the nuclear plant and the transmission entity. When it comes to compliance, it is uncertain how to identify which transmission entities are subject to this standard for each nuclear plant. There should be a new requirement that would be the first requirement. This requirement would be for the NP generator operator to identify the applicable transmission entities which are required to support the NPLRs. This would begin the process for developing the NPIR and associated agreements.**

6. Are you aware of any regional differences that would be required as a result of this standard?

Yes

No

If yes, please explain:



## **Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

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7. If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here: **The levels of non-compliance don't line up with the risk factors assigned. The most severe level of non-compliance is for R1 which has a LOWER risk associated with it. The highest level of non-compliance should be for not considering the nuclear plant's off-site power requirements and not for administrative issues. Recommend that a new requirement R9.3.8 be added that states Provisions to establish protocols that address cycling of nuclear plants to preserve/restore the reliability of the transmission system.**

**Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

Please use this form to submit comments on Draft 2 of the Nuclear Power Plant Off-site Power Coordination standard. Comments must be submitted by **October 16, 2006**. You must submit the completed form e-mail to [sarcomm@nerc.com](mailto:sarcomm@nerc.com) with the words "Nuclear Off-site Power Comments" in the subject line. If you have questions please contact Craig Lawrence at [craig.lawrence@nerc.net](mailto:craig.lawrence@nerc.net) or 609-452-8060.

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- DO NOT:** Do not insert tabs or paragraph returns in any data field.  
Do not use numbering or bullets in any data field.  
Do not use quotation marks in any data field.  
Do not submit a response in an unprotected copy of this form.

<b>Individual Commenter Information</b>	
(Complete this page for comments from one organization or individual.)	
Name:	<b>Will Franklin</b>
Organization:	<b>Entergy - System Planning/Energy Management</b>
Telephone:	<b>281-297-3594</b>
E-mail:	<b>wfrankl@entergy.com</b>
NERC Region	Registered Ballot Body Segment
<input type="checkbox"/> ERCOT	<input type="checkbox"/> 1 — Transmission Owners
<input type="checkbox"/> FRCC	<input type="checkbox"/> 2 — RTOs, ISOs, Regional Reliability Councils
<input type="checkbox"/> MRO	<input type="checkbox"/> 3 — Load-serving Entities
<input type="checkbox"/> NPCC	<input type="checkbox"/> 4 — Transmission-dependent Utilities
<input type="checkbox"/> RF	<input type="checkbox"/> 5 — Electric Generators
<input checked="" type="checkbox"/> SERC	<input checked="" type="checkbox"/> 6 — Electricity Brokers, Aggregators, and Marketers
<input type="checkbox"/> SPP	<input type="checkbox"/> 7 — Large Electricity End Users
<input type="checkbox"/> WECC	<input type="checkbox"/> 8 — Small Electricity End Users
<input type="checkbox"/> NA — Not Applicable	<input type="checkbox"/> 9 — Federal, State, Provincial Regulatory, or other Government Entities



## Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard

### Please Enter All Comments in Simple Text Format.

1. Which of the following describes your organization:

- We own or operate a nuclear power plant.
- We provide transmission services to a nuclear power plant.
- Other: Planning for unit and system energy across all horizons.

2. In response to stakeholder comments, the drafting team modified the title and altered the sequence of requirements. Do you agree with the changes the new title and the revised sequence of requirements?

- Yes
- No

Comments: The agreement specifics of R9 should be placed under the requirement to have an agreement (R2) to maintain coherence. R3 seems redundant to what is contained in R9.

3. In response to stakeholder comments, the drafting team modified the definition of 'Nuclear Plant Interface Requirements (NPIR)' and added the term, 'Nuclear Plant Licensing Requirements (NPLR)'. These changes were made to help make the distinction between requirements **mandated** by the jurisdictional nuclear regulatory agency for the nuclear plant (NPLR) and the **mutually agreed upon interface requirements** (NPIR) that support the nuclear power plant in meeting its licensing requirements. The standard is intended to establish a **collaborative effort** between the nuclear plant owner/operator and the transmission entities that provide those necessary services. The NPIR will vary depending on such specifics as plant licensing commitments, plant-grid interconnection design, plant design itself, and location. The details of how the NPIR are addressed will be set forth in the agreement(s) required by this standard.

Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

- Yes
- No

Comments:

4. Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement?

- Yes
- No

Comments:

## **Comment Form for Draft 2 of Nuclear Power Plant Off-site Power Coordination Standard**

5. The revised draft standard establishes a single nuclear entity (the Nuclear Plant Generator Operator) that must work with the appropriate transmission authorities to identify the applicable transmission entities. The Nuclear Plant Generator Operator must provide its proposed nuclear interface requirements (NPIR) to the applicable transmission entities (see R1 and M1). The specific entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR). The standard requires the Nuclear Plant Generator Operator and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs will be addressed and implemented (see R2 and M2). The names of the responsible entities must be clearly identified in these agreements (see R9.1.2 and A4.2).

Do you agree that the changes made by the drafting team address stakeholder concerns that 'transmission entities' is too broad a term?

Yes

No

Comments: The use of the term "Transmission Entities" to describe everything outside of the nuclear plant is misleading. Not everything outside of the nuclear plant is "transmission". BAs or LSEs may not think of themselves as "transmission entities" except as defined in this one standard. The term "Grid Entity" or similar descriptor would be more appropriate.

6. Are you aware of any regional differences that would be required as a result of this standard?

Yes

No

If yes, please explain:

7. If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here: Transmission Entity is not listed as a new definition; R2- the "one or more" is not needed; R7 & R8 refer to the "transmission system" where I believe this should refer to the "electric system" (thus, the misleading nature of the term "transmission entity"); Level 3 non-compliance should read R3 "through" R8 instead of "to".

## Consideration of Comments on 2<sup>nd</sup> Draft of Nuclear Off-site Power Supply Standard

The Nuclear Plant Interface Coordination Standard Drafting Team thanks all commenters who submitted comments on Draft 2 of the proposed standard. This standard was posted for a 30-day public comment period from September 15 through October 16, 2006. The Nuclear Plant Interface Coordination Standard Drafting Team asked stakeholders to provide feedback on the standard through a special standard Comment Form. There were 29 sets of comments, including comments from more than 160 different people from more than 50 companies representing 7 of the 10 Industry Segments as shown in the table on the following pages.

Most commenters support the changes made to version 2 of the standard, but many commenters indicated a concern with the use of the term, 'transmission entities'. Because the responsible entities are dependent upon local operating relationships, the drafting team could not break down the requirements in the standard to identify the specific functional entity or entities that would be required to comply with each of the requirements. To attempt to satisfy those commenters who want to know exactly who the transmission entities are for each specific operating situation, the drafting team modified the implementation plan to include language to specify when and how 'transmission entities' will be identified. Beyond the change to the implementation plan, the drafting team made only minor clarifying changes to the standard in response to stakeholder comments.

- Modified the definition of Nuclear Power Plant Operator to include the possibility that this could be either a generator operator or a generator owner.
- Modified the definition of NPIR to emphasize that the requirements are, ' . . . mutually agreed to. . . '.
- Removed the word, 'reliability' from R4.1 and M4.1 to clarify that these are not analyses conducted by the reliability coordinator.
- Modified R4.2 to eliminate the phrase, 'while respecting System Operating Limits' at the end of the requirement.
- Modified M4.2 to eliminate the phrase "to the extent practicable" since this is difficult to measure objectively.
- Deleted R4.3 and M4.3: Inform the Nuclear Plant Generator Operator and coordinate mitigating actions when NPIRs cannot be met. This was deleted because the wording of R4.2 and R4.3 appeared to conflict.
- Replaced the term, 'transmission system' with the term, 'electric system' to recognize that some of the agreements may involve elements of the distribution system.

The drafting team does not believe that additional comment periods will improve consensus and will ask the Standards Committee for authorization to move the standard forward to ballot.

In this 'Consideration of Comments' document stakeholder comments have been organized so that it is easier to see the responses associated with each question. All comments received on the SAR can be viewed in their original format at:

<http://www.nerc.com/~filez/standards/Nuclear-Offsite-Supply.html>

If you feel that your comment has been overlooked, please let us know immediately. Our goal is to give every comment serious consideration in this process! If you feel there has been an error or omission, you can contact the Vice President and Director of Standards, Gerry Adamski at 609-452-8060 or at [gerry.adamski@nerc.net](mailto:gerry.adamski@nerc.net). In addition, there is a NERC Reliability Standards Appeals Process.<sup>1</sup>

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<sup>1</sup> The appeals process is in the Reliability Standards Development Procedures:  
<http://www.nerc.com/standards/newstandardsprocess.html>.

**Consideration of Comments on 2<sup>nd</sup> Draft of Nuclear Off-site Power Supply Standard**

Commenter		Organization	Industry Segment											
			1	2	3	4	5	6	7	8	9			
1.	Ben Pilleteri	Alabama Power Company	✓											
2.	Ken Goldsmith	ALT		✓										
3.	John Sullivan	Ameren	✓											
4.	Jason Shaver	ATCLLC	✓											
5.	Davd Rudolph	BEPC		✓										
6.	Lorissa Jones	BPA	✓											
7.	Brian Altman	BPA	✓											
8.	Peg Olds	BPA	✓											
9.	Tedd Snodgrass	BPA	✓											
10.	Mike Viles	BPA	✓											
11.	Lawrence Carter	BPA	✓											
12.	Bob Sherman	BPA			✓									
13.	Andy Rapacz	BPA			✓									
14.	Milap Shah	CenterPoint Energy	✓											
15.	Walter Adams	Constellation Generation						✓						
16.	Lou Oberski	Dominion Energy Marketing, Inc.						✓						
17.	Lou Nunes	Dominion Nuclear Connecticut, Inc.						✓						
18.	Harold Adams	Dominion Resources Services						✓						
19.	Jalal Babik	Dominion VA Power	✓											
20.	Will Franklin	Energy – Syst. Plan./Energy Mgmt.							✓					
21.	Robert Penny	Energy Nuclear Northeast							✓					
22.	Thomas W. Leeming	Exelon Energy Delivery	✓		✓									
23.	David L. Folk	FirstEnergy	✓		✓			✓	✓					
24.	Anthony R. Stallard	FirstEnergy	✓		✓			✓	✓					
25.	William R. Duge	FirstEnergy	✓		✓			✓	✓					
26.	John Flaherty	FirstEnergy	✓		✓			✓	✓					
27.	James Zarea	FirstEnergy	✓		✓			✓	✓					
28.	Marty Mennes	FPL	✓											
29.	Ed DeVarona	FPL	✓											
30.	Pedro Modia	FPL	✓											
31.	Ron Critelli	FPL	✓											
32.	Ron Scheirer	FPL Energy Duane Arnold L.L.C.						✓						
33.	John Ragan	FPL Energy L.L.C.						✓						
34.	Juan Villar	FPL Energy L.L.C.						✓						
35.	David Applebaum	FPL Energy L.L.C.						✓						
36.	Matt Handel	FPL Energy Seabrook L.L.C.						✓						
37.	James Peschel	FPL Energy Seabrook L.L.C.						✓						
38.	Raj Kundalker	FPL Nuclear Division						✓						

**Consideration of Comments on 2<sup>nd</sup> Draft of Nuclear Off-site Power Supply Standard**

	Commenter	Organization	Industry Segment								
			1	2	3	4	5	6	7	8	9
39.	John Granger	FPL Nuclear Division					✓				
40.	Chris Costanzo	FPL St. Lucie Nuclear Plant					✓				
41.	Michael Pearce	FPL Turkey Point Nuclear Plant					✓				
42.	Eric Senkowicz	FRCC		✓							
43.	John Odom	FRCC		✓							
44.	Linda Campbell	FRCC		✓							
45.	Phil Winston	Georgia Power Company			✓						
46.	Dick Pursley	GRE		✓							
47.	William Pope	Gulf Power Company	✓								
48.	Ron Falsetti	IESO		✓							
49.	Charles Yeung (SPP)	ISO/RTO Council		✓							
50.	Tom Bowe (PJM)	ISO/RTO Council		✓							
51.	Peter Brandien (ISO-NE)	ISO/RTO Council		✓							
52.	Mike Calimano (NYISO)	ISO/RTO Council		✓							
53.	Ron Falsetti (IESO)	ISO/RTO Council		✓							
54.	Brent Kingsford (CAISO)	ISO/RTO Council		✓							
55.	Anita Lee (AESO)	ISO/RTO Council		✓							
56.	Steve Meyers (ERCOT)	ISO/RTO Council		✓							
57.	Bill Phillips (MISO)	ISO/RTO Council		✓							
58.	Jim Cyrulewski	JDRJC Associates	✓								
59.	Tom Mielnik	MEC		✓							
60.	Robert Coish	MHEB		✓							
61.	Terry Bilke	MISO		✓							
62.	Terry Volkmann (MISO)	MISO Nuclear Plant WG									
63.	Tim Lensmire (Nuclear Management Co.)	MISO Nuclear Plant WG					✓				
64.	James Thorson (DTE Energy)	MISO Nuclear Plant WG					✓				
65.	John Gyrath (Exelon)	MISO Nuclear Plant WG					✓				
66.	David Waller (Ameren)	MISO Nuclear Plant WG					✓				
67.	Tim Lillehei (Nuclear Management Co.)	MISO Nuclear Plant WG					✓				
68.	Ed Watzl Nuclear (Management Co.)	MISO Nuclear Plant WG					✓				
69.	Steve Myres (FirstEnergy)	MISO Nuclear Plant WG					✓				
70.	Robert Deppi (Nuclear Management Co.)	MISO Nuclear Plant WG					✓				
71.	Steve Gocek (NPPD)	MISO Nuclear Plant WG					✓				
72.	Bill Blessie (OPPD)	MISO Nuclear Plant WG					✓				
73.	Richard Neslon (Dominion Resources)	MISO Nuclear Plant WG					✓				
74.	Michael McMullen (Xcel)	MISO Nuclear Plant WG	✓								



**Consideration of Comments on 2<sup>nd</sup> Draft of Nuclear Off-site Power Supply Standard**

	Commenter	Organization	Industry Segment											
			1	2	3	4	5	6	7	8	9			
	Energy)													
75.	Darrell Yohnk (ATC)	MISO Nuclear Plant WG	✓											
76.	Eugene Warnecke (Ameren)	MISO Nuclear Plant WG	✓											
77.	Robert Hass (ITC)	MISO Nuclear Plant WG	✓											
78.	Randy Samson (OPPD)	MISO Nuclear Plant WG	✓											
79.	David Huff (FirstEnergy)	MISO Nuclear Plant WG	✓											
80.	Terry Wright (Michigan Electric Transm. Co.)	MISO Nuclear Plant WG	✓											
81.	Ron Gunderson (NPPD)	MISO Nuclear Plant WG	✓											
82.	Carol Gerou	MP		✓										
83.	Martin Trence	MRO		✓										
84.	Joe Knight	MRO		✓										
85.	Dale Goodney	Nine Mile Point Engineering												
86.	Guy Zito (NPCC)	NPCC CP9 RSWG		✓										
87.	Ralph Rufrano (NYPA)	NPCC CP9 RSWG	✓											
88.	Ben Li (IESO)	NPCC CP9 RSWG		✓										
89.	Ron Falsetti (IESO)	NPCC CP9 RSWG		✓										
90.	Kathleen Goodman (ISONE)	NPCC CP9 RSWG		✓										
91.	Bill Shemley (ISONE)	NPCC CP9 RSWG		✓										
92.	David Kiguel (Hydro One)	NPCC CP9 RSWG	✓											
93.	Dave Little (Nova Scotia Power)	NPCC CP9 RSWG	✓											
94.	Roger Champagne (TransÉ-HQ)	NPCC CP9 RSWG	✓											
95.	Ed Thompson (ConEd)	NPCC CP9 RSWG	✓											
96.	Don Nelson (MA Dept. Tele. & Energy)	NPCC CP9 RSWG												✓
97.	John Bonner (Entergy)	NPCC CP9 RSWG						✓						
98.	Alden Briggs (NBSO)	NPCC CP9 RSWG		✓										
99.	Alan Boesch	NPPD		✓										
100.	Ronald O. Gunderson	NPPD	✓											
101.	Michael Calimano	NYISO		✓										
102.	Brian Gooder	Ontario Power Generation						✓						
103.	Brian L. Gooder	OPG Inc.						✓						
104.	Todd Gosnell	OPPD		✓										
105.	Bill Thompson	PJM	✓											
106.	Mike Garton	PJM						✓						
107.	Ed Croasdale	PJM	✓											
108.	Ayad Alhamdani	PJM						✓						
109.	George Attarian	Progress Energy	✓		✓			✓	✓					

**Consideration of Comments on 2<sup>nd</sup> Draft of Nuclear Off-site Power Supply Standard**

	Commenter	Organization	Industry Segment									
			1	2	3	4	5	6	7	8	9	
110.	Phil Riley	PS Commission of SC										✓
111.	Mignon L. Clyburn	PS Commission of SC										✓
112.	Elizabeth B. Fleming	PS Commission of SC										✓
113.	G. O'Neal Hamilton	PS Commission of SC										✓
114.	John E. Howard	PS Commission of SC										✓
115.	Randy Mitchell	PS Commission of SC										✓
116.	C. Robert Moseley	PS Commission of SC										✓
117.	David A. Wright	PS Commission of SC										✓
118.	Sally Wofford	SCE&G ERO Working Group	✓									
119.	Hubert C. Young	SCE&G ERO Working Group		✓								
120.	Richard Jones	SCE&G ERO Working Group			✓							
121.	Henry Delk	SCE&G ERO Working Group										
122.	John T. Blalock	SCE&G ERO Working Group										
123.	Dan Goldston	SCE&G ERO Working Group										
124.	Todd Johnson	SCE&G ERO Working Group										
125.	Jay Hammond	SCE&G ERO Working Group										
126.	Phil Kleckley	SCE&G ERO Working Group										
127.	Pat Longshore	SCE&G ERO Working Group										
128.	Simon Shealy	SCE&G ERO Working Group										
129.	Bob Smith	SCE&G ERO Working Group										
130.	Andy Bowden	SCE&G ERO Working Group										
131.	Arnie Bribb	SCE&G ERO Working Group										
132.	Marion Frick	SCE&G ERO Working Group										
133.	Ernie Gibbons	SCE&G ERO Working Group										
134.	Jerry Lindler	SCE&G ERO Working Group										
135.	Wayne Stuart	SCE&G ERO Working Group										
136.	Brad Stokes	SCE&G ERO Working Group										
137.	Shawn McCarthy	SCE&G ERO Working Group										
138.	Terrence J. Harris	SCE&G ERO Working Group										
139.	James T. Wood	Southern Company Services, Inc.	✓									
140.	Marc Butts	Southern Company Services, Inc.	✓									
141.	Roman Carter	Southern Company Services, Inc.	✓									
142.	Jim Busbin	Southern Company Services, Inc.	✓									
143.	Tom Sims	Southern Company Services, Inc.			✓							
144.	Terry Crawley	Southern Company Services, Inc.	✓									
145.	Jim Viikinsalo	Southern Company Services, Inc.					✓					

**Consideration of Comments on 2<sup>nd</sup> Draft of Nuclear Off-site Power Supply Standard**

	Commenter	Organization	Industry Segment										
			1	2	3	4	5	6	7	8	9		
146.	Raymond Vice	Southern Company Services, Inc.	✓										
147.	Kathleen Davis	TVA	✓										
148.	Doug Baily	TVA	✓										
149.	Jennifer Weber	TVA	✓										
150.	David Johnston	TVA	✓										
151.	Robbie Bottoms	TVA	✓										
152.	Mitch Needham	TVA	✓										
153.	Billy Tiller	TVA	✓										
154.	Chris Donilon	TVA	✓										
155.	Tom Bellew	TVA	✓										
156.	Jerry Nicely	TVA						✓					
157.	Darrick Moe	WAPA		✓									
158.	Nancy Bellows (WAPA)	WECC RCCWG											
159.	Mike Gentry (SRP)	WECC RCCWG											
160.	Bob Johnson (PSC)	WECC RCCWG											
161.	Frank McElvain (RDRC)	WECC RCCWG											
162.	Tom Botello (SCE)	WECC RCCWG											
163.	Jim Maenner	WPS		✓									

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**1. Which of the following describes your organization?**

- We own or operate a nuclear power plant.
- We provide transmission services to a nuclear power plant.
- Other:

**Summary Consideration:**

The responses indicate that the comments submitted with this comment form come from a fairly evenly distributed mix of commenters. There were 29 sets of comments submitted – 7 sets of comments come from entities that own or operate a nuclear power plant; 6 sets of comments come from entities that own or operate a nuclear power plant and also provide transmission services to a nuclear power plant; 8 sets of comments come from entities that provide transmission services to a nuclear power plant; 9 sets of comments come from entities that indicated they aren't owners or operators of a nuclear power plant and don't provide transmission services to a nuclear power plant.

Question #1	
Commenter	Comment
FirstEnergy (1, 3, 5, 6) David L. Folk	<input checked="" type="checkbox"/> We own or operate a nuclear power plant.
Constellation Generation (5) Walter Adams	<input checked="" type="checkbox"/> We own or operate a nuclear power plant.
OPG Inc. (5) Brian Gooder	<input checked="" type="checkbox"/> We own or operate a nuclear power plant.
Tennessee Valley Authority (5) – Jerry Nicely	<input checked="" type="checkbox"/> We own or operate a nuclear power plant.
FPL Energy L.L.C. John Ragan	<input checked="" type="checkbox"/> We own or operate a nuclear power plant.
Entergy Nuclear NE (5) Robert Penny	<input checked="" type="checkbox"/> We own or operate a nuclear power plant.
FPL Nuclear Division (5) Raj Kundalkar	<input checked="" type="checkbox"/> We own or operate a nuclear power plant.
ISO/RTO Council (2) Charles Yeung	<input checked="" type="checkbox"/> We own or operate a nuclear power plant. <input checked="" type="checkbox"/> We provide transmission services to a nuclear power plant. Except Alberta.
Southern Co. (1) James T. Wood	<input checked="" type="checkbox"/> We own or operate a nuclear power plant. <input checked="" type="checkbox"/> We provide transmission services to a nuclear power plant.

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<b>Question #1</b>	
<b>Commenter</b>	<b>Comment</b>
SCE&G ERO Working Group Sally Wofford	<input checked="" type="checkbox"/> We own or operate a nuclear power plant. <input checked="" type="checkbox"/> We provide transmission services to a nuclear power plant.
Dominion VA Power (1) Jalal Babik	<input checked="" type="checkbox"/> We own or operate a nuclear power plant. <input checked="" type="checkbox"/> We provide transmission services to a nuclear power plant.
Exelon Energy Delivery (1, 3) Thomas W. Leeming	<input checked="" type="checkbox"/> We own or operate a nuclear power plant. <input checked="" type="checkbox"/> We provide transmission services to a nuclear power plant.
NPPD (1) Ronald O. Gunderson	<input checked="" type="checkbox"/> We own or operate a nuclear power plant. <input checked="" type="checkbox"/> We provide transmission services to a nuclear power plant.
IESO (2) Ron Falsetti	<input checked="" type="checkbox"/> We provide transmission services to a nuclear power plant.
TVA (1) Kathleen Davis	<input checked="" type="checkbox"/> We provide transmission services to a nuclear power plant. These comments were gathered by TVA's Compliance organization and coordinated with our Nuclear Generator Owner.
FPL (1) Pedro Modia	<input checked="" type="checkbox"/> We provide transmission services to a nuclear power plant.
Ameren (1) John Sullivan	<input checked="" type="checkbox"/> We provide transmission services to a nuclear power plant.
ATCLLC (1) Jason Shaver	<input checked="" type="checkbox"/> We provide transmission services to a nuclear power plant.
BPA (1) Lorissa Jones	<input checked="" type="checkbox"/> We provide transmission services to a nuclear power plant.
CenterPoint Energy (1) Milap Shah	<input checked="" type="checkbox"/> We provide transmission services to a nuclear power plant.
Progress Energy (1, 3, 5, 6) George Attarian	<input checked="" type="checkbox"/> We provide transmission services to a nuclear power plant. Progress Energy Carolinas, Inc. (PEC), nuclear power plants and transmission system operations are conducted under a vertically integrated utility business model. Under PEC's vertically integrated utility business model, the System Operator (Grid Operations) operates the transmission system and provides guidance for the operation of generation systems (nuclear and non-nuclear). The System Operator is in the same company that holds the licenses to operate the nuclear power plants. Nuclear power plant offsite power reliability is managed by the System Operators through communications with licensed Nuclear Plant Operators and Work Control Management personnel at the plants as governed by a formal interface agreement.

**Consideration of Comments on 2<sup>nd</sup> Draft of Nuclear Off-site Power Supply Standard**

<b>Question #1</b>	
<b>Commenter</b>	<b>Comment</b>
PS Commission of SC (9) Phil Riley	<input checked="" type="checkbox"/> Other A state public service commission.
JDRJC Associates (1) Jim Cyrulewski	<input checked="" type="checkbox"/> Other Consultant who formerly worked for Transmission Entity.
WECC RCCWG Nancy Bellows	<input checked="" type="checkbox"/> Other Reliability Coordinator.
MRO (2) Martin Trence	<input checked="" type="checkbox"/> Other Members of this group providing a response either own and/or operate nuclear plants or provide transmission services to a nuclear power plant.
New York ISO (2) Michael Calimano	<input checked="" type="checkbox"/> Other
NPCC CP9 RSWG Guy Zito	<input checked="" type="checkbox"/> Other
Entergy (5) Will Franklin	<input checked="" type="checkbox"/> Other Planning for unit and system energy across all horizons.
FRCC (2) Eric Senkowicz	<input checked="" type="checkbox"/> Other Regional Reliability Council and Reliability Coordinator which includes five operating nuclear units within its Reliability footprint.
MISO Nuclear Plant WG Terry Volkman (MISO)	<input checked="" type="checkbox"/> Other The MISO Nuclear Plant Working Group is comprised of representatives from each of its 13 nuclear plants and their interconnected transmission operator. These comments are from the WG as a whole and do not represent the position of any single WG member.

**Consideration of Comments on 2<sup>nd</sup> Draft of Nuclear Off-site Power Supply Standard**

**2. In response to stakeholder comments, the drafting team modified the title and altered the sequence of requirements. Do you agree with the changes the new title and the revised sequence of requirements?**

**Summary Consideration:** Most commenters indicated support of the changes made to the standard.

Question #2			
Commenter	Yes	No	Comment
Entergy (5) Will Franklin		<input checked="" type="checkbox"/>	The agreement specifics of R9 should be placed under the requirement to have an agreement (R2) to maintain coherence. R3 seems redundant to what is contained in R9.
<b>Response:</b> The drafting team expended considerable effort and time in crafting the text of the requirements and arranging their order for flow and readability. Requirement R2 was inserted to state “up front” that the Transmission Entities and Nuclear Plant Generator Operator shall have the necessary agreements in place. R2 only requires establishment of the agreements themselves. Requirements R3 and above refer to and require compliance with the agreements and provide additional information not provided in R2 as to the basic content of the agreements. Additional details (“elements”) that are to be included in the agreements are appropriately placed as R9 (after the more general requirements contained in R3 through R8). Thus, R3 is not redundant to R9 because R9 expands upon the basic content of R3 by design.			
NPCC CP9 RSWG Guy Zito	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	NPCC has a recommendation in the response to Question 7 below that may affect the sequence of requirements.
<b>Response:</b> See the Drafting Team response to Q7 for this commenter.			
IESO (2) Ron Falsetti	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	We agree with the changes. However, please see additional comment in Q7.
<b>Response:</b> See the Drafting Team response to Q7 for this commenter.			
JDRJC Associates (1) Jim Cyrulewski	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Agree with the title change. Disagree with revised sequence. Requirements 2 and 9 should be combined. New Requirement 5 is unnecessary since covered in Requirement 2. Requirement 6 unnecessary since also covered in Requirement 2. Items identified in these requirements are always included in agreements/protocols between generation operators and transmission entities as well as many other operation items. Items in Requirements 5 and 6 are not unique enough to justify special recognition.
<b>Response:</b> The drafting team expended considerable effort and time in crafting the text of the requirements and arranging their order for flow and readability. Requirement R2 was inserted to state “up front” that the Transmission Entities and Nuclear Plant Generator Operator shall have the necessary agreements in place. R2 only requires establishment of the agreements themselves. Requirements R3 and above refer to and require compliance with the agreements and provide additional information not provided in R2 as to the basic content of the agreements. Additional details (“elements”) that are to be included in the agreements are appropriately placed as R9 (after the more general requirements contained in R3 through R8).			



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<b>Question #2</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
ISO/RTO Council (2) Charles Yeung	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	The title properly reflects the object of the standard. Regarding the requirements see response to question 7.
<b>Response:</b> See the Drafting Team response to Q7 for this commenter.			
Tennessee Valley Authority (5) – Jerry Nicely	<input checked="" type="checkbox"/>		A more appropriate title might have been "Nuclear Plant/Grid Interface Coordination.
<b>Response:</b> Thank you for your comment. However, the Drafting Team believes the existing title properly reflects the objective of the standard and is, therefore, appropriate as is.			
FRCC (2) Eric Senkowicz	<input checked="" type="checkbox"/>		We appreciate the significant time and effort of the DT at developing this important standard.
<b>Response:</b> The Drafting Team thanks you for the complement.			
TVA (1) Kathleen Davis	<input checked="" type="checkbox"/>		
CenterPoint Energy (1) Milap Shah	<input checked="" type="checkbox"/>		
Progress Energy (1, 3, 5, 6) George Attarian	<input checked="" type="checkbox"/>		
PS Commission of SC (9) Phil Riley	<input checked="" type="checkbox"/>		
FirstEnergy (1, 3, 5, 6) David L. Folk	<input checked="" type="checkbox"/>		
Constellation Generation (5) Walter Adams	<input checked="" type="checkbox"/>		
FPL Energy L.L.C. John Ragan	<input checked="" type="checkbox"/>		
WECC RCCWG Nancy Bellows	<input checked="" type="checkbox"/>		
MRO (2) Martin Trence	<input checked="" type="checkbox"/>		
Dominion VA Power (1) Jalal Babik	<input checked="" type="checkbox"/>		
Exelon Energy Delivery (1, 3)	<input checked="" type="checkbox"/>		

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<b>Question #2</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
Thomas W. Leeming			
Entergy Nuclear NE (5) Robert Penny	<input checked="" type="checkbox"/>		
FPL Nuclear Division (5) Raj Kundalkar	<input checked="" type="checkbox"/>		
Southern Co. (1) James T. Wood	<input checked="" type="checkbox"/>		
SCE&G ERO Working Group Sally Wofford	<input checked="" type="checkbox"/>		
ATCLLC (1) Jason Shaver	<input checked="" type="checkbox"/>		
MISO Nuclear Plant WG Terry Volkmann (MISO)	<input checked="" type="checkbox"/>		
OPG Inc. (5) Brian Gooder	<input checked="" type="checkbox"/>		
FPL (1) Pedro Modia	<input checked="" type="checkbox"/>		
Ameren (1) John Sullivan	<input checked="" type="checkbox"/>		
NPPD (1) Ronald O. Gunderson	<input checked="" type="checkbox"/>		

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3. Do you agree that these changes made by the drafting team clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort between the Nuclear Plant and associated transmission entities?

**Summary Consideration:** While most commenters did agree that the changes made to clarify that Nuclear Plant Interface Requirements are achieved through a collaborative effort, some commenters indicated that additional clarification was still needed and the drafting team modified the definition of Nuclear Plant Interface Requirements to provide this additional clarification. The new definition of NPIR states:

The requirements, based on NPLRs and Bulk Electric System requirements, that have been mutually agreed to by the Nuclear Plant Generator Operator and the applicable Transmission Entities.

Question #3			
Commenter	Yes	No	Comment
Exelon Energy Delivery (1, 3) Thomas W. Leeming		<input checked="" type="checkbox"/>	The NPIR definition should be changed to -The criteria to meet the NPLRs as mutually agreed to by the Nuclear Plant Generator Operator and the applicable Transmission Entity.
<b>Response:</b> The Drafting Team agrees with this clarification and has revised the definition accordingly.			
ISO/RTO Council (2) Charles Yeung		<input checked="" type="checkbox"/>	<p>Yes – The clarification provides a clearer statement of the SDT's focus.</p> <p>No – the changes themselves are not likely to achieve the intended goal. The NIPRs as defined are independent agreements between and among a variety of entities. Those requirements are not standard, nor are the entities involved a standized group.</p> <p>The FERC has informed NERC that the NERC standards must not be ambiguous with respect to specificity of requirements, measureability and degree of compliance. And further, the standards must not create undue negative impact on competition, and the applicability must be clear.</p> <p>The proposed requirements as written do not focus on a specific outcome (they may intend to focus on a specific outcome, but in their effort to efficiently cover their objective, they effectively propose a one-size-fits-all standard - one that lacks specificity and clarity).</p>
<b>Response:</b> The Drafting Team believes the standard will accomplish the intended goal if agreements that contain, at a minimum, the elements identified in R9 are developed and adhered to based on this standard. The Drafting Team has clarified the definition of NPIRs to 1) emphasize that the development of the NPIRs is a collaborative effort of the Nuclear Plant Generator Operator and the applicable Transmission Entities, and 2) that they must be based on the both the NPLRs mandated by nuclear			

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<b>Question #3</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
<p>regulations and Bulk Electric System requirements mandated by the NERC/ERO standards.</p> <p>The Drafting Team feels that the standard as written is not ambiguous per NERC and FERC requirements and focuses on the agreements that must be developed and adhered to in order to meet the requirements of this standard.</p>			
MRO (2) Martin Trence		<input checked="" type="checkbox"/>	<p>Requirement 9 contains elements that become prescriptive, which removes the "collaborative effort" concept between the nuclear plant owner/operator and the transmission entities that provide those necessary services. The elements listed in Requirement 9 should be reviewed and revisions made to clearly demonstrate the "collaborative intent" concept the Standards Drafting Team wishes to convey. An example of retaining the collaborative spirit of the standard, would be to insert language to the effect that the Nuclear Plant Generator Operator and the Transmission Entities shall jointly develop....in Requirement 9. In addition, a number of the requirement subsections should be revised i.e. R9.1.3 revise to say: a requirement to review the agreement(s) on a periodic basis not to exceed three (3) years. The NSRS feels that the requirement as written does not give the parties the freedom to put in a statement to review the agreement(s) more frequently.</p>
<p><b>Response:</b> The Drafting Team, which includes representatives from both Transmission and Nuclear Generation, mutually developed R9 based on input from the team members based on existing agreements and other industry inputs. The list of "elements" in R9 is a consensus list of the minimum elements the team agreed must be included in the agreements to ensure the Purpose of the standard will be met. Based on industry comments to date, most respondents are in agreement with R9 as written. The Drafting Team has clarified the definition of NPIRs to 1) emphasize that the development of the NPIRs is a collaborative effort of the Nuclear Plant Generator Operator and the applicable Transmission Entities, and 2) that they must be based on the both the NPLRs mandated by nuclear regulations and Bulk Electric System requirements mandated by the NERC/ERO standards.</p> <p>R9.1.3 as written allows review of the agreements more frequently than every 3 years, and it does not preclude the agreements from specifying a shorter maximum period.</p>			
NPPD (1) Ronald O. Gunderson		<input checked="" type="checkbox"/>	<p>The definition of NPIR does not make it clear that they are a collaborative effort between the nuclear plant and the transmission entities. The standard doesn't help clarify that either. A clearer definition for NPIR would be The criteria to meet the NPLR that are mutually agreed upon by the nuclear plant and the transmission entities. R1 is also very unclear and leads to the assumption that the nuclear plant develops the NIPR and simply presents them to the transmission entities. R1 should be revised to require the nuclear plant and transmission entities to mutually agree to a set of NPIRs to meet the NPLRs of the nuclear plant. In many cases even developing a proposed set of NPIR requires mutual analysis between transmission</p>

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<b>Question #3</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
			entity and generator operator. A better requirement is for the agreement to document how the NPIR are developed and implemented. In addition R1 as currently written is ambiguous about who has to acknowledge receipt of the NPIRs. As written it seems to be a requirement that the nuclear plant provides them and then acknowledges their receipt. This needs to be clarified. R7 and R8 are communicative in nature, not action steps to ensure the proper coordination is performed to develop, re-affirm or modify the NPIRs. The requirements should require coordination of changes between the NP operator and the transmission entity prior to implementing the changes instead of just informing the other entity of the changes.
<p><b>Response:</b> The standard is intended to establish a collaborative effort between the nuclear plant owner/operator and the applicable transmission entities that provide those necessary services. The Drafting Team has revised the definition of NPIRs to emphasize that the NPIRs are mutually agreed to by the Nuclear Plant Generator Operator and the applicable Transmission Entities and that the NPIRs must be based on the both the NPLRs mandated by nuclear regulations and Bulk Electric System requirements mandated by the NERC/ERO standards. In addition, the Drafting Team revised R2 for clarity to emphasize that in the process of developing the agreements, the Nuclear Plant Generator Operator and the applicable Transmission Entity shall document the (agreed upon) NPIRs within the content of the agreements.</p> <p>R1 as written clearly states, "Nuclear Plant Generator Operator shall provide the NPIRs ... and shall verify receipt."</p> <p>R7 and R8 are designed to be communication requirements. R1, R3, R4, R5, 9.1.2, 9.1.4, 9.2, 9.3.4, 9.4.1 address the actions to be taken if the NPIRs cannot be met.</p>			
BPA (1) Lorissa Jones		<input checked="" type="checkbox"/>	<p>The standard, as written, places too much emphasis on the transmission system being operated to meet the needs of (in our case) a single generator. It states, in R4.2. , that the transmission entity " ... shall operate the electric system to meet the Nuclear Plant Interface Requirements (NPIR), while respecting the System Operating Limits." BPA must put the safety and reliability of the entire system first, while respecting the NIPRs</p> <p>While we agree that nuclear plants have a unique subset of requirements to ensure safe and reliable operation, these requirements should be addressed in the individual interconnection agreements between the plants and the transmission provider – not in a "special" standard that goes beyond the needs of other types of generation.</p>
<p><b>Response:</b> The Drafting Team understands the concerns regarding safety and reliability of the Bulk Electric System. Also, upon further review, the wording of R4.2/R4.3 appear to conflict. As a result, the Drafting Team has clarified the definition of NPIRs to 1) emphasize that the development of the NPIRs is a collaborative effort of the Nuclear Plant Generator Operator and</p>			

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<b>Question #3</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
<p>the applicable Transmission Entities, and 2) that they must be based on the both the NPLRs mandated by nuclear regulations and Bulk Electric System requirements mandated by the NERC/ERO standards. Both are important in terms of safety and reliability. Thus, Bulk Electric System requirements, including those associated with System Operating Limits, should be factored into the NPIRs along with appropriate notifications and actions to be taken if conflicts arise in maintaining both safety/reliability of the Bulk Electric System and safety/reliability of the nuclear plant. The NPIRs will, therefore, be met in such cases as long as the Nuclear Plant is notified and appropriate mitigating actions are taken per the provisions of the Agreement(s) in order to maintain nuclear plant safety. Therefore, R4.2 only needs to state, "Operate the electric system to meet the NPIRs" and R4.3 can be deleted. The Drafting Team has modified R4, M4, and R9.3.4 accordingly.</p> <p>The NERC Standards Authorization Board agreed with industry requests for a special standard to ensure uniformity regarding the minimum content of the nuclear interface/interconnection agreement(s) to ensure reliable operation of the bulk electric system at the nuclear plant/electric system interface.</p>			
Ameren (1) John Sullivan		<input checked="" type="checkbox"/>	<p>While the separation of Nuclear Plant Licensing Requirements and Nuclear Plant Interface Requirements is a step in the right direction, there should be more emphasis in the standard on the mutual development of the Nuclear Plant Interface Requirements (NPIRs) between both the Nuclear Plant Generator Operator and Transmission Entities. For example, R1 states that the Nuclear Plant Generator Operator provides the proposed NPIRs to the Transmission Entities. Rather, this requirement should be revised to show both the Nuclear Plant Generator Operator and Transmission Entities participating in developing the NPIR's at the outset.</p> <p>In R7 and R8, the meaning of the terms 'limits' and 'capabilities' in this context is not clear. Suggested modifications to narrow the scope and make the meaning of these two terms clearer would be ' generator limits' and 'generator system capabilities'.</p>
<p><b>Response:</b> The standard is intended to establish a collaborative effort between the nuclear plant owner/operator and the applicable transmission entities that provide those necessary services. The Drafting Team has revised the definition of NPIRs to emphasize that the NPIRs are mutually agreed to by the Nuclear Plant Generator Operator and the applicable Transmission Entities and that the NPIRs must be based on the both the NPLRs mandated by nuclear regulations and Bulk Electric System requirements mandated by the NERC/ERO standards. In addition, the Drafting Team revised R2 for clarity to emphasize that in the process of developing the agreements, the Nuclear Plant Generator Operator and the applicable Transmission Entity shall document the (agreed upon) NPIRs within the content of the agreements.</p> <p>R7 and R8 state the limits and capabilities based on the entity making the notification.</p>			
MISO Nuclear Plant WG Terry Volkmann (MISO)		<input checked="" type="checkbox"/>	<p>Separating the requirements into Licensing and Interface requirements is a major improvement. However, the standard still lacks language around the NPIR being mutually agreed to. The definition of NPIR states agreed upon criteria. It does not</p>

## Consideration of Comments on 2<sup>nd</sup> Draft of Nuclear Off-site Power Supply Standard

Question #3			
Commenter	Yes	No	Comment
			<p>state mutual agreement or who the agreement is with. R1 is still one way, the Nuclear Plant Generator proposing NPIR. In many cases even developing a proposed set of NPIR requires mutual analysis between transmission entity and generator operator. Recommended change to R1 - The Nuclear Plant Generator Operator shall provide the NPLRs in writing to the applicable transmission entities, shall verify receipt of the NPLRs, and mutually develop and agree on the NPIRs. Without mutual development of NPIRs, no agreed on NPIRs can exist.</p> <p>R7 and R8 are communicative in nature, not action steps to ensure the proper coordination. Recommend changing R7 and R8 to provide language to ensure coordination prior to implementation of the changes.</p>
<p><b>Response:</b> The standard is intended to establish a collaborative effort between the nuclear plant owner/operator and the applicable transmission entities that provide necessary services. The Drafting Team has revised the definition of NPIRs to emphasize that the NPIRs are mutually agreed to by the Nuclear Plant Generator Operator and the applicable Transmission Entities and that the NPIRs must be based on the both the NPLRs mandated by nuclear regulations and Bulk Electric System requirements mandated by the NERC/ERO standards. In addition, the Drafting Team revised R2 for clarity to emphasize that in the process of developing the agreements, the Nuclear Plant Generator Operator and the applicable Transmission Entity shall document the (agreed upon) NPIRs within the content of the agreements.</p>			
NPCC CP9 RSWG Guy Zito	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	NPCC has a recommendation in the response to Question 7 below that may affect the sequence of requirements.
<p><b>Response:</b> See the Drafting Team response to Q7 for this commenter.</p>			
IESO (2) Ron Falsetti	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	We agree with the changes. However, please see additional comment in Q7.
<p><b>Response:</b> See the Drafting Team response to Q7 for this commenter.</p>			
Progress Energy (1, 3, 5, 6) George Attarian	<input checked="" type="checkbox"/>		Good change, but we will still need to ensure that the NPLR are always met. If any commitments are made through NPIR, these will need to be clearly identified in site procedures that the nuclear plant operators use.
<p><b>Response:</b> The Drafting Team agrees with your comment.</p>			
TVA (1) Kathleen Davis	<input checked="" type="checkbox"/>		
CenterPoint Energy (1) Milap Shah	<input checked="" type="checkbox"/>		
PS Commission of SC (9) Phil Riley	<input checked="" type="checkbox"/>		
FirstEnergy (1, 3, 5, 6)	<input checked="" type="checkbox"/>		

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<b>Question #3</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
David L. Folk			
JDRJC Associates (1) Jim Cyrulewski	<input checked="" type="checkbox"/>		
Constellation Generation (5) Walter Adams	<input checked="" type="checkbox"/>		
Tennessee Valley Authority (5) – Jerry Nicely	<input checked="" type="checkbox"/>		
FPL Energy L.L.C. John Ragan	<input checked="" type="checkbox"/>		
WECC RCCWG Nancy Bellows	<input checked="" type="checkbox"/>		
Dominion VA Power (1) Jalal Babik	<input checked="" type="checkbox"/>		
Entergy (5) Will Franklin	<input checked="" type="checkbox"/>		
Entergy Nuclear NE (5) Robert Penny	<input checked="" type="checkbox"/>		
FPL Nuclear Division (5) Raj Kundalkar	<input checked="" type="checkbox"/>		
Southern Co. (1) James T. Wood	<input checked="" type="checkbox"/>		
SCE&G ERO Working Group Sally Wofford	<input checked="" type="checkbox"/>		
ATCLLC (1) Jason Shaver	<input checked="" type="checkbox"/>		
FRCC (2) Eric Senkowicz	<input checked="" type="checkbox"/>		
OPG Inc. (5) Brian Gooder	<input checked="" type="checkbox"/>		
FPL (1) Pedro Modia	<input checked="" type="checkbox"/>		



**Consideration of Comments on 2<sup>nd</sup> Draft of Nuclear Off-site Power Supply Standard**

**4. Are you aware of any conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement?**

**Summary Consideration:** While some commenters provided suggestions for improvement, no conflicts between the proposed standard and any regulatory function, rule order, tariff, rate schedule, legislative requirement or agreement were identified.

Question #4			
Commenter	Yes	No	Comment
MRO (2) Martin Trence			This group cannot answer this question due to the multitude of regulations present and insufficient time allotted in the commenting period to perform adequate research to provide a correct answer.
BPA (1) Lorissa Jones			Unsure. Without a full understanding of the NPIR requirements and an opportunity to compare those requirements with standards, statutes, tariffs, rates, legislative requirements or other agreements it is not possible at this point to determine if conflicts exist. This would be an important element of work to complete to assure we don't increase operational, financial or legal risks for Transmission system operators or NPPs. We recommend the committee not implement this standard until that level of analyses can be completed by affected Transmission Operators, Balancing Authorities and Load Serving Entities.
<p><b>Response:</b> The NPIRs, as part of the agreements, are mutually negotiated and agreed to and it is expected that the involved entities will address these issues as part of developing the required agreements.</p> <p>The effective date of the standard will be at least 18 months after BOT approval of the standard to allow time for development or revision of agreements.</p>			
Progress Energy (1, 3, 5, 6) George Attarian		<input checked="" type="checkbox"/>	Under the Applicability Section 4., "Nuclear Plant Generator Operator" is currently not a recognized entity by NERC for which a certification is being developed. "Generator Operator" is currently a recognized NERC entity. Do you want NERC to pursue a "Nuclear Plant Generator Operator" certification standard?
<p><b>Response:</b> Currently NERC Standards require certification of the following Entities: Balancing Authorities, Reliability Coordinators, and Transmission Operators. Organization registration will require Generator Operators to be compliant with NERC standards. The Drafting Team will NOT recommend that Nuclear Plant Generators be certified per Section 500 of the Rules of Order. The Drafting Team will NOT recommend that Nuclear Plant Generator Operator entities are added as a NERC Certified entity. The definition in the standard for Nuclear Plant Generator Operator has been revised for clarity of this issue.</p>			
FirstEnergy (1, 3, 5, 6) David L. Folk		<input checked="" type="checkbox"/>	M-6 is very open ended. Some how the Modification process would have to ask a question, "Does the Mod affect the ability to meet an NPIR?" and then be able to screen out those that have some impact so we could alert the transmission authorities. It would seem we would have to alter the mod process or something

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<b>Question #4</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
			else to accomplish this requirement. While this process can be changed, the change may require regulatory activity to get it accomplished.
<b>Response:</b> M6 requires the audited entity to supply documents that show that outages and maintenance activities have been coordinated to insure that activities pertaining to NPIRs have been identified.			
Constellation Generation (5) Walter Adams		<input checked="" type="checkbox"/>	However, in section R8 a clause should be added to the requirements to ensure that any changes to the electric system that would impact the NPIR are not implemented until the NPGO has performed a review in accordance with 10 CFR 50.59. This is important because being informed by the TE does not necessarily constitute a hold point, and if the change does impact the NPGO design or licensing bases, then a review under 50.59 is required prior to implementation.
<b>Response:</b> The Drafting Team understands your concern and agrees that such changes should be reviewed prior to implementation. This is a detail that should be addressed within the agreements.			
Dominion VA Power (1) Jalal Babik		<input checked="" type="checkbox"/>	See comments to Q7.
<b>Response:</b> See the Drafting Team response to Q7 for this commenter.			
ISO/RTO Council (2) Charles Yeung		<input checked="" type="checkbox"/>	Because this standard does not propose any specific requirement of its own (it only requires that entities meet requirements set forth by others), it can't conflict with anyone else's requirements.  Because the SDT adopted a broad brush term (Transmission Entities) and uses that term casually - the requirements cannot be assigned a one-to-one relationship. This standard imposes indirect obligations (if it applies to you then you must do ....; if it doesn't apply then don't worry). As noted in response to Q3 above, FERC has suggested that such ill-defined obligations will be challenged. The question becomes, who decides who is responsible? The Plant operator? The license? The NRC? NERC? This issue must be resolved before the standard is approved - not after.
<b>Response:</b> The applicability section of the standard identifies the organizations that are considered transmission entities for the purpose of this standard. These organizations will be required to be registered per NERC requirements and therefore responsible for adherence to reliability standards.			
FRCC (2) Eric Senkowicz	<input checked="" type="checkbox"/>		We would suggest the addition of requirement R4.5 to state that (transmission entities shall)....  "Utilize all other available measures / resources to preserve / restore the reliability of the transmission system prior to re-dispatching a Nuclear unit's real and reactive power output." In our opinion, this is a critical element for preserving the stability

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<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
			<p>of the nuclear plants as base load units. These units are not accustomed to load following or regulation and should be protected as reliable base load resources. This position is consistent with several opinions and positions expressed by the NRC. Dispatch changes on Nuclear units are much more complex than conventional fossil fuel units and rapid dispatch changes usually involve exposing the local system to an increased risk of a large unplanned outage with a much more involved return to service process than other unit recoveries.</p> <p>Requirement R5, "The Nuclear Plant Generator Operator shall operate per the Agreements developed in accordance with this standard. " This requirement may introduce unintentional conflicts or mis-understanding across the industry (between transmission and nuclear generation) and the various regulator segments, especially with regard to Compliance metrics. We believe the DT understands that the Nuclear facilities "shall" operate in accordance with their much more formalized Nuclear Licensing requirements as mandated by the jurisdictional nuclear regulatory agency for the plant (NRC or Canadian equivalent). Where conflicts or room for interpretation exists, between licensing requirements and NPIR Agreement requirements, the plants must operate in accordance with their licenses and not the Agreements. The requirement is therefore redundant to a plants licensing basis and could be deleted from the standard.</p> <p>If the requirement is there to address a concern by the DT (that the plants operate in a manner consistent with the Agreements), the requirement may be more effective if it is written to require the Nuclear Plant Generator Operator to validate that the appropriate operating licensing procedures (or bases) are accurately incorporated into the NPIRs and resulting Agreements.</p> <p>This would leave the appropriate accountabilities (to the jurisdictional nuclear regulatory agency) for the operations and accountability to the ERO for deviations from NPIR agreements. (the standard requirement language would be consistent with proper enforcement protocol).</p>
<p><b>Response:</b> The drafting team has discussed in detail the issue of cycling nuclear plants for power up and down requirements. The consensus of the drafting team is that priorities for power transients should be decided by the applicable entities and entered as part of the agreement(s) required by this standard. The drafting team believes the standard should be non-prescriptive in terms of what constitutes the specific NPIR, which are mutually determined in R1 and R2 by the Nuclear Plant Generator Operator and the applicable Transmission Entities. R9 lists the minimum required elements of an agreement; it does not limit the inclusion of additional elements for clarification/agreement on this type of operational issue.</p>			

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<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
R5 covers operating per the agreements – if the agreements are not in line with the Nuclear Plant Operating Procedures OR the Transmission Entities Operating Procedures, then the agreements or procedures need to be modified to resolve the differences.			
Ameren (1) John Sullivan		<input checked="" type="checkbox"/>	We are not aware of any conflicts from a transmission perspective.
NPCC CP9 RSWG Guy Zito		<input checked="" type="checkbox"/>	
IESO (2) Ron Falsetti		<input checked="" type="checkbox"/>	
TVA (1) Kathleen Davis		<input checked="" type="checkbox"/>	
CenterPoint Energy (1) Milap Shah		<input checked="" type="checkbox"/>	
PS Commission of SC (9) Phil Riley		<input checked="" type="checkbox"/>	
JDRJC Associates (1) Jim Cyrulewski		<input checked="" type="checkbox"/>	
Tennessee Valley Authority (5) – Jerry Nicely		<input checked="" type="checkbox"/>	
FPL Energy L.L.C. John Ragan		<input checked="" type="checkbox"/>	
WECC RCCWG Nancy Bellows		<input checked="" type="checkbox"/>	
New York ISO (2) Michael Calimano		<input checked="" type="checkbox"/>	
Exelon Energy Delivery (1, 3) Thomas W. Leeming		<input checked="" type="checkbox"/>	
Entergy (5) Will Franklin		<input checked="" type="checkbox"/>	
Entergy Nuclear NE (5) Robert Penny		<input checked="" type="checkbox"/>	
FPL Nuclear Division (5)		<input checked="" type="checkbox"/>	

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<b>Question #4</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
Raj Kundalkar			
Southern Co. (1) James T. Wood		<input checked="" type="checkbox"/>	
SCE&G ERO Working Group Sally Wofford		<input checked="" type="checkbox"/>	
ATCLLC (1) Jason Shaver		<input checked="" type="checkbox"/>	
MISO Nuclear Plant WG Terry Volkmann (MISO)		<input checked="" type="checkbox"/>	
OPG Inc. (5) Brian Gooder		<input checked="" type="checkbox"/>	
FPL (1) Pedro Modia		<input checked="" type="checkbox"/>	
NPPD (1) Ronald O. Gunderson		<input checked="" type="checkbox"/>	

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5. Do you agree that the changes made by the drafting team address stakeholder concerns that ‘transmission entities’ is too broad a term?

**Summary Consideration:** Many commenters indicated that additional clarification is needed with respect to ‘Transmission Entities’. The drafting team modified its implementation plan to require entities to file the agreements required in this standard so that entities will know, before the standard becomes effective, if the requirements are applicable to them.

Question #5			
Commenter	Yes	No	Comment
WECC RCCWG Nancy Bellows		<input checked="" type="checkbox"/>	It remains unclear what Transmission Entities would be required to be involved in an agreement with a nuclear power plant. In cases where the Reliability Coordinator is distinct from other Transmission Entity, the Reliability Coordinator should not be required to negotiate individual nuclear plant interface coordination agreements. These agreements, instead, should be with the Transmission Entity, distinct from the Reliability Coordinator, interfacing with the individual Nuclear Plant Generator Operator. The Reliability Coordinator should be aware of any existing agreement between the Transmission Entity and the Nuclear Plant Generator Operator, but should not be required to be a party to the agreement. That said, participation in the agreement would be at the Reliability Coordinator's option. The Reliability Coordinator will oversee the operation of the power system in accordance with the agreement between the Transmission Entity and the Nuclear Plant Generator Operator.
<p><b>Response:</b> A number of respondents expressed concerns that the term “Transmission Entities” is too broad, making it difficult to determine which transmission entities are responsible, and making it difficult for NERC to enforce compliance. Based on input from NERC Staff, the standard drafting team made changes included in the 2nd draft of the standard to address these concerns. These changes included the establishment of a single nuclear entity (the Nuclear Plant Generator Operator). The Nuclear Plant Generator Operator must work with the appropriate transmission authorities to identify the applicable Transmission Entities. The Nuclear Plant Generator Operator must provide the plant’s proposed nuclear interface requirements (NPIR) to the identified Transmission Entities (see R1 and M1). The specific Transmission Entities involved will be contingent on that plant’s physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant’s specific licensing requirements (NPLR).</p> <p>Next, the standard requires the Nuclear Plant Generator Operators and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs shall be addressed and implemented (see R2 and M2). The names of the responsible Transmission Entities must be clearly identified in these agreements (see R9.1.2 and A4.2).</p>			
Progress Energy (1, 3, 5, 6) George Attarian		<input checked="" type="checkbox"/>	See 4. From a nuclear plant operator perspective, we should only have to be concerned with one single point of contact off-site with respect to the transmission entities. Anything related to the host of transmission entities should come through

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<b>Question #5</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
			that one single point of contact to us.
<b>Response:</b> The standard does not require more than one "point of contact" as long as the requirements of R1 are satisfied.			
JDRJC Associates (1) Jim Cyrulewski		<input checked="" type="checkbox"/>	This is a reliability standard. There are no relationships identified with the Transmission Service Provider, Planning Authority, Distribution Providers and Load Serving Entities. Thus the first three entities should be eliminated from Section A Item 4.2. Likewise Section A Item 4.3 should be eliminated.
<b>Response:</b> This standard applies to all entities that are responsible for providing services related to Nuclear Plant Interface Requirements (NPIRs). If the entities identified in this comment are deemed by the authors of the agreements to be necessary parties to the agreement, then the standard will apply to those entities.			
Tennessee Valley Authority (5) – Jerry Nicely		<input checked="" type="checkbox"/>	Section B. Requirements refer to coordination with the applicable transmission entities. Since section 4.2 lists 8 different entities, the NPP will most likely be confused to which ones they have to coordinate with. As a result, probably some will be missed. This will be a confusion factor for the NPP.
<b>Response:</b> The Nuclear Plant Generator Operator is required to determine the applicable Transmission Entities per requirement R1 and, therefore, must work with the appropriate transmission entity(ies) to accomplish this.			
Dominion VA Power (1) Jalal Babik		<input checked="" type="checkbox"/>	A new requirement shall be added to the Standard stating on how to resolve a dispute between the entities in case they can't meet R2.
<b>Response:</b> If agreements cannot be reached, all applicable parties will be held in non-compliance with R2.			
Exelon Energy Delivery (1, 3) Thomas W. Leeming		<input checked="" type="checkbox"/>	The Standard Development Procedure requires a standard to be applicable to a functional entity as defined in the functional model. There is no Nuclear Plant Generator Operator or Transmission Entities in the model. The clarification as to applicability is handled in CIP -002-009. Consider staying with this approved convention.  At a minimum, the term should be qualified in each instance as - the designated Transmission Entity - or - the applicable Transmission Entity.
<b>Response:</b> With the new ERO requirements for Organization Registration, the list of applicable entities for the Reliability Standards has grown. The Three Year Plan for standards review and revision will address the Applicability issues in all standards. Each agreement identifies the applicable or designated entities.			
Entergy (5) Will Franklin		<input checked="" type="checkbox"/>	The use of the term "Transmission Entities" to describe everything outside of the nuclear plant is misleading. Not everything outside of the nuclear plant is "transmission". BAs or LSEs may not think of themselves as "transmission entities" except as defined in this one standard. The term "Grid Entity" or similar descriptor would be more appropriate.

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Question #5			
Commenter	Yes	No	Comment
<p><b>Response:</b> The term Transmission Entity is defined in the applicability section of this standard.</p>			
<p>ATCLLC (1) Jason Shaver</p>		<input checked="" type="checkbox"/>	<p>The Standard Drafting Team has introduced a new sub-entity titled "Nuclear Plant Generator Operator" into the NERC Functional Model. ATC does not agree with the introduction of this new sub-entity category.</p> <p>Concern:</p> <p>ATC is uncertain of the consequence of this new sub-entity on existing standards. Would a Nuclear Plant Generator Operator have to be listing in other standards that are applicable to them and other Generator Operators?</p> <p>If this term is accepted by the Industry it will effectively split the Generator Operator group into two camps. Those that operate a nuclear facility and those that do not. This type of work should not be done without the input of the Functional Model Task Force Group and the NERC compliance group.</p> <p>Suggested Solution:</p> <ol style="list-style-type: none"> <li>1) Delete the term Nuclear Plant Generator Operator.</li> <li>2) In the applicability section of the document use the following language:</li> </ol> <p>Generator Operator: Those Generator Operators that have a Nuclear Plant Licenses and are responsible for operation of a nuclear facility licensed to produced commercial power.</p> <p>ATC is also concerned with the term Transmission Entity.</p> <p>First, applicability will be determined by a subsequent agreement document not by the Applicability Section of the standard. This situation is unique in NERC standards. Some entities that are listed in the Applicability section may not know that they are required to meet this agreement unless the Generator Operator informs them. What steps has the STD done to discuss this topic with NERC? ATC would strongly suggest that NERC clarify the auditability of this standard and post that information with the standards next posting.</p> <p>Overall ATC is reluctant to support a standard were Applicability is determine by an alternate agreement. Lastly, this situation seems to go against NERC's "Essential Attributes for Technically Excellent Reliability Standards". These attributes are identified in NERC's FERC filing SECTION 300 Reliability Standards Development".</p>
<p><b>Response:</b> The standard has been revised for clarification of this issue. The standard defines the term Nuclear Plant</p>			



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<b>Question #5</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
<p>Generator Operator as “Any <u>Generator Operator</u> or <u>Generator Owner</u> that is a Nuclear Plant Licensee responsible for operation of a nuclear facility licensed to produce commercial power.” The Nuclear Plant Generator Operator is, thus, an entity that falls within categories defined in the Functional Model.</p> <p>A number of respondents expressed concerns that the term “Transmission Entities” is too broad, making it difficult to determine which transmission entities are responsible, and making it difficult for NERC to enforce compliance. Based on input from NERC Staff, the standard drafting team made changes included in the 2nd draft of the standard to address these concerns. These changes included the establishment of a single nuclear entity (the Nuclear Plant Generator Operator). The Nuclear Plant Generator Operator must work with the appropriate transmission authorities to identify the applicable Transmission Entities. The Nuclear Plant Generator Operator must provide the plant’s proposed nuclear interface requirements (NPIR) to the identified Transmission Entities (see R1 and M1). The specific Transmission Entities involved will be contingent on that plant’s physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant’s specific licensing requirements (NPLR).</p> <p>Next, the standard requires the Nuclear Plant Generator Operators and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs shall be addressed and implemented (see R2 and M2). The names of the responsible Transmission Entities must be clearly identified in these agreements (see R9.1.2 and A4.2).</p>			
BPA (1) Lorissa Jones		<input checked="" type="checkbox"/>	The term "Transmission Entities" as previously defined was too broad, but now it is too vague in that it is not defined at all. If the term is going to be used in this standard, it must be defined to avoid confusion.
<p><b>Response:</b> A number of respondents expressed concerns that the term “Transmission Entities” is too broad, making it difficult to determine which transmission entities are responsible, and making it difficult for NERC to enforce compliance. Based on input from NERC Staff, the standard drafting team made changes included in the 2nd draft of the standard to address these concerns. These changes included the establishment of a single nuclear entity (the Nuclear Plant Generator Operator). The Nuclear Plant Generator Operator must work with the appropriate transmission authorities to identify the applicable Transmission Entities. The Nuclear Plant Generator Operator must provide the plant’s proposed nuclear interface requirements (NPIR) to the identified Transmission Entities (see R1 and M1). The specific Transmission Entities involved will be contingent on that plant’s physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant’s specific licensing requirements (NPLR).</p> <p>Next, the standard requires the Nuclear Plant Generator Operators and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs shall be addressed and implemented (see R2 and M2). The names of the responsible Transmission Entities must be clearly identified in these agreements (see R9.1.2 and A4.2).</p>			
MISO Nuclear Plant WG Terry Volkmann (MISO)		<input checked="" type="checkbox"/>	The changes are an improvement. However, when it comes to compliance, it is uncertain how to identify which transmission entities are subject to this standard for

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<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
			each nuclear plant. The MISO NPWG recommends the addition of a new requirement that would be the first requirement. This requirement would be for the Nuclear Plant generator operator to identify the applicable transmission entities which are required to support NPLRs. This would begin the process for developing applicable agreements. This identification should be only a Nuclear Plant generator operator compliance issue. Once identified the transmission entities can be held responsible for compliance with this standard.
<b>Response:</b> R1 as written establishes the requirement for the Nuclear Plant Generator Operator to identify all Transmission Entities that the standard is applicable to.			
NPPD (1) Ronald O. Gunderson		<input checked="" type="checkbox"/>	There is no guidance on how to identify those transmission entities with which agreements are required. How will a nuclear plant or transmission entity be determined to be in compliance? There is no definition of services provided to the nuclear plant. Again R1 indicates the nuclear plant develops the NPIR instead of them being a collaborative effort as indicated in question 3. It needs to be a collaborative effort between the nuclear plant and the transmission entity. When it comes to compliance, it is uncertain how to identify which transmission entities are subject to this standard for each nuclear plant. There should be a new requirement that would be the first requirement. This requirement would be for the NP generator operator to identify the applicable transmission entities which are required to support the NPLRs. This would begin the process for developing the NPIR and associated agreements.
<b>Response:</b> R1 establishes the requirement for the Nuclear Plant Generator Operator to identify all Transmission Entities that the standard is applicable to. R1 requires the Nuclear Plant Generator Operator to initiate the agreement process by submitting the PROPOSED NPIRs to the applicable entities. R2 has been revised to clarify that development of the final NPIRs in the agreement will be a collaborative effort between all the entities involved in the agreement.			
NPCC CP9 RSWG Guy Zito		<input checked="" type="checkbox"/>	NPCC has a recommendation in the response to Question 7 below that may affect the sequence of requirements.
<b>Response:</b> See the Drafting Team response to Q7 for this commenter.			
Entergy Nuclear NE (5) Robert Penny		<input checked="" type="checkbox"/>	See comments provided by NPCC.
<b>Response:</b> See response provided for comment from NPCC.			
ISO/RTO Council (2) Charles Yeung		<input checked="" type="checkbox"/>	See comments to question 7.
<b>Response:</b> See the Drafting Team response to Q7 for this commenter.			

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<b>Question #5</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
New York ISO (2) Michael Calimano		<input checked="" type="checkbox"/>	
IESO (2) Ron Falsetti	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Please see our additional comments in Q7.
<b>Response:</b> See the Drafting Team response to Q7 for this commenter.			
MRO (2) Martin Trence	<input checked="" type="checkbox"/>		It is recognized in today's world, many different parties may become involved in interface coordination on the transmission side of the world, however, the concern arises as there is nothing in the Standard that suggests consideration of establishing an order of ranking these different transmission entities in relation to respective Nuclear Power Plant Operator. If all transmission entities were treated equally in relation to the Nuclear Power Plant Operator, the potential for conflicts in administration and execution of the Agreements established is significantly higher. The standard should address when multiple Transmission Entities are involved with a Nuclear Plant Generator Operator, who will be the prevailing entity. For example, the Transmisson Entity with the most stringent requirements shall prevail in the event of a conflict.
<p><b>Response:</b> A number of respondents expressed concerns that the term "Transmission Entities" is too broad, making it difficult to determine which transmission entities are responsible, and making it difficult for NERC to enforce compliance. Based on input from NERC Staff, the standard drafting team made changes included in the 2nd draft of the standard to address these concerns. These changes included the establishment of a single nuclear entity (the Nuclear Plant Generator Operator). The Nuclear Plant Generator Operator must work with the appropriate transmission authorities to identify the applicable Transmission Entities. The Nuclear Plant Generator Operator must provide the plant's proposed nuclear interface requirements (NPIR) to the identified Transmission Entities (see R1 and M1). The specific Transmission Entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR).</p> <p>Next, the standard requires the Nuclear Plant Generator Operators and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs shall be addressed and implemented (see R2 and M2). The names of the responsible Transmission Entities must be clearly identified in these agreements (see R9.1.2 and A4.2).</p> <p>The entities are responsible for insuring that the agreements that they develop do not have conflicts between the agreements.</p>			
FRCC (2) Eric Senkowicz	<input checked="" type="checkbox"/>		Is it the intention of the DT that the " Nuclear Plant Generator Operator" (NPGO) will become a new "registered" entity with regards to standards development and compliance?

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<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
			If so, the implementation plan may need to address integrating / adding (NPGO) to the applicability of other standards that have only been identified as applicable to Generator Operators (GOPs).
<p><b>Response:</b> No, the definition in the standard was revised to clarify the term Nuclear Plant Generator Operator as “Any <u>Generator Operator</u> or <u>Generator Owner</u> that is a Nuclear Plant Licensee responsible for operation of a nuclear facility licensed to produce commercial power.” The Nuclear Plant Generator Operator is, thus, an entity that falls within categories defined in the Functional Model.</p>			
TVA (1) Kathleen Davis	<input checked="" type="checkbox"/>		
CenterPoint Energy (1) Milap Shah	<input checked="" type="checkbox"/>		
PS Commission of SC (9) Phil Riley	<input checked="" type="checkbox"/>		
FirstEnergy (1, 3, 5, 6) David L. Folk	<input checked="" type="checkbox"/>		
Constellation Generation (5) Walter Adams	<input checked="" type="checkbox"/>		
FPL Energy L.L.C. John Ragan	<input checked="" type="checkbox"/>		
FPL Nuclear Division (5) Raj Kundalkar	<input checked="" type="checkbox"/>		
Southern Co. (1) James T. Wood	<input checked="" type="checkbox"/>		
SCE&G ERO Working Group Sally Wofford	<input checked="" type="checkbox"/>		
OPG Inc. (5) Brian Gooder	<input checked="" type="checkbox"/>		
FPL (1) Pedro Modia	<input checked="" type="checkbox"/>		
Ameren (1) John Sullivan	<input checked="" type="checkbox"/>		

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6. Are you aware of any regional differences that would be required as a result of this standard?

**Summary Consideration:** No commenter identified any regional differences needed as a result of this standard.

Question #6			
Commenter	Yes	No	Comment
OPG Inc. (5) Brian Gooder	<input checked="" type="checkbox"/>		We strongly support the inclusion of Section E - Regional Differences.
Entergy Nuclear NE (5) Robert Penny		<input checked="" type="checkbox"/>	See comments to question 7.
<b>Response:</b> See the Drafting Team response to Q7 for this commenter.			
Response: Please			
NPCC CP9 RSWG Guy Zito		<input checked="" type="checkbox"/>	
IESO (2) Ron Falsetti		<input checked="" type="checkbox"/>	
TVA (1) Kathleen Davis		<input checked="" type="checkbox"/>	
CenterPoint Energy (1) Milap Shah		<input checked="" type="checkbox"/>	
Progress Energy (1, 3, 5, 6) George Attarian		<input checked="" type="checkbox"/>	
PS Commission of SC (9) Phil Riley		<input checked="" type="checkbox"/>	
FirstEnergy (1, 3, 5, 6) David L. Folk		<input checked="" type="checkbox"/>	
JDRJC Associates (1) Jim Cyrulewski		<input checked="" type="checkbox"/>	
Constellation Generation (5) Walter Adams		<input checked="" type="checkbox"/>	
Tennessee Valley Authority (5) – Jerry Nicely		<input checked="" type="checkbox"/>	
FPL Energy L.L.C. John Ragan		<input checked="" type="checkbox"/>	

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<b>Question #6</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
WECC RCCWG Nancy Bellows		<input checked="" type="checkbox"/>	
MRO (2) Martin Trence		<input checked="" type="checkbox"/>	
New York ISO (2) Michael Calimano		<input checked="" type="checkbox"/>	
Dominion VA Power (1) Jalal Babik		<input checked="" type="checkbox"/>	
Exelon Energy Delivery (1, 3) Thomas W. Leeming		<input checked="" type="checkbox"/>	
Entergy (5) Will Franklin		<input checked="" type="checkbox"/>	
ISO/RTO Council (2) Charles Yeung		<input checked="" type="checkbox"/>	
FPL Nuclear Division (5) Raj Kundalkar		<input checked="" type="checkbox"/>	
Southern Co. (1) James T. Wood		<input checked="" type="checkbox"/>	
SCE&G ERO Working Group Sally Wofford		<input checked="" type="checkbox"/>	
ATCLLC (1) Jason Shaver		<input checked="" type="checkbox"/>	
BPA (1) Lorissa Jones		<input checked="" type="checkbox"/>	
FRCC (2) Eric Senkowicz		<input checked="" type="checkbox"/>	
MISO Nuclear Plant WG Terry Volkmann (MISO)		<input checked="" type="checkbox"/>	
FPL (1) Pedro Modia		<input checked="" type="checkbox"/>	
Ameren (1) John Sullivan		<input checked="" type="checkbox"/>	
NPPD (1)		<input checked="" type="checkbox"/>	

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<b>Question #6</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
Ronald O. Gunderson			

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**7. If you have other comments or specific suggestions for improvements to this standard that you have not already made, please provide them here:**

**Summary Consideration:** Based on stakeholder comments, the drafting team made the following changes to the standard:

- Modified the definition of Nuclear Power Plant Operator to include the possibility that this could be either a generator operator or a generator owner
- Removed the word, 'reliability' from R4.1 and M4.1 to clarify that these are not analyses conducted by the reliability coordinator
- Modified R4.2 to eliminate the phrase, 'while respecting System Operating Limits' at the end of the requirement.
- Modified M4.2 to eliminate the phrase "to the extent practicable" since this is difficult to measure objectively.
- Deleted R4.3 and M4.3: Inform the Nuclear Plant Generator Operator and coordinate mitigating actions when NPIRS cannot be met. This was deleted because the wording of R4.2 and R4.3 appeared to conflict.
- The Drafting Team has revised the standard to use the term "electric system" rather than 'transmission system'. This modification recognizes that some of the agreements may involve the distribution system.
- Made other minor changes to improve clarity or to fix typographical errors.

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Commenter	Yes	No	Comment
NPCC CP9 RSWG Guy Zito	<input checked="" type="checkbox"/>		NPCC participating members believe that any requirements must be assigned to entities that are part of and recognized in the NERC Functional Model. As such, the "Transmission Entity" that appears in the posted draft does not meet this criterion. NPCC recommends instead of the generic Transmission Entity designation in the draft, the TOP and the Nuclear Plant should jointly identify with whom the Nuclear plant needs to establish the indicated agreement with that addresses the NPIRs. These entities could be the TOP itself, a TO or any other appropriate Functional Model entity as necessary.
<p><b>Response:</b> A number of respondents expressed concerns that the term "Transmission Entities" is too broad, making it difficult to determine which transmission entities are responsible, and making it difficult for NERC to enforce compliance. Based on input from NERC Staff, the standard drafting team made changes included in the 2nd draft of the standard to address these concerns. These changes included the establishment of a single nuclear entity (the Nuclear Plant Generator Operator). To meet R1, the Nuclear Plant Generator Operator must work with the appropriate transmission authorities to identify the applicable Transmission Entities. The Nuclear Plant Generator Operator must provide the plant's proposed nuclear interface requirements (NPIR) to the identified Transmission Entities (see R1 and M1). The specific Transmission Entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR).</p> <p>Next, the standard requires the Nuclear Plant Generator Operators and the applicable Transmission Entities to have in effect one</p>			



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<p>or more agreements that document how the NPIRs shall be addressed and implemented (see R2 and M2). The names of the responsible Transmission Entities must be clearly identified in these agreements (see R9.1.2 and A4.2).</p>			
<p>IESO (2) Ron Falsetti</p>			<p>IESO believes that all requirements must be assigned to specific entities that are part of and recognized in the NERC Functional Model. As such, the "Transmission Entity" that appears in the posted draft does not meet this criterion. We recommend that instead of the generic Transmission Entity designation in the draft, the TOP and the Nuclear Plant Operator be designated as the responsible entities to jointly identify with whom the nuclear plant needs to establish the indicated agreement with that addresses the NPIRs. These entities could be the TOP itself, a TO or any other appropriate Functional Model entity as necessary.</p>
<p><b>Response:</b> A number of respondents expressed concerns that the term "Transmission Entities" is too broad, making it difficult to determine which transmission entities are responsible, and making it difficult for NERC to enforce compliance. Based on input from NERC Staff, the standard drafting team made changes included in the 2nd draft of the standard to address these concerns. These changes included the establishment of a single nuclear entity (the Nuclear Plant Generator Operator). To meet R1, the Nuclear Plant Generator Operator must work with the appropriate transmission authorities to identify the applicable Transmission Entities. The Nuclear Plant Generator Operator must provide the plant's proposed nuclear interface requirements (NPIR) to the identified Transmission Entities (see R1 and M1). The specific Transmission Entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR).</p> <p>Next, the standard requires the Nuclear Plant Generator Operators and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs shall be addressed and implemented (see R2 and M2). The names of the responsible Transmission Entities must be clearly identified in these agreements (see R9.1.2 and A4.2).</p>			
<p>TVA (1) Kathleen Davis</p>			<p>In sections R4.1 and M4.1 the word "reliability" should be struck. These are not Reliability Coordinator requirements. Also, add the entities "Generator Operator" &amp; "Generator Owner" to the list of Transmission Entities in 4.2 because neighboring generators can affect or be affected by NPIRs.</p>
<p><b>Response:</b> R4.1 and M4.1 have been revised to address this issue. Note that the term reliability does not necessarily apply only to reliability coordinators.</p> <p>The definition of Nuclear Plant Generator Operator has been revised and A4.2 under Applicability has been revised to clarify this issue.</p>			
<p>CenterPoint Energy (1) Milap Shah</p>			<p>R6 - As written, R6 covers coordination of outages and maintenance activities, however it does not cover the last minute cancellation of coordinated activities on the basis of nuclear operating license violations. Add R6.1 as follows to address this concern:</p>

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			<p>Suggested wording for R6.1: Nuclear Plant Generator Operator shall provide written notification to the Transmission Service Provider and Transmission Operator whenever the Transmission Service Provider is denied access to a nuclear plant switchyard for nuclear operating license reasons. This notification shall occur within 30 days following such an event and shall include the specific nuclear operating requirement that would have been violated had access been granted.</p> <p>Suggested wording for M6.1: The Nuclear Plant Generator Operator shall produce evidence that it provided written explanation to the Transmission Service Provider and Transmission Operator within 30 days following denial of access to a nuclear plant switchyard by a Transmission Service Provider. (Requirement 6.1)</p> <p>R7 - As written, R7 covers notification for actual or proposed changes to the nuclear plant design, configuration.....that may impact the ability of the transmission system to meet the NPIRs, this notification however needs to be tied to the outage and maintenance notification requirement applied to the other transmission facilities within the Reliability Organization. Add R7.1 as follows to address this concern:</p> <p>Suggested wording for R7.1: The Nuclear Plant Generator Operator shall inform the applicable Transmission Entities, in accordance with Transmission Entities' planned outage and maintenance outage protocols, of proposed or actual nuclear plant operations that require restriction of (a) access to, (b) switching of, or (c) work on Off-site Power supply facilities as stipulated in the NPIRs.</p> <p>Suggested wording for M7.1: The Nuclear Plant Generator Operator shall provide evidence that it informed the applicable Transmission Entities, in accordance with Transmission Entities' planned outage and maintenance outage protocols, of proposed or actual nuclear plant operations that require restriction of (a) access to, (b) switching of, or (c) work on Off-site Power supply facilities as required by the NPIRs. (Requirement 7.1)</p> <p>Violation Risk Factors for R3 through R8: These requirements should be assigned LOW violation risk factor as this standard is specific to Nuclear Plant Interface Coordination. Yes, some requirements are important but they are common to all generators and are covered under other NERC standards.</p> <p>Audit timing - NERC audit for this standard should be combined with the NERC readiness audit.</p>

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			<p>R9.1.3. (A requirement to review the agreement(s) at least every three years) is a "contract" issue that has no impact on reliability. Most agreements are evergreen in nature so a forced periodic review is unnecessary and against common practice.</p> <p>R9.1.4. (A dispute resolution mechanism) is a "contract" issue that has no impact on reliability. Most Reliability Organizations have a mechanism in place (ERCOT has one) and therefore a contractual provision is unnecessary.</p> <p>R9.3.4 should specify the specific time frame for this requirement as this could be generalized for all the plants whereas some other requirements cannot be generalized.</p> <p>R9.4.3 &amp; R9.4.4 deal with issues that have no impact on reliability and as such are not needed in this standard.</p>
<p><b>Response:</b> Documentation for this type of issue (R6 and R7) should be covered in the agreements covered by this standard.</p> <p>The VRFs were determined by consensus of the Drafting Team and the 3 comments received during this posting do not justify changing any of the VRFs in this standard.</p> <p>NERC Compliance audits and readiness audits are conducted by different departments in NERC that have different requirements for scheduling and performing audits. Regional Organization Compliance audits are scheduled by the respective regions.</p> <p>Agreements need periodic review and a reasonable maximum review period should be specified. A reasonable maximum review period is three years.</p> <p>A resolution mechanism is a necessary requirement supported by most commenters. Details of the mechanism should be in the individual agreements.</p> <p>Notification times should be agreed upon between the entities based on the specific requirements of the systems involved and should be specified within the agreement.</p> <p>These requirements are necessary to insure the interface coordination between the entities occurs to meet the purpose of this standard.</p>			
Progress Energy (1, 3, 5, 6) George Attarian			<p>The statement "documentation is missing" associated with Section D.2.1, Non-Compliance Level 1, is too vague to be enforceable. Revise to: "documentation described in Measures M1 - M8 is not available or cannot be provided for inspection".</p> <p>Page 4 Requirement R7: Change to ... actual or planned changes... (change</p>

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			<p>"proposed" to "planned"). This change is needed because "proposed" changes are typically too early in their development to warrant cross organizational interactions. However, "planned" changes typically indicate a more developed conceptual design that can be discussed in a meaningful way.</p> <p>Page 4 Requirement R8: Change to ... actual or planned changes... (change "proposed" to "planned"). This change is needed because "proposed" changes are typically too early in their development to warrant cross organizational interactions. However, "planned" changes typically indicate a more developed conceptual design that can be discussed in a meaningful way.</p> <p>M6 has two periods at the end of the paragraph                      D.2.4 has two periods at the end of the paragraph                      E has no period at the end of the first paragraph)</p>
<p><b>Response:</b> D.2.1 has been revised for clarity of this issue – ‘documentation is missing’ was replaced with ‘documentation was not provided’.</p> <p>R7 – This issue should be covered in the agreements. The purpose of this wording is to alleviate “Plans” from being “approved” prior to discussion between the entities involved.</p> <p>Thank you for the editorial review comments. The Drafting Team has made corrections as necessary.</p>			
<p>FirstEnergy (1, 3, 5, 6)                      David L. Folk</p>			<p>R9.3.6 - the last part of sentence - "to ensure each asset is covered under at least one entity's plan." There is no context/specificity provided. What is an asset, a generating station or a component in that station? What is an entity, a station operator or a grid operator?</p> <p>R9.4.5 - FE would expect some definition of who should be trained. The training is only required on the NPIR's. Nothing is mentioned on training personnel on the other important factors such as Operations and Maintenance requirements, Communication requirements, required protocols, etc.</p> <p>Measures M-1 - Compliance Monitor should be a defined term. This "person" has many responsibilities in this document, but even after reading, FE is unsure as to who this is.</p> <p>Page 3 Footnote (below B. R4.1)- should read "Agreements between nuclear plant generator operator and transmission entities may include mutually agreed upon procedures or protocols."</p>

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			R9.4.5 - Include comment that training should happen at lease every 3 years. M4 - Remove the words "demonstrate or".
<p><b>Response:</b> R9.3.6 - Specifics mentioned in your comments should be addressed in the respective agreements. Also, the types of assets to be considered should be addressed within the security plans themselves. The intent of this requirement is only to ensure that those who are responsible for the transmission system and nuclear plant physical and cyber security protection plans review the appropriate assets at the nuclear plant interface and make sure important assets are not overlooked.</p> <p>The training requirement of R9.4.5 includes all aspects related to the NPIRs which include communications, operations, maintenance, etc. The agreement(s) should identify the specifics such as training periodicity.</p> <p>Compliance Monitor is a term defined in the NERC standards glossary.</p> <p>R2 and the applicability section clearly identify the effected parties. No change to the footnote is needed.</p> <p>Demonstration can be applied in M4.2.</p>			
JDRJC Associates (1) Jim Cyrulewski			The risk factors for Requirements 1-4 should be high. Transmission entities need to know all the NRC requirements to properly plan and operate the system. In Section C Measures the following comments are made: 1) Elininate Measure 4.2 since the requirement is not needed and "to the extent practical" is not measurable, 2) Incorporate Measure 4.5 in Measure 2 as a bullet and 3) Eliminate Measure 5 since incorporation of Measure 4.5 into Measure 2 would address this requirement.
<p><b>Response:</b> The VRFs were determined by consensus of the Drafting Team and the 3 comments received during this posting do not justify changing any of the VRFs in this standard.</p> <p>1) R4.2/M4.2 are needed but have been modified to eliminate the phrase "to the extent practicable"</p> <p>2) &amp; 3) R4.5 no longer exists in the standard so M4.5 has been removed in a previous revision to the standard.</p>			
Constellation Generation (5) Walter Adams			In section R9, an element should be added covering transmittal of maintenance records and test results from the TE to the NPGO. This has been a weakness identified in several INPO Switchyard reviews. In section R9.3, there should be an additional requirement: R.9.3.8 Coordination of real load changes (in MWe) such that load change requests to nuclear plants will occur only after exhausting all other efforts to cure the issue/condition. Section R9.3.2: It is unclear how far out into the network this element covers. For

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			example, some plants may be impacted by equipment 2 or 3 stations away and that may end up being a huge population of equipment. It is suggested that this element be more specific. For example, it should limit the scope to transmission equipment covered by Maintenance Rule. In the definition for NPLRs the requirements are mandated not only by statute, but by regulations as well.
<p><b>Response:</b> R9 Maintenance issues such as these should be addressed in the agreements (see R9.3).</p> <p>The drafting team has discussed in detail the issue of cycling nuclear plants for power up and down requirements. Priorities for power transients should be decided by the applicable entities and entered as part of the agreement(s) required by this standard. The standard should be non-prescriptive in terms of what constitutes the specific NPIR, which are mutually determined in R1 and R2 by the Nuclear Plant Generator Operator and the applicable Transmission Entities. R9 only lists the minimum required elements of an agreement; it does not limit the inclusion of additional elements for clarification/agreement on this type of operational issue.</p> <p>The depth of coverage of the requirements of R9.3.2 should be covered in the respective agreements.</p>			
Tennessee Valley Authority (5) – Jerry Nicely			Section R4.2 has the term "System Operating Limits". Most NPP's would not know what this means. Any terms not readily familiar should have either the definition or reference to where the definition can be found. Sections R4.3, 4.4, R9.3.7, and R9.4.1 address notification time frames. Would recommend that the NERC 30 minute requirement be listed as a maximum guideline. Section R9.2.3 should require the agreement to provide documentation requirements for the studies (i.e. an issued study, letter, informal study, retrievability, etc.). Section R9.3.2 should not extend past the NPP switchyard. Section R9.3.5 the transmission entities most likely will not know the NPP coping times. Should tailor more like the NRC GL 2006-02 responses. Section R9.4.5 should be expanded to clarify what training is required.
<p><b>Response:</b> SOL is a term defined in the NERC Glossary of Terms. When standards are approved, the definitions are removed from the front of the standard and entered into the NERC Glossary of Terms.</p> <p>If the involved entities of the agreements feel time frames are needed, they should be addressed in the agreements.</p> <p>The depth of coverage of the requirements of R9.3.2, R9.3.5, and 9.4.5 should be covered in the respective agreements.</p>			
FPL Energy L.L.C. John Ragan			FPLE agrees with the overall purpose of the proposed standard in that coordination between Nuclear Plant Generator Operators and Transmission Entities is required to ensure nuclear plant safety. Nuclear power plants should be considered as a solution to resolve system problems only when all other available actions have been considered and implemented. Nuclear plants are designed as base load units.

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			<p>Frequent cycling and rapid ramping are not advisable. Therefore, involvement of a nuclear facility in the mitigation of electric system problems should occur only after all other available actions have been considered and implemented. The existing NERC Reliability Standards on Emergency Preparedness and Operations (EOP-005-0 and EOP-005-1), which deal with system restoration plans, require that the affected Transmission Operators shall give high priority to restoration of off-site power to nuclear stations. Similarly, cycling nuclear plants should be considered the solution of last resort when actions are required to re-establish transmission system reliability. In this regard, FPLE would note the comments on this subject of the Commissioners of the Nuclear Regulatory Commission at a joint meeting with the Federal Energy Regulatory Commission on April 24, 2006 (FERC Docket No. AD06-6-000).</p> <p>NRC Chairman Diaz stated at transcript page 10:  ... nuclear power plants are big producers of electricity, and they also in many ways, anchor part[s] of the grids in which they are. They are also not very good machines for moving up and down in power. They were really designed and operated as base power units, and that's the way they really work best. We like to keep them like that, like to keep them safe and operating.</p> <p>NRC Commissioner McGaffigan supported Chairman Diaz remarks at transcript pages 13-14:  And I would echo the Chairman's point. I know this is an issue before you and we're not going to discuss it today, but, in public, it's fair for me to say that it is not good for nuclear power plants to go up and down, and so the particular issue in New England that I think is before you in some way, where Seabrook is currently going up and down, because it's the first contingency for some agreement between New England and New York, is not a good idea. There's got to be a coal plant somewhere that can go up and down, but I say that -- you have two of us now saying that going up and down is not a good idea for nuclear power plants.</p> <p>NRC Commissioner Merrifield elaborated on these concerns at transcript pages 16-17):  I would add, in recognizing the sensitivities from your Commission in ongoing issues, as originally hailing from New Hampshire, issues associated</p>

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			<p>with the Seabrook Station and its operation, are very important to the folks who I hold near and dear. That activity, in terms of bringing that plant up and down, is of, in my particular concern, significant. There have been a total, I believe, at this point, of 20 instances in which that plant has been brought up or down, averaging nine over the course of the last three months. So that is certainly one that, although I know you're limited in terms of your getting into it, certainly I want to use the opportunity to express my concern and to agree with Commissioner McGaffigan.</p> <p>We don't believe and I don't believe it's a safety issue at the plant. It is an ongoing challenge to the operations by the individuals who are in the control room, and certainly with our maintenance activities, our allowance for online maintenance, that makes that issue even more difficult, where a utility is attempting to do online maintenance and plan on that, to have facing them, multiple down-powers through the course of a week, and in some cases, multiple down-powers during the course of a day.</p> <p>As a general matter, I think that's imprudent, and it's certainly something I would recommend that the Commission, your Commission take a look at, because, certainly from my standpoint -- and I agree with Commissioner McGaffigan -- that is not the direction you would want to see it.</p> <p>NRC Commissioner Jaczko noted his concerns in this area as well at transcript pages 18-19, requested that the FERC work with the NRC on these concerns:  ... there are areas in which I think there is a nexus between the work that you do and the work that we do. Certainly, Seabrook is one case in which I think there is that nexus and I think this is a good opportunity for us to be able get together and discuss those issues.</p> <p>These comments by the NRC Commissioners provide a reasonable basis for the proposed provision, which requires that the agreement between the nuclear plant owner and the transmission entity utilize other available measures prior to cycling a nuclear plant.</p>
<p><b>Response:</b> The drafting team has discussed in detail the issue of cycling nuclear plants for power up and down requirements. Priorities for power transients should be decided by the applicable entities and entered as part of the agreement(s) required by this standard. The standard should be non-prescriptive in terms of what constitutes the specific NPIR, which are mutually</p>			



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determined in R1 and R2 by the Nuclear Plant Generator Operator and the applicable Transmission Entities. R9 lists the minimum required elements of an agreement, but does not limit the inclusion of additional elements for clarification/agreement on this type of operational issue.			
WECC RCCWG Nancy Bellows			The Nuclear Plant Generator Operator could end up with multiple agreements that may conflict and make relationships and requirements less clear or difficult to manage. The 4.2 requirement and measurement need to provide better linkage. There might not be SOL's, but instead other limitations that impact the ability to meet NPIRs. Requirement 4.2 and measure 4.2 should be rewritten. Suggested language is: "... to the extent practicable under electric system conditions, while adhering to system operating limits (SOL)".
<p><b>Response:</b> It is the responsibility of the Nuclear Plant Generator Operator and each Transmission Entity to ensure that they clearly understand their requirements and that conflicts do not exist between the agreements they enter into.</p> <p>The Drafting Team understands your concerns related to R4.2 and M4.2. Also, upon further review, the wording of R4.2/R4.3 appears to conflict and the phrase "to the extent practicable under electric system conditions" was found unacceptable by NERC Compliance because it is difficult to measure. As a result, the Drafting Team has clarified the definition of NPIRs to 1) emphasize that the development of the NPIRs is a collaborative effort of the Nuclear Plant Generator Operator and the applicable Transmission Entities, and 2) that they must be based on the both the NPLRs mandated by nuclear regulations and Bulk Electric System requirements mandated by the NERC/ERO standards. Both are important in terms of safety and reliability. Thus, Bulk Electric System requirements, including (but not limited to) those associated with System Operating Limits, should be factored into the NPIRs along with appropriate notifications and actions to be taken if conflicts arise in maintaining both safety/reliability of the Bulk Electric System and safety/reliability of the nuclear plant. The NPIRs will, therefore, be met in such cases as long as the Nuclear Plant is notified and appropriate mitigating actions are taken per the provisions of the Agreement(s) in order to maintain nuclear plant safety. Therefore, R4.2 only needs to state, "Operate the electric system to meet the NPIRs" and R4.3 can be deleted. The Drafting Team has modified R4, M4, and R9.3.4 accordingly.</p>			
New York ISO (2) Michael Calimano			The NYISO believes that any requirement must be assigned to entities that are part of and recognized in the NERC Functional Model. As such, the "Transmission Entity" that appears in the posted draft does not meet this criterion. NYISO recommends instead of the generic Transmission Entity designation in the draft, the TOP and the Nuclear Plant should jointly identify with whom the Nuclear plant needs to establish the indicated agreement with that addresses the NPIRs. These entities could be the TOP itself, a TO or any other appropriate Functional Model entity as necessary.
<p><b>Response:</b> A number of respondents expressed concerns that the term "Transmission Entities" is too broad, making it difficult to determine which transmission entities are responsible, and making it difficult for NERC to enforce compliance. Based on input from NERC Staff, the standard drafting team made changes included in the 2nd draft of the standard to address these concerns. These changes included the establishment a single nuclear entity (the Nuclear Plant Generator Operator). To meet R1, the</p>			

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<p>Nuclear Plant Generator Operator must work with the appropriate transmission authorities to identify the applicable Transmission Entities. The Nuclear Plant Generator Operator must provide the plant's proposed nuclear interface requirements (NPIR) to the identified Transmission Entities (see R1 and M1). The specific Transmission Entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured, and the plant's specific licensing requirements (NPLR).</p> <p>Next, the standard requires the Nuclear Plant Generator Operators and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs shall be addressed and implemented (see R2 and M2). The names of the responsible Transmission Entities must be clearly identified in these agreements (see R9.1.2 and A4.2).</p>			
<p>Dominion VA Power (1) Jalal Babik</p>			<p>(1) A web cast would be helpful to discuss the wording of the requirements. This may help clarify the interpretation of the requirements (2) There is a certain amount of overlap between this standard and other NERC standards with GO/GOP applicability. For example: R6 - See IRO-005-0, TOP-001-1, R7 - See FAC-002-0, FAC-009-1, MOD-0010-0, MOD-011-0, MOD-012-0, MOD-024-1, MOD-025-1, PRC-001-1, R9.3.7 - See PRC-015-0, PRC-016-0, PRC-017-0. To clarify the requirements the Standard Development Team may reference the NUC-001-1 requirements to the other standards. (3) R9 shall be an attachment to the standard but not a requirement. Entities may already have Interface Agreements drafted amongst each other and may not follow the same format.</p>
<p><b>Response:</b> The Drafting Team will request a webcast question and answer period to be presented prior to ballot of the standard.</p> <p>The Drafting Team could identify no overlap between standards related to NPIRs.</p> <p>R9 designates the minimum elements required in an agreement to meet the requirements of the standard. A specific format is not required by the standard but does require minimum elements to be included.</p>			
<p>Exelon Energy Delivery (1, 3) Thomas W. Leeming</p>			<p>1 Change the wording in R3 to read - Per the Agreements developed with this standard, the applicable Transmission Entity shall perform planning analysis to evaluate the electric system with regard to the NPIRs and communicate these results to the Nuclear Plant Generator Operator. This wording indicates that the NPIR studies could potentially be separate from the normal reinforcement planning analysis.</p> <p>2 Change the wording in R4.2 to read -Establish and utilize formal procedures or policies that facilitate the Operation of the electric system to meet the applicable Nuclear Plant Interface Requirements.- Exelon Energy Delivery feels this wording allows for a compliance review. In addition, the requirement to respect the System</p>

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			<p>Operating Limits is included in other existing Standards. Including it here is redundant.</p> <p>3 Change the wording in R4.3 to read -Establish and utilize formal procedures or policies for notification of the NPP Generator Operator when Nuclear Plant Interface Requirements cannot be met. The procedure or policy shall include the requirement to develop mutually agreed upon mitigating actions.- This wording allows for a compliance review and reflects the fact that the Transmission Entity cannot be totally responsible for mitigating actions when there are options that may involve the Nuclear Plant.</p> <p>4 Change the wording in R4.4 to read -Establish and utilize formal procedures or policies for notification of the NPP Generator Operator when the ability to assess the operation of the transmission system affecting Nuclear Plant Interface Requirements is not available.- This wording allows for a compliance review.</p> <p>5 Change R5 to - The Nuclear Plant Generator Operator shall operate, and provide relevant data and information, per the Agreements developed in accordance with this standard.</p> <p>6 Change the wording of R6 to read -the designated Transmission Operator and the NPP Generator Operator shall establish and utilize formal procedures for the coordination of planned outages and maintenance activities affecting the Nuclear Plant Interface Requirements-. This wording allows for compliance review.</p> <p>7 In R7, substitute the phrase -establish and utilize formal procedures or policies for notification of- where the word -inform- appears. This wording allows for compliance review.</p> <p>8 In R8, substitute the phrase -establish and utilize formal procedures or policies for notification of- where the word -inform- appears. This wording allows for compliance review. Additionally, the phrase -within bounds defined by the FERC Standards of Conduct- should be added to the end of the requirement.</p> <p>9 Under R9.2, add a new requirement R.9.2.4 - Timelines for the provision of data necessary to perform planning and operational analysis.</p>

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<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
			<p>10 M4.3, change to - When NPIRs could not be met, the applicable Transmission Operator informed the Nuclear Plant Generator Operator and both parties developed a mutually agreed upon action plan to mitigate the situation.</p> <p>11 Change M6 and M7, add ending phrase -within the timelines as specified in the Agreements-</p> <p>12 Under 1.3 Data Retention 4<sup>th</sup> item down - For Measures 4.3, 4.4, 6, and 7- should read -For measures 4.3,4.4,6, and 8-</p> <p>Under 1.3 Data Retention 5<sup>th</sup> item down - For Measures 5,6, and 8- should read - For Measures 5,6, and 7-</p>
<p><b>Response:</b> Comment 1 - The wording in R3 does not preclude separate studies. R9.2.3 allows other studies to be conducted and included in the agreements as applicable.</p> <p>Comments 2, 3 ,4, 6, 7, 8 - Effective procedures, protocols, guidelines, etc., are already in use in many cases and would satisfy the intent of this standard. This was the purpose of adding Footnote 1 in R.9. It is the intent of R9 that the particular format and content of the implementing documents would be established in the agreements to ensure the requirements are met.</p> <p>Comment 5 - No change is needed to R5. Communication of operating data and information is covered in R7 and R9.4.</p> <p>Comment 8, second statement - The exchange of information would be within the bounds defined by the FERC standards of conduct and further assumes the parties would act within the bounds of their legal responsibilities and therefore is not required to be included within the standard.</p> <p>Comment 9 - Time requirements for providing planning data should be included as part of the agreements and is covered in R9.4.1</p> <p>Comment 10 - R4.3 and M4.3 are being deleted. The wording of R4.2/R4.3 appears to conflict and the phrase "to the extent practicable under electric system conditions" was found unacceptable by NERC Compliance because it is difficult to measure. Since development of the NPIRs and the associated agreements is a collaborative process, the types of actions to be taken (if conflicts arise in maintaining both safety/reliability of the Bulk Electric System and safety/reliability of the nuclear plant) should be addressed within the establishment of the NPIRs and agreements. The NPIRs will, therefore, be met in such cases as long as the Nuclear Plant is notified and appropriate mitigating actions are taken per the provisions of the Agreement(s) in order to maintain nuclear plant safety. If a situation occurs where the NPIRs themselves cannot be met, the expectation of the</p>			

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<b>Question #7</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
			<p>standard is that the NPIRs and agreement(s) will be revisited and revised as mutually agreed by the Nuclear Plant Generator Operator and the applicable Transmission Entities to mitigate the problem.</p> <p>Comment 11 - The Drafting Team disagrees. The timelines are required to be in the agreements per R9.4.1 and do not need to be included as part of the measures.</p> <p>Comment 12 Corrected Compliance elements.</p>
Entergy (5) Will Franklin			<p>Transmission Entity is not listed as a new definition; R2- the "one or more" is not needed; R7 &amp; R8 refer to the "transmission system" where I believe this should refer to the "electric system" (thus, the misleading nature of the term "transmission entity"); Level 3 non-compliance should read R3 "through" R8 instead of "to".</p>
			<p><b>Response:</b> The use of the term "Transmission Entity" is more appropriately addressed in Section 4 Applicability.</p> <p>There may be more than one entity per agreement.</p> <p>The Drafting Team has revised the standard to use the term "electric system" throughout.</p> <p>Compliance level corrections noted and changed.</p>
Entergy Nuclear NE (5) Robert Penny			<p>Entergy Nuclear Northeast support FPL, LLC comments relating for the need to add an additional provision as R9.3.8. "All other available measures to preserve/restore the reliability of the transmission system prior to cycling a nuclear unit." This comment is based on the potential of a unit trip during an unplanned power changes. The unplanned loss of a nuclear unit can have a significant adverse impact on grid reliability, as well as challenging the unit safe shutdown system.</p>
			<p><b>Response:</b> The drafting team has discussed in detail the issue of cycling nuclear plants for power up and down requirements. Priorities for power transients should be decided by the applicable entities and entered as part of the agreement(s) required by this standard. The standard should be non-prescriptive in terms of what constitutes the specific NPIR, which are mutually determined in R1 and R2 by the Nuclear Plant Generator Operator and the applicable Transmission Entities. R9 only lists the minimum required elements of an agreement; it does not limit the inclusion of additional elements for clarification/agreement on this type of operational issue.</p>
ISO/RTO Council (2) Charles Yeung			<p>This standard lacks the transparency, and clarity required of a NERC standard. For example:</p> <ol style="list-style-type: none"> <li>The use of the generic Transmission Entities does nothing for clarity. From a reading of the standard, no one can be certain who the requirement applies to. Responsibility is not assigned it is implied - and NERC mandatory standards should not be so ill-defined.</li> </ol>

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			<p>2. There is no standard of behavior being mandated. The only "standard" is that everyone respects the agreements that they agree to.</p> <p>What seems to be the issue?</p> <p>1. From a health and welfare perspective all relevant nuclear reliability issues must be identified and enforced. The 'common good' needs of the general public must be respected at all costs. From the NERC Standards perspective the most important issue is how to assure that NERC mandatory standards clearly and unambiguously mandate those reliability needs not already covered by other standards.</p> <p>2. From the plant operator's perspective the issue seems to be that the operator wants to ensure that it can get/maintain its operating license. Where these requirements are common to any resource, the requirements should be covered. Where the requirements represent an added (i.e. not common) expense, then those requirements are not reliability issues as much as they are market issues. Distinguishing between the two is critical to this standard.</p> <p>3. From a NERC standards perspective, the proposed requirements must comply with the rules and processes submitted in the NERC Compliance Filing to FERC.</p> <p>The Standard Drafting Team proposes that a common set of requirements be imposed on each member of a predefined set of entities - even though the SDT recognizes that each requirement does not apply to each and every entity in the set. The SDT is urged first to identify specific common reliability requirements:</p> <ul style="list-style-type: none"> <li>• That off-site power to nuclear power plants must be ensured</li> <li>• That all identified and agreed to operating limits are met</li> <li>• others?</li> </ul> <p>The SDT must ensure that proposed requirements are not redundant with other NERC standards.</p> <ul style="list-style-type: none"> <li>• NUC-001, R1 – R5, R7 may already be covered by FAC-005 R1 and R2 (that requires facility ratings (using the entity's own methodology) be developed. FAC-008 &amp; 009 requires the information be exchanged and respected. FAC-012 requires the system limits be respected in both operations and planning. Plant integration assessments are already mandated by FAC-002 R1. R1.3 already requires evidence of coordination and cooperation.</li> </ul> <p>Seemingly the one issue that is not specifically covered in NERC's current Standards is</p>

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			<p>the obligation to explicitly notify the plant operator of maintenance plans and to coordinate those plans with the plant operator. As written NUC-001, R6 could be seen as providing commercial information to another corporate entity. The need to provide market safeguards must be recognized by the SDT. The intent may be appropriate but the specific requirement may be questionable.</p> <p>The Reliability Coordinators and Transmission Operators are already obligated to meet the agreed to limits. The outstanding question is what happens when one of the party has reservations about the commercial aspects of the proposed requirement? The SDT must provide a clear direction. Does it require all disputed requirements be submitted to an independent Board of Review (within FERC?, within NERC?, within the RRO?); or are the current standards (as noted above) sufficient?</p> <p>The SDT is asked to reconsider NUC-001 R9 as a NERC Guide or Technical paper as opposed to a list of administrative elements that may or may not apply.</p> <p>The bottom line is:</p> <ol style="list-style-type: none"> <li>1. The terminology must be changed to agree with the Functional Model Terms and the requirements be specific to each entity; and</li> <li>2. The nuclear plant needs to ensure the specific plant nuclear licensing requirements associated with the offsite circuits are not violated. This standard is an attempt to REQUIRE this kind of coordination and communication. More work is needed to ensure the standard is properly written.</li> </ol> <p>It is suggested that the SDT conduct a technical workshop among the Nuclear Plant Operators, NERC Standards Manager(s), NERC's Functional Model Working Group to address the structural issues, and then conduct another open workshop to drive consensus on the issues of concern.</p>
<p><b>Response:</b> Comment 1 - A number of respondents expressed concerns that the term "Transmission Entities" is too broad, making it difficult to determine which transmission entities are responsible, and making it difficult for NERC to enforce compliance. Based on input from NERC Staff, the standard drafting team made changes included in the 2nd draft of the standard to address these concerns. These changes included the establishment of a single nuclear entity (the Nuclear Plant Generator Operator). The Nuclear Plant Generator Operator must work with the appropriate transmission authorities to identify the applicable Transmission Entities. The Nuclear Plant Generator Operator must provide the plant's proposed nuclear interface requirements (NPIR) to the identified Transmission Entities (see R1 and M1). The specific Transmission Entities involved will be contingent on that plant's physical plant-grid interconnection, how the interfacing transmission system entities are structured,</p>			

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			<p>and the plant's specific licensing requirements (NPLR).</p> <p>Next, the standard requires the Nuclear Plant Generator Operators and the applicable Transmission Entities to have in effect one or more agreements that document how the NPIRs shall be addressed and implemented (see R2 and M2). The names of the responsible Transmission Entities must be clearly identified in these agreements (see R9.1.2 and A4.2).</p> <p>Comment 2 - The standard has requirements to operate per the agreements.</p> <p>Comment on Redundancy with other standards - No overlap exists between standards related to NPIRs.</p> <p>The remainder of the comments are covered in the SAR. The Standard to date has been revised to its current revision based on industry comments and NERC input. A request for a question and answer WebEx presented by NERC has been made.</p>
FPL Nuclear Division (5) Raj Kundalkar			<p>FPL Nuclear requests that the Nuclear Plant Interface Coordination standard be modified by adding the following provision as R9.3.8:</p> <p style="padding-left: 40px;">Provisions to utilize all other available measures to preserve/restore the reliability of the transmission system prior to cycling nuclear plants.</p> <p>FPL Nuclear provides the following statement in support of this proposed requirement:</p> <p>FPL Nuclear agrees with the overall purpose of the proposed standard in that coordination between Nuclear Plant Generator Operators and Transmission Entities is required to ensure nuclear plant safety. Nuclear power plants should be considered as a solution to resolve system problems only when all other available actions have been considered and implemented. Nuclear plants are designed as base load units. Frequent cycling and rapid ramping are not advisable. Therefore, involvement of a nuclear facility in the mitigation of electric system problems should occur only after all other available actions have been considered and implemented. The existing NERC Reliability Standards on Emergency Preparedness and Operations (EOP-005-0 and EOP-005-1), which deal with system restoration plans, require that the affected Transmission Operators shall give high priority to restoration of off-site power to nuclear stations. Similarly, cycling nuclear plants should be considered the solution of last resort when actions are required to re-establish transmission system reliability. In this regard, FPL Nuclear would note the comments on this subject of the Commissioners of the Nuclear Regulatory Commission at a joint meeting with the</p>



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			<p>Federal Energy Regulatory Commission on April 24, 2006 (FERC Docket No. AD06-6-000).</p> <p>NRC Chairman Diaz stated at transcript page 10:            ... nuclear power plants are big producers of electricity, and they also in many ways, anchor part[s] of the grids in which they are. They are also not very good machines for moving up and down in power. They were really designed and operated as base power units, and that's the way they really work best. We like to keep them like that, like to keep them safe and operating.</p> <p>NRC Commissioner McGaffigan supported Chairman Diaz remarks at transcript pages 13-14:            And I would echo the Chairman's point. I know this is an issue before you and we're not going to discuss it today, but, in public, it's fair for me to say that it is not good for nuclear power plants to go up and down, and so the particular issue in New England that I think is before you in some way, where Seabrook is currently going up and down, because it's the first contingency for some agreement between New England and New York, is not a good idea. There's got to be a coal plant somewhere that can go up and down, but I say that -- you have two of us now saying that going up and down is not a good idea for nuclear power plants.</p> <p>NRC Commissioner Merrifield elaborated on these concerns at transcript pages 16-17):            I would add, in recognizing the sensitivities from your Commission in ongoing issues, as originally hailing from New Hampshire, issues associated with the Seabrook Station and its operation, are very important to the folks who I hold near and dear. That activity, in terms of bringing that plant up and down, is of, in my particular concern, significant. There have been a total, I believe, at this point, of 20 instances in which that plant has been brought up or down, averaging nine over the course of the last three months. So that is certainly one that, although I know you're limited in terms of your getting into it, certainly I want to use the opportunity to express my concern and to agree with Commissioner McGaffigan.</p>

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			<p>We don't believe and I don't believe it's a safety issue at the plant. It is an ongoing challenge to the operations by the individuals who are in the control room, and certainly with our maintenance activities, our allowance for online maintenance, that makes that issue even more difficult, where a utility is attempting to do online maintenance and plan on that, to have facing them, multiple down-powers through the course of a week, and in some cases, multiple down-powers during the course of a day.</p> <p>As a general matter, I think that's imprudent, and it's certainly something I would recommend that the Commission, your Commission take a look at, because, certainly from my standpoint -- and I agree with Commissioner McGaffigan -- that is not the direction you would want to see it.</p> <p>NRC Commissioner Jaczko noted his concerns in this area as well at transcript pages 18-19, requested that the FERC work with the NRC on these concerns:                      ... there are areas in which I think there is a nexus between the work that you do and the work that we do. Certainly, Seabrook is one case in which I think there is that nexus and I think this is a good opportunity for us to be able get together and discuss those issues.</p> <p>These comments by the NRC Commissioners provide a reasonable basis for the proposed provision, which requires that the agreement between the nuclear plant owner and the transmission entity utilize other available measures prior to cycling a nuclear plant.</p>
<p><b>Response:</b> The drafting team has discussed in detail the issue of cycling nuclear plants for power up and down requirements. Priorities for power transients should be decided by the applicable entities and entered as part of the agreement(s) required by this standard. The standard should be non-prescriptive in terms of what constitutes the specific NPIR, which are mutually determined in R1 and R2 by the Nuclear Plant Generator Operator and the applicable Transmission Entities. R9 only lists the minimum required elements of an agreement; it does not limit the inclusion of additional elements for clarification/agreement on this type of operational issue.</p>			
Southern Co. (1) James T. Wood			<p>It is difficult to refer to a Load Serving Entity or a Distribution Provider as a Transmission Entity. Maybe the group described under 4.2 should be named "Power Supply Entities". The intent of Requirement R 9.3.5 "Provision to consider nuclear plant coping times as required by the NPLR in coordination of grid and nuclear plant restoration following a nuclear plant loss of Off-site Power." is not clear. Requirement 9 outlines the items that should be covered in an interface agreement between a</p>

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			<p>Nuclear Plant Operator and the Transmission Entity. Requirement 9.3.5 falls under the section titled "Operations and maintenance". The intent is to make sure that Transmission Entity is aware of the impact that loss of Off-site Power has on the calculations used in determination of a plant's coping time. The concern is that as worded there may be some confusion that following the unexpected LOSP there is an expectation to have off-site power returned within the coping time. The layman's understanding of coping time is that it represents the maximum probabilistic time that would be expected, based on station design and historical events, to return off-site or on-site (diesels) AC power to at least one of the nuclear plant's emergency trains of AC equipment. Our understanding is that the critical event that requires recovery within the coping time is a Station Blackout (SBO) which is the total loss of all off-site and on-site ac supply. It seems confusing that the NERC requirement mixes coping time and grid restoration with an LOSP. What the agreement required in section 9 needs to accomplish is the following: 1)Clearly define the off-site power supplies (R 9.2.2), 2)inform the Transmission Entity on the severity of either a partial or total LOSP for a unit's operation, 3)inform the Transmission Entity on the long term impact of LOSPs (frequency and duration) being a possible increase in the required coping time (plant modifications), 4)inform the Transmission Entity of the severity of an actual SBO event compared to a LOSP event. Proposed rewording: "Documentation of the Transmission Entity's priority for restoration of nuclear plant off-site power in overall grid restoration plans. The agreement should clearly provide an understanding of the severity of a LOSP and a SBO condition. The agreement should state the plant's SBO coping times and the cumulative impact that LOSPs have on the coping time determination." We suggest that the Drafting Team consider changing the Risk Factor of Requirement R4 from "Medium" to "High". It seems that failure to incorporate NPIRs into real-time reliability analysis, failure to operate the electric system to meet NPIRs while respecting SOLs, and failure to inform the Nuclear Plant Generator Operator and coordinate mitigating actions when NPIRs cannot be met could collectively result in a very serious threat to continued safe nuclear plant operation.</p>
<p><b>Response:</b> Comment 1 – The drafting team discussed the term “Transmission Entities” at length and believes this is the most appropriate term to use in this standard for simplicity. Nuclear plant generators and most nuclear offsite power supplies interconnect with the bulk electric system at transmission system voltage levels. While backup station service for some plants may be provided via distribution lines, these cases are the exception, not the rule.            Comment 2 - R9.3.5 has been revised to provide clarity.</p>			

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Commenter	Yes	No	Comment
<p>Comment 3 - The VRFs were determined by consensus of the Drafting Team and the 3 comments received during this posting does not justify changing any of the VRFs in this standard. The comments that were received on VRF values were not in consensus.</p>			
<p>ATCLLC (1) Jason Shaver</p>			<p>Requirement 1 ATC suggest that the word "proposed" is added in front of the term "NPIR".</p> <p>1 Requirement 1: "...Transmission Entities and shall verify receipt of the "proposed" NPIRs."</p> <p>2 The standard drafting team uses the words "electric system" and "transmission system" through out the standard. ATC strongly suggest that the STD uses defined NERC terms or writes a definitions for each of the above mentioned terms.</p> <p>3 Requirement 9.3.4</p> <p>This <b>requirement</b> has two parts ATC suggest that the second part of the requirment be placed in a sub-sub category.</p> <p>Proposed change</p> <p>Requirement 9.3.4.1</p> <p>This provision shall included <b>responsibility</b> to notify the Nuclear Plant Generator Operator within a specified time frame. "The standard drafting team should consider entering a not to exceed time frame."</p> <p>4 Requirement 9.3.6</p> <p>ATC believes that this requirement goes beyond the intent of the standard and should be removed. The intent of this standard is to coordinate the physical interface between nuclear plants and the transmission system. This requirement seems to have been thrown into requirements with out being completely thought out.</p> <p>5 ATC's other concern is that this requirement is too broad to comply with. It seems that the STD is attempting to require these facilities to be included in the CIP-002 standards without specifically mentioning that standard. When the CIP standards were written it's our recollection that that STD specifically avoid nuclear facilities because of respect for the NRC.</p>
<p><b>Response:</b> Comment 1 - R1 revised to provide clarity.</p>			

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<p>Comment 2 - The Drafting Team has revised the standard to use the term "electric system" throughout.</p> <p>Comment 3 - The Drafting Team believes the wording is adequate for understanding the requirement.</p> <p>Comments 4 &amp; 5 –Cyber and physical security need to be included, because two different plans exist at the interface - the transmission plan based on NERC requirements and the nuclear plant's plan based on nuclear regulatory requirements. It is not the intent of this standard to address detailed requirements on physical and cyber security that are already addressed in the NERC CIP standards and the nuclear plants' plans. The intent of R9.3.6 is only to ensure that those who are responsible for these two plans review the nuclear plant interface and make sure important assets are covered under at least one entity's plan.</p>			
BPA (1) Lorissa Jones			<p>The Drafting Team has stated that the need for this standard is supported by an increase in the number of times NPPs have lost offsite power in 2003 and 2004 compared to the last 10-year average. It has also stated that these events may not be directly related to violations of NPP requirements, yet this standard clearly places the "fix" with the Transmission Owners. Since it is not certain that violations of NPP requirements has caused the increase in interruptions, it is not clear how this standard, as written, will reverse that trend. If there is an upward trend in the number interruptions of offsite supply to NPPs, then the NPPs should be addressing their needs on a plant-by-plant basis in their Interconnection Agreements; not in a new NERC standard.</p>
<p><b>Response:</b> The standard was developed based on the scope of a SAR approved by the NERC Standards Authorization Committee.</p>			
FRCC (2) Eric Senkowicz			<p>Requirement R9.3.3, "Coordination of testing, calibration and maintenance of on-site and off-site power supply systems and related components" is in our opinion much too broad as written. The requirement should be clearly separated into the three areas ( testing, calibration, maintenance ) and the applicable equipment should be more clearly defined. We recommend that the DT more clearly define the bounds for this requirement so that the desires of the DT are more clearly conveyed to the industry and so that the requirement is measurable.</p> <p>i.e. as written I could state that a 230kv line outage, six transmission stations away from a nuclear plant switchyard should be coordinated with the plant since it is part of its "off-site" power supply. Does the test equipment used to validate settings and perform maintenance on the relays at this hypothetical transmission station need to have the same rigorous traceability requirements as far as calibration, as the test equipment used to calibrate the undervoltage relays on the nuclear plants on-site</p>

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			<p>distribution busses.</p> <p>These are the types of interpretations that can and would be made unless the requirement is more clearly defined.</p> <p>R9.3.5...The terms, "plant coping times" should become a defined term since this is not a common term for non-nuclear personnel. This is especially important if the term and times will be used in any way to provide relevance and severity of NPLRs and NPIRs to the responsible transmission entity.</p>
<p><b>Response:</b> Comments 1, 2, and 3 - These levels of detail need to be addressed in the individual agreements.</p> <p>Comment 4 - Addressing coping times is covered by R9.3.5. The level of detail in the agreement on coping times should be addressed by the parties developing the agreements. R9.3.5 has been revised to provide clarity on this issue.</p>			
MISO Nuclear Plant WG Terry Volkmann (MISO)			<p>Recommend the addition of R9.3.8 Provisions to establish protocols that address cycling of nuclear plants to preserve/restore the reliability of the transmission system.</p>
<p><b>Response:</b> The Drafting Team has discussed in detail the issue of cycling nuclear plants for power up and down requirements. Priorities for power transients should be decided by the applicable entities and entered as part of the agreement(s) required by this standard. The standard should be non-prescriptive in terms of what constitutes the specific NPIR, which are mutually determined in R1 and R2 by the Nuclear Plant Generator Operator and the applicable Transmission Entities. R9 only lists the minimum required elements of an agreement; it does not limit the inclusion of additional elements for clarification/agreement on this type of operational issue.</p>			
OPG Inc. (5) Brian Gooder			<p>PG has reviewed Standard NUC-001-1 and supports the current version.</p>
<p><b>Response:</b> The Drafting Team thanks you for the compliment.</p>			
FPL (1) Pedro Modia			<p>FPL requests that the Nuclear Plant Interface Coordination standard be modified by adding the following provision as</p> <p>R9.3.8: Provisions to utilize all other available measures to preserve/restore the reliability of the transmission system prior to adjusting the dispatch of a nuclear plant.</p> <p>FPL provides the following statement in support of this proposed requirement:</p> <p>FPL agrees with the overall purpose of the proposed standard in that coordination between Nuclear Plant Generator Operators and Transmission Entities is required to ensure nuclear plant safety. Nuclear power plants should be considered as a solution to resolve system problems only when all other reasonable actions have been considered and implemented. Nuclear plants are designed as base load units.</p>

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			<p>Frequent cycling and rapid ramping is not advisable. Cycling of a nuclear unit requires [highly orchestrated and complex deviation from normal operations.] Frequent cycling significantly increases the likelihood of unplanned outages. Therefore, involving a nuclear facility in the mitigation of electric system problems should occur only after all other reasonable actions have been considered and implemented. The existing NERC Reliability Standards on Emergency Preparedness and Operations (EOP-005-0 and EOP-005-1), which deal with system restoration plans, require that the affected Transmission Operators shall give high priority to restoration of off-site power to nuclear stations. Similarly, cycling nuclear plants should be considered the solution of last resort when actions are required to re-establish transmission system reliability. In this regard, FPL would note the comments on this subject of the Commissioners of the Nuclear Regulatory Commission at a joint meeting with the Federal Energy Regulatory Commission on April 24, 2006 (FERC Docket No. AD06-6-000).</p> <p>NRC Chairman Diaz stated at transcript page 10:</p> <p style="padding-left: 40px;">... nuclear power plants are big producers of electricity, and they also in many ways, anchor part[s] of the grids in which they are. They are also not very good machines for moving up and down in power. They were really designed and operated as base power units, and that's the way they really work best. We like to keep them like that, like to keep them safe and operating.</p> <p>NRC Commissioner McGaffigan supported Chairman Diaz remarks at transcript pages 13-14:</p> <p>And I would echo the Chairman's point. I know this is an issue before you and we're not going to discuss it today, but, in public, it's fair for me to say that it is not good for nuclear power plants to go up and down, and so the particular issue in New England that I think is before you in some way, where Seabrook is currently going up and down, because it's the first contingency for some agreement between New England and New York, is not a good idea. There's got to be a coal plant somewhere that can go up and down, but I say that -- you have two of us now saying that going up and down is not a good idea for nuclear power plants.</p> <p>NRC Commissioner Merrifield elaborated on these concerns at transcript pages 16-17):</p> <p>I would add, in recognizing the sensitivities from your Commission in ongoing issues, as originally hailing from New Hampshire, issues associated with the Seabrook Station and its operation, are very important to the folks who I hold near and dear. That</p>

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<b>Question #7</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
			<p>activity, in terms of bringing that plant up and down, is of, in my particular concern, significant. There have been a total, I believe, at this point, of 20 instances in which that plant has been brought up or down, averaging nine over the course of the last three months. So that is certainly one that, although I know you're limited in terms of your getting into it, certainly I want to use the opportunity to express my concern and to agree with Commissioner McGaffigan.</p> <p>We don't believe and I don't believe it's a safety issue at the plant. It is an ongoing challenge to the operations by the individuals who are in the control room, and certainly with our maintenance activities, our allowance for online maintenance, that makes that issue even more difficult, where a utility is attempting to do online maintenance and plan on that, to have facing them, multiple down-powers through the course of a week, and in some cases, multiple down-powers during the course of a day.</p> <p>As a general matter, I think that's imprudent, and it's certainly something I would recommend that the Commission, your Commission take a look at, because, certainly from my standpoint -- and I agree with Commissioner McGaffigan -- that is not the direction you would want to see it.</p> <p>NRC Commissioner Jaczko noted his concerns in this area as well at transcript pages 18-19, requested that the FERC work with the NRC on these concerns:</p> <p style="padding-left: 40px;">... there are areas in which I think there is a nexus between the work that you do and the work that we do. Certainly, Seabrook is one case in which I think there is that nexus and I think this is a good opportunity for us to be able get together and discuss those issues.</p> <p>These comments by the NRC Commissioners provide a reasonable basis for the proposed provision, which simply requires that the agreement between the nuclear plant owner and the transmission entity consider the impacts on the nuclear plant when the transmission entity contemplates nuclear plant cycling as a reliability measure.</p>
<p><b>Response:</b> The drafting team has discussed in detail the issue of cycling nuclear plants for power up and down requirements. Priorities for power transients should be decided by the applicable entities and entered as part of the agreement(s) required by this standard. The standard should be non-prescriptive in terms of what constitutes the specific NPIR, which are mutually determined in R1 and R2 by the Nuclear Plant Generator Operator and the applicable Transmission Entities. R9 only lists the minimum required elements of an agreement; it does not limit the inclusion of additional elements for clarification/agreement</p>			



**Consideration of Comments on 2<sup>nd</sup> Draft of Nuclear Off-site Power Supply Standard**

<b>Question #7</b>			
<b>Commenter</b>	<b>Yes</b>	<b>No</b>	<b>Comment</b>
on this type of operational issue.			
NPPD (1) Ronald O. Gunderson			The levels of non-compliance don't line up with the risk factors assigned. The most severe level of non-compliance is for R1 which has a LOWER risk associated with it. The highest level of non-compliance should be for not considering the nuclear plant's off-site power requirements and not for administrative issues. Recommend that a new requirement R9.3.8 be added that states Provisions to establish protocols that address cycling of nuclear plants to preserve/restore the reliability of the transmission system.
<p><b>Response:</b> The levels of non-compliance in a standard are not linked to the VRFs. They are both used for sanctions (see the sanction guidelines) but are not otherwise related. Violation Risk Factors identify the reliability-related risk of violating a requirement – Violation Severity Levels identify how badly an entity missed full compliance with the requirement. The drafting team has discussed in detail the issue of cycling nuclear plants for power up and down requirements. Priorities for power transients should be decided by the applicable entities and entered as part of the agreement(s) required by this standard. The standard should be non-prescriptive in terms of what constitutes the specific NPIR, which are mutually determined in R1 and R2 by the Nuclear Plant Generator Operator and the applicable Transmission Entities. R9 only lists the minimum required elements of an agreement; it does not limit the inclusion of additional elements for clarification/agreement on this type of operational issue.</p>			

**Standard Development Roadmap**

*This section is maintained by the drafting team during the development of the standard and will be removed when the standard becomes effective.*

**Development Steps Completed:**

1. A SAR was received on October 20, 2004 from the Nuclear Energy Institute Grid Reliability Task Force.
2. The SAR was posted for comment from December 1, 2004 to January 7, 2005.
3. Nominations for a SAR drafting team were solicited from December 1 to December 21, 2004. The nomination period was extended to January 28, 2005 to solicit additional nominations.
4. The SAR was revised and draft 2 was posted from April 1 to April 30, 2005. The comment period was extended to May 16, 2005.
5. On May 25, 2005, the Standards Authorization Committee authorized development of a standard and appointed the SAR drafting team to serve as the standard drafting team, while soliciting additional members.
6. The first draft of the standard was posted for comment for the period December 1, 2005 through January 15, 2006.
7. The second draft of the standard was posted for comment for the period September 15, 2006 through October 16, 2006.

**Description of Current Draft:**

The drafting team posted its response to the comments received on the last draft of the standard and implementation plan and is posting the revised standards and implementation plan for a 30-day pre-ballot review period from February 15–March 16, 2007.

**Future Development Plan:**

<b>Anticipated Actions</b>	<b>Anticipated Date</b>
Conduct first ballot.	March 19–30, 2006
Consider comments submitted with first ballot; post consideration of comments.	April 15, 2006
Conduct second ballot.	April 16–26, 2007
Post standards and implementation plan for 30-day review by board.	April 2–May 1
Board adoption date.	May 2, 2007

### Definitions of Terms Used in Standard

*This section includes all newly defined or revised terms used in the proposed standard. Terms already defined in the Reliability Standards Glossary of Terms are not repeated here. New or revised definitions listed below become approved when the proposed standard is approved. When the standard becomes effective, these defined terms will be removed from the individual standard and added to the Glossary.*

**Nuclear Plant Generator Operator:** Any Generator Operator or Generator Owner that is a Nuclear Plant Licensee responsible for operation of a nuclear facility licensed to produce commercial power.

**Nuclear Plant Off-site Power Supply (Off-site Power):** The electric power supply provided from the electric system to the nuclear power plant distribution system as required per the nuclear power plant license.

**Nuclear Plant Licensing Requirements (NPLRs):** Requirements included in the design basis of the nuclear plant and statutorily mandated for the operation of the plant, including nuclear power plant licensing requirements for:

- 1) Off-site power supply to enable safe shutdown of the plant during an electric system or plant event; and
- 2) Avoiding preventable challenges to nuclear safety as a result of an electric system disturbance, transient, or condition.

**Nuclear Plant Interface Requirements (NPIRs):** The requirements, based on NPLRs and Bulk Electric System requirements, that have been mutually agreed to by the Nuclear Plant Generator Operator and the applicable Transmission Entities.

**A. Introduction**

1. **Title:** Nuclear Plant Interface Coordination
2. **Number:** NUC-001-1
3. **Purpose:** This standard requires coordination between Nuclear Plant Generator Operators and Transmission Entities for the purpose of ensuring nuclear plant safe operation and shutdown.
4. **Applicability**
  - 4.1. Nuclear Plant Generator Operator.
  - 4.2. Transmission Entities, shall mean all entities that are responsible for providing services related to Nuclear Plant Interface Requirements (NPIRs). Such entities may include one or more of the following:
    - 4.2.1 Transmission Operators
    - 4.2.2 Transmission Owners
    - 4.2.3 Transmission Planners
    - 4.2.4 Transmission Service Providers
    - 4.2.5 Balancing Authorities
    - 4.2.6 Reliability Coordinators
    - 4.2.7 Planning Authorities
    - 4.2.8 Distribution Providers
    - 4.2.9 Load-serving Entities
    - 4.2.10 Generator Owners
    - 4.2.11 Generator Operators
5. **Proposed Effective Date:** First day of first quarter 15 months after applicable regulatory approvals.

**B. Requirements**

- R1.** The Nuclear Plant Generator Operator shall provide the proposed NPIRs in writing to the applicable Transmission Entities and shall verify receipt [Risk Factor: Lower]
- R2.** The Nuclear Plant Generator Operator and the applicable Transmission Entities shall have in effect one or more Agreements<sup>1</sup> that include mutually agreed to NPIRs and document how the Nuclear Plant Generator Operator and the applicable Transmission Entities shall address and implement these NPIRs. [Risk Factor: Lower]
- R3.** Per the Agreements developed in accordance with this standard, the applicable Transmission Entities shall incorporate the NPIRs into their planning analyses of the electric system and shall communicate the results of these analyses to the Nuclear Plant Generator Operator. [Risk Factor: Medium]
- R4.** Per the Agreements developed in accordance with this standard, the applicable Transmission Entities shall: [Risk Factor: Medium]

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1. Agreements may include mutually agreed upon procedures or protocols.

- R4.1.** Incorporate the NPIRs into their operating analyses of the electric system.
- R4.2.** Operate the electric system to meet the NPIRs.
- R4.3.** Inform the Nuclear Plant Generator Operator when the ability to assess the operation of the electric system affecting NPIRs is lost.
- R5.** The Nuclear Plant Generator Operator shall operate per the Agreements developed in accordance with this standard. [Risk Factor: Medium]
- R6.** Per the Agreements developed in accordance with this standard, the applicable Transmission Entities and the Nuclear Plant Generator Operator shall coordinate outages and maintenance activities which affect the NPIRs. [Risk Factor: Medium]
- R7.** Per the Agreements developed in accordance with this standard, the Nuclear Plant Generator Operator shall inform the applicable Transmission Entities of actual or proposed changes to nuclear plant design, configuration, operations, limits, protection systems, or capabilities that may impact the ability of the electric system to meet the NPIRs. [Risk Factor: Medium]
- R8.** Per the Agreements developed in accordance with this standard, the applicable Transmission Entities shall inform the Nuclear Plant Generator Operator of actual or proposed changes to electric system design, configuration, operations, limits, protection systems, or capabilities that may impact the ability of the electric system to meet the NPIRs. [Risk Factor: Medium]
- R9.** The Nuclear Plant Generator Operator and the applicable Transmission Entities shall include, as a minimum, the following elements within the agreement(s) identified in R2: [Risk Factor: Lower]
  - R9.1.** Administrative elements:
    - R9.1.1.** Definitions of key terms used in the agreement.
    - R9.1.2.** Names of the responsible entities, organizational relationships, and responsibilities related to the NPIRs.
    - R9.1.3.** A requirement to review the agreement(s) at least every three years.
    - R9.1.4.** A dispute resolution mechanism.
  - R9.2.** Technical requirements and analysis:
    - R9.2.1.** Identification of parameters, limits, configurations, and operating scenarios included in the NPIRs and, as applicable, procedures for providing any specific data not provided within the agreement.
    - R9.2.2.** Identification of facilities, components, and configuration restrictions that are essential for meeting the NPIRs.
    - R9.2.3.** Types of planning and operational analyses performed specifically to support the NPIRs, including the frequency of studies and types of Contingencies and scenarios required.
  - R9.3.** Operations and maintenance coordination:
    - R9.3.1.** Designation of ownership of electrical facilities at the interface between the electric system and the nuclear plant and responsibilities for operational control coordination and maintenance of these facilities.

- R9.3.2.** Identification of any maintenance requirements for equipment not owned or controlled by the Nuclear Plant Generator Operator that are necessary to meet the NPIRs.
- R9.3.3.** Coordination of testing, calibration and maintenance of on-site and off-site power supply systems and related components.
- R9.3.4.** Provisions to address mitigating actions needed to avoid violating NPIRs and to address periods when responsible Transmission Entity loses the ability to assess the capability of the electric system to meet the NPIRs. These provisions shall include responsibility to notify the Nuclear Plant Generator Operator within a specified time frame.
- R9.3.5.** Provision to consider nuclear plant coping times required by the NPLRs and their relation to the coordination of grid and nuclear plant restoration following a nuclear plant loss of Off-site Power.
- R9.3.6.** Coordination of physical and cyber security protection of the Bulk Electric System at the nuclear plant interface to ensure each asset is covered under at least one entity's plan.
- R9.3.7.** Coordination of the NPIRs with transmission system Special Protection Systems and under-frequency and under-voltage load shedding programs.
- R9.4.** Communications and training:
  - R9.4.1.** Provisions for communications between the Nuclear Plant Generator Operator and Transmission Entities, including communications protocols, notification time requirements, and definitions of terms.
  - R9.4.2.** Provisions for coordination during an off-normal or emergency event affecting the NPIRs, including the need to provide timely information explaining the event, an estimate of when the system will be returned to a normal state, and the actual time the system is returned to normal.
  - R9.4.3.** Provisions for coordinating investigations of causes of unplanned events affecting the NPIRs and developing solutions to minimize future risk of such events.
  - R9.4.4.** Provisions for supplying information necessary to report to government agencies, as related to NPIRs.
  - R9.4.5.** Provisions for personnel training, as related to NPIRs.

### **C. Measures**

- M1.** The Nuclear Plant Generator Operator shall, upon request of the Compliance Monitor, provide a copy of the transmittal and receipt of transmittal of the proposed NPIRs to the responsible Transmission Entities. (Requirement 1)
- M2.** The Nuclear Plant Generator Operator and each Transmission Entity shall each have a copy of the Agreement(s) addressing the elements in Requirement 9 available for inspection upon request of the Compliance Monitor. (Requirement 2 and 9)
- M3.** Each Transmission Entity responsible for planning analyses in accordance with the Agreement shall, upon request of the Compliance Monitor, provide a copy of the planning analyses results transmitted to the Nuclear Plant Generator Operator, showing incorporation of the NPIRs. The

Compliance Monitor shall refer to the Agreements developed in accordance with this standard for specific requirements. (Requirement 3)

**M4.** Each Transmission Entity responsible for operating the electric system in accordance with the Agreement shall demonstrate or provide evidence of the following, upon request of the Compliance Monitor:

**M4.1** The NPIRs have been incorporated into the current operating analysis of the electric system. (Requirement 4.1)

**M4.2** The electric system was operated to meet the NPIRs. (Requirement 4.2)

**M4.3** The Transmission Entity informed the Nuclear Plant Generator Operator when it became aware it lost the capability to assess the operation of the electric system affecting the NPIRs. (Requirement 4.3)

**M5.** The Nuclear Plant Generator Operator shall, upon request of the Compliance Monitor, demonstrate or provide evidence that the Nuclear Power Plant is being operated consistent with the Agreements developed in accordance with this standard. (Requirement 5)

**M6.** The Transmission Entities and Nuclear Plant Generator Operator shall, upon request of the Compliance Monitor, provide evidence of the coordination between the Transmission Entities and the Nuclear Plant Generator Operator regarding outages and maintenance activities which affect the NPIRs. (Requirement 6)

**M7.** The Nuclear Plant Generator Operator shall provide evidence that it informed the applicable Transmission Entities of changes to nuclear plant design, configuration, operations, limits, protection systems, or capabilities that would impact the ability of the Transmission Entities to meet the NPIRs. (Requirement 7)

**M8.** The Transmission Entities shall each provide evidence that it informed the Nuclear Plant Generator Operator of changes to electric system design, configuration, operations, limits, protection systems, or capabilities that would impact the ability of the Nuclear Plant Generator Operator to meet the NPIRs. (Requirement 8)

## **D. Compliance**

### **1. Compliance Monitoring Process**

#### **1.1. Compliance Monitoring Responsibility**

Regional Reliability Organization.

#### **1.2. Compliance Monitoring Period and Reset Time Frame**

One calendar year.

#### **1.3. Data Retention**

For Measure 1, the Nuclear Plant Generator Operator shall keep its latest transmittals and receipts.

For Measure 2, the Nuclear Plant Generator Operator and each Transmission Entity shall have its current, in-force agreement.

For Measure 3, the Transmission Entity shall have the latest planning analysis results.

For Measures 4.3, 6 and 8, the Transmission Entity shall keep evidence for two years plus current.

For Measures 5, 6 and 7, the Nuclear Plant Generator Operator shall keep evidence for two years plus current.

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor.

The Compliance Monitor shall keep the last periodic audit report and all requested and submitted subsequent compliance records.

**1.4. Additional Compliance Information**

The Nuclear Plant Generator Operator and Transmission Entities shall each demonstrate compliance through self-certification or audit (periodic, as part of targeted monitoring or initiated by complaint or event), as determined by the Compliance Monitor.

**2. Violation Severity Levels**

- 2.1. **Lower:** Agreement(s) exist per this standard and NPIRs were identified and implemented, but documentation described in M1-M8 was not provided.
- 2.2. **Moderate:** Agreement(s) exist per R2 and NPIRs were identified and implemented, but one or more elements of the Agreement in R9 were not met.
- 2.3. **High:** One or more requirements of R3 through R8 were not met.
- 2.4. **Severe:** No proposed NPIRs were submitted per R1, no Agreement exists per this standard, or the Agreements were not implemented.

**E. Regional Differences**

The design basis for Canadian (CANDU) NPPs does not result in the same licensing requirements as U.S. NPPs. NRC design criteria specifies that in addition to emergency on-site electrical power, electrical power from the electric network also be provided to permit safe shutdown. This requirement is specified in such NRC Regulations as *10 CFR 50 Appendix A - General Design Criterion 17* and *10 CFR 50.63 Loss of all alternating current power*. There are no equivalent Canadian Regulatory requirements for *Station Blackout (SBO)* or *coping times* as they do not form part of the licensing basis for CANDU NPPs.

Therefore the definition of NPLR for Canadian CANDU units will be as follows:

**Nuclear Plant Licensing Requirements (NPLR)**, are requirements included in the design basis of the nuclear plant and are statutorily mandated for the operation of the plant; when used in this standard, NPLR shall mean nuclear power plant licensing requirements for avoiding preventable challenges to nuclear safety as a result of an electric system disturbance, transient, or condition.

**Version History**

Version	Date	Action	Change Tracking



**Standard Development Roadmap**

*This section is maintained by the drafting team during the development of the standard and will be removed when the standard becomes effective.*

**Development Steps Completed:**

1. A SAR was received on October 20, 2004 from the Nuclear Energy Institute Grid Reliability Task Force.
2. The SAR was posted for comment from December 1, 2004 to January 7, 2005.
3. Nominations for a SAR drafting team were solicited from December 1 to December 21, 2004. The nomination period was extended to January 28, 2005 to solicit additional nominations.
4. The SAR was revised and draft 2 was posted from April 1 to April 30, 2005. The comment period was extended to May 16, 2005.
5. On May 25, 2005, the Standards Authorization Committee authorized development of a standard and appointed the SAR drafting team to serve as the standard drafting team, while soliciting additional members.
6. The first draft of the standard was posted for comment for the period December 1, 2005 through January 15, 2006

**Description of Current Draft:**

The drafting team has prepared a second draft of the proposed standard on nuclear power plant off-site power supply coordination for the purpose of soliciting public comment. The requested comment period is September 15, 2006 through October 16, 2006.

**Future Development Plan:**

<u>Anticipated Actions</u>	<u>Anticipated Date</u>
<u>1. The drafting team plans to review stakeholder comments from the posting and make a recommendation whether to proceed to ballot or to a third draft of the standard.</u>	<u>November 3, 2006</u>
<u>2. 30-day pre-ballot posting.</u>	<u>November 15, 2006</u>
<u>3. Ballot.</u>	<u>December 15, 2006</u>
<u>4. 30-day board notice.</u>	<u>December 15, 2006</u>
<u>5. Adoption by board.</u>	<u>February 12, 2007</u>

### Definitions of Terms Used in Standard

*This section includes all newly defined or revised terms used in the proposed standard. Terms already defined in the Reliability Standards Glossary of Terms are not repeated here. New or revised definitions listed below become approved when the proposed standard is approved. When the standard becomes effective, these defined terms will be removed from the individual standard and added to the Glossary.*

~~Nuclear Plant Entities, when used in this standard, shall mean any~~ **Operator: Any Nuclear Plant Licensee** ~~Owners and/or Generator Operators~~ responsible for operation of a nuclear facility licensed to produce commercial power.

~~Nuclear Plant Off-site Power Supply (Off-site Power): The ), when used in this standard, shall mean the~~ electric power supply provided from the transmission system to the nuclear power plant distribution system as required per the for nuclear power plant licenses ~~safety~~.

~~Transmission Entities, when used in this standard, shall mean Transmission Operators, Transmission Owners, Transmission Planners, Transmission Service Providers, Planning Authorities, Balancing Authorities, Reliability Coordinators, Planning Authorities, Distribution Providers, Load-serving Entities that are responsible for providing services related to Nuclear Plant Off-site Power Supply.~~

~~Nuclear Plant Licensing~~**Interface Requirements (NPLRs):** Requirements included in the design basis of the nuclear plant and statutorily mandated for the operation of the plant, including, when used in this standard, shall mean nuclear power plant licensing requirements for:

- 1) Off-site power supply to enable safe shutdown of the plant during an electric system or plant event; and
- 2) Avoiding preventable challenges to nuclear safety as a result of an electric system disturbance, transient, or condition.

**Nuclear Plant Interface Requirements (NPIRs):** The agreed upon criteria to meet the NPLRs.

## A. Introduction

1. **Title:** Nuclear Plant ~~Interface~~Off-site Power Supply Coordination
2. **Number:** ~~NUC-001-1~~To be determined.
3. **Purpose:** This standard requires coordination between Nuclear Plant ~~Generator Operator~~Entities and Transmission Entities for the purpose of ensuring nuclear plant safe operation and shutdown. ~~The standard applies only to those entities that interface with or provide services to a nuclear plant.~~
4. **Applicability**
  - 4.1. **Nuclear Plant ~~Entities, meaning~~** Generator ~~Operator, Owners and/or Generator Operators responsible for a nuclear facility licensed to produce commercial power~~
  - 4.2. **Transmission Entities, shall mean all entities that are responsible for providing services related to Nuclear Plant Interface Requirements (NPIRs) in accordance with the terms of the Agreements developed in this standard. Such entities may include one or more of the following:**
    - 4.2.1 ~~meaning~~Transmission Operators
    - 4.2.2 ~~;~~Transmission Owners
    - 4.2.3 ~~;~~Transmission Planners
    - 4.2.4 ~~;~~Transmission Service Providers
    - 4.2.5 ~~;~~~~Planning Authorities,~~Balancing Authorities
    - 4.2.6 ~~;~~Reliability Coordinators
    - 4.2.7 ~~;~~Planning Authorities
    - 4.2.8 ~~;~~Distribution Providers
  - 4.3. ~~;~~Load-serving Entities ~~that are responsible for providing services related to Nuclear Plant Off-site Power Supply.~~
5. **Proposed Effective Date:** ~~Eighteen months after Board of Trustee~~BOT adoption. ~~July 1, 2007~~

## B. Requirements

- R1. ~~The Nuclear Plant Generator Operator Entities shall provide the proposed NPIRs in writing to the applicable Transmission Entities and shall verify receipt of the NPIRs. [Risk Factor: Lower]the current Nuclear Plant Interface Requirements.~~
- ~~R2. The Transmission Planner, per the Agreements developed in accordance with Requirement 8 (R8), shall incorporate the Nuclear Plant Interface Requirements into the planning analysis of the electric system and shall communicate the results of the analysis to the Nuclear Plant Entities.~~
- R2. The Nuclear Plant ~~Generator Operator~~Entities and the Transmission Entities shall have in effect one or more Agreements<sup>1</sup> that document how NPIRs shall be addressed~~resolve issues identified in R2, R6, and~~ implemented. [Risk Factor: Lower]

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Agreements may include mutually agreed upon procedures or protocols.

- R3.** ~~Per the Agreements developed in accordance with this standard, the Transmission Entity shall incorporate the NPIRs into the planning analyses of the electric system and shall communicate the results of the analyses to the Nuclear Plant Generator Operator. [Risk Factor: Medium]~~
- R4.** ~~Per R7, per the Agreements developed in accordance with this standard, the Transmission Entities shall: [Risk Factor: Medium]R8:~~
- ~~R4.— The Transmission Entities designated in the Agreements developed in accordance with R8 shall:~~
- R4.1.** Incorporate the ~~NPIRs~~~~Nuclear Plant Interface Requirements~~ into the operating reliability analysis of the electric system.
  - R4.2.** Operate the electric system to meet the ~~NPIRs~~~~Nuclear Plant Interface Requirements~~, while respecting ~~other~~ System Operating Limits (SOL). ~~.~~
  - R4.3.** Inform the Nuclear Plant ~~Generator Operator Entities~~ and coordinate mitigating actions when ~~NPIRs~~~~Nuclear Plant Interface Requirements~~ cannot be met.
  - R4.4.** Inform the Nuclear Plant ~~Generator Operator Entities~~ when the Transmission Entity loses the ability to assess the operation of the transmission system affecting ~~NPIRs~~~~Nuclear Plant Interface Requirements~~.
- R5.** ~~The Nuclear Plant Generator Operator shall operate per the Agreements developed in accordance with this standard. [Risk Factor: Medium]~~
- R6.** Per the Agreements developed in accordance with ~~this standard~~~~R8~~, the designated Transmission Entities and the Nuclear Plant ~~Generator Operator Entities~~ shall coordinate ~~planned~~ outages and maintenance activities ~~which affect the NPIRs. [Risk Factor: Medium]~~~~affecting the Nuclear Plant Interface Requirements:~~
- R7.** ~~The~~~~Per the Agreements developed in accordance with R8, the~~ Nuclear Plant ~~Generator Operator Entities~~ shall inform the applicable Transmission Entities of ~~any~~ actual or proposed changes to nuclear plant design, configuration, operations, limits, protection systems, or capabilities that may impact the ability of the transmission system to meet the ~~NPIRs. [Risk Factor: Medium]~~~~Nuclear Plant Interface Requirements:~~
- R8.** ~~The~~~~Per the Agreements developed in accordance with R8, the~~ Transmission Entities shall inform the Nuclear Plant ~~Generator Operator of Entities of any~~ actual or proposed changes to electric system design, configuration, operations, limits, protection systems, or capabilities that may impact the ability of the transmission system to meet the ~~NPIRs. [Risk Factor: Medium]~~~~Nuclear Plant Interface Requirements:~~
- R9.** ~~The Nuclear Plant Generator Operator and the Transmission Entities shall include the following elements within the agreement(s) identified in R2: [Risk Factor: Lower]~~
- ~~R8.— The Transmission Entities and the Nuclear Plant Entities shall have in effect one or more Agreements<sup>2</sup> that document how Nuclear Plant Interface Requirements are addressed. The Agreement(s) shall include the following elements, which the Transmission Entities and Nuclear Plant Entities shall implement per the Agreement(s):~~
- R9.1.** Administrative elements:

<sup>2</sup> ~~For the purpose of this standard, Agreements may include mutually agreed upon procedures or protocols.~~

- R9.1.1. Definitions of key terms used in the agreement.
- R9.1.2. Names of the responsible entities, organizational~~Organizational~~ relationships, and responsibilities related to the NPIRs~~Nuclear Plant Interface Requirements~~.
- ~~R8.1.3.—A requirement~~Data confidentiality requirements.
- ~~R8.1.4.—Provisions for suspending standards of conduct when needed to ensure grid reliability, nuclear plant safety, or personnel safety.~~
- R9.1.3. ~~Requirements~~ to review the agreement(s) at least every three years ~~for administrative elements and at least annually for technical elements.~~
- R9.1.4. A dispute resolution mechanism.
- ~~R8.1.6.—Process for resolving disputes or issues.~~
- R9.2. Technical requirements and analysis:
  - R9.2.1. Identification of parameters, limits, configurations, and operating scenarios that constitute the NPIR~~Nuclear Plant Interface Requirements~~, and, as applicable, procedures for providing any specific data not provided within the agreement~~Agreement~~.
  - R9.2.2. Identification of facilities, components, and configuration restrictions that are essential for meeting NPIR~~Nuclear Plant Interface Requirements~~.
  - R9.2.3. Types of planning and operational analyses performed specifically to support NPIR~~Nuclear Plant Interface Requirements~~, including the frequency of studies and ~~types~~a list of Contingencies~~contingencies~~ and scenarios required.
- R9.3. Operations and maintenance coordination:
  - R9.3.1. Designation ~~and coordination~~ of ownership operational control of ~~and maintenance responsibilities for~~ electrical facilities ~~at~~on the interface between the electric system and the nuclear plant ~~and responsibilities for operational control coordination and maintenance of these facilities.~~
  - R9.3.2. Identification of any maintenance requirements for equipment not owned or controlled by the Nuclear Plant ~~Generator Operator Entity~~ that are necessary to meet NPIRs. ~~Nuclear Plant Interface Requirements.~~
  - R9.3.3. Coordination of testing, calibration and maintenance of on-site and off-site power supply systems and related components.
  - R9.3.4. Provision to address actions when the electric system cannot meet NPIRs or the responsible Transmission Entity loses the ability to assess the capability of the electric system to meet the NPIRs. This provision shall include responsibility to notify the Nuclear Plant Generator Operator within a specified time frame.
  - ~~R8.3.4.—Provision to address actions when the electric system cannot meet the Nuclear Plant Interface Requirements, including responsibilities to notify the nuclear plant, and the development, implementation, and coordination of action plans for such conditions.~~
  - R9.3.5. Provision to consider nuclear plant coping times as required by the NPLR in coordination of ~~coordinate~~ grid and nuclear plant restoration

following a nuclear plant loss of Off-site Power. ~~including consideration of nuclear plant coping times and responsibilities for developing, implementing, and coordinating restoration plans for such conditions.~~

~~R8.3.6. Obligations of Nuclear Plant Entities to arrange for Off-site Power supplies necessary to meet regulatory requirements for safe shutdown and operation of the plant.~~

R9.3.6. Coordination of physical and cyber security protection of the bulk electric system ~~at the~~-nuclear plant interface to ensure each asset is covered under at least one entity's plan.

R9.3.7. Coordination of the ~~NPIRs~~Nuclear Plant Interface Requirements with transmission system Special Protection Systems and under-frequency and under-voltage load shedding, ~~Underfrequency Load Shedding and Undervoltage Load Shedding~~ programs.

R9.4. Communications and training:

R9.4.1. Provisions for communications between the Nuclear Plant Generator Operator~~Entities~~ and Transmission Entities, including communications protocols, notification time requirements, and definitions of terms.

R9.4.2. Provisions for coordination during an off-normal or emergency ~~event~~events affecting the ~~NPIRs~~Nuclear Plant Interface Requirements, including the need to provide timely information explaining the event, an estimate of when the system will be returned to a normal state, and the actual time the system is returned to normal~~emergency event~~.

R9.4.3. Provisions for coordinating ~~coordination of~~ investigations of causes of unplanned events affecting the ~~NPIRs and developing~~ Nuclear Plant Interface Requirements and development of solutions to minimize future ~~risk~~risks of such events.

R9.4.4. Provisions for supplying information necessary to report to government agencies, as related to ~~NPIRs~~Nuclear Plant Interface Requirements.

R9.4.5. Provisions for personnel training, as related to ~~NPIRs~~Nuclear Plant Interface Requirements.

### C. Measures

The ~~following measures will be used to demonstrate compliance with R1 through R8:~~

~~M1.~~ Nuclear Plant Generator OperatorEntities shall, upon request ~~of~~by the Compliance Monitor, provide a copy of the transmittal and receipt of transmittal of the proposed NPIRs to the responsible Nuclear Plant Interface Requirements to the Transmission Entities.

~~M1.~~ ~~The~~Transmission Entities. (Requirement 1)

~~M2.~~ The Nuclear Plant Generator Operator and each Transmission Entity shall each have a copy of the Agreement(s) addressing the elements in Requirement 9 available for inspection upon request of the Compliance Monitor. (Requirement 2 and 9)

~~M3.~~ Each Transmission Entity responsible for planning analyses in accordance with the Agreement~~Planner~~ shall, upon request of the Compliance Monitor, provide a copy of the planning ~~analyses analysis~~results transmitted to the Nuclear Plant Generator OperatorEntities, showing incorporation of the NPIRs.Nuclear Plant Interface Requirements. The Compliance Monitor shall refer to the Agreements developed in accordance with this standard~~R8~~ for specific requirements. (Requirement 3)

~~M3.~~ Each Transmission Entity responsible for operating the electric system in accordance with the Agreement shall demonstrate or ~~The Compliance Monitor shall interview the Nuclear Plant Entities and Transmission Entities to identify any issues encountered and whether the issues were resolved or are being resolved.~~

~~M4.~~ ~~The Transmission Entities shall~~ provide evidence of the following, upon request ~~of~~by the Compliance Monitor:

~~M4.1~~ The NPIRs~~Documentation showing the Nuclear Plant Interface Requirements~~ have been incorporated into the current operating reliability analysis of the electric system. (Requirement 4.1)

~~M4.2~~ The Evidence that the electric system is being operated to meet the NPIR~~Nuclear Plant Interface Requirements~~, to the extent practicable~~practical~~ under electric system conditions. (Requirement 4.2)

~~M4.3~~ When NPIRs could not be met, the Transmission Entity informed the Nuclear Plant Generator Operator and coordinated the mitigating actions. (Requirement 4.3)

~~M4.3~~ The Transmission Entity informed the Nuclear Plant Generator Operator when it became aware it lost~~Documentation of the process used by the Transmission Entities to inform the Nuclear Plant Entities when electric system conditions precluded meeting the Nuclear Plant Interface Requirements, including the coordination of mitigating actions; and copies of logs, or other evidence, documenting any instances the process was implemented.~~

~~M4.4~~ Documentation of the process used by the Transmission Entities to notify the Nuclear Plant Entities if the capability to assess the operation of the electric system affecting the NPIRs. (Requirement 4.4)

~~M4.5~~ The Nuclear Plant Generator Operator shall, upon request~~Nuclear Plant Interface Requirements is lost; and copies of the Compliance Monitor, demonstrate~~logs, or provide~~other~~ evidence that the Nuclear Power Plant is being operated consistent with the Agreements developed in accordance with this standard. (Requirement 5); ~~documenting any instances that the process was implemented.~~

- M5. The Transmission Entities and Nuclear Plant ~~Generator Operator~~Entities shall, upon request of the Compliance Monitor, provide evidence of the coordination between the Transmission Entities and the Nuclear Plant ~~Generator Operator~~Entities regarding ~~current-planned~~ outages and maintenance activities ~~which affect the NPIRs. (Requirement 6)~~ affecting the Nuclear Plant ~~Interface Requirements~~.
- M6. The Nuclear Plant ~~Generator Operator~~Entities shall provide evidence that ~~it~~they informed the applicable Transmission Entities of ~~any~~ changes to nuclear plant design, configuration, operations, limits, protection systems, or capabilities that would impact the ability of the Transmission Entities to meet the ~~NPIRs. (Requirement 7)~~ ~~Nuclear Plant Interface Requirements~~.
- M7. The Transmission Entities shall ~~each~~ provide evidence that ~~it~~they informed the Nuclear Plant ~~Generator Operator~~Entities of ~~any~~ changes to electric system design, configuration, operations, limits, protection systems, or capabilities that would impact the ability of the Nuclear Plant ~~Generator Operator~~Entities to meet the ~~NPIRs. (Requirement 8)~~ ~~Nuclear Plant Interface Requirements~~.
- ~~M8. The Nuclear Plant Entities and Transmission Entities shall have a copy of the executed Agreement(s) addressing the elements in R8 available for inspection upon request.~~

## D. Compliance

### 1. Compliance Monitoring Process

#### 1.1. Compliance Monitoring Responsibility

Regional Reliability Organization.

#### 1.2. Compliance Monitoring Period and Reset Time Frame

One calendar year.

#### 1.3. Data Retention

For Measure 1, the Nuclear Plant Generator Operator shall keep its latest transmittals and receipts.

For Measure 2, the Nuclear Plant Generator Operator and each Transmission Entity shall have its current, in-force agreement.

For Measure 3, the Transmission Entity shall have the latest planning analysis results.

For Measures 4.3, 4.4, 6 and 7, the Transmission Entity shall keep evidence for two years plus current.

For Measures 5, 6 and 8, the Nuclear Plant Generator Operator shall keep evidence for two years plus current.

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor.

The Compliance Monitor shall keep the last periodic audit report and all requested and submitted subsequent compliance records.



~~The Nuclear Plant Entities and Transmission Entities shall retain information from the most current and prior compliance verification reports.~~

~~The Compliance Monitor shall retain any audit data for three years.~~

**1.4. Additional Compliance Information**

The Nuclear Plant ~~Generator Operator Entities~~ and Transmission Entities shall each demonstrate compliance through self-certification or audit (periodic, as part of targeted monitoring or initiated by complaint or event), as determined by the Compliance Monitor.

**2.1. Levels of Non-Compliance**

~~**2.1.1.1. Level 1:** Agreement(s) exist per this standard R8 and NPIRs Nuclear Plant Interface Requirements are identified and implementedrespected in the current planning and operation of the electric system and nuclear plant, but some documentation is missing.~~

~~**2.2.1.2. Level 2:** Agreement(s) exist per R2R8 and NPIRs Nuclear Plant Interface Requirements are identified and implementedrespected in the current planning and operation of the electric system and nuclear plant, but one or more elements of the Agreement in R9per R8 are not met in coordinating the operation and planning of the electric system and nuclear plant.~~

~~**2.3.1.3. Level 3:** One or more requirements of R3elements of R1 to R8 R7 were not met.~~

~~**1.4. Level 4:** No proposed NPIRs were submitted per R1, no Agreement exists per this standard, or the Agreements are not implemented.~~

~~**2.4. Level 4:** No agreement exists per R8 or the Nuclear Plant Interface Requirements are not respected in the current operation and planning of the electric system or nuclear plant.~~

**E. Regional Differences**

~~The design basis for Canadian (CANDU) NPPs does not result in the same licensing requirements as U.S. NPPs. NRC design criteria specifies that in addition to emergency on-site electrical power, electrical power from the transmission network also be provided to permit safe shutdown. This requirement is specified in such NRC Regulations as *10 CFR 50 Appendix A - General Design Criterion 17* and *10 CFR 50.63 Loss of all alternating current power*. There are no equivalent Canadian Regulatory requirements for Station Blackout (SBO) or coping times as they do not form part of the licensing basis for CANDU NPPs~~

~~Therefore the definition of NPLR for Canadian CANDU units will be as follows:~~

~~**Nuclear Plant Licensing Requirements (NPLR)**, are requirements included in the design basis of the nuclear plant and are statutorily mandated for the operation of the plant; when used in this standard, NPLR shall mean nuclear power plant licensing requirements for avoiding preventable challenges to nuclear safety as a result of an electric system disturbance, transient, or condition.~~

~~None.~~

**Version History**

Version	Date	Action	Change Tracking



February 15, 2007

TO: REGISTERED BALLOT BODY

Ladies and Gentlemen:

**Announcement**  
**Three Pre-ballot Windows and Ballot Pools Open February 15, 2007**

**The Standards Committee (SC) announces the following standards actions:**

**Pre-ballot Window and Ballot Pool for Balance Resources and Demand Standards Open February 15, 2007**

The following [Balance Resources and Demand](#) standards are posted for a 30-day pre-ballot review:

- BAL-007-1 — Balance of Resources and Demand
- BAL-008-1 — Frequency and Area Control Error
- BAL-009-1 — Actions to Return Frequency to within Frequency Trigger Limits
- BAL-010-1 — Frequency Bias Settings
- BAL-011-1 — Frequency Limits

The ballot for the above set of standards also includes the Balance Resources and Demand [Implementation Plan](#). These standards require entities to maintain interconnection scheduled frequency within a predefined frequency profile under all conditions (i.e., normal and abnormal) to prevent unwarranted load shedding and to prevent frequency-related cascading collapse of the interconnected grid.

A new [ballot pool](#) to vote on this set of standards has been formed and will remain open until 8 a.m. (EST) Monday, March 19, 2007. (The ballot pool used to ballot these standards during the fall of 2006 has been dissolved.) During the pre-ballot window, members of the ballot pool may communicate with one another by using their “ballot pool list server.” The list server for this ballot pool is called: [bp-bal\\_resources\\_demand\\_in@nerc.com](mailto:bp-bal_resources_demand_in@nerc.com)

The initial ballot for this set of standards will be conducted from 8 a.m. (EST) on Monday, March 19 through 8 p.m. (EST) on Friday, March 30, 2007.

**Pre-ballot Window and Ballot Pool for Nuclear Plant Interface Coordination Standard (NUC-001) both Open February 15, 2007**

The [Nuclear Plant Interface Coordination](#) standard is posted for a 30-day pre-ballot review. The ballot for this standard also includes the Nuclear Plant Interface Coordination [Implementation Plan](#). This standard requires coordination between nuclear plant generator operators and transmission entities to ensure safe operation and shutdown of nuclear plants. The drafting team will hold a Webcast to provide highlights of this standard on March 8 from 1–3 p.m. EST.

REGISTERED BALLOT BODY

February 15, 2007

Page Two

A new [ballot pool](#) to vote on this standard has been formed and will remain open until 8 a.m. (EST) Monday, March 19, 2007. During the pre-ballot window, members of the ballot pool may communicate with one another by using their “ballot pool list server.” The list server for this ballot pool is called: [bp-nuclear\\_interface\\_in@nerc.com](mailto:bp-nuclear_interface_in@nerc.com).

The initial ballot for this standard will be conducted from 8 a.m. (EST) on Monday, March 19 through 8 p.m. (EST) on Friday, March 30, 2007.

**Pre-ballot Window and Ballot Pool for Urgent Action SAR to modify Coordinate Interchange Standards (INT-005, INT-006, and INT-008) both Open February 15, 2007**

An [Urgent Action SAR](#) for Modifications to Timing Tables in the following Coordinate Interchange standards is posted for a 30-day pre-ballot review.

INT-005-2 — Interchange Authority Distributes Arranged Interchange

INT-006-2 — Response to Interchange Authority

INT-008-2 — Interchange Authority Distributes Status

This Urgent Action SAR will correct an error in the timing table that appears in all three standards. Under some conditions, the error in the timing table doesn't give reliability entities within the Western Electricity Coordinating Council enough time to conduct a reliability-related review of e-tags.

A new [ballot pool](#) to vote on the modifications to these standards has been formed and will remain open until 8 a.m. (EST), Monday, March 19, 2007. During the pre-ballot window, members of the ballot pool may communicate with one another by using their “ballot pool list server.” The list server for this ballot pool is called: [bp-ua\\_sar\\_int\\_in@nerc.com](mailto:bp-ua_sar_int_in@nerc.com).

The initial ballot for this set of standards will be conducted from 8 a.m. (EST) on Monday, March 19 through 8 p.m. (EST) on Friday, March 30, 2007.

**Standards Development Process**

The [Reliability Standards Development Procedure](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate. If you have any questions, please contact me at 813-468-5998 or [maureen.long@nerc.net](mailto:maureen.long@nerc.net).

Sincerely,

*Maureen E. Long*

cc: Registered Ballot Body Registered Users  
Standards Mailing List  
NERC Roster

## **Implementation Plan — Nuclear Plant Interface Coordination Standard**

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### **Effective Date**

The proposed effective date for the standard is the later of a) July 1, 2007, or b) the beginning of the next quarter following approval of the standard by the Federal Energy Regulatory Commission and applicable governmental authorities in Canada.

### **Compliance Date**

Compliance monitoring and enforcement of the standard shall begin 18 months after the effective date. The 18-month phase-in for compliance is intended to provide responsible entities sufficient time to develop or modify agreements and to begin implementing the agreements.

### **Impact on Existing Standards and Other Standards in Development**

The drafting team has determined that no existing standards or standards in development need to be modified as a result of this proposed standard.

### **Applicability**

The proposed standard is intended to apply only to entities that own or operate nuclear power plants licensed to provide commercial power and the entities that provide off-site power, transmission, or related services for a nuclear power plant. The standard would not apply to other entities. The drafting team has designated these entities that provide services to a nuclear power plant as “Transmission Entities.” They may include the following:

- Transmission operators
- Transmission owners
- Transmission planners
- Transmission service providers
- Balancing authorities
- Reliability coordinators
- Planning authorities
- Distribution providers
- Load-serving entities

Because of the diverse organizational arrangements in support of nuclear power plants, the drafting team believes that each of the functions listed above may have a role in supporting nuclear power plants. In the future, as part of NERC’s work plan, the standard will be reviewed with the intent of sharpening the applicability section of the standard and eliminating the need for the use of the general term “Transmission Entities.”

In the interim, clarity of accountability will be provided through the registration process. Each Nuclear Plant Generator Operator shall be identified in compliance program registration process so that it can be held accountable for the unique requirements specified within the nuclear plant interface coordination standard. Additionally, each Nuclear Plant Generator Operator shall report to its regional entity each of the entities that provides bulk power system services to the nuclear plant. Each of these entities in turn shall be requested by the regional entity to register in the compliance program and be designated as responsible for compliance with the applicable requirements within the standard. Thus, precise accountability is achieved in the initial implementation of the standard by noting in the compliance registry the specific organizations by

name that must comply with the standard. The registration results will also be helpful going forward in refining the applicability section of the standard as part of the three-year work plan.

The regional entity will consider the information provided by the nuclear plant generator operator and information provided by the proposed responsible entities and will make an initial decision on the registration of each entity. If an entity disagrees with the regional entity decision on registration, the entity can file an appeal with the NERC Director of Compliance for presentation to the Compliance Committee of the NERC Board of Trustees.

All registration decisions are subject to final approval by NERC and applicable governmental authorities. An ultimate appeal is available with the applicable governmental authority(ies).

March 7, 2007

TO: REGISTERED BALLOT BODY  
NERC ROSTER  
STANDARDS MAILING LIST  
U.S and CANADIAN REGULATORY AUTHORITIES

Ladies and Gentlemen:

**Announcement**  
**Nuclear Plant Interface Coordination Standard Drafting Team**  
**Conference Call and WebEx — Thursday, March 8, 2007**

**The standard drafting team announces the following:**

NERC will be conducting a web cast and conference call to discuss the draft of its Nuclear Plant Interface Coordination standard, NUC-001-1. A 15–20 minute web cast presentation on the standard will be followed by a question and answer period via a moderated conference call. Members of the Nuclear Standard Drafting Team will be available to discuss your questions and concerns.

**WebEx and Conference Call**

Topic: Standard NUC-001-1 — Nuclear Plant Interface Coordination  
Date: Thursday, March 8, 2007  
Time: 1–3 p.m. Eastern Standard Time

Web cast URL: <https://nerc.webex.com>  
Web cast meeting number: 713 778 499  
Web cast meeting password: standards

Conference call dial-in number: 866-708-1784  
Confirmation number: 2116069

Moderators/Presenters: Darrel Yohnk — American Transmission Company, LLC  
John Gyath — Exelon Corporation  
Terry Crawley — Southern Company Services, Inc.  
Maurice Casadaban — Entergy Services, Inc.

The draft standard and implementation plan are available for download from  
<http://www.nerc.com/~filez/standards/Nuclear-Offsite-Supply.html>.

Sincerely,



Gerry A. Adamski  
Director of Standards

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**NERC Standard NUC-001-1  
Nuclear Plant Interface Coordination**

**WEBCAST – March 8, 2007**



# Why a Nuclear Plant Interface Coordination Standard?

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- Ensure adequate off-site power to support the safe shutdown of the nuclear unit(s)
- Identify & minimize the potential of spurious nuclear unit trips which present challenges to plant systems and can impact the reliability of Bulk Electric Power System.

# Drivers for NERC Standard

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- NRC & Industry concerns due to Electric Industry Deregulation / Breakup / Market Pressures
- Grid and switchyard related events impacting nuclear power plants increased significantly in 2003/2004 compared to the previous three years.
- August 2003 blackout magnified interest  
(Impacted 9 US and 11 Canada nuclear units)
- Need to ensure the roles and responsibilities of the transmission organizations and nuclear plants are clearly understood and documented.

# NRC Initiatives

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- Temporary Instructions (TIs) issued in 2004, 2005 and 2006 to assess Offsite Power Operational Readiness prior to summer.
- Joint Meetings of NRC & FERC in April, 2006 and January, 2007.
- Generic Letter 2006-02 issued February 1, 2006 requiring responses from all licensees.

# NRC Generic Letter 2006-02

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GL 2006-02 (2/06): Grid Reliability and the Impact on Plant Risk and the Operability of Offsite Power

Issues of concern include:

- The use of protocols between the nuclear plants and the grid operators and the use of grid operator analysis tools to aid the plant in assessing offsite power operability and in performing maintenance risk assessments.

# Nuclear Plant Interface Coordination Standard

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- Requested by NEI Grid Reliability Task Force
- Standard Authorization Request (SAR) approved by NERC in 2005
- Status – 30 day pre-ballot review
- Proposed Effective Date: First day of first quarter 15 months after applicable regulatory approvals.

# Nuclear Plant Interface Coordination Standard

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## Standard Drafting Team

- Members

9 – SERC

6 – RFC

3 – NPCC

1 – WECC

2 - ERCOT

1 – Mid West ISO

1 – FRCC

1 - PJM

2 – Other

- 60% of the drafting team is comprised of transmission entities and non-nuclear organizations.

# Purpose of Standard

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Establish Communications & Coordination  
(via Agreements)  
between  
Transmission Entities &  
Nuclear Plant Operators  
to  
Ensure Safe Operation & Shutdown of the  
Nuclear Units.

# Applicability

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Nuclear power plant owners and operators and the entities that provide off-site power, transmission, or related services for a nuclear power plant.

May include:

- Transmission Owners & Operators
- Transmission Planners & Planning Authorities
- Transmission Service Providers
- Reliability Coordinators
- Balancing Authorities
- Others responsible for providing services related to Nuclear Plant Interface Requirements



# Key Terms

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- **Nuclear Plant Licensing Requirements (NPLR):**

Requirements included in the design basis of the nuclear plant and statutorily mandated for the operation of the plant, including licensing requirements for:

- Off-site power supply to enable safe shutdown of the plant during an electric system or plant event.
- Avoiding preventable challenges to nuclear safety as a result of an electric system disturbance, transient, or condition.

# Key Terms

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- **Nuclear Plant Interface Requirements (NPIRs):**  
The requirements, based on NPLRs and Bulk Electric System requirements, that have been mutually agreed to by the Nuclear Plant Generator Operator and the applicable Transmission Entities.
- **Agreements**  
These may include mutually agreed upon procedures and protocols.

# Nuclear Plant Interface Requirements (NPIRs)

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- Requirements are unique for each plant due to differences in:
  - Plant Designs
  - Physical/Electrical Interconnections with Grid
  - Nuclear Plant Licensing Requirements / Commitments (NPLRs)
  - Standards in Place When Constructed
  - Operational Philosophies & Procedures
  - How the Grid is planned and operated

# Focus of Standard

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- Clear Understanding of and Agreement on the Nuclear Plant's Interface Requirements (NPIRs)
- Factor NPIRs into Transmission Planning Studies, System Operation & Operating Limits, and Reliability Analyses
- Coordination of Outages, Maintenance, and Design Changes
- Agreements that include the mutually agreed to NPIRs and document how the NPIRs will be met

# Requirements of the Standard

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- The Nuclear Plant Operator shall provide the proposed NPIRs to the applicable Transmission Entities.
- The Nuclear Plant Operator and the applicable Transmission Entities shall have in effect one or more Agreements that include mutually agreed to NPIRs and document how these NPIRs are to be addressed and implemented.
- Transmission Entities shall incorporate NPIRs into the planning analyses of the electric system and communicate results of the analysis to the Nuclear Plant Operator.

# Requirements of the Standard

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- Transmission Entities shall per the Agreements:
  - Incorporate the NPIRs into the operating analysis of the electric system.
  - Operate the electric system to meet the NPIRs.
  - Inform the Nuclear Plant Operator when the ability to assess the operation of the electric system affecting the NPIRs is lost.
- The Nuclear Plant Operator shall operate per the Agreements developed in accordance with the standard.

# Requirements of the Standard

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- Nuclear Plants Operators and Transmission Entities shall coordinate outages and maintenance activities affecting the NPIRs.
- Nuclear Plant Operator shall inform the Transmission Entities of actual or proposed changes to the nuclear plant design or operation that may impact the ability of the electric system to meet the NPIRs.
- Transmission Entities shall inform the Nuclear Plant Operator of actual or proposed changes to the electric system design or operation that may impact the ability of the electric system to meet the NPIRs.

# Requirements of the Standard

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- The following elements are to be included in the Agreements between the Nuclear Plant Operator and the Transmission Entities:
  - Administrative elements:
  - Technical requirements and analysis
  - Operations and Maintenance coordination
  - Communications and training



# Closing Remarks

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- Critical for industry to take the initiative and resolve issues related to Nuclear Plant/Grid Interface.
- Nuclear Interface Coordination Standard has been developed through the collaborative effort of both nuclear and transmission organization representatives.
- Balloting March 19 through 30, 2007.

# Nuclear Plant Interface Coordination Standard

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Questions?

March 19, 2007

TO: REGISTERED BALLOT BODY

Ladies and Gentlemen:

**Announcement: Four Ballot Windows Open on March 19, 2007**

**The Standards Committee (SC) announces the following standards actions:**

**Initial Ballot Window for Balance Resources and Demand Standards Opens March 19, 2007**

The initial [ballot](#) for the following set of [Balance Resources and Demand](#) standards will be conducted from 8 a.m. (EDT) on Monday, March 19 through 8 p.m. (EDT) Friday, March 30, 2007.

- BAL-007-1 — Balance of Resources and Demand
- BAL-008-1 — Frequency and Area Control Error
- BAL-009-1 — Actions to Return Frequency to within Frequency Trigger Limits
- BAL-010-1 — Frequency Bias Settings
- BAL-011-1 — Frequency Limits

These standards require entities to maintain interconnection scheduled frequency within a predefined frequency profile under all conditions (i.e., normal and abnormal), to prevent unwarranted load shedding and to prevent frequency-related cascading collapse of the interconnected grid. The ballot for the above set of standards also includes the Balance Resources and Demand [Implementation Plan](#).

**Initial Ballot Window for Nuclear Plant Interface Coordination Standard (NUC-001) Opens March 19, 2007**

The initial [ballot](#) for the [Nuclear Plant Interface Coordination \(NUC-001-1\)](#) standard will be conducted from 8 a.m. (EDT) on Monday, March 19 through 8 p.m. (EDT) Friday, March 30, 2007.

This standard requires coordination between nuclear plant generator operators and transmission entities to ensure safe operation and shutdown of nuclear plants. The ballot for this standard also includes the Nuclear Plant Interface Coordination [Implementation Plan](#).

**Initial Ballot Window for Urgent Action SAR to Modify Coordinate Interchange Standards (INT-005, INT-006, INT-008) Opens March 19, 2007**

The initial [ballot](#) for the [Urgent Action SAR](#) to Modify the Timing Table in the following Coordinate Interchange Standards will be conducted from 8 a.m. (EDT) on Monday, March 19 through 8 p.m. (EDT) Friday, March 30, 2007.

- INT-005-2 — Interchange Authority Distributes Arranged Interchange
- INT-006-2 — Response to Interchange Authority
- INT-008-2 — Interchange Authority Distributes Status

116-390 Village Boulevard, Princeton, New Jersey 08540-5721

Phone: 609.452.8060 • Fax: 609.452.9550 • [www.nerc.com](http://www.nerc.com)

REGISTERED BALLOT BODY

March 19, 2007

Page Two

This Urgent Action SAR will correct an error in the timing table that appears in all three standards. Under some conditions, the error in the timing table doesn't give reliability entities within WECC enough time to conduct a reliability-related review of e-tags.

### **Initial Ballot Window for Interpretation of BAL-005 — Automatic Generation Control Requirement 17 Opens March 19, 2007**

The initial [ballot](#) for the [Interpretation of BAL-005-0 — Automatic Generation Control Requirement 17](#) will be conducted from 8 a.m. (EDT) on Monday, March 19 through 8 p.m. (EDT) Friday, March 30, 2007.

The interpretation clarifies that the Balancing Authority is required to check and calibrate its control room time error and frequency devices against a common reference at least annually, but the requirement to “annually check and calibrate” does not address any devices outside of the operations control room.

### **Standards Development Process**

The [Reliability Standards Development Procedure](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate. If you have any questions, please contact me at 813-468-5998 or [maureen.long@nerc.net](mailto:maureen.long@nerc.net).

Sincerely,

*Maureen E. Long*

cc: Registered Ballot Body Registered Users  
Standards Mailing List  
NERC Roster

## **Implementation Plan — Nuclear Plant Interface Coordination Standard**

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### **Effective Date**

The proposed effective date for the standard is the later of a) July 1, 2007, or b) the beginning of the next quarter following approval of the standard by the Federal Energy Regulatory Commission and applicable governmental authorities in Canada.

### **Compliance Date**

Compliance monitoring and enforcement of the standard shall begin 18 months after the effective date. The 18-month phase-in for compliance is intended to provide responsible entities sufficient time to develop or modify agreements and to begin implementing the agreements.

### **Impact on Existing Standards and Other Standards in Development**

The drafting team has determined that no existing standards or standards in development need to be modified as a result of this proposed standard.

### **Applicability**

The proposed standard is intended to apply only to entities that own or operate nuclear power plants licensed to provide commercial power and the entities that provide off-site power, transmission, or related services for a nuclear power plant. The standard would not apply to other entities. The drafting team has designated these entities that provide services to a nuclear power plant as “Transmission Entities.” They may include the following:

- Transmission operators
- Transmission owners
- Transmission planners
- Transmission service providers
- Balancing authorities
- Reliability coordinators
- Planning authorities
- Distribution providers
- Load-serving entities

Because of the diverse organizational arrangements in support of nuclear power plants, the drafting team believes that each of the functions listed above may have a role in supporting nuclear power plants. In the future, as part of NERC’s work plan, the standard will be reviewed with the intent of sharpening the applicability section of the standard and eliminating the need for the use of the general term “Transmission Entities.”

In the interim, clarity of accountability will be provided through the registration process. Each Nuclear Plant Generator Operator shall be identified in compliance program registration process so that it can be held accountable for the unique requirements specified within the nuclear plant interface coordination standard. Additionally, each Nuclear Plant Generator Operator shall report to its regional entity each of the entities that provides bulk power system services to the nuclear plant. Each of these entities in turn shall be requested by the regional entity to register in the compliance program and be designated as responsible for compliance with the applicable requirements within the standard. Thus, precise accountability is achieved in the initial implementation of the standard by noting in the compliance registry the specific organizations by

name that must comply with the standard. The registration results will also be helpful going forward in refining the applicability section of the standard as part of the three-year work plan.

The regional entity will consider the information provided by the nuclear plant generator operator and information provided by the proposed responsible entities and will make an initial decision on the registration of each entity. If an entity disagrees with the regional entity decision on registration, the entity can file an appeal with the NERC Director of Compliance for presentation to the Compliance Committee of the NERC Board of Trustees.

All registration decisions are subject to final approval by NERC and applicable governmental authorities. An ultimate appeal is available with the applicable governmental authority(ies).

## Nuclear Plant Interface Coordination Standard

Summary Consideration: While some stakeholders suggested modifications to the standard, most stakeholders agreed with the standard as proposed and the drafting team did not make any changes to the standard.

Voter	Entity	Comment
Peggy Ladd	Ameren Services Company	<p>1 - While the definition of Nuclear Plant Interface Requirements (NPIRs) has been revised to show a collaborative effort between nuclear plant owner/operators and applicable transmission entities, this collaborative effort should also be reflected in the language of the standard itself, particularly in R1.</p> <p>2- Also, the meaning of the term 'limits' found in R7 and R8 should still be given further clarification.</p>
<p><b>Response:</b></p> <p>1 - The purpose of R1 is to get the initial process started. The Nuclear Plant Generator Operator (NPGO) is most familiar with the NPLRs and what is required by their specific grid interconnection in the plant's Final Safety Analysis Report (FSAR) and a myriad of other licensing documents and commitments that are specific to his plant. Therefore, the standard is requiring the NPGO establish a set of "proposed" NPIRs and to provide those to the appropriate interfacing Transmission Entities for their review. From that point, in order to meet R2, the NPGO and applicable Transmission Entities will have to interact and work together to establish the appropriate NPIRs that can satisfy both the NPLRs and the Bulk Electric System requirements (per the NPIR definition) for that specific nuclear plant interconnection. R2 and the NPIR definition emphasize that this requires a collaborative effort in order to establish the "mutually agreed to" NPIRs and the Agreements that will document how the NPIRs will be addressed and implemented. The remaining requirements make appropriate reference to these "mutually agreed to" NPIRs and the corresponding Agreements and, hence, reflect a continued collaborative effort.</p> <p>2 - The term "limits" is non-specific to allow latitude for differences in plant design and grid interconnections. R7 and R8 use this term to ensure <u>any applicable limits</u> are identified so the NPGO and applicable Transmission Entities both know what they are and the significance of changes to those limits to the plant and Bulk Electric System.</p>		
Douglas F. Johnson	American Transmission Company, LLC	<p>Since this version of the standard went straight to ballot ATC was unable to highlight our concern regarding the deletion of this requirement prior to balloting. ATC believes that Requirement 4.2 is now too vague for purposes of compliance following the deletion of Requirement 4.3. ATC disagrees with the removal of Requirement 4.3 from the previous drafts and recommends the following changes.</p> <p>Recommendations: R4.2 Operate the electric system to meet the NPIRs per Requirement 9.2 R4.3 Inform the Nuclear Plant Generator Operator when requirement 4.2 cannot be met</p> <p>New Requirement: (The current language places the burden to correct any operational issues squarely on the Transmission Entities. In light of this, ATC recommends that the following requirement be added to the standard.) The Transmission Entity and the Nuclear Plant Generator Operator shall agree to and coordinate</p>

**Consideration of Comments in Initial Ballot of Nuclear Plant Interface Coordination NUC-001-1**

Voter	Entity	Comment
		mitigating actions when the NPIR cannot be met.
<p><b>Response: –</b>                      The key to understanding the requirement placed on the nuclear operator and the appropriate transmission organization is based on the Nuclear Plant Interface Requirements (NPIRs) as defined in the standard. The NPIRs are communication, operating and interfacing requirements, which have been <u>mutually agreed upon</u> and documented by the various parties. Therefore, the transmission system operating limits (SOLs) will be a critical element in these discussions and final agreements.</p> <p>During the NPIR development process an assessment of the transmission/plant interconnection will be needed to determine if design changes are warranted to ensure both BES reliability and assurance of plant safety per its nuclear regulatory licensing requirements. Thus, considering both BES requirements (e.g. SOLs) and the plant's nuclear regulatory requirements (e.g. NPLRs) during establishment of the NPIRs is important to both BES reliability and the plant's safety. It should be noted that under extreme system conditions off-normal action on the part of either the transmission operator or the nuclear generator may be required to ensure the overall reliability of the transmission system and the safety of the nuclear unit. Therefore the drafting team believes the concerns the ATC expressed have been considered and will be addressed in the NPIR development process.</p>		
Donald S. Watkins	Bonneville Power Administration	It is imperative that the NPIRs are developed by mutual agreement and must include Transmission system operating accommodations.
<p><b>Response:</b> Agree. The standard requires establishment of "mutually agreed to" NPIRs which are based on both the Nuclear Plant Licensing Requirements and Bulk Electric System Requirements.</p>		
Edwin E. Thompson PE	Consolidated Edison Co. of New York	The phrase "while respecting System Operating Limits (SOL)" should be included in Requirement 4.2.
<p><b>Response:</b> To fully respond to the comment two issues need to be addressed:                      First, the reason for the removal of the phrase, "while respecting System Operating Limits (SOL)" was based on a comment received from the NERC Compliance Group. The NERC Compliance Group believed the standard containing the above wording posed a compliance conflict. The potential conflict was based on having a justification for not meeting the NERC standard requirement, "meet the NPIRs" within the body of the standard. It's the NERC position that any incongruities between the SOL and the Nuclear Licensing Requirements have been resolved prior to establishing the final NPIRs.</p> <p>Secondly, the key to understanding the requirement placed on the nuclear operator and the appropriate transmission organization is based on the Nuclear Plant Interface Requirements (NPIRs) as defined in the standard. The NPIRs are communication, operating and interfacing requirements, which have been <u>mutually agreed upon</u> and documented by the various parties. Therefore, the transmission system operating limits (SOLs) will be a critical element in these discussions and final agreements.</p> <p>During the NPIR development process an assessment of the transmission/plant interconnection will be needed to determine if design changes are warranted to ensure both BES reliability and assurance of plant safety per its nuclear regulatory licensing requirements. Thus, considering both BES</p>		



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Voter	Entity	Comment
<p>requirements (e.g. SOLs) and the plant's nuclear regulatory requirements (e.g. NPLRs) during establishment of the NPIRs is important to both BES reliability and the plant's safety. It should be noted that under extreme system conditions off-normal action on the part of either the transmission operator or the nuclear generator may be required to ensure the overall reliability of the transmission system and the safety of the nuclear unit.</p> <p>Therefore, there shouldn't be any need for an exemption clause.</p>		
Ajay Garg	Hydro One Networks, Inc.	<p>While Hydro One Networks Inc. supports the standard, we request that if the standard is adopted, NERC clearly confirms that the meaning of Requirement 4.2 is that operation of the Bulk Electric System within SOLs is paramount and Transmission Entities shall not violate these limits to meet NPIRs. This should be part of the agreements in between the Transmission Entity and the Nuclear Plant Generator Operator.</p>
<p>Response:</p> <p>The reason for the removal of the phrase, "while respecting System Operating Limits (SOL)" was based on a comment received by the NERC Compliance Group. The NERC Compliance Group believed the standard containing the above wording posed a compliance conflict. The potential conflict was based on having a justification for not meeting the NERC standard requirement, "meet the NPIR" within the body of the standard. It's the NERC position that any incongruities between the SOL and the Nuclear Licensing Requirements have been resolved prior to establishing the final NPIRs.</p> <p>In addition, the key to understanding the requirement placed on the nuclear operator and the appropriate transmission organization is based on the Nuclear Plant Interface Requirements (NPIRs) as defined in the standard. The NPIRs are communication, operating and interfacing requirements, which have been <u>mutually agreed upon</u> and documented by the various parties. Therefore, the transmission system operating limits (SOLs) will be a critical element in these discussions and final agreements.</p> <p>During the NPIR development process an assessment of the transmission/plant interconnection will be needed to determine if design changes are warranted to ensure both BES reliability and assurance of plant safety per its nuclear regulatory licensing requirements. Thus, considering both BES requirements (e.g. SOLs) and the plant's nuclear regulatory requirements (e.g. NPLRs) during establishment of the NPIRs is important to both BES reliability and the plant's safety. It should be noted that under extreme system conditions off-normal action on the part of either the transmission operator or the nuclear generator may be required to ensure the overall reliability of the transmission system and the safety of the nuclear unit.</p> <p>Therefore, there shouldn't be any need for an exemption clause.</p>		

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Voter	Entity	Comment
Don Tench	Independent Electricity System Operator	It is the IESO's view some confusion may still exists in the industry regarding whether the standard favours a Nuclear Plant Generator Operators (NGPOs) access to off-site power, even if ensuring access to such power could jeopardize BPS operating limits as a result of the latest changes to requirement R4.2. It is our understanding the purpose of the Standard is to make sure that procedures and communications are in place so that if conditions exist which could adversely impact a nuclear plant's access to off-site power, then the transmission entity must be able provides an NPGO sufficient notice. However, some have interpreted the latest draft of the Standard to sacrifice reliable BPS operation in favour of nuclear plant safety. We therefore believe the definition of NPIR needs to be further strengthening to clarify that bulk power system (BPS) requirements must be adhered to in establishing the NPIRs.
<p><b>Response:</b>                      The key to understanding the requirement placed on the nuclear operator and the appropriate transmission organization is based on the Nuclear Plant Interface Requirements (NPIRs) as defined in the standard. The NPIRs are communication, operating and interfacing requirements, which have been <u>mutually agreed upon</u> and documented by the various parties. Therefore, the transmission system operating limits (SOLs) will be a critical element in these discussions and final agreements.</p> <p>During the NPIR development process an assessment of the transmission/plant interconnection will be needed to determine if design changes are warranted to ensure both BES reliability and assurance of plant safety per its nuclear regulatory licensing requirements. Thus, considering both BES requirements (e.g. SOLs) and the plant's nuclear regulatory requirements (e.g. NPLRs) during establishment of the NPIRs is important to both BES reliability and the plant's safety. It should be noted that under extreme system conditions off-normal action on the part of either the transmission operator or the nuclear generator may be required to ensure the overall reliability of the transmission system and the safety of the nuclear unit.</p>		
Kathleen Goodman	ISO New England, Inc.	To: Mr. Gerard Adamski Director of Standards NERC From: Kathleen Goodman Date: March 30, 2007 Subject: ISO New England Voting Position Opposing NERC Standard NUC-001-1 " Nuclear Plant Interface Coordination ISO New England strongly supports the purported goal of the Nuclear Plant Interface Coordination (NUC-001) Standard, because the Standard sets out to require Transmission Entities (such as Transmission Operators and Reliability Coordinators) to coordinate with and communicate information to Nuclear Plant Generator Operators (NGPOs) in order to make the NGPO aware of when system conditions would create the risk of its nuclear generator losing access to off-site power sources. Because ISO-NE already has a series of agreements and tariff provisions approved by the Federal Energy Regulatory Commission (FERC) in place that both address and require the communication of critical bulk-power system (BPS) information to NGPOs, ISO-NE would support a Standard like NUC-001, because overall BPS reliability should be enhanced by requiring all Transmission Entities and NGPOs to have such agreements in place. Unfortunately, ISO-NE must oppose this draft of NUC-001, because changes made to the last version of NUC-001 have created confusion in the industry regarding whether to favor an NPGO's access to off-site power, even if ensuring access to such power could jeopardize BPS operating limits (and potentially other NERC

Voter	Entity	Comment
		<p>Standards). The purported purpose of the Standard is to make sure that procedures and communications are in place so that if conditions exist which could adversely impact a nuclear plant's access to off-site power, then the Transmission Entity must be able provide an NPGO sufficient notice. However, some have interpreted the latest draft of the Standard to sacrifice reliable BPS operation in favor of nuclear plant operating conditions. As a result, passage of this Standard could, at a minimum, create confusion about what types of agreements are needed, and at most, could lead to agreements which jeopardize BPS reliability. While such an interpretation clearly contravenes Applicable Reliability Principles (e.g., the reliability of the interconnected bulk power systems shall be assessed, monitored, and maintained on a wide-area basis), the facts that certain entities have interpreted the Standard in such a manner and that the Drafting Team would not clearly state that BPS reliability must be maintained clearly indicate that the drafting of the requirements within the Standard must be improved. In particular, ISO-NE recommends certain changes to NUC-001-1 (Draft 3) that, if incorporated into a future revision, would allow ISO-NE to support the standard. These changes include the following:</p> <p>A. Modify Requirement R4.2 to restore an amended version of the language previously included in Draft 2, as follows: Operate the electric system to meet the NPIRs, while ensuring that all Bulk Electric system requirements are met, including respecting System Operating Limits and Interconnection Reliability Operating Limits.</p> <p>B. Redefine Nuclear Plant Interface Requirements (NPIRs) as follows: The requirements, based on NPLRs, that have been mutually agreed to by the Nuclear Plant Generator Operator and the applicable Transmission Entities</p> <p>C. Restore an amended version of what was Requirement R4.3 in the previous draft (Draft 2) as follows: Inform the Nuclear Plant Generator Operator and coordinate mitigating actions, in accordance with the relevant provisions of the NPIRs and Agreements, when certain other elements of NPIRs cannot be met, to ensure the safe operation or, if necessary, the safe shutdown of the nuclear plant.</p>
<p><b>Response:</b> Compliance with the remaining NERC standards is mandatory. The remaining standards are not pre-empted or negatively impacted by this NERC standard. This is exactly why it is very important to include applicable Bulk Electric System requirements <u>up front</u> in development of the NPIRs and Agreements <u>as this standard is requiring</u>. Therefore, the standard as written supports Bulk Electric System Reliability, but contains additional requirements not addressed in the other NERC standards to ensure the interface requirements of nuclear plants are properly understood and addressed within the context of the NERC reliability standards.</p>		
<p>The standard drafting team believes the standard as written addresses the concerns raised in Comments A, B &amp; C. This conclusion is based on the</p>		

Voter	Entity	Comment
<p>following:</p> <p>First, the reason for the removal of the phrase, "while respecting System Operating Limits (SOLs)" was based on a comment received by the NERC Compliance Group. The NERC Compliance Group believed the standard containing the above wording posed a compliance conflict. The potential conflict was based on having a justification for not meeting the NERC standard requirement, "meet the NPIR" within the body of the standard. It's the NERC position that any incongruities between the SOL and the Nuclear Licensing Requirements have been resolved prior to establishing the final NPIRs.</p> <p>Secondly, the key to understanding the requirement placed on the nuclear operator and the appropriate transmission organization is based on the Nuclear Plant Interface Requirements (NPIRs) as defined in the standard. The NPIRs are communication, operating and interfacing requirements, which have been <u>mutually agreed upon</u> and documented by the various parties. Therefore, the transmission system operating limits (SOLs) will be a critical element in these discussions and final agreements.</p> <p>During the NPIR development process an assessment of the transmission/plant interconnection will be needed to determine if design changes are warranted to ensure both BES reliability and assurance of plant safety per its nuclear regulatory licensing requirements. Thus, considering both BES requirements (e.g. SOLs) and the plant's nuclear regulatory requirements (e.g. NPLRs) during establishment of the NPIRs is important to both BES reliability and the plant's safety. It should be noted that under extreme system conditions off-normal action on the part of either the transmission operator or the nuclear generator may be required to ensure the overall reliability of the transmission system and the safety of the nuclear unit.</p> <p>Therefore, the standard will ensure the reliability of the BES and the safe operation or safe shutdown of a nuclear generator.</p> <p>Also, note that to satisfy R9.3.4, the NPIRs and associated Agreements are expected to contain provisions that address informing the NPGO and coordination of mitigating actions when operational conditions create a situation where, for example, an IROL and a plant voltage limit can not both be met. Thus, if the NPIRs and Agreements satisfy R9.3.4, and mitigating actions are taken when such a condition occurs, R4.2 is met. Thus, R4.3 is not needed.</p>		
Terry Bilke	Midwest ISO, Inc.	While this standard deals with a significant public safety issue, we are troubled by the use of violation risk factors for something other than what they are intended. Risk factors are supposed to relate to the likelihood of a requirement to cause cascading or instability. Something missing from an interconnection agreement will not in itself lead to cascading. If the plant is doing something that is risking cascading, it is almost surely violating some other standard. This is primarily an administrative standard. While the administrative items are important, importance is not the same as risk.
<p><b>Response:</b> Requirements R1, R2, and R9 address establishment of the NPIRs and Agreements and specific elements that need to be included in the Agreements. Thus, they are considered to be administrative in nature and have been assigned a Lower violation risk factor. Requirements R3 through R8 involve planning and operations and failure to meet these requirements could result in loss of one or more nuclear units during stressed grid conditions. This could be adverse, not only to the plant, but the system. Therefore, assignment of Medium violation risk factors to these requirements is consistent with risk factors assigned to plant requirements in other NERC Standards such as the PRC standards. Also, the other</p>		

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Voter	Entity	Comment
<p>NERC standards do not address NPIRs nor require Agreements to define and address the NPIRs which are specific to nuclear plants.</p>		
Alden Briggs	New Brunswick System Operator	<p>NBSO disagrees with the specific removal of the phrase "while respecting System Operating Limits (SOL) in Requirement 4.2 and the resulting final words, "Operate the electric system to meet the NPIR". If left as written the nuclear operator may believe that it is ok to violate an SOL.</p>
<p><b>Response:</b>                      The reason for the removal of the phrase, "while respecting System Operating Limits (SOL)" was based on a comment received by the NERC Compliance Group. The NERC Compliance Group believed the standard containing the above wording posed a compliance conflict. The potential conflict was based on having a justification for not meeting the NERC standard requirement, "meet the NPIR" within the body of the standard. It's the NERC position that any incongruities between the SOL and the Nuclear Licensing Requirements have been resolved prior to establishing the final NPIRs.</p> <p>In addition, the key to understanding the requirement placed on the nuclear operator and the appropriate transmission organization is based on the Nuclear Plant Interface Requirements (NPIRs) as defined in the standard. The NPIR are communication, operating and interfacing requirements, which have been <u>mutually agreed upon</u> and documented by the various parties. Therefore, the transmission system operating limits (SOLs) will be a critical element in these discussions and final agreements.</p> <p>During the NPIR development process an assessment of the transmission/plant interconnection will be needed to determine if design changes are warranted to ensure both BES reliability and assurance of plant safety per its nuclear regulatory licensing requirements. Thus, considering both BES requirements (e.g. SOLs) and the plant's nuclear regulatory requirements (e.g. NPLRs) during establishment of the NPIRs is important to both BES reliability and the plant's safety. It should be noted that under extreme system conditions off-normal action on the part of either the transmission operator or the nuclear generator may be required to ensure the overall reliability of the transmission system and the safety of the nuclear unit.</p> <p>Therefore, there shouldn't be any need for an exemption clause.</p>		
Gregory Campoli	New York Independent System Operator	<p>The NYISO agrees with issues raised concerning the requirement to track NPIR requirements vs SOL requirements.</p>
<p><b>Response: :</b>                      The reason for the removal of the phrase, "while respecting System Operating Limits (SOL)" was based on a comment received by the NERC Compliance. The NERC Compliance Group believed the standard containing the above wording posed a compliance conflict. The potential conflict was based on having a justification for not meeting the NERC standard requirement, "meet the NPIR" within the body of the standard. It's the NERC position that any incongruities between the SOL and the Nuclear Licensing Requirements have been resolved prior to establishing the final NPIR.</p> <p>In addition, the key to understanding the requirement placed on the nuclear operator and the appropriate transmission organization is based on the Nuclear Plant Interface Requirements (NPIR) as defined in the standard. The NPIR are communication, operating and interfacing requirements, which have been <u>mutually agreed upon</u> and documented by the various parties. Therefore, the transmission system operating limits (SOL) will be a</p>		

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Voter	Entity	Comment
<p>critical element in these discussions and final agreements.</p> <p>During the NPIR development process an assessment of the transmission/plant interconnection will be needed to determine if design changes are warranted to ensure both BES reliability and assurance of plant safety per its nuclear regulatory licensing requirements. Thus, considering both BES requirements (e.g. SOLs) and the plant's nuclear regulatory requirements (e.g. NPLRs) during establishment of the NPIRs is important to both BES reliability and the plant's safety. It should be noted that under extreme system conditions off-normal action on the part of either the transmission operator or the nuclear generator may be required to ensure the overall reliability of the transmission system and the safety of the nuclear unit.</p> <p>Therefore, there shouldn't be any need for an exemption clause.</p>		
Rebecca Berdahl	Bonneville Power Administration	It is imperative that the NPIRs are developed by mutual agreement and must include transmission system operating accommodations
<p><b>Response:</b> Agree. The standard requires establishment of "mutually agreed to" NPIRs which are based on both the Nuclear Plant Licensing Requirements and Bulk Electric System Requirements.</p>		
Michael D. Penstone	Hydro One Networks, Inc.	While Hydro One Networks Inc. supports the standard, we request that if the standard is adopted, NERC clearly confirms that the meaning of Requirement 4.2 is that operation of the Bulk Electric System within SOLs is paramount and Transmission Entities shall not violate these limits to meet NPIRs. This should be part of the agreements in between the Transmission Entity and the Nuclear Plant Generator Operator.
<p><b>Response:</b></p> <p>The key to understanding the requirement placed on the nuclear operator and the appropriate transmission organization is based on the Nuclear Plant Interface Requirements (NPIRs) as defined in the standard. The NPIRs are communication, operating and interfacing requirements, which have been <u>mutually agreed upon</u> and documented by the various parties. Therefore, the transmission system operating limits (SOLs) will be a critical element in these discussions and final agreements.</p> <p>During the NPIR development process an assessment of the transmission/plant interconnection will be needed to determine if design changes are warranted to ensure both BES reliability and assurance of plant safety per its nuclear regulatory licensing requirements. Thus, considering both BES requirements (e.g. SOLs) and the plant's nuclear regulatory requirements (e.g. NPLRs) during establishment of the NPIRs is important to both BES reliability and the plant's safety. It should be noted that under extreme system conditions off-normal action on the part of either the transmission operator or the nuclear generator may be required to ensure the overall reliability of the transmission system and the safety of the nuclear unit.</p>		
Christopher Lawrence de Graffenried	New York Power Authority	NPCC CP-9 is opposed to this version of the standard.
<p><b>Response:</b></p> <p>The standard drafting team assumes that the New York Power Authority comments relate to the removal of the SOL phase and the presumed conflict between the SOLs and NPRLs as expressed by our NPCC member.</p>		

Voter	Entity	Comment
		<p>The reason for the removal of the phrase, "while respecting System Operating Limits (SOLs)" was based on a comment received by the NERC Compliance Group. The NERC Compliance Group believed the standard containing the above wording posed a compliance conflict. The potential conflict was based on having a justification for not meeting the NERC standard requirement, "meet the NPIRs" within the body of the standard. It's the NERC position that any incongruities between the SOLs and the Nuclear Licensing Requirements have been resolved prior to establishing the final NPIRs.</p> <p>In addition, the key to understanding the requirement placed on the nuclear operator and the appropriate transmission organization is based on the Nuclear Plant Interface Requirements (NPIRs) as defined in the standard. The NPIR are communication, operating and interfacing requirements, which have been <u>mutually agreed upon</u> and documented by the various parties. Therefore, the transmission system operating limits (SOLs) will be a critical element in these discussions and final agreements.</p> <p>During the NPIR development process an assessment of the transmission/plant interconnection will be needed to determine if design changes are warranted to ensure both BES reliability and assurance of plant safety per its nuclear regulatory licensing requirements. Thus, considering both BES requirements (e.g. SOLs) and the plant's nuclear regulatory requirements (e.g. NPLRs) during establishment of the NPIRs is important to both BES reliability and the plant's safety. It should be noted that under extreme system conditions off-normal action on the part of either the transmission operator or the nuclear generator may be required to ensure the overall reliability of the transmission system and the safety of the nuclear unit.</p> <p>Therefore, there shouldn't be any need for an exemption clause.</p>
Michael Schiavone	Niagara Mohawk (National Grid Company)	The phrase "while respecting System Operating Limits (SOL)" should be added back in Requirement 4.2 to make it clear that SOLs take priority over NPIRs.
		<p><b>Response:</b></p> <p>The reason for the removal of the phrase, "while respecting System Operating Limits (SOLs)" was based on a comment received by the NERC Compliance Group. The NERC Compliance Group believed the standard containing the above wording posed a compliance conflict. The potential conflict was based on having a justification for not meeting the NERC standard requirement, "meet the NPIRs" within the body of the standard. It's the NERC position that any incongruities between the SOLs and the Nuclear Licensing Requirements have been resolved prior to establishing the final NPIRs.</p> <p>In addition, the key to understanding the requirement placed on the nuclear operator and the appropriate transmission organization is based on the Nuclear Plant Interface Requirements (NPIRs) as defined in the standard. The NPIR are communication, operating and interfacing requirements, which have been <u>mutually agreed upon</u> and documented by the various parties. Therefore, the transmission system operating limits (SOLs) will be a critical element in these discussions and final agreements.</p> <p>During the NPIR development process an assessment of the transmission/plant interconnection will be needed to determine if design changes are warranted to ensure both BES reliability and assurance of plant safety per its nuclear regulatory licensing requirements. Thus, considering both BES requirements (e.g. SOLs) and the plant's nuclear regulatory requirements (e.g. NPLRs) during establishment of the NPIRs is important to both BES</p>

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Voter	Entity	Comment
<p>reliability and the plant's safety. It should be noted that under extreme system conditions off-normal action on the part of either the transmission operator or the nuclear generator may be required to ensure the overall reliability of the transmission system and the safety of the nuclear unit.</p> <p>Therefore, there shouldn't be any need for an exemption clause.</p>		
James R. Keller	Wisconsin Electric Power Marketing	<p>Our general comment on the document is that it does not contain enough specificity to be enforceable. References to Transmission Entities - in what appears to be an attempt to be all inclusive - leave considerable room for interpretation. Questions arise as to what entity is responsible for what requirements. These need to be articulated to avoid confusion and to ensure that all requirements are addressed by the appropriate entity. The statement "Agreements developed in accordance with this standard" is vague. "Shotgun approach" to cover requirements is too loose with entities and agreements.</p>
<p><b>Response:</b> Because the responsible entities are dependent upon local operating relationships, the drafting team could not break down the requirements in the standard to identify the specific functional entity or entities that would be required to comply with each of the requirements. To determine exactly who the transmission entities are for each specific operating situation, the Implementation Plan includes language to specify when and how the applicable Transmission Entities will be identified.</p>		
Anthony Jankowski	Wisconsin Energy Corp.	<p>1 - Our general comment on the document is that it does not contain enough specificity to be enforceable.</p> <p>2 - References to Transmission Entities in what appears to be an attempt to be all inclusive leave considerable room for interpretation. Questions arise as to what entity is responsible for what requirements. These need to be articulated to avoid confusion and to ensure that all requirements are addressed by the appropriate entity.</p> <p>3 - The statement "Agreements developed in accordance with this standard" is vague. Shotgun approach to cover requirements is too loose with entities and agreements.</p> <p>4 - Definitions Section: The definition for Nuclear Plant Generator Operator lumps Generator Operators and Generator Owners. How does that definition square with the NERC functional model? Do we need separate agreements with the Generator Owner and the Generator Operator? Do the Generator Owner and the Generator Operator need agreements with all 9 or so counterparts?</p> <p>5 - A. Introduction Section 3 Purpose: Add the text "and to ensure the reliability of the interconnected bulk electric system" at the end of the sentence.</p> <p>6 - Section 4.2 lumps a raft of NERC defined functional groups as Transmission Entities. We don't normally think of an LSE or Distribution Provider as a Transmission Entity. A TP could establish a tariff with a NP, but the same may not be true for an LSE or DP. This lack of specificity in who is</p>



Voter	Entity	Comment
		<p>responsible for which requirements may mean some requirements to ensure safe nuclear plant operation and to ensure the reliability of the interconnected bulk electric system are not addressed at all.</p> <p>7 - B. Requirement R1 is loose. How formal are the "mutually agreed upon" NPIR's? R2 Footnote 1 Agreements may include mutually agreed upon procedures and protocols does not specify what formalities constitute a mutually agreed upon procedures or protocols.</p> <p>8 - R4.3 should be considered a high priority.</p> <p>9 - R7 and R8 " Who makes the determination that plant or system changes will affect the NPIR's? What ensures that there will be good coordination between parties?</p> <p>10 - R9.1.2 " There is no clear assignment of responsibility for specific requirements. R9.2 Recommend adding strength to R9.2.1 " R9.2.3 by listing the requirements and defining review periods for studies. R9.3.4 The agreement should state that the notification will occur as soon as practicable. R9.3.5 Define coping time. R9.3.5 Define the list of assets that need to be protected. R9.4 this is a great idea to develop a jointly prepared communication plan.</p> <p>11 - M7 and M8 Add a requirement that the parties provide evidence that all system changes are coordinated so impacts on the NPIR's are understood by both.</p>
<p><b>Response:</b></p> <p>1 - The standard's language cannot address the specific requirements for each plant-grid interconnection design due to the differences in plant licensing requirements, grid interconnection configurations, operational constraints, etc. This is why the standard emphasizes the importance of identifying those unique requirements for each plant and establishing Agreements to ensure the requirements are met.</p> <p>2 - Because the responsible entities are dependent upon local operating relationships, the drafting team could not break down the requirements in the standard to identify the specific functional entity or entities that would be required to comply with each of the requirements. To determine exactly who the transmission entities are for each specific operating situation, the Implementation Plan includes language to specify when and how the applicable Transmission Entities will be identified.</p> <p>3 - The NERC Glossary defines Agreement as "A contract or arrangement, either written or verbal and sometimes enforceable by law." The use of the term Agreement in this standard is consistent with this definition, and allows latitude for existing agreements, protocols, procedures, etc. within the various industry structures to satisfy the standard.</p>		

Voter	Entity	Comment
		<p>4 - The NPGO as defined can be the nuclear plant owner, the nuclear plant operator, or both. Plant owners and plant operators are both valid functions in the NERC Functional Model. Depending on the relationship of the existing plant operator and owner, the structure of the interfacing transmission organizations, existing agreements and protocols, etc., agreements may be needed with either or both. In some instances, the nuclear generator owner may be the same entity and only one set of agreements would be needed. In other cases, these may be separate entities and more than one set of agreements would be needed. Definition of the term NPGO covers these different situations and avoids use of "if, when, but, either, and, or" types of statements within the standard language which would be cumbersome, difficult, and confusing.</p> <p>5 - By definition and in accordance with the NERC Standards process, all NERC standards have the basic purpose to ensure reliability of the BES. By ensuring nuclear plant safe operation and shutdown, this standard will help accomplish the goal of BES reliability without compromising the health and safety of the public under NRC rules and regulations which impose requirements not only on the nuclear plant, but its electric grid interconnections as well.</p> <p>6 - In the case of a nuclear plant, a LSE or Distribution Provider may be involved in providing backup offsite power to help ensure safe shutdown of the plant. From the standpoint of the potential impact of degradation or loss of this offsite power source on the plant and the BES, these entities can be considered to fit within the term "Transmission Entities".</p> <p>7 - Most NPGOs already have mutually agreed upon procedures and/or protocols with applicable Transmission Entities that meet some or most of the requirements in this standard. The standard language, including Footnote 1, is designed to allow use of these existing arrangements and to avoid having a specific format or structure everyone must follow. Based on the definition of Agreement in the NERC Standard Glossary ("A contract or arrangement, either written or verbal and sometimes enforceable by law.").</p> <p>8 – Agree that R4.3 is an important requirement.</p> <p>9 - This standard requires communication, coordination, and understanding of the nuclear-plant/grid interconnection. The NPGO and applicable Transmission Entities responsible for changes in electric system design, operations, protection, etc. must communicate and work together to understand a particular plant/grid interconnection and how changes can impact the ability of the electric system to meet the NPIRs established for that interconnection.</p> <p>10 - These types of specifics will vary from one plant to another and should be addressed within the Agreements.</p> <p>11 - M7 and M8 are worded consistently with R7 and R8. If changes that impact the NPIRs are identified and communicated, actions will be required to resolve these. Such actions could include revising the NPIRs, changing a procedure, making a modification, making a setpoint change, etc.</p>

**Consideration of Comments in Initial Ballot of Nuclear Plant Interface Coordination NUC-001-1**

Voter	Entity	Comment
Michael F. Gildea	Constellation Generation Group	In this Standard, "Transmission Entities" shall mean all entities that include one or more: TO, TOP, TP, TSP, BA, PA, DP, LSE, GO, and GOP. (Listed out as 4.2.1 - 4.2.11.) As this Standard is designed, which functions (4.2.1 - 4.2.11) that are applicable is unique to each nuclear plant site. While this flexibility might be appropriate given all the different arrangements between Nuclear Plant Generator Operator and those that interface with it, the Standard should really be modified to require each Nuclear Plant Generation Operator at each site, to list out for public review or audit which of the functions (4.2.1 - 4.2.11) are applicable and who they specifically are. Otherwise, there are scenarios where there could be controversy or ambiguity on whom this Standard should apply. This would be especially possible, if there was a problem at the plant related to this Standard, resulting in finger pointing on whom was to be included in the list of functional Transmission Entities, and under this Standard, there was not pre-verified clarity of who those entities were and yet impacted parties had different versions of who were in the list of Transmission Entities for that site.
<p><b>Response:</b> The Implementation Plan posted with the standard addresses the process for determining the applicable Transmission Entities.</p>		
Thomas Bradish	Reliant Energy Services	I am not questioning the intent of the standard. I voted negative because of Section 4.2. Another less confusing term should replace the term 'Transmission'. The entities listed are not transmission entities. They are service-providing entities under contract with the nuclear plant. Maybe they should be called, " Service Providing Entities" or "Interface Entities".
<p><b>Response:</b> The Drafting Team discussed this at length and considered the terms you mention. The term "Transmission Entities" was selected because the nuclear plant generator itself interconnects with and can impact the reliability of the Transmission System or BES. In the case of some nuclear plants, a LSE or Distribution Provider may be involved in providing backup offsite power to help ensure safe shutdown of the plant. From the standpoint of the potential impacts of degradation or loss of this offsite power source on the plant and the BES, it is appropriate to consider these entities as "Transmission Entities" within the context of this standard.</p>		
Mark Bowman	Tennessee Valley Authority	<p>1) "Nuclear Plant Generator Operator" is a new entity that is not recognized by the NERC functional model.</p> <p>2) The term "Nuclear Plant Licensing Requirements" is not an industry standard term, which lead to confusion (even during the web-cast meeting). The industry standard term is "Safety Analysis Report (SAR) Requirements"</p> <p>3) The term "Nuclear Plant Interface Requirements" is misleading because it uses the word requirements. This is too easily confused with actual requirements, like voltage limits, etc. (this also lead to confusion during the web-cast meeting). We are actually talking about the 'agreements' (see Requirement R2). Replace this term with 'Nuclear Plant Interface Agreements'.</p>

Voter	Entity	Comment
		<p>4) Requirement R6 uses the word 'outages'. This is an industry standard term for Nuclear Plant Operators that means 'plant outage'. My belief after reading the standard, is that this is talking about system outages. However, several on the web-cast believed that this was talking about nuclear plant outages. Please clarify system or nuclear plant.</p> <p>5) Requirement R9.3.5 uses the word 'coping'. This is a nuclear industry standard term related to Station Blackout (SBO) and would tend to make one think of times like 4 hours. However, actual coping times for a Loss-of-Offsite-Power (LOOP) is more like 100 days. During the web-cast, the drafting team stated that nuclear plants have calculated their coping times for how long they can survive an SBO (This is actually not true since SBO coping times are discrete times defined in 10CFR and are instead based on statistical analysis of the likelihood of losing ALL AC power sources and the mean time to restore). I think they meant LOOP. In any case, this should be clarified.</p> <p>6) For Measures M5 through M6, the drafting team stated multiple times during the web-cast that the intent of all of these was communicate and they kept using words like 'call' or 'talk'. I agree with this, BUT there is no way to demonstrate evidence for these type communications. There should be a provision for recognizing that integrated companies will communicate this way.</p>
<p><b>Response:</b></p> <p>1) The NPGO as defined can be the nuclear plant owner, the nuclear plant operator, or both. Plant owners and plant operators are both valid functions in the NERC Functional Model.</p> <p>2) The term "Nuclear Plant Licensing Requirements (NPLRs)" is defined in the Definitions section of the standard. A key purpose of this standard is to convey to those in transmission planning and operations a better understanding of what the NPLRs are for a specific plant and how those translate into requirements for the grid interconnection.</p> <p>3) NPIRs are requirements. While a limit can be a requirement, it may not constitute "the" entire NPIR. The NPIR may be more comprehensive and specify the limit and the notification protocols if grid conditions may preclude meeting the limit. The purpose of the Agreements is to ensure the mutually agreed upon NPIRs are documented and addressed by the appropriate entities.</p> <p>4) R6 addresses both plant and system outages.</p> <p>5) The intent of R9.3.5 is to convey the meaning of the "coping time" for a Station Blackout (SBO) event at the plant (which includes a LOOP). In such a case, restoration of the offsite power source to the nuclear plant may warrant provisions within the Agreements to assign them a higher priority within the transmission system recovery plans.</p> <p>6) Evidence that coordination is taking place can be demonstrated by the presence of procedures and guides, email and voice communications,</p>		

Voter	Entity	Comment
operator logs, and other similar documentation.		
Linda Horn	Wisconsin Electric Power Co.	<ol style="list-style-type: none"> <li>1. Our general comment on the document is that it does not contain enough specificity to be enforceable.</li> <li>2. References to Transmission Entities " in what appears to be an attempt to be all inclusive " leave considerable room for interpretation. Questions arise as to what entity is responsible for what requirements. These need to be articulated to avoid confusion and to ensure that all requirements are addressed by the appropriate entity.</li> <li>3. The statement "Agreements developed in accordance with this standard" is vague. 'Shotgun approach' to cover requirements is too loose with entities and agreements.</li> <li>4. Definitions Section: The definition for Nuclear Plant Generator Operator lumps Generator Operators and Generator Owners. How does that definition square with the NERC functional model? Do we need separate agreements with the Generator Owner and the Generator Operator? Do the Generator Owner and the Generator Operator need agreements with all 9 or so counterparts?</li> </ol> <p>Specific Comments:</p> <ol style="list-style-type: none"> <li>5. Introduction Section 3 Purpose: Add the text "and to ensure the reliability of the interconnected bulk electric system" at the end of the sentence.</li> <li>6. Section 4.2 lumps a raft of NERC defined functional groups as Transmission Entities. We don't normally think of an LSE or Distribution Provider as a Transmission Entity. A TP could establish a tariff with a NP, but the same may not be true for an LSE or DP. This lack of specificity in who is responsible for which requirements may mean some requirements to ensure safe nuclear plant operation and to ensure the reliability of the interconnected bulk electric system are not addressed at all.</li> <li>7. Requirements R1 is loose. How formal are the "mutually agreed upon" NP/IR's? R2 Footnote 1 Agreements may include mutually agreed upon procedures and protocols does not specify what formalities constitute a mutually agreed upon procedures or protocols.</li> <li>8. R4.3 should be considered a high priority.</li> <li>9. R7 and R8 " Who makes the determination that plant or system changes will affect the</li> </ol>

Voter	Entity	Comment
		<p>NPIR's? What ensures that there will be good coordination between parties?</p> <p>10. R9.1.2 " There is no clear assignment of responsibility for specific requirements. R9.2 Recommend adding strength to R9.2.1" R9.2.3 by listing the requirements and defining review periods for studies. R9.3.4 The agreement should state that the notification will occur as soon as practicable. R9.3.5 Define coping time. R9.3.5 Define the list of assets that need to be protected. R9.4 this is a great idea to develop a jointly prepared communication plan.</p> <p>11. M7 and M8 Add a requirement that the parties provide evidence that all system changes are coordinated so impacts on the NPIR's are understood by both.</p>
<p><b>Response:</b> 1 - The standard's language cannot address the specific requirements for each plant-grid interconnection design due to the differences in plant licensing requirements, grid interconnection configurations, operational constraints, etc. This is why the standard emphasizes the importance of identifying those unique requirements for each plant and establishing Agreements to ensure the requirements are met.</p> <p>2 - Because the responsible entities are dependent upon local operating relationships, the drafting team could not break down the requirements in the standard to identify the specific functional entity or entities that would be required to comply with each of the requirements. To determine exactly who the transmission entities are for each specific operating situation, the Implementation Plan includes language to specify when and how the applicable Transmission Entities will be identified.</p> <p>3 - The NERC Glossary defines Agreement as "A contract or arrangement, either written or verbal and sometimes enforceable by law." The use of the term Agreement in this standard is consistent with this definition, and allows latitude for existing agreements, protocols, procedures, etc. within the various industry structures to satisfy the standard.</p> <p>4 - The NPGO as defined can be the nuclear plant owner, the nuclear plant operator, or both. Plant owners and plant operators are both valid functions in the NERC Functional Model. Depending on the relationship of the existing plant operator and owner, the structure of the interfacing transmission organizations, existing agreements and protocols, etc., agreements may be needed with either or both. In some instances, the nuclear generator owner may be the same entity and only one set of agreements would be needed. In other cases, these may be separate entities and more than one set of agreements would be needed. Definition of the term NPGO covers these different situations and avoids use of "if, when, but, either, and, or" types of statements within the standard language which would be cumbersome, difficult, and confusing.</p> <p>5 - By definition and in accordance with the NERC Standards process, all NERC standards have the basic purpose to ensure reliability of the BES. By ensuring nuclear plant safe operation and shutdown, this standard will help accomplish the goal of BES reliability without compromising the health and safety of the public under NRC rules and regulations which impose requirements not only on the nuclear plant, but its electric grid interconnections as well.</p> <p>6 - In the case of a nuclear plant, a LSE or Distribution Provider may be involved in providing backup offsite power to help ensure safe shutdown of</p>		

**Consideration of Comments in Initial Ballot of Nuclear Plant Interface Coordination NUC-001-1**

Voter	Entity	Comment
<p>the plant. From the standpoint of the potential impact of degradation or loss of this offsite power source on the plant and the BES, these entities can be considered to fit within the term "Transmission Entities".</p> <p>7 - Most NPGOs already have mutually agreed upon procedures and/or protocols with applicable Transmission Entities that meet some or most of the requirements in this standard. The standard language, including Footnote 1, is designed to allow use of these existing arrangements and to avoid having a specific format or structure everyone must follow. Based on the definition of Agreement in the NERC Standard Glossary ("A contract or arrangement, either written or verbal and sometimes enforceable by law.").</p> <p>8 – Agree that R4.3 is an important requirement.</p> <p>9 - This standard requires communication, coordination, and understanding of the nuclear-plant/grid interconnection. The NPGO and applicable Transmission Entities responsible for changes in electric system design, operations, protection, etc. must communicate and work together to understand a particular plant/grid interconnection and how changes can impact the ability of the electric system to meet the NPIRs established for that interconnection.</p> <p>10 - These types of specifics will vary from one plant to another and should be addressed within the Agreements.</p> <p>11 - M7 and M8 are worded consistently with R7 and R8. If changes that impact the NPIRs are identified and communicated, actions will be required to resolve these. Such actions could include revising the NPIRs, changing a procedure, making a modification, making a setpoint change, etc.</p>		
Brenda S. Anderson	Bonneville Power Administration	It is imperative that the NPIRs are developed by mutual agreement and must include Transmission system operating accommodations.
<p><b>Response:</b> Agree. The standard requires establishment of "mutually agreed to" NPIRs which are based on both the Nuclear Plant Licensing Requirements and Bulk Electric System Requirements.</p>		
William Mitchell Chamberlain	California Energy Commission	While it is certainly important to ensure that nuclear facilities receive the services they need to operate safely, there are too many ambiguities in this standard that appear to be left to negotiation of agreements in the future. It also appears that the standard assumes that the needs of the nuclear unit should always trump the needs of the system for avoiding cascading outages. Transmission operators may be required to exceed system operating limits, leading to reliability problems, under circumstances where the risk of a true nuclear safety event are extremely small. More thought should be given to defining the circumstances when the needs of the nuclear unit must trump all other considerations.
<p><b>Response:</b> The key to understanding the requirement placed on the nuclear operator and the appropriate transmission organization is based on the Nuclear Plant Interface Requirements (NPIRs) as defined in the standard. The NPIRs are communication, operating and interfacing requirements, which</p>		

Voter	Entity	Comment
<p>have been <u>mutually agreed upon</u> and documented by the various parties. Therefore, the transmission system operating limits (SOL) will be a critical element in these discussions and final agreements.</p> <p>During the NPIR development process an assessment of the transmission/plant interconnection will be needed to determine if design changes are warranted to ensure both BES reliability and assurance of plant safety per its nuclear regulatory licensing requirements. Thus, considering both BES requirements (e.g. SOLs) and the plant's nuclear regulatory requirements (e.g. NPLRs) during establishment of the NPIRs is important to both BES reliability and the plant's safety. It should be noted that under extreme system conditions off-normal action on the part of either the transmission operator or the nuclear generator may be required to ensure the overall reliability of the transmission system and the safety of the nuclear unit.</p> <p>In addition, the standard cannot predict all conditions for all plant interconnections and the requirements are worded accordingly. The standard requires that both the nuclear plant's requirements and BES requirements be factored in when establishing the NPIRs (which are plant/grid-interconnection specific). Thus, important SOLs and plant limits should be identified during establishment of the NPIRs. The Agreements and resulting procedures, protocols, etc. themselves should contain specifics of how these will be addressed during planning and operations. It is a basic expectation that, if there are potential conflicts between meeting a plant limit and a SOL, this will be worked out in the Agreements. The main concern from a nuclear safety standpoint is that the appropriate Transmission Entity notify the Nuclear Plant Generator Owner (NPGO) when such a problem occurs during operations, so appropriate actions can be taken to restore the grid to a stable condition and to assure continued safe operation and/or shutdown of the plant as applicable to the particular circumstance. Meeting both goals assure not only the nuclear plant's safety, but also the continued reliability of the BES.</p>		
Donald E. Nelson	Massachusetts Department of Telecommunications and Energy	Language should be inserted in the standard to make it clear that the only time system operating limits will be compromised is in the event that public safety would be more in jeopardy from the risk of a nuclear event than from the risk of a blackout.
<p><b>Response:</b></p> <p>The key to understanding the requirement placed on the nuclear operator and the appropriate transmission organization is based on the Nuclear Plant Interface Requirements (NPIRs) as defined in the standard. The NPIR are communication, operating and interfacing requirements, which have been <u>mutually agreed upon</u> and documented by the various parties. Therefore, the transmission system operating limits (SOLs) will be a critical element in these discussions and final agreements.</p> <p>During the NPIR development process an assessment of the transmission/plant interconnection will be needed to determine if design changes are warranted to ensure both BES reliability and assurance of plant safety per its nuclear regulatory licensing requirements. Thus, considering both BES requirements (e.g. SOLs) and the plant's nuclear regulatory requirements (e.g. NPLRs) during establishment of the NPIRs is important to both BES reliability and the plant's safety. It should be noted that under extreme system conditions off-normal action on the part of either the transmission operator or the nuclear generator may be required to ensure the overall reliability of the transmission system and the safety of the nuclear unit.</p>		
Diane J. Barney	National Association of Regulatory Utility Commissioners	Language should be inserted in the standard to make it clear that the only time system operating limits will be compromised is in the event that public safety would be more in jeopardy from the risk of a nuclear event than from the risk of a blackout.
<p><b>Response:</b></p>		



**Consideration of Comments in Initial Ballot of Nuclear Plant Interface Coordination NUC-001-1**

Voter	Entity	Comment
		<p>The key to understanding the requirement placed on the nuclear operator and the appropriate transmission organization is based on the Nuclear Plant Interface Requirements (NPIRs) as defined in the standard. The NPIR are communication, operating and interfacing requirements, which have been <u>mutually agreed upon</u> and documented by the various parties. Therefore, the transmission system operating limits (SOLs) will be a critical element in these discussions and final agreements.</p> <p>During the NPIR development process an assessment of the transmission/plant interconnection will be needed to determine if design changes are warranted to ensure both BES reliability and assurance of plant safety per its nuclear regulatory licensing requirements. Thus, considering both BES requirements (e.g. SOLs) and the plant's nuclear regulatory requirements (e.g. NPLRs) during establishment of the NPIRs is important to both BES reliability and the plant's safety. It should be noted that under extreme system conditions off-normal action on the part of either the transmission operator or the nuclear generator may be required to ensure the overall reliability of the transmission system and the safety of the nuclear unit.</p>
James T. Gallagher	New York State Public Service Commission	Language should be inserted in the standard to make it clear that the only time system operating limits will be compromised is in the event that public safety would be more in jeopardy from the risk of a nuclear event than from the risk of a blackout.
		<p><b>Response:</b></p> <p>The key to understanding the requirement placed on the nuclear operator and the appropriate transmission organization is based on the Nuclear Plant Interface Requirements (NPIRs) as defined in the standard. The NPIR are communication, operating and interfacing requirements, which have been <u>mutually agreed upon</u> and documented by the various parties. Therefore, the transmission system operating limits (SOLs) will be a critical element in these discussions and final agreements.</p> <p>During the NPIR development process an assessment of the transmission/plant interconnection will be needed to determine if design changes are warranted to ensure both BES reliability and assurance of plant safety per its nuclear regulatory licensing requirements. Thus, considering both BES requirements (e.g. SOLs) and the plant's nuclear regulatory requirements (e.g. NPLRs) during establishment of the NPIRs is important to both BES reliability and the plant's safety. It should be noted that under extreme system conditions off-normal action on the part of either the transmission operator or the nuclear generator may be required to ensure the overall reliability of the transmission system and the safety of the nuclear unit.</p>
Edward A. Schwerdt	Northeast Power Coordinating Council, Inc.	The removal of the words "while respecting System Operating Limits (SOL)" from Requirement 4.2 could lead to misinterpretations of the standard and are unacceptable.
		<p><b>Response:</b></p> <p>The reason for the removal of the phrase, "while respecting System Operating Limits (SOLs)" was based on a comment received by the NERC Compliance Group. The NERC Compliance Group believed the standard containing the above wording posed a compliance conflict. The potential conflict was based on having a justification for not meeting the NERC standard requirement, "meet the NPIRs" within the body of the standard. It's the NERC position that any incongruities between the SOLs and the Nuclear Licensing Requirements have been resolved prior to establishing the final NPIR.</p> <p>In addition, the key to understanding the requirement placed on the nuclear operator and the appropriate transmission organization is based on the Nuclear Plant Interface Requirements (NPIRs) as defined in the standard. The NPIR are communication, operating and interfacing requirements, which have been <u>mutually agreed upon</u> and documented by the various parties. Therefore, the transmission system operating limits (SOLs) will be</p>

Voter	Entity	Comment
<p>a critical element in these discussions and final agreements.</p> <p>During the NPIR development process an assessment of the transmission/plant interconnection will be needed to determine if design changes are warranted to ensure both BES reliability and assurance of plant safety per its nuclear regulatory licensing requirements. Thus, considering both BES requirements (e.g. SOLs) and the plant's nuclear regulatory requirements (e.g. NPLRs) during establishment of the NPIRs is important to both BES reliability and the plant's safety. It should be noted that under extreme system conditions off-normal action on the part of either the transmission operator or the nuclear generator may be required to ensure the overall reliability of the transmission system and the safety of the nuclear unit.</p> <p>Therefore, there shouldn't be any need for an exemption clause.</p>		
<p>Charles H. Yeung</p>	<p>Southwest Power Pool</p>	<p>A. Modify Requirement R4.2 to restore an amended version of the language previously included in Draft 2, as follows: Operate the electric system to meet the NPIRs, while ensuring that all Bulk Electric system requirements are met, including respecting System Operating Limits and Interconnection Reliability Operating Limits.</p> <p>B. Redefine Nuclear Plant Interface Requirements (NPIRs) as follows: The requirements, based on NPLRs, that have been mutually agreed to by the Nuclear Plant Generator Operator and the applicable Transmission Entities.</p> <p>C. Restore an amended version of what was Requirement R4.3 in the previous draft (Draft 2) as follows: Inform the Nuclear Plant Generator Operator and coordinate mitigating actions, in accordance with the relevant provisions of the NPIRs and Agreements, when certain other elements of NPIRs cannot be met, to ensure the safe operation or, if necessary, the safe shutdown of the nuclear plant.</p>
<p><b>Response:</b></p> <p>The standard drafting team believes the standard as written address the concerns raised in Comments A, B &amp;C. This conclusion is based on the following:</p> <p>First, the reason for the removal of the phrase, "while respecting System Operating Limits (SOLs)" was based on a comment received by the NERC Compliance Group. The NERC Compliance Group believed the standard containing the above wording posed a compliance conflict. The potential conflict was based on having a justification for not meeting the NERC standard requirement, "meet the NPIRs" within the body of the standard. It's the NERC position that any incongruities between the SOLs and the Nuclear Licensing Requirements have been resolved prior to establishing the final NPIR.</p> <p>Secondly, the key to understanding the requirement placed on the nuclear operator and the appropriate transmission organization is based on the Nuclear Plant Interface Requirements (NPIRs) as defined in the standard. The NPIR are communication, operating and interfacing requirements, which have been <u>mutually agreed upon</u> and documented by the various parties. Therefore, the transmission system operating limits (SOLs) will be</p>		

Voter	Entity	Comment
		<p>a critical element in these discussions and final agreements.</p> <p>During the NPIR development process an assessment of the transmission/plant interconnection will be needed to determine if design changes are warranted to ensure both BES reliability and assurance of plant safety per its nuclear regulatory licensing requirements. Thus, considering both BES requirements (e.g. SOLs) and the plant's nuclear regulatory requirements (e.g. NPLRs) during establishment of the NPIRs is important to both BES reliability and the plant's safety. It should be noted that under extreme system conditions off-normal action on the part of either the transmission operator or the nuclear generator may be required to ensure the overall reliability of the transmission system and the safety of the nuclear unit.</p> <p>Therefore, the standard will ensure the reliability of the BES and the safe operation or safe shutdown of a nuclear generator.</p> <p>Also, note that to satisfy R9.3.4, the NPIRs and associated Agreements are expected to contain provisions that address informing the NPGO and coordination of mitigating actions when operational conditions create a situation where, for example, an IROL and a plant voltage limit could not both be met. Thus, if the NPIRs and Agreements satisfy R9.3.4, and mitigating actions are taken when such a condition occurs, R4.2 is met. Thus, R4.3 is not needed.</p>

## Reliability Standards

### Ballot Results

<b>Ballot Name:</b>	Nuclear Power Interface Coordination Standard_in
<b>Ballot Period:</b>	3/19/2007 - 3/30/2007
<b>Ballot Type:</b>	Initial
<b>Total # Votes:</b>	164
<b>Total Ballot Pool:</b>	183
<b>Quorum:</b>	<b>89.62 % The Quorum has been reached</b>
<b>Weighted Segment Vote:</b>	77.10 %
<b>Ballot Results:</b>	<b>The standard will proceed to recirculation ballot.</b>

### Summary of Ballot Results

Segment	Ballot Pool	Segment Weight	Affirmative		Negative		Abstain	No Vote
			# Votes	Fraction	# Votes	Fraction	#	
1 - Segment 1.	54	1	36	0.9	4	0.1	8	6
2 - Segment 2.	8	0.7	4	0.4	3	0.3	1	0
3 - Segment 3.	42	1	32	0.941	2	0.059	5	3
4 - Segment 4.	9	0.7	6	0.6	1	0.1	1	1
5 - Segment 5.	30	1	16	0.842	3	0.158	3	8
6 - Segment 6.	19	1	16	1	0	0	2	1
7 - Segment 7.	2	0.2	2	0.2	0	0	0	0
8 - Segment 8.	5	0.5	4	0.4	1	0.1	0	0
9 - Segment 9.	7	0.7	1	0.1	6	0.6	0	0
10 - Segment 10.	7	0.7	4	0.4	3	0.3	0	0
<b>Totals</b>	<b>183</b>	<b>7.5</b>	<b>121</b>	<b>5.783</b>	<b>23</b>	<b>1.717</b>	<b>20</b>	<b>19</b>

### Individual Ballot Pool Results

Segment	Organization	Member	Ballot		Comments
1	AEP Service Corp. -- Transmission System AEP	Scott P. Moore		Affirmative	
1	Allegheny Power	Rodney Phillips		Affirmative	
1	Alliant Energy	Kenneth Goldsmith		Affirmative	
1	Ameren Services Company	Peggy Ladd		Affirmative	<a href="#">View</a>
1	American Public Power Association	E. Nick Henery		Abstain	
1	American Transmission Company, LLC	Douglas F. Johnson		Negative	<a href="#">View</a>
1	Avista Corp.	Scott Kinney		Abstain	
1	Baltimore Gas & Electric Company	John J. Moraski		Affirmative	

1	Bonneville Power Administration	Donald S. Watkins	Affirmative	<a href="#">View</a>
1	CenterPoint Energy	Paul Rocha		
1	Central Maine Power Company	David Mark Conroy	Abstain	
1	Consolidated Edison Co. of New York	Edwin E. Thompson PE	Negative	<a href="#">View</a>
1	Dominion Virginia Power	William L. Thompson	Affirmative	
1	Duke Energy	Doug Hils	Affirmative	
1	Duquesne Light Co.	Bob McClelland	Affirmative	
1	Entergy Corporation	George R. Bartlett	Affirmative	
1	Exelon Energy	John J. Blazekovich	Affirmative	
1	FirstEnergy Energy Delivery	Robert Martinko	Affirmative	
1	Florida Keys Electric Cooperative Assoc.	Dennis Minton	Affirmative	
1	Florida Power & Light Co.	C. Martin Mennes	Affirmative	
1	Hydro One Networks, Inc.	Ajay Garg	Affirmative	<a href="#">View</a>
1	ITC Transmission	Brian F. Thumm	Abstain	
1	JEA	Ted E. Hobson	Affirmative	
1	Keyspan LIPA	Richard J. Bolbrock	Negative	
1	Lincoln Electric System	Doug Bantam		
1	Manitoba Hydro	Robert G. Coish	Abstain	
1	Municipal Electric Authority of Georgia	Jerry J Tang	Affirmative	
1	National Grid USA	Herbert Schrayshuen	Affirmative	
1	New Brunswick Power Transmission Corporation	Wayne N. Snowdon	Affirmative	
1	New York Power Authority	Ralph Rufrano	Negative	
1	Northeast Utilities	David H Boguslawski	Affirmative	
1	Northern Indiana Public Service Co.	Joseph Dobes	Affirmative	
1	Oncor	Charles W. Jenkins	Affirmative	
1	Otter Tail Power Company	Lawrence R. Larson		
1	Pacific Gas and Electric Company	Chifong L. Thomas	Affirmative	
1	PacifiCorp	Robert Williams	Abstain	
1	Potomac Electric Power Co.	Richard J. Kafka	Affirmative	
1	PP&L, Inc.	Ray Mammarella	Affirmative	
1	Progress Energy Carolinas	Verne B. Ingersoll	Affirmative	
1	Public Service Electric and Gas Co.	Colin Loxley	Affirmative	
1	Sacramento Municipal Utility District	Dilip Mahendra	Abstain	
1	Salt River Project	Robert Kondziolka	Affirmative	
1	San Diego Gas & Electric	Linda Brown		
1	Santee Cooper	Terry L. Blackwell	Affirmative	
1	SaskPower	Wayne Guttormson	Abstain	
1	Seattle City Light	Christopher M. Turner	Affirmative	
1	South Carolina Electric & Gas Co.	Lee N. Xanthakos		
1	Southern California Edison Co.	Dana Cabbell	Affirmative	
1	Southern Company Services, Inc.	Horace Stephen Williamson	Affirmative	
1	Tampa Electric Co.	Paul Michael Davis	Affirmative	
1	Tennessee Valley Authority	Larry G. Akens	Affirmative	
1	Tri-State G & T Association Inc.	Bruce A Sembrick		
1	Westar Energy	Allen Klassen	Affirmative	
1	Xcel Energy, Inc.	Gregory L. Pieper	Affirmative	
2	Alberta Electric System Operator	Anita Lee	Abstain	
2	California ISO	David Hawkins	Affirmative	
2	Independent Electricity System Operator	Don Tench	Affirmative	<a href="#">View</a>
2	ISO New England, Inc.	Kathleen Goodman	Negative	<a href="#">View</a>
2	Midwest ISO, Inc.	Terry Bilke	Affirmative	<a href="#">View</a>
2	New Brunswick System Operator	Alden Briggs	Negative	<a href="#">View</a>
2	New York Independent System Operator	Gregory Campoli	Negative	<a href="#">View</a>

2	PJM Interconnection, L.L.C.	Tom Bowe	Affirmative	
3	Alabama Power Company	Robin Hurst	Affirmative	
3	Allegheny Power	Bob Reeping	Affirmative	
3	Arizona Public Service Co.	Thomas R. Glock	Affirmative	
3	Atlantic City Electric Company	James V. Petrella	Affirmative	
3	Blue Ridge Power Agency	Duane S. Dahlquist	Abstain	
3	Bonneville Power Administration	Rebecca Berdahl	Affirmative	<a href="#">View</a>
3	City Public Service of San Antonio	Edwin Les Barrow	Affirmative	
3	Commonwealth Edison Co.	Stephen Lesniak	Affirmative	
3	Constellation Energy	Carolyn Ingersoll	Affirmative	
3	Consumers Energy Co.	David A. Lapinski	Affirmative	
3	Delmarva Power & Light Co.	Michael R. Mayer	Affirmative	
3	Dominion Resources, Inc.	Jalal (John) Babik	Affirmative	
3	Duke Energy	Henry Ernst-Jr	Affirmative	
3	Entergy Services, Inc.	Matt Wolf	Affirmative	
3	FirstEnergy Solutions	Joanne Kathleen Borrell	Affirmative	
3	Florida Municipal Power Agency	Michael Alexander	Affirmative	
3	Florida Power & Light Co.	W.R. Schoneck	Abstain	
3	Florida Power Corporation	Lee Schuster		
3	Georgia Power Company	Leslie Sibert	Affirmative	
3	Gulf Power Company	William F. Pope	Affirmative	
3	Hydro One Networks, Inc.	Michael D. Penstone	Affirmative	<a href="#">View</a>
3	JEA	Garry Baker	Affirmative	
3	Lincoln Electric System	Bruce Merrill	Affirmative	
3	Louisville Gas and Electric Co.	Charles A. Freibert		
3	Manitoba Hydro	Ronald Dacombe	Abstain	
3	MidAmerican Energy Co.	Thomas C. Mielnik	Affirmative	
3	Mississippi Power	Don Horsley	Affirmative	
3	New York Power Authority	Christopher Lawrence de Graffenried	Negative	<a href="#">View</a>
3	Niagara Mohawk (National Grid Company)	Michael Schiavone	Affirmative	<a href="#">View</a>
3	Oklahoma Gas and Electric Co.	Gary Clear	Abstain	
3	Platte River Power Authority	Terry L Baker	Affirmative	
3	Potomac Electric Power Co.	Robert Reuter	Affirmative	
3	Progress Energy Carolinas	Sam Waters	Affirmative	
3	Public Service Electric and Gas Co.	Jeffrey Mueller	Affirmative	
3	Salt River Project	John T. Underhill	Affirmative	
3	San Diego Gas & Electric	Scott Peterson		
3	Santee Cooper	Zack Dusenbury	Affirmative	
3	Seattle City Light	Dana Wheelock	Affirmative	
3	Tampa Electric Co.	Ronald L. Donahey	Abstain	
3	Tennessee Valley Authority	Cynthia Herron	Affirmative	
3	Wisconsin Electric Power Marketing	James R. Keller	Negative	<a href="#">View</a>
3	Xcel Energy, Inc.	Michael Ibold	Affirmative	
4	Consumers Energy Co.	David Frank Ronk	Affirmative	
4	Florida Municipal Power Agency	William S. May	Affirmative	
4	LaGen	Richard Comeaux		
4	Old Dominion Electric Coop.	Mark Ringhausen	Affirmative	
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4	Reedy Creek Improvement District	Doug Wagner	Affirmative	
4	Seattle City Light	Hao Li	Affirmative	
4	Seminole Electric Cooperative, Inc.	Steven R. Wallace	Affirmative	
4	Wisconsin Energy Corp.	Anthony Jankowski	Negative	<a href="#">View</a>

5	AEP Service Corp.	Brock Ondayko	Affirmative	
5	Avista Corp.	Edward F. Groce	Abstain	
5	Bonneville Power Administration	Francis J. Halpin		
5	Bruce Power	Dave Abbott	Affirmative	
5	City of Tallahassee	Alan Gale		
5	Conectiv Energy Supply, Inc.	Richard K Douglass	Affirmative	
5	Constellation Generation Group	Michael F. Gildea	Affirmative	<a href="#">View</a>
5	Dairyland Power Coop.	Warren Schaefer	Affirmative	
5	Detroit Edison Company	Ronald W. Bauer	Affirmative	
5	Dominion Energy	Harold W. Adams	Affirmative	
5	East Kentucky Power Coop.	Gerard Bordes	Affirmative	
5	Entergy Operations, Inc.	Thomas Barnett	Affirmative	
5	Exelon Corporation	Jack Crowley		
5	Florida Municipal Power Agency	Steve McElhaney		
5	Florida Power & Light Co.	Robert A. Birch	Negative	
5	Lincoln Electric System	Dennis Florom	Affirmative	
5	Oklahoma Gas and Electric Co.	Kim Morphis	Abstain	
5	Ontario Power Generation Inc.	Barry Green		
5	PPL Generation LLC	Mark A. Heimbach	Affirmative	
5	Progress Energy Carolinas	Wayne Lewis	Affirmative	
5	PSEG Power LLC	Thomas Piascik		
5	Reedy Creek Energy Services	Bernie Budnik		
5	Reliant Energy Services	Thomas Bradish	Negative	<a href="#">View</a>
5	Salt River Project	Glen Reeves	Affirmative	
5	Southeastern Power Administration	Douglas Spencer	Abstain	
5	Southern Company Services, Inc.	Roger Green		
5	Tennessee Valley Authority	Mark Bowman	Affirmative	<a href="#">View</a>
5	U.S. Army Corps of Engineers Northwestern Division	Karl Bryan	Affirmative	
5	Wisconsin Electric Power Co.	Linda Horn	Negative	<a href="#">View</a>
5	Xcel Energy, Inc.	Stephen J. Beuning	Affirmative	
6	AEP Service Corp.	Dana E. Horton	Affirmative	
6	Bonneville Power Administration	Brenda S. Anderson	Affirmative	<a href="#">View</a>
6	Constellation Energy Commodities Group	Donald Schopp	Affirmative	
6	Dominion Energy Marketing	Lou Oberski	Affirmative	
6	Entergy Services, Inc.	William Franklin	Affirmative	
6	Exelon Power Team	Pulin Shah	Affirmative	
6	FirstEnergy Solutions	Edward C. Stein	Affirmative	
6	Florida Municipal Power Agency	Robert C. Williams	Affirmative	
6	Lincoln Electric System	Eric Ruskamp	Affirmative	
6	Manitoba Hydro	Daniel Prowse	Abstain	
6	PP&L, Inc.	Thomas Hyzinski	Affirmative	
6	Progress Energy Carolinas	James Eckelkamp	Affirmative	
6	Santee Cooper	Suzanne Ritter	Affirmative	
6	Seminole Electric Cooperative, Inc.	Trudy S. Novak	Affirmative	
6	Southern Company Generation and Energy Marketing	J. Roman Carter	Affirmative	
6	Split Rock Energy LLC	Donna Stephenson	Affirmative	
6	Tampa Electric Co.	Jose Benjamin Quintas	Abstain	
6	Western Area Power Administration - UGP Marketing	John Stonebarger		
6	Xcel Energy, Inc.	David F. Lemmons	Affirmative	
7	Eastman Chemical Company	Lloyd Webb	Affirmative	
7	Praxair Inc.	David Meade	Affirmative	

8	JDRJC Associates	Jim D. Cyrulewski	Affirmative	
8	Missouri Office of Public Counsel	Ryan Kind	Affirmative	
8	North Carolina Utilities Commission Public Staff	Jack Floyd	Negative	
8	Other	Michehl R. Gent	Affirmative	
8	Pennsylvania Office of Consumer Advocate	Sonny Popowsky	Affirmative	
9	California Energy Commission	William Mitchell Chamberlain	Negative	<a href="#">View</a>
9	Massachusetts Department of Telecommunications and Energy	Donald E. Nelson	Negative	<a href="#">View</a>
9	Minnesota Public Utilities Commission	Ken Wolf	Affirmative	
9	National Association of Regulatory Utility Commissioners	Diane J. Barney	Negative	<a href="#">View</a>
9	New York State Public Service Commission	James T. Gallagher	Negative	<a href="#">View</a>
9	North Carolina Utilities Commission	Sam Watson	Negative	
9	Public Utilities Commission of Ohio	Klaus Lambeck	Negative	
10	Electric Reliability Council of Texas, Inc.	Sam R. Jones	Affirmative	
10	Florida Reliability Coordinating Council	Linda Campbell	Affirmative	
10	Midwest Reliability Organization	Larry Brusseau	Affirmative	
10	New York State Reliability Council	Alan Adamson	Negative	
10	Northeast Power Coordinating Council, Inc.	Edward A. Schwerdt	Negative	<a href="#">View</a>
10	ReliabilityFirst Corporation	Timothy R. Gallagher	Affirmative	
10	Southwest Power Pool	Charles H. Yeung	Negative	<a href="#">View</a>

609.452.8060 (Voice) - 609.452.9550 (Fax)  
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April 17, 2007

TO: REGISTERED BALLOT BODY

Ladies and Gentlemen:

**Announcement: One Initial Ballot Window and Three Recirculation Ballot Windows Open on April 17, 2007**

**The Standards Committee (SC) announces the following standards actions:**

**Initial Ballot Window Open April 17–26, 2007**

**Interpretation of VAR-002-1 Requirements 1 and 2**

The initial [ballot](#) on the [Interpretation of VAR-002-1](#) — Generator Operation for Maintaining Network Voltage Schedules, Requirements 1 and 2 will be conducted from 8 a.m. (EDT) on Tuesday, April 17 through 8 p.m. (EDT) Thursday, April 26, 2007.

This interpretation clarifies the intent of the use of the phrase, “operation in the automatic voltage control mode” in Requirements 1 and 2.

**Three Recirculation Ballot Windows Open April 17–26, 2007**

Each of the following three recirculation ballots will be conducted from 8 a.m. (EDT) on Tuesday, April 17 through 8 p.m. (EDT) Thursday, April 26, 2007. All members of the associated ballot pools are encouraged to review the comments submitted with the initial ballots, and the associated drafting team’s responses to those comments.

Members of the ballot pools may:

- Reconsider and change their vote from the first ballot.
- Vote in the second ballot even if they did not vote on the first ballot.
- Take no action if they do not want to change their original vote.

In the recirculation ballot, votes are counted by exception only — if members don’t indicate a revision to their original votes, the vote remains the same as in the first ballot.

**Balance Resources and Demand Standards**

The recirculation [ballot](#) for the following set of Balance Resources and Demand standards will be conducted from 8 a.m. (EDT) on Tuesday, April 17 through 8 p.m. (EDT) Thursday, April 26, 2007. All members of the ballot pool are encouraged to review the comments submitted with the initial ballot, and the drafting team’s [responses to those comments](#).

BAL-007-1 — Balance of Resources and Demand

BAL-008-1 — Frequency and Area Control Error

BAL-009-1 — Actions to Return Frequency to within Frequency Trigger Limits

BAL-010-1 — Frequency Bias Settings

BAL-011-1 — Frequency Limits

116-390 Village Boulevard, Princeton, New Jersey 08540-5721

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These standards require entities to maintain interconnection scheduled frequency within a predefined frequency profile under all conditions (i.e., normal and abnormal), to prevent unwarranted load shedding and to prevent frequency-related cascading collapse of the interconnected grid. The ballot for the above set of standards also includes the Balance Resources and Demand Implementation Plan.

#### **Nuclear Plant Interface Coordination Standard (NUC-001)**

The recirculation [ballot](#) for the Nuclear Plant Interface Coordination (NUC-001-1) standard will be conducted from 8 a.m. (EDT) on Tuesday, April 17, 2007 through 8 p.m. (EDT) Thursday, April 26, 2007. All members of the ballot pool are encouraged to review the comments submitted with the initial ballot, and the drafting team's [responses to those comments](#).

This standard requires coordination between nuclear plant generator operators and transmission entities to ensure safe operation and shutdown of nuclear plants. The ballot for this standard also includes the Nuclear Plant Interface Coordination Implementation Plan.

#### **Interpretation of BAL-005 — Automatic Generation Control Requirement 17**

The recirculation [ballot](#) for the Interpretation of BAL-005-0 — Automatic Generation Control Requirement 17 will be conducted from 8 a.m. (EDT) on Tuesday, April 17, 2007 through 8 p.m. (EDT) Thursday, April 26, 2007. All members of the ballot pool are encouraged to review the comments submitted with the initial ballot, and the drafting team's [responses to those comments](#).

The interpretation clarifies that the Balancing Authority is required to check and calibrate its control room time error and frequency devices against a common reference at least annually, but the requirement to “annually check and calibrate” does not address any devices outside of the operations control room.

#### **Standards Development Process**

The [Reliability Standards Development Procedure](#) contains all the procedures governing the standards development process. The success of the NERC standards development process depends on stakeholder participation. We extend our thanks to all those who participate. If you have any questions, please contact me at 813-468-5998 or [maureen.long@nerc.net](mailto:maureen.long@nerc.net).

Sincerely,

*Maureen E. Long*

cc: Registered Ballot Body Registered Users  
Standards Mailing List  
NERC Roster



**Reliability Standards**

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Password

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- [Proxy Voters](#)
- [Registration Instructions](#)
- [Regional Reliability Standards](#)

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Ballot Results	
<b>Ballot Name:</b>	Nuclear Power Interface Coordination Standard_rc
<b>Ballot Period:</b>	4/17/2007 - 4/26/2007
<b>Ballot Type:</b>	recirculation
<b>Total # Votes:</b>	176
<b>Total Ballot Pool:</b>	183
<b>Quorum:</b>	<b>96.17 % The Quorum has been reached</b>
<b>Weighted Segment Vote:</b>	79.94 %
<b>Ballot Results:</b>	<b>The Standard has Passed</b>

Summary of Ballot Results									
Segment	Ballot Pool	Segment Weight	Affirmative		Negative		Abstain	No Vote	
			# Votes	Fraction	# Votes	Fraction	# Votes		
1 - Segment 1.		54	1	40	0.889	5	0.111	7	2
2 - Segment 2.		8	0.6	4	0.4	2	0.2	2	0
3 - Segment 3.		42	1	32	0.914	3	0.086	5	2
4 - Segment 4.		9	0.7	6	0.6	1	0.1	1	1
5 - Segment 5.		30	1	21	0.913	2	0.087	5	2
6 - Segment 6.		19	1	16	1	0	0	3	0
7 - Segment 7.		2	0.2	2	0.2	0	0	0	0
8 - Segment 8.		5	0.5	5	0.5	0	0	0	0
9 - Segment 9.		7	0.7	1	0.1	6	0.6	0	0
10 - Segment 10.		7	0.7	4	0.4	3	0.3	0	0
<b>Totals</b>		<b>183</b>	<b>7.4</b>	<b>131</b>	<b>5.916</b>	<b>22</b>	<b>1.484</b>	<b>23</b>	<b>7</b>

Individual Ballot Pool Results				
Segment	Organization	Member	Ballot	Comments
1	AEP Service Corp. -- Transmission System AEP	Scott P. Moore	Affirmative	
1	Allegheny Power	Rodney Phillips	Affirmative	
1	Alliant Energy	Kenneth Goldsmith	Affirmative	
1	Ameren Services Company	Peggy Ladd	Affirmative	<a href="#">View</a>
1	American Public Power Association	E. Nick Henery	Abstain	
1	American Transmission Company, LLC	Douglas F. Johnson	Affirmative	<a href="#">View</a>
1	Avista Corp.	Scott Kinney	Affirmative	
1	Baltimore Gas & Electric Company	John J. Moraski	Affirmative	
1	Bonneville Power Administration	Donald S. Watkins	Affirmative	<a href="#">View</a>
1	CenterPoint Energy	Paul Rocha	Negative	

1	Central Maine Power Company	David Mark Conroy	Abstain	
1	Consolidated Edison Co. of New York	Edwin E. Thompson PE	Affirmative	<a href="#">View</a>
1	Dominion Virginia Power	William L. Thompson	Affirmative	
1	Duke Energy	Doug Hils	Affirmative	
1	Duquesne Light Co.	Bob McClelland	Affirmative	
1	Entergy Corporation	George R. Bartlett	Affirmative	
1	Exelon Energy	John J. Blazekovich	Affirmative	
1	FirstEnergy Energy Delivery	Robert Martinko	Affirmative	
1	Florida Keys Electric Cooperative Assoc.	Dennis Minton	Affirmative	
1	Florida Power & Light Co.	C. Martin Mennes	Affirmative	
1	Hydro One Networks, Inc.	Ajay Garg	Affirmative	<a href="#">View</a>
1	ITC Transmission	Brian F. Thumm	Abstain	
1	JEA	Ted E. Hobson	Affirmative	
1	Keyspan LIPA	Richard J. Bolbrock	Negative	
1	Lincoln Electric System	Doug Bantam		
1	Manitoba Hydro	Robert G. Coish	Abstain	
1	Municipal Electric Authority of Georgia	Jerry J Tang	Affirmative	
1	National Grid USA	Herbert Schrayshuen	Negative	<a href="#">View</a>
1	New Brunswick Power Transmission Corporation	Wayne N. Snowdon	Negative	
1	New York Power Authority	Ralph Rufrano	Negative	
1	Northeast Utilities	David H Boguslawski	Affirmative	
1	Northern Indiana Public Service Co.	Joseph Dobes	Affirmative	
1	Oncor	Charles W. Jenkins	Affirmative	
1	Otter Tail Power Company	Lawrence R. Larson	Affirmative	
1	Pacific Gas and Electric Company	Chifong L. Thomas	Affirmative	
1	PacifiCorp	Robert Williams	Abstain	
1	Potomac Electric Power Co.	Richard J. Kafka	Affirmative	
1	PP&L, Inc.	Ray Mammarella	Affirmative	
1	Progress Energy Carolinas	Verne B. Ingersoll	Affirmative	
1	Public Service Electric and Gas Co.	Colin Loxley	Affirmative	
1	Sacramento Municipal Utility District	Dilip Mahendra	Abstain	
1	Salt River Project	Robert Kondziolka	Affirmative	
1	San Diego Gas & Electric	Linda Brown	Affirmative	
1	Santee Cooper	Terry L. Blackwell	Affirmative	
1	SaskPower	Wayne Guttormson	Abstain	
1	Seattle City Light	Christopher M. Turner	Affirmative	
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4	Wisconsin Energy Corp.	Anthony Jankowski	Negative	<a href="#">View</a>
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5	Detroit Edison Company	Ronald W. Bauer	Affirmative	
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5	U.S. Army Corps of Engineers Northwestern Division	Karl Bryan	Affirmative	
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6	Lincoln Electric System	Eric Ruskamp	Affirmative	
6	Manitoba Hydro	Daniel Prowse	Abstain	
6	PP&L, Inc.	Thomas Hyzinski	Affirmative	
6	Progress Energy Carolinas	James Eckelkamp	Affirmative	
6	Santee Cooper	Suzanne Ritter	Affirmative	
6	Seminole Electric Cooperative, Inc.	Trudy S. Novak	Abstain	
6	Southern Company Generation and Energy Marketing	J. Roman Carter	Affirmative	
6	Split Rock Energy LLC	Donna Stephenson	Affirmative	
6	Tampa Electric Co.	Jose Benjamin Quintas	Abstain	
6	Western Area Power Administration - UGP Marketing	John Stonebarger	Affirmative	
6	Xcel Energy, Inc.	David F. Lemmons	Affirmative	
7	Eastman Chemical Company	Lloyd Webb	Affirmative	
7	Praxair Inc.	David Meade	Affirmative	
8	JDRJC Associates	Jim D. Cyrulewski	Affirmative	
8	Missouri Office of Public Counsel	Ryan Kind	Affirmative	
8	North Carolina Utilities Commission Public Staff	Jack Floyd	Affirmative	
8	Other	Michehl R. Gent	Affirmative	

8	Pennsylvania Office of Consumer Advocate	Sonny Popowsky	Affirmative	
9	California Energy Commission	William Mitchell Chamberlain	Negative	<a href="#">View</a>
9	Commonwealth of Massachusetts Department of Public Utilities	Donald E. Nelson	Negative	<a href="#">View</a>
9	Minnesota Public Utilities Commission	Ken Wolf	Affirmative	
9	National Association of Regulatory Utility Commissioners	Diane J. Barney	Negative	<a href="#">View</a>
9	New York State Public Service Commission	James T. Gallagher	Negative	<a href="#">View</a>
9	North Carolina Utilities Commission	Sam Watson	Negative	
9	Public Utilities Commission of Ohio	Klaus Lambeck	Negative	
10	Electric Reliability Council of Texas, Inc.	Sam R. Jones	Affirmative	
10	Florida Reliability Coordinating Council	Linda Campbell	Affirmative	
10	Midwest Reliability Organization	Larry Brusseau	Affirmative	
10	New York State Reliability Council	Alan Adamson	Negative	
10	Northeast Power Coordinating Council, Inc.	Edward A. Schwerdt	Negative	<a href="#">View</a>
10	ReliabilityFirst Corporation	Timothy R. Gallagher	Affirmative	
10	Southwest Power Pool	Charles H. Yeung	Negative	<a href="#">View</a>

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# **Exhibit C**

## **Standard Drafting Team Roster**



## Nuclear Plant Offsite Electricity Supply Reliability Drafting Team

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