UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

North American Electric Reliability Corporation	**)** **)**	**Docket No. _____**

PETITION OF THE NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION FOR APPROVAL OF PROPOSED RELIABILITY STANDARD NUC-001-3

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Pursuant to Section 215(d)(1) of the Federal Power Act ("FPA")[1] and Section 39.5[2] of the Federal Energy Regulatory Commission's ("FERC" or "Commission") regulations, the North American Electric Reliability Corporation ("NERC")[3] hereby submits for Commission approval proposed Reliability Standard NUC-001-3 (Nuclear Plant Interface Coordination) (**Exhibit A**). NERC requests that the Commission approve the proposed Reliability Standard and find it is just, reasonable, not unduly discriminatory or preferential, and in the public interest.[4] NERC also requests approval of: (i) the Implementation Plan for the proposed Reliability Standard (**Exhibit B**); (ii) the associated Violation Risk Factors ("VRFs") and Violation Severity Levels ("VSLs") (**Exhibits A and F**); and (iii) the retirement of the currently-effective Reliability Standard NUC-001-2.1 as listed in the Implementation Plan.

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1 16 U.S.C. § 824o (2012).

2 18 C.F.R. § 39.5 (2014).

3 The Commission certified NERC as the electric reliability organization ("ERO") in accordance with Section 215 of the FPA on July 20, 2006. *N. Am. Elec. Reliability Corp.*, 116 FERC ¶ 61,062 (2006).

4 Unless otherwise designated, capitalized terms shall have the meaning set forth in the *Glossary of Terms Used in NERC Reliability Standards* ("NERC Glossary of Terms"), *available at* http://www.nerc.com/files/Glossary_of_Terms.pdf.

As required by Section 39.5(a)[5] of the Commission's regulations, this petition presents the technical basis and purpose of proposed Reliability Standard NUC-001-3, a summary of the development history for the proposed Reliability Standard (**Exhibit G**), and a demonstration that the proposed Reliability Standard meets the criteria identified by the Commission in Order No. 672[6] (**Exhibit C**). The NERC Board of Trustees adopted proposed Reliability Standard NUC-001-3 on August 14, 2014.

I. EXECUTIVE SUMMARY

Proposed Reliability Standard NUC-001-3 requires coordination between Nuclear Plant Generator Operators and Transmission Entities for the purpose of ensuring safe operation and shutdown of nuclear power plants.

The Standard Processes Manual[7] obligates NERC to conduct periodic reviews of all Reliability Standards. A Five Year Review Team, appointed by the NERC Standards Committee, reviewed currently-effective Reliability Standard NUC-001-2.1 to identify opportunities for consolidation and improvement. Proposed Reliability Standard NUC-001-3 represents the implementation of recommendations made by the Five Year Review Team to revise the currently effective Reliability Standard NUC-001-2.1.

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5 18 C.F.R. § 39.5(a) (2014).

6 The Commission specified in Order No. 672 certain general factors it would consider when assessing whether a particular Reliability Standard is just and reasonable. *See Rules Concerning Certification of the Electric Reliability Organization; and Procedures for the Establishment, Approval, and Enforcement of Electric Reliability Standards*, Order No. 672, FERC Stats. & Regs. ¶ 31,204, at P 262, 321-37, *order on reh'g*, Order No. 672-A, FERC Stats. & Regs. ¶ 31,212 (2006).

7 NERC Standards Processes Manual, *available at:* http://www.nerc.com/comm/SC/Documents/Appendix_3A_StandardsProcessesManual.pdf

For the reasons discussed in this Petition, NERC respectfully requests that the Commission approve the proposed Reliability Standard as just, reasonable, not unduly discriminatory or preferential, and in the public interest.

II. NOTICES AND COMMUNICATIONS

Notices and communications with respect to this filing may be addressed to the following:[8]

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III. BACKGROUND

A. Regulatory Framework

By enacting the Energy Policy Act of 2005,[9] Congress entrusted the Commission with the duties of approving and enforcing rules to ensure the reliability of the Nation's Bulk-Power

[8] Persons to be included on the Commission's service list are identified by an asterisk. NERC respectfully requests a waiver of Rule 203 of the Commission's regulations, 18 C.F.R. § 385.203 (2014), to allow the inclusion of more than two persons on the service list in this proceeding.

[9] 16 U.S.C. § 824o (2012).

System, and with the duties of certifying an ERO that would be charged with developing and enforcing mandatory Reliability Standards, subject to Commission approval. Section 215(b)(1)[10] of the FPA states that all users, owners, and operators of the Bulk-Power System in the United States will be subject to Commission-approved Reliability Standards. Section 215(d)(5)[11] of the FPA authorizes the Commission to order the ERO to submit a new or modified Reliability Standard. Section 39.5(a)[12] of the Commission's regulations requires the ERO to file with the Commission for its approval each Reliability Standard that the ERO proposes should become mandatory and enforceable in the United States, and each modification to a Reliability Standard that the ERO proposes should be made effective.

The Commission has the regulatory responsibility to approve Reliability Standards that protect the reliability of the Bulk-Power System and to ensure that such Reliability Standards are just, reasonable, not unduly discriminatory or preferential, and in the public interest. Pursuant to Section 215(d)(2) of the FPA[13] and Section 39.5(c)[14] of the Commission's regulations, the Commission will give due weight to the technical expertise of the ERO with respect to the content of a Reliability Standard.

B. NERC Reliability Standards Development Procedure

The proposed Reliability Standard was developed in an open and fair manner and in accordance with the Commission-approved Reliability Standard development process.[15] NERC

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10 *Id.* § 824(b)(1).
11 *Id.* § 824o(d)(5).
12 18 C.F.R. § 39.5(a).
13 16 U.S.C. § 824o(d)(2).
14 18 C.F.R. § 39.5(c)(1).
15 *Rules Concerning Certification of the Electric Reliability Organization; and Procedures for the Establishment, Approval, and Enforcement of Electric Reliability Standards*, Order No. 672 at P 334, FERC Stats. & Regs. ¶ 31,204, *order on reh'g*, Order No. 672-A, FERC Stats. & Regs. ¶ 31,212 (2006) ("Further, in considering whether a proposed Reliability Standard meets the legal standard of review, we will entertain comments about whether the ERO implemented its Commission-approved Reliability Standard development process for the

develops Reliability Standards in accordance with Section 300 (Reliability Standards Development) of its Rules of Procedure and the NERC Standard Processes Manual.[16] In its order certifying NERC as the Commission's Electric Reliability Organization, the Commission found that NERC's proposed rules provide for reasonable notice and opportunity for public comment, due process, openness, and a balance of interests in developing Reliability Standards[17] and thus satisfies certain of the criteria for approving Reliability Standards.[18] 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 before the Reliability Standard is submitted to the Commission for approval.

IV. Reliability Standard Background

A. Procedural History

The Standard Processes Manual obligates NERC to conduct periodic reviews of all Reliability Standards. When this project was initiated, periodic reviews were required every five years. The Standards Processes Manual has since been revised to require reviews every ten years.

The Executive Committee of the Standards Committee appointed the Five Year Review Team ("FYRT") for Reliability Standard NUC-001-2.1 on April 22, 2013. The FYRT reviewed Reliability Standard NUC-001-2.1 to identify opportunities for consolidation and

development of the particular proposed Reliability Standard in a proper manner, especially whether the process was open and fair. However, we caution that we will not be sympathetic to arguments by interested parties that choose, for whatever reason, not to participate in the ERO's Reliability Standard development process if it is conducted in good faith in accordance with the procedures approved by FERC.").

[16] The NERC *Rules of Procedure* are available at http://www.nerc.com/AboutNERC/Pages/Rules-of-Procedure.aspx. The NERC *Standard Processes Manual* is available at http://www.nerc.com/comm/SC/Documents/Appendix_3A_StandardsProcessesManual.pdf.

[17] 116 FERC ¶ 61,062 at P 250.

[18] Order No. 672 at PP 268, 270.

improvement. The FYRT posted its recommendation to revise Reliability Standard NUC-001-2.1 for industry comment on July 27, 2013. The FYRT considered stakeholder comments and submitted its final recommendation to revise Reliability Standard NUC-001-2.1 to the Standards Committee on October 7, 2013.

The Standards Committee accepted the work of the FYRT, accepted the proposed Standard Authorization Request for standard development, authorized posting for informal comment, and appointed the existing FYRT members as the standard drafting team to implement the recommended revisions to Reliability Standard NUC-001-2.1 through a formal standard development project.

V. JUSTIFICATION FOR APPROVAL

A. Proposed Reliability Standard NUC-001-3

1. Purpose of Proposed Reliability Standard

Proposed Reliability Standard NUC-001-3 requires coordination between Nuclear Plant Generator Operators and Transmission Entities[19] for the purpose of ensuring safe operation and shutdown of nuclear power plants. The proposed Reliability Standard represents the implementation of recommendations made by the FYRT to revise the currently effective Reliability Standard NUC-001-2.1.

2. Requirements, Technical Basis, and Defined Terms

The phrase "undervoltage load shedding programs" has been replaced throughout the proposed Reliability Standard with the phrase "any programs that reduce or shed load based on

[19] The Applicability section of proposed Reliability Standard NUC-001-3 indicates that "Transmission Entities" shall mean 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 Coordinators, Distribution Providers, Load-Serving Entities, Generator Owners, and Generator Operators.

underfrequency or undervoltage." This revision was determined necessary by the standard drafting team in order to avoid any potential conflict with the Project 2008-02 standard drafting team's work to develop a definition for the phrase "undervoltage load shedding programs" to create a new NERC defined term.[20]

In Requirement R9, sub-part 9.3.7, the phrase "Special Protection Systems" was replaced with "Remedial Action Schemes" in order to align with Project 2007-06: Special Protection Coordination which is seeking to replace "Special Protection Systems" with "Remedial Action Schemes" throughout the NERC Reliability Standards. In the current NERC Glossary of Terms, the terms "Special Protection System and "Remedial Action Scheme" cross-reference each other and share a definition.

Requirement 1 requires Nuclear Plant Generator Operators to provide Nuclear Plant Interface Requirements ("NPIR") to their respective Transmission Entities in writing and verify that the Transmission Entities have received the NPIRs.

Requirement R2 requires that Transmission Entities and Nuclear Plant Generator Operators have agreements in place that include the mutually agreed to NPIRs and that describe how those NPIRs are addressed and implemented.

Requirement R3 requires Transmission Entities to incorporate the NPIRs into their planning analysis and communicate the results of that analysis to the Nuclear Plant Generator Operators.

Requirement R4 requires the Transmission Entities to incorporate the NPIRs into their operational analysis, operate the electric system to meet the NPIRs, and inform the Nuclear Plant Generator Operator when it loses the ability to meet an NPIR.

[20] More information on Project 2008-02 is available at: http://www.nerc.com/pa/Stand/Pages/Project-2008-02-Undervoltage-Load-Shedding.aspx.

Requirement R5 requires the Nuclear Plant Generator Operator to operate its plant to meet NPIRs.

Requirement R6 requires Nuclear Plant Generator Operators and Transmission Entities to coordinate any outages or maintenance activities that could affect the NPIRs.

Requirement R7 requires the Nuclear Plant Generator Operators to inform its respective Transmission Entity of actual or proposed changes to plant design or capabilities that could impact the ability of the electric system to meet the NPIRs.

Requirement R8 requires the Transmission Entity to inform its Nuclear Plant Generator Operators of any actual or proposed changes to its design or capabilities that could impact the ability of the electric system to meet the NPIRs.

Requirement R9 requires that Nuclear Plant Generator Operators and Transmission Entities must address all of the elements listed in the sub-parts of Requirement R9 within the aggregate of their agreements. Requirement R9 also lists the essential elements that must be contained in the agreements.

3. Improvements Reflected in Proposed NUC-001-3

Proposed Reliability Standard NUC-001-3 contains several improvements, many of which are intended to provide clarity by improving the structure and language over the currently-effective version of the Reliability Standard.

Measure M2 was revised so that it better aligns with Requirement R2. In addition, the Requirement R5 was revised both to ensure consistency with Requirement R4, and to clarify that nuclear plants must be operated to meet the NPIRs.

In Requirements R7 and R8, the standard drafting team deleted the words “Protection Systems” as it is a subset of the elements of "nuclear plant design", in Requirement R7, and "electric system design", in Requirement R8.

The most substantial revisions pertain to Requirement R9 and are intended to clarify that *all* agreements are not required to address each of the elements in Requirement R9, but that the agreements taken as a whole must address the *all* elements. In addition, the standard drafting team, in Requirement R9, sub-part 9.4.1, inserted "affecting the NPIRs" following "Provisions for communications" and "applicable unique" following "definitions of" as recommended for clarity by the Five Year Review Team.

Requirement R9, sub-part 9.1 was retired under Paragraph 81 criteria as it was determined to be solely administrative. However, the standard drafting team recognized any renumbering of the Requirements or sub-parts within proposed Reliability Standard NUC-001-3 would force many Nuclear Plant Generator Operators and Transmission Entities to revise their agreements for the sole purpose of realigning the Agreement with the revised numbering. As a result, the standard drafting team inserted the word “Retired” in Requirement R9.1 in place of the now-retired section to avoid renumbering the sub-parts.

The VRF for Requirement R1 was revised from low to medium because the standard drafting team determined that this Requirement is foundational in nature for the proposed Reliability Standard and that in the event a Nuclear Plant Generator Operator did not provide NPIRs to the Transmission Entities a reliability impact could result. The VSLs were modified such that the proposed Reliability Standard will not unfairly punish Nuclear Plant Generator Operators who have agreements with a large number of Transmission Entities.

The VSLs for the sub-parts of Requirement R4 were eliminated because they were duplicative of the VSLs for Requirement R4. The low VSL for Requirement R6 was eliminated because it pertained only to administrative elements.

The medium VSL for Requirement R7 was revised to high and the high VSL for Requirement R7 was revised to severe. The currently-effective version of the Reliability Standard does not contain a severe VSL. Such incidents represent significant violations of the proposed Reliability Standard and thus the standard drafting team felt this revision was necessary. For the same reasons, the standard drafting team made the same revisions to the VSLs for Requirement 8.

Because of the retirement of Requirement R9.1, the VSLs in Requirement R9 were revised and are now staggered based on the percentage of missing components of the elements from the sub-parts of Requirement R9.

Finally, the proposed Reliability Standard was converted to reflect NERC's template for results-based Reliability Standards. In addition, Time Horizons were added to all of the Requirements as none had been assigned in the previous or currently-effective versions of the Reliability Standard.

B. Enforceability of Proposed Reliability Standards

The proposed Reliability Standard includes Measures that support each Requirement to help ensure that the Requirements will be enforced in a clear, consistent, non-preferential manner, and without prejudice to any party. The proposed Reliability Standard also includes VRFs and VSLs for each Requirement. The VRFs and VSLs for the proposed Reliability Standard comport with NERC and Commission guidelines related to their assignment. A

detailed analysis of the assignment of the VRFs and VSLs for proposed Reliability Standard NUC-001-3 is attached as **Exhibit F**.

VI. CONCLUSION

For the reasons set forth above, NERC respectfully requests that the Commission:

- approve the proposed Reliability Standard and other associated elements included in **Exhibit A**;
- approve the VRFs and VSLs (**Exhibits A and F**);
- approve the Implementation Plan (**Exhibit B**); and
- approve the retirement of the currently effective Reliability Standard NUC-001-2.1, as proposed in the Implementation Plan.

Respectfully submitted,

/s/ Brady A. Walker

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Date: September 15, 2014

Exhibit A

Proposed Reliability Standard NUC-001-3

A. Introduction

1. **Title:** **Nuclear Plant Interface Coordination**

2. **Number:** **NUC-001-3**

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. Functional Entities:

   4.1.1 Nuclear Plant Generator Operators.

   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 Coordinators.

   4.2.8 Distribution Providers.

   4.2.9 Load-Serving Entities.

   4.2.10 Generator Owners.

   4.2.11 Generator Operators.

5. **Background:** Project 2012-13 Nuclear Power Interface Coordination seeks to implement the changes that were proposed by the NUC FYRT. The NUC FYRT was appointed by the Standards Committee Executive Committee on April 22, 2013. The NUC FYRT reviewed the NUC-001-2.1 standard to identify opportunities for consolidation and additional improvements. The NUC FYRT posted its recommendation to revise NUC-001-2.1 for industry comment on July 27, 2013. The NUC FYRT considered comments and submitted its final recommendation to revise NUC-001-2.1, along with a Standards Authorization Request (SAR) to the Standards Committee on October 17, 2013. The Standards Committee accepted the

recommendation of the FYRT and appointed the team as the Standard Drafting Team (SDT) to implement the recommendation.

6. **Effective Dates:** First day of the first calendar quarter that is twelve months beyond the date that this standard is approved by applicable regulatory authorities, or as otherwise provided for in a jurisdiction where approval by an applicable governmental authority is required for a standard to go into effect. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is twelve months after the date this standard is adopted by the NERC Board of Trustees or as otherwise provided for in that jurisdiction.

B. Requirements and Measures

R1. The Nuclear Plant Generator Operator shall provide the proposed NPIRs in writing to the applicable Transmission Entities and shall verify receipt. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M1. The Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, provide a copy of the transmittal and receipt of transmittal of the proposed NPIRs to the responsible Transmission Entities.

R2. The Nuclear Plant Generator Operator and the applicable Transmission Entities shall have in effect one or more Agreements[1] 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. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M2. The Nuclear Plant Generator Operator and each Transmission Entity shall each have a copy of the currently effective Agreement(s) which document how the Nuclear Plant Generator Operator and the applicable Transmission Entities address and implement the NPIRs available for inspection upon request of the Compliance Enforcement Authority.

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.: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M3. Each Transmission Entity responsible for planning analyses in accordance with the Agreement shall, upon request of the Compliance Enforcement Authority, provide a copy of the planning analyses results transmitted to the Nuclear Plant Generator Operator, showing incorporation of the NPIRs. The Compliance Enforcement

[1] Agreements may include mutually agreed upon procedures or protocols in effect between entities or between departments of a vertically integrated system.

Authority shall refer to the Agreements developed in accordance with this standard for specific requirements.

R4. Per the Agreements developed in accordance with this standard, the applicable Transmission Entities shall *[Violation Risk Factor: High] [Time Horizon: Operations Planning and Real-time Operations]*

4.1. Incorporate the NPIRs into their operating analyses of the electric system.
4.2. Operate the electric system to meet the NPIRs.

4.3. Inform the Nuclear Plant Generator Operator when the ability to assess the operation of the electric system affecting NPIRs is lost.

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 Enforcement Authority:

- The NPIRs have been incorporated into the current operating analysis of the electric system. (Requirement 4.1)
- The electric system was operated to meet the NPIRs. (Requirement 4.2)
- 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

R5. Per the Agreements developed in accordance with this standard, the Nuclear Plant Generator Operator shall operate the nuclear plant to meet the NPIRs. *[Violation Risk Factor: High] [Time Horizon: Operations Planning and Real-time Operations]*

M5. The Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, demonstrate or provide evidence that the nuclear power plant is being operated consistent with the NPIRs.

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. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*

M6. The Transmission Entities and Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, provide evidence of the coordination between the Transmission Entities and the Nuclear Plant Generator Operator regarding outages and maintenance activities which affect the NPIRs.

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 (e.g., protective relay setpoints),

configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs. *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*

M7. The Nuclear Plant Generator Operator shall provide evidence that it informed the applicable Transmission Entities of changes to nuclear plant design (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the Transmission Entities to meet the NPIRs.

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 (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs. *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*

M8. The Transmission Entities shall each provide evidence that the entities informed the Nuclear Plant Generator Operator of changes to electric system design (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the Nuclear Plant Generator Operator to meet the NPIRs.

R9. The Nuclear Plant Generator Operator and the applicable Transmission Entities shall include the following elements in aggregate within the Agreement(s) identified in R2.

- Where multiple Agreements with a single Transmission Entity are put into effect, the R9 elements must be addressed in aggregate within the Agreements; however, each Agreement does not have to contain each element. The Nuclear Plant Generator Operator and the Transmission Entity are responsible for ensuring all the R9 elements are addressed in aggregate within the Agreements.
- Where Agreements with multiple Transmission Entities are required, the Nuclear Plant Generator Operator is responsible for ensuring all the R9 elements are addressed in aggregate within the Agreements with the Transmission Entities. The Agreements with each Transmission Entity do not have to contain each element; however, the Agreements with the multiple Transmission Entities, in the aggregate, must address all R9 elements. For each Agreement(s), the Nuclear Plant Generator Operator and the Transmission Entity are responsible to ensure the Agreement(s) contain(s) the elements of R9 applicable to that Transmission Entity. : *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

9.1. Retired. *[Note: Part 9.1 was retired under the Paragraph 81 project. The NUC SDT proposes to leave this Part blank to avoid renumbering Requirement parts that would impact existing agreements throughout the industry.]*

9.2. Technical requirements and analysis:

9.2.1. 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.

9.2.2. Identification of facilities, components, and configuration restrictions that are essential for meeting the NPIRs.

9.2.3. Types of planning and operational analyses performed specifically to support the NPIRs, including the frequency of studies and types of Contingencies and scenarios required.

9.3. Operations and maintenance coordination

9.3.1. 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.

9.3.2. Identification of any maintenance requirements for equipment not owned or controlled by the Nuclear Plant Generator Operator that are necessary to meet the NPIRs.

9.3.3. Coordination of testing, calibration and maintenance of on-site and off-site power supply systems and related components.

9.3.4. 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.

9.3.5. Provision for considering, within the restoration process, the requirements and urgency of a nuclear plant that has lost all off-site and on-site AC power.

9.3.6. Coordination of physical and cyber security protection at the nuclear plant interface to ensure each asset is covered under at least one entity's plan.

9.3.7. Coordination of the NPIRs with transmission system Remedial Action Schemes and any programs that reduce or shed load based on underfrequency or undervoltage.

9.4. Communications and training Administrative elements:

9.4.1. Provisions for communications affecting the NPIRs between the Nuclear Plant Generator Operator and Transmission Entities, including communications protocols, notification time requirements, and definitions of applicable unique terms.

9.4.2. 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.

9.4.3. Provisions for coordinating investigations of causes of unplanned events affecting the NPIRs and developing solutions to minimize future risk of such events.

9.4.4. Provisions for supplying information necessary to report to government agencies, as related to NPIRs.

9.4.5. Provisions for personnel training, as related to NPIRs.

M9. The Nuclear Plant Generator Operator shall have a copy of the Agreement(s) addressing the elements in Requirement 9 available for inspection upon request of the Compliance Enforcement Authority. Each Transmission Entity shall have a copy of the Agreement(s) addressing the elements in Requirement 9 for which it is responsible available for inspection upon request of the Compliance Enforcement Authority.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority

Regional Entity

1.2. Compliance Monitoring and Assessment Processes:

Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints Text

1.3. Data Retention

The Responsible Entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

- 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, 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 a Responsible Entity is found non-compliant it shall keep information related to the noncompliance until found compliant.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

1.4. Additional Compliance Information

None

Table of Compliance Elements

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1		**Medium**	The Nuclear Plant Generator Operator provided the NPIRs to the applicable entities but did not verify receipt.	The Nuclear Plant Generator Operator did not provide the proposed NPIR to one of the applicable entities unless there was only one entity.	The Nuclear Plant Generator Operator did not provide the proposed NPIRs to two of the applicable entities unless there were only two entities.	The Nuclear Plant Generator Operator did not provide the proposed NPIRs to more than two of applicable entities. OR For a particular nuclear power plant, if the number of possible applicable transmission entities is equal to the number of applicable transmission entities not provided NPIRs
R2		**Medium**	N/A	N/A	N/A	The Nuclear Plant Generator Operator or the applicable Transmission Entity does not have in effect one or more agreements that include mutually agreed to NPIRs and document the implementation of the NPIRs.
R3		**Medium**	N/A	The responsible entity incorporated the NPIRs into its planning analyses but did not communicate	N/A	The responsible entity did not incorporate the NPIRs into its planning analyses of the electric system.

				the results to the Nuclear Plant Generator Operator.		
R4		**High**	N/A	The responsible entity did not comply with Requirement R4, Part 4.3.	The responsible entity did not comply with Requirement R4, Part R4.1.	The responsible entity did not comply with Requirement R4, Part R4.2.
R5		**High**	N/A	N/A	N/A	The Nuclear Plant Generator Operator failed to operate per the NPIRs developed in accordance with this standard.
R6		**Medium**	N/A	The Nuclear Plant Generator Operator or Transmission Entity failed to provide outage or maintenance schedules to the appropriate parties as described in the agreement or on a time period consistent with the agreements.	The Nuclear Plant Generator Operator or Transmission Entity failed to coordinate one or more outages or maintenance activities in accordance the requirements of the agreements.	N/A
R7		**High**	The Nuclear Plant Generator Operator did not inform the applicable Transmission Entities of proposed changes to nuclear plant design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.	N/A	The Nuclear Plant Generator Operator did not inform the applicable Transmission Entities of actual changes to nuclear plant design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.	The Nuclear Plant Generator Operator did not inform the applicable Transmission Entities of actual changes to nuclear plant design (e.g., protective relay setpoints), configuration, operations, limits or capabilities that directly impact the ability of the electric system to meet the NPIRs.
R8		**High**	The applicable Transmission Entities did not inform the Nuclear	N/A	The applicable Transmission Entities did not inform the Nuclear	The applicable Transmission Entities did not inform the Nuclear

			Plant Generator Operator of proposed changes to transmission system design, configuration (e.g. protective relay setpoints), operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.		Plant Generator Operator of actual changes to transmission system design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.	Plant Generator Operator of actual changes to transmission system design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that directly impacts the ability of the electric system to meet the NPIRs.
R9		**Medium**		The Agreement(s) identified in R2. between the Nuclear Plant Generator Operator and the applicable Transmission Entity failed to include up to 20% of the combined sub-components in Requirement R9 Parts 9.2, 9.3 and 9.4 applicable to that entity.	The Agreement(s) identified in R2. between the Nuclear Plant Generator Operator and the applicable Transmission Entity failed to include greater than 20%, but less than 40% of the combined sub-components in Requirement R9 Parts 9.2, 9.3 and 9.4 applicable to the entity.	The Agreement(s) identified in R2. between the Nuclear Plant Generator Operator and the applicable Transmission Entity failed to include 40% or more of the combined sub-components in Requirement R9 Parts 9.2, 9.3 and 9.4 applicable to the entity.

D. Regional Variances

The design basis for Canadian (CANDU) nuclear power plants (NPPs) does not result in the same licensing requirements as U.S. NPPs. Nuclear Regulatory Commission (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. There are no equivalent Canadian Regulatory requirements for electrical power from the electric network to be provided to permit safe shutdown. Therefore the definition of Nuclear Plant Licensing Requirements (NPLR) for Canadian CANDU NPPs will be as follows:

Canadian Nuclear Plant Licensing Requirements (CNPLR) 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.

E. Interpretations

None.

F. Associated Documents

None

Version History

Version	Date	Action	Change Tracking
1	May 2, 2007	Approved by Board of Trustees	New
2	August 5, 2009	Adopted by Board of Trustees	Revised. Modifications for Order 716 to Requirement R9.3.5 and footnote 1; modifications to bring compliance elements into conformance with the latest version of the ERO Rules of Procedure.
2	January 22, 2010	Approved by FERC on January 21, 2010. Added Effective Date	Update
2	February 7, 2013	R9.1, R9.1.1, R9.1.2, R9.1.3, and R9.1.4 and associated elements approved by NERC Board of Trustees for retirement as part of the Paragraph 81 project (Project 2013-02) pending applicable regulatory approval.	

2	November 21, 2013	R9.1, R9.1.1, R9.1.2, R9.1.3, and R9.1.4 and associated elements approved by FERC for retirement as part of the Paragraph 81 project (Project 2013-02)	
2.1	April 11, 2012	Errata approved by the Standards Committee; (Capitalized “Protection System” in accordance with Implementation Plan for Project 2007-17 approval of revised definition of “Protection System”)	Errata associated with Project 2007-17
2.1	September 9, 2013	Informational filing submitted to reflect the revised definition of Protection System in accordance with the Implementation Plan for the revised term.	
3	March 2014	Modifications to implement the recommendations of the five-year review of NUC-001, which was accepted by the Standards Committee on October 17, 2013.	Revision
3	August 14, 2014	Adopted by the NERC Board of Trustees	

Rationale

During development of this standard, text boxes were embedded within the standard to explain the rationale for various parts of the standard. Upon BOT approval, the text from the rationale text boxes was moved to this section.

Rationale for R5:

The NUC FYRT recommended R5 be revised for consistency with R4 and to clarify that nuclear plants must be operated to meet the Nuclear Plant Interface Requirements.

Rationale for R7 and R8:

The NUC FYRT recommended deleting “Protection Systems” in Requirements R7 and R8 since it is a subset of the "nuclear plant design" and "electric system design" elements currently contained in R7 and R8 respectively; and adding a parenthetical clause (e.g. protective setpoints) to R7 following "nuclear plant design" and parenthetical clause (e.g. relay setpoints) to R8 following "electric system design."

Rationale for R9:

The NUC FYRT recommended that R9 be revised to clarify that all agreements do not have to discuss each of the elements in R9, but that the sum total of the agreements need to address the elements. In addition, for clarity in Part 9.4.1, the NUC FYRT recommended that "affecting the

NPIRs" be inserted following "Provisions for communications" and "applicable unique" be inserted following ""definitions of."

Rationale for R9.3.7:

The term “Special Protection Systems” (SPS) was replaced with “Remedial Action Schemes” (RAS) in order to align with other current NERC standards development work in Project 2010-05.2: Special Protection Systems. Project 2010-05.2 has proposed to replace SPS with RAS throughout all of the NERC Standards in order to move to the use of a single term. RAS and SPS have the same definition in the NERC Glossary of Terms.

Exhibit B

Implementation Plan

Implementation Plan

Project 2012-13 Nuclear Plant Interface Coordination

Requested Approvals

- NUC-001-3 – Nuclear Plant Interface Coordination

Requested Retirements

- NUC-001-2.1 – Nuclear Plant Interface Coordination

Prerequisite Approvals

None

Revisions to Defined Terms in the NERC Glossary

None

Background

The Project 2012-13 Nuclear Power Interface Coordination Standards Drafting Team (NPIC SDT) seeks to implement the changes that were proposed by the NUC-001-2.1 Five Year Review Team (FYTR). The NUC FYRT was appointed by the Standards Committee Executive Committee on April 22, 2013. The NUC FYRT reviewed the NUC-001-2.1 standard to identify opportunities for consolidation and additional improvements. The NUC FYRT posted for industry comment its recommendation to revise NUC-001-2.1 on July 27, 2013. The NUC FYRT considered comments and submitted to the Standards Committee its final recommendation to revise NUC-001-2.1, along with a Standards Authorization Request (SAR) on October 17, 2013. The Standards Committee accepted the recommendation of the FYRT and appointed the team as the NPIC SDT to implement the recommendation.

Applicable Entities

- Nuclear Plant Generator Operators.
- 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:
- Transmission Operators.
- Transmission Owners.
- Transmission Planners.
- Transmission Service Providers.
- Balancing Authorities.
- Reliability Coordinators.
- Planning Coordinators.
- Distribution Providers.
- Load-serving Entities.
- Generator Owners.
- Generator Operators.

Effective Date

First day of the first calendar quarter that is twelve months beyond the date that this standard is approved by applicable regulatory authorities or as otherwise provided for in a jurisdiction where approval by an applicable governmental authority is required for a standard to go into effect. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is twelve s months after the date this standard is adopted by the NERC Board of Trustees or as otherwise provided for in that jurisdiction.

Standards for Retirement

Midnight of the day immediately prior to the Effective Date of NUC-001-3 in the particular jurisdiction in which the new standard is becoming effective.

Revisions or Retirements to Already Approved Standards

The following tables identify the sections of the approved standard that shall be retired or revised when this standard is implemented. If the drafting team is recommending the retirement or revision of a requirement, that text is blue.

Already Approved Standard	Proposed Replacement Requirement(s)
NUC-001-2.1 **R5.** The Nuclear Plant Generator Operator shall operate per the Agreements developed in accordance with this standard. *[Violation Risk Factor: High] [Time Horizon: None]* **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. [Violation Risk Factor: High] [Time Horizon: None] **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. [Violation Risk Factor: High] [Time Horizon:]	NUC-001-3 R5. Per the Agreements developed in accordance with this standard, the Nuclear Plant Generator Operator shall operate the nuclear plant to meet the NPIRs. *[Violation Risk Factor: High] [Time Horizon: Operations Planning]* 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 (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs. *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]* 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 (e.g., protective relay setpoints), configuration, operations, limits, , or capabilities that may impact the ability of the electric system to meet the NPIRs. [Violation Risk Factor: High] [Time Horizon: Long-term Planning]
Notes:	

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: [Violation Risk Factor: Medium] [Time Horizon:] 9.1. Administrative elements: 9.1.1. Definitions of key terms used in the agreement. 9.1.2. Names of the responsible entities, organizational relationships, and responsibilities related to the NPIRs. 9.1.3. A requirement to review the agreement(s) at least every three years. A dispute resolution mechanism. 9.2. Technical requirements and analysis: 9.2.1. 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. 9.2.2. Identification of facilities, components, and configuration restrictions that are essential for meeting the NPIRs. 9.2.3. Types of planning and operational analyses performed specifically to support the NPIRs, including the frequency of studies and types of Contingencies and scenarios required. 9.3. Operations and maintenance coordination 9.3.1. 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. 9.3.2. Identification of any maintenance requirements for equipment not owned or controlled by the Nuclear Plant Generator Operator that are necessary to meet the NPIRs. 9.3.3. Coordination of testing, calibration and maintenance of on-site and off-site power supply systems and related components. 9.3.4. Provisions to address mitigating actions needed to avoid violating NPIRs and to address periods when responsible	R9. The Nuclear Plant Generator Operator and the applicable Transmission Entities shall include the following elements in aggregate within the Agreement(s) identified in R2. • Where multiple Agreements with a single Transmission Entity are put into effect, the R9 elements must be addressed in aggregate within the Agreements; however, each Agreement does not have to contain each element. The Nuclear Plant Generator Operator and the Transmission Entity are responsible for ensuring all the R9 elements are addressed in aggregate within the Agreements. • Where Agreements with multiple Transmission Entities are required, the Nuclear Plant Generator Operator is responsible for ensuring all the R9 elements are addressed in aggregate within the Agreements with the Transmission Entities. The Agreements with each Transmission Entity do not have to contain each element; however, the Agreements with the multiple Transmission Entities, in the aggregate, must address all R9 elements. For each Agreement(s), the Nuclear Plant Generator Operator and the Transmission Entity are responsible to ensure the Agreement(s) contain(s) the elements of R9 applicable to that Transmission Entity. : [Violation Risk Factor: Medium] [Time Horizon: Long-term Planning] 9.1. Not used. 9.2. Technical requirements and analysis: 9.2.1. 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. 9.2.2. Identification of facilities, components, and configuration restrictions that are essential for meeting the NPIRs. 9.2.3. Types of planning and operational analyses performed specifically to support the NPIRs, including the frequency of studies and types of Contingencies and scenarios required.

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. 9.3.5. Provision for considering, within the restoration process, the requirements and urgency of a nuclear plant that has lost all off-site and on-site AC power. 9.3.6. 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. 9.3.7. Coordination of the NPIRs with transmission system Special Protection Systems and underfrequency and undervoltage load shedding programs. 9.4. Communications and training Administrative elements: 9.4.1. Provisions for communications between the Nuclear Plant Generator Operator and Transmission Entities, including communications protocols, notification time requirements, and definitions of terms. 9.4.2. 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. 9.4.3. Provisions for coordinating investigations of causes of unplanned events affecting the NPIRs and developing solutions to minimize future risk of such events. 9.4.4. Provisions for supplying information necessary to report to government agencies, as related to NPIRs. 9.4.5. Provisions for personnel training, as related to NPIRs.	9.3. Operations and maintenance coordination 9.3.1. 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. 9.3.2. Identification of any maintenance requirements for equipment not owned or controlled by the Nuclear Plant Generator Operator that are necessary to meet the NPIRs. 9.3.3. Coordination of testing, calibration and maintenance of on-site and off-site power supply systems and related components. 9.3.4. 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. 9.3.5. Provision for considering, within the restoration process, the requirements and urgency of a nuclear plant that has lost all off-site and on-site AC power. 9.3.6. Coordination of physical and cyber security protection at the nuclear plant interface to ensure each asset is covered under at least one entity's plan. 9.3.7. Coordination of the NPIRs with transmission system Special Protection Systems and any programs that reduce or shed load based on underfrequency or undervoltage. 9.4. Communications and training Administrative elements: 9.4.1. Provisions for communications affecting the NPIRs between the Nuclear Plant Generator Operator and Transmission Entities, including communications protocols, notification time requirements, and definitions of applicable unique terms.

Already Approved Standard	Proposed Replacement Requirement(s)
	9.4.2. 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. 9.4.3. Provisions for coordinating investigations of causes of unplanned events affecting the NPIRs and developing solutions to minimize future risk of such events. 9.4.4. Provisions for supplying information necessary to report to government agencies, as related to NPIRs. 9.4.5. Provisions for personnel training, as related to NPIRs.
Notes: Requirement R9.1 retired under Paragraph 81 criteria. Retirement approved by FERC January 2014.	

Exhibit C

Order No. 672 Criteria

Order No. 672 Criteria

In Order No. 672,[1] the Commission identified a number of criteria it will use to analyze Reliability Standards proposed for approval to ensure they are just, reasonable, not unduly discriminatory or preferential, and in the public interest. The discussion below identifies these factors and explains how the proposed Reliability Standard has met or exceeded the criteria:

1. Proposed Reliability Standards must be designed to achieve a specified reliability goal and must contain a technically sound means to achieve that goal.[2]

The proposed standard achieves the specific reliability goal of ensuring safe operating and shutdown of nuclear plants. This is accomplished by requiring coordination between Nuclear Plant Generator Operators and Transmission Entities.

2. Proposed Reliability Standards must be applicable only to users, owners and operators of the bulk power system, and must be clear and unambiguous as to what is required and who is required to comply.[3]

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[1] *Rules Concerning Certification of the Electric Reliability Organization; and Procedures for the Establishment, Approval, and Enforcement of Electric Reliability Standards*, Order No. 672, FERC Stats. & Regs. ¶ 31,204, *order on reh'g*, Order No. 672-A, FERC Stats. & Regs. ¶ 31,212 (2006).

[2] Order No. 672 at P 321. The proposed Reliability Standard must address a reliability concern that falls within the requirements of section 215 of the FPA. That is, it must provide for the reliable operation of Bulk-Power System facilities. It may not extend beyond reliable operation of such facilities or apply to other facilities. Such facilities include all those necessary for operating an interconnected electric energy transmission network, or any portion of that network, including control systems. The proposed Reliability Standard may apply to any design of planned additions or modifications of such facilities that is necessary to provide for reliable operation. It may also apply to Cybersecurity protection.

Order No. 672 at P 324. The proposed Reliability Standard must be designed to achieve a specified reliability goal and must contain a technically sound means to achieve this goal. Although any person may propose a topic for a Reliability Standard to the ERO, in the ERO's process, the specific proposed Reliability Standard should be developed initially by persons within the electric power industry and community with a high level of technical expertise and be based on sound technical and engineering criteria. It should be based on actual data and lessons learned from past operating incidents, where appropriate. The process for ERO approval of a proposed Reliability Standard should be fair and open to all interested persons.

[3] Order No. 672 at P 322. The proposed Reliability Standard may impose a requirement on any user, owner, or operator of such facilities, but not on others.

Order No. 672 at P 325. The proposed Reliability Standard should be clear and unambiguous regarding what is required and who is required to comply. Users, owners, and operators of the Bulk-Power System must know what they are required to do to maintain reliability.

The proposed Reliability Standard is clear and unambiguous as to what is required and who is required to comply, in accordance with Order No. 672. The proposed Reliability Standard applies to Transmission Entities, which include Transmission Operators, Transmission Owners, Transmission Planners, Transmission Service Providers, Balancing Authorities, Reliability Coordinators, Planning Coordinators, Distribution Providers, Load-Serving Entities, Generator Owners, and Generator Operators, and clearly articulates the actions that such entities must take to comply with the proposed Reliability Standard.

3. A proposed Reliability Standard must include clear and understandable consequences and a range of penalties (monetary and/or non-monetary) for a violation.[4]

The VRFs and VSLs for the proposed Reliability Standard comport with NERC and Commission guidelines related to their assignment. The assignment of the severity level for each VSL is consistent with the corresponding requirement and the VSLs should ensure uniformity and consistency in the determination of penalties. The VSLs do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations. For these reasons, the proposed Reliability Standard includes clear and understandable consequences in accordance with Order No. 672.

4. A proposed Reliability Standard must identify clear and objective criterion or measure for compliance, so that it can be enforced in a consistent and non

[4] Order No. 672 at P 326. The possible consequences, including range of possible penalties, for violating a proposed Reliability Standard should be clear and understandable by those who must comply.

preferential manner.[5]

The proposed Reliability Standard contains Measures that support each Requirement by clearly identifying what is required and how the Requirement will be enforced. The Measures are as follows:

M1. The Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, provide a copy of the transmittal and receipt of transmittal of the proposed NPIRs to the responsible Transmission Entities.

M2. The Nuclear Plant Generator Operator and each Transmission Entity shall each have a copy of the currently effective Agreement(s) which document how the Nuclear Plant Generator Operator and the applicable Transmission Entities address and implement the NPIRs available for inspection upon request of the Compliance Enforcement Authority.

M3. Each Transmission Entity responsible for planning analyses in accordance with the Agreement shall, upon request of the Compliance Enforcement Authority, provide a copy of the planning analyses results transmitted to the Nuclear Plant Generator Operator, showing incorporation of the NPIRs. The Compliance Enforcement Authority shall refer to the Agreements developed in accordance with this standard for specific requirements.

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 Enforcement Authority:

- The NPIRs have been incorporated into the current operating analysis of the electric system. (Requirement 4.1)
- The electric system was operated to meet the NPIRs. (Requirement 4.2)
- 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

M5. The Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, demonstrate or provide evidence that the nuclear power plant is being operated consistent with the NPIRs.

M6. The Transmission Entities and Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, provide evidence of the coordination between the Transmission Entities and the Nuclear Plant Generator Operator regarding outages and maintenance activities which affect the NPIRs.

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[5] Order No. 672 at P 327. There should be a clear criterion or measure of whether an entity is in compliance with a proposed Reliability Standard. It should contain or be accompanied by an objective measure of compliance so that it can be enforced and so that enforcement can be applied in a consistent and non-preferential manner.

M7. The Nuclear Plant Generator Operator shall provide evidence that it informed the applicable Transmission Entities of changes to nuclear plant design (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the Transmission Entities to meet the NPIRs.

M8. The Transmission Entities shall each provide evidence that the entities informed the Nuclear Plant Generator Operator of changes to electric system design (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the Nuclear Plant Generator Operator to meet the NPIRs.

M9. The Nuclear Plant Generator Operator shall have a copy of the Agreement(s) addressing the elements in Requirement 9 available for inspection upon request of the Compliance Enforcement Authority. Each Transmission Entity shall have a copy of the Agreement(s) addressing the elements in Requirement 9 for which it is responsible available for inspection upon request of the Compliance Enforcement Authority.

These measures help provide clarity regarding how the Requirements will be enforced, and help ensure that the Requirements will be enforced in a clear, consistent, and non-preferential manner and without prejudice to any party.

5. Proposed Reliability Standards should achieve a reliability goal effectively and efficiently — but do not necessarily have to reflect "best practices" without regard to implementation cost or historical regional infrastructure design.[6]

The proposed Reliability Standard achieves its reliability goals effectively and efficiently in accordance with Order No. 672. Proposed Reliability Standard NUC-001-3 reflects significant structural revisions designed to provide increased clarity. The important reliability goal of ensuring safe operation and shut down of nuclear power plants is more effectively supported by these revisions.

6. Proposed Reliability Standards cannot be "lowest common denominator," i.e., cannot reflect a compromise that does not adequately protect Bulk-Power System reliability. Proposed Reliability Standards can consider costs to implement for smaller entities, but not at consequences of less than excellence in operating system reliability.[7]

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[6] Order No. 672 at P 328. The proposed Reliability Standard does not necessarily have to reflect the optimal method, or "best practice," for achieving its reliability goal without regard to implementation cost or historical regional infrastructure design. It should however achieve its reliability goal effectively and efficiently.

[7] Order No. 672 at P 329. The proposed Reliability Standard must not simply reflect a compromise in the ERO's Reliability Standard development process based on the least effective North American practice — the so-called

The proposed Reliability Standard does not reflect a "lowest common denominator" approach. To the contrary, the proposed standard represents an improvement over the previous version as described herein. The changes reflected in proposed Reliability Standard NUC-001-3 are based on the recommendations of the Five Year Review Team tasked to perform a review of the currently-effective Reliability Standard. The proposed Reliability Standard also reflects the input of the standard drafting team charged with implementing the recommendations in the review.

7. Proposed Reliability Standards must be designed to apply throughout North America to the maximum extent achievable with a single Reliability Standard while not favoring one geographic area or regional model. It should take into account regional variations in the organization and corporate structures of transmission owners and operators, variations in generation fuel type and ownership patterns, and regional variations in market design if these affect the proposed Reliability Standard.[8]

The proposed Reliability Standard applies throughout North America and does not favor one geographic area or regional model. While the proposed Reliability Standard does not propose any new or additional variances, a variance for Canadian nuclear power plants included

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"lowest common denominator" — if such practice does not adequately protect Bulk-Power System reliability. Although FERC will give due weight to the technical expertise of the ERO, we will not hesitate to remand a proposed Reliability Standard if we are convinced it is not adequate to protect reliability.

Order No. 672 at P 330. A proposed Reliability Standard may take into account the size of the entity that must comply with the Reliability Standard and the cost to those entities of implementing the proposed Reliability Standard. However, the ERO should not propose a "lowest common denominator" Reliability Standard that would achieve less than excellence in operating system reliability solely to protect against reasonable expenses for supporting this vital national infrastructure. For example, a small owner or operator of the Bulk-Power System must bear the cost of complying with each Reliability Standard that applies to it.

[8] Order No. 672 at P 331. A proposed Reliability Standard should be designed to apply throughout the interconnected North American Bulk-Power System, to the maximum extent this is achievable with a single Reliability Standard. The proposed Reliability Standard should not be based on a single geographic or regional model but should take into account geographic variations in grid characteristics, terrain, weather, and other such factors; it should also take into account regional variations in the organizational and corporate structures of transmission owners and operators, variations in generation fuel type and ownership patterns, and regional variations in market design if these affect the proposed Reliability Standard.

in the currently-effective version of the Reliability Standard is carried forward in the proposed version of the Reliability Standard. The variance accounts for differences in Canadian Regulatory requirements regarding safe shutdown of nuclear plants and is as follows:

> The design basis for Canadian (CANDU) nuclear power plants (NPPs) does not result in the same licensing requirements as U.S. NPPs. Nuclear Regulatory Commission (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. There are no equivalent Canadian Regulatory requirements for electrical power from the electric network to be provided to permit safe shutdown.
>
> Therefore the definition of Nuclear Plant Licensing Requirements (NPLR) for Canadian CANDU NPPs will be as follows: Canadian Nuclear Plant Licensing Requirements (CNPLR) 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.

8. Proposed Reliability Standards should cause no undue negative effect on competition or restriction of the grid beyond any restriction necessary for reliability.[9]

The proposed Reliability Standard does not restrict the available transmission capability or limit use of the Bulk-Power System in a preferential manner.

9. The implementation time for the proposed Reliability Standard is reasonable.[10]

The proposed effective dates for the standard are just and reasonable and appropriately

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[9] Order No. 672 at P 332. As directed by section 215 of the FPA, FERC itself will give special attention to the effect of a proposed Reliability Standard on competition. The ERO should attempt to develop a proposed Reliability Standard that has no undue negative effect on competition. Among other possible considerations, a proposed Reliability Standard should not unreasonably restrict available transmission capability on the Bulk-Power System beyond any restriction necessary for reliability and should not limit use of the Bulk-Power System in an unduly preferential manner. It should not create an undue advantage for one competitor over another.

[10] Order No. 672 at P 333. In considering whether a proposed Reliability Standard is just and reasonable, FERC will consider also the timetable for implementation of the new requirements, including how the proposal balances any urgency in the need to implement it against the reasonableness of the time allowed for those who must comply to develop the necessary procedures, software, facilities, staffing or other relevant capability.

balance the urgency in the need to implement the standards against the reasonableness of the time allowed for those who must comply to develop necessary procedures, software, facilities, staffing or other relevant capability. This will allow applicable entities adequate time to ensure compliance with the Requirements. The proposed effective dates are explained in the proposed Implementation Plan, attached as **Exhibit B**.

10. The Reliability Standard was developed in an open and fair manner and in accordance with the Commission-approved Reliability Standard development process.[11]

The proposed Reliability Standard was developed in accordance with NERC's Commission-approved, ANSI- accredited processes for developing and approving Reliability Standards. **Exhibit G** includes a summary of the Reliability Standard development proceedings, and details the processes followed to develop the Reliability Standard.

These processes included, among other things, the opportunity for multiple comment periods, pre-ballot review periods, and balloting periods. Additionally, all meetings of the standard drafting team were properly noticed and open to the public. The initial and final ballots both achieved a quorum and exceeded the required ballot pool approval levels.

11. NERC must explain any balancing of vital public interests in the development of proposed Reliability Standards.[12]

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[11] Order No. 672 at P 334. Further, in considering whether a proposed Reliability Standard meets the legal standard of review, we will entertain comments about whether the ERO implemented its Commission-approved Reliability Standard development process for the development of the particular proposed Reliability Standard in a proper manner, especially whether the process was open and fair. However, we caution that we will not be sympathetic to arguments by interested parties that choose, for whatever reason, not to participate in the ERO's Reliability Standard development process if it is conducted in good faith in accordance with the procedures approved by FERC.

[12] Order No. 672 at P 335. Finally, we understand that at times development of a proposed Reliability Standard may require that a particular reliability goal must be balanced against other vital public interests, such as environmental, social and other goals. We expect the ERO to explain any such balancing in its application for approval of a proposed Reliability Standard.

NERC has identified no competing public interests regarding the request for approval of this proposed Reliability Standard. No comments were received that indicated the proposed standard conflicts with other vital public interests.

12. Proposed Reliability Standards must consider any other appropriate factors.[13]

No other negative factors relevant to whether the proposed Reliability Standard is just and reasonable were identified.

[13] Order No. 672 at P 323. In considering whether a proposed Reliability Standard is just and reasonable, we will consider the following general factors, as well as other factors that are appropriate for the particular Reliability Standard proposed.

Exhibit D

Mapping Document

Project 2012-13 Nuclear Plant Interface Coordination

Mapping Document

NUC-001-2.1 to NUC-001-3

Standard: NUC-001-3		
Requirement in Approved Standard	**Translation to New Standard or Other Action**	**Comments**
R5. The Nuclear Plant Generator Operator shall operate per the Agreements developed in accordance with this standard.	Replaced with NUC-001-3 R5. Per the Agreements developed in accordance with this standard, the Nuclear Plant Generator Operator shall operate the nuclear plant to meet the Nuclear Plant Interface	The FYRT recommended R5 be revised for consistency with R4 and to clarify that nuclear plants must be operated to meet the NPIRs.

Standard: NUC-001-3		
Requirement in Approved Standard	**Translation to New Standard or Other Action**	**Comments**
	Requirements (NPIRs).	
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.	Inserted (e.g., protective relay setpoints) after the words “nuclear power plant design”	The FYRT recommended deleting “Protection Systems” in Requirements R7 and R8 since it is a subset of the "nuclear plant design" and "electric system design" elements currently contained in R7 and R8 respectively; and adding a parenthetical clause (e.g. protective setpoints) to R7 following "nuclear plant design" and parenthetical clause (e.g. relay setpoints) to R8 following "electric system design."
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.	Inserted (e.g., protective relay setpoints) after the words “electric system design.” Deleted the words “Protection Systems”	Same comment as above.
R9. The Nuclear Plant Generator Operator and the applicable Transmission Entities shall include, as a	Inserted the following text after	The FYRT recommended that R9 be revised to clarify that all Agreements do not have to discuss each of the

Standard: NUC-001-3		
Requirement in Approved Standard	**Translation to New Standard or Other Action**	**Comments**
minimum, the following elements within the agreement(s) identified in R2: [Violation Risk Factor: Medium] [Time Horizon:] 9.1. Administrative elements: 9.1.1. Definitions of key terms used in the agreement. 9.1.2. Names of the responsible entities, organizational relationships, and responsibilities related to the NPIRs. 9.1.3. A requirement to review the agreement(s) at least every three years. A dispute resolution mechanism. 9.2. Technical requirements and analysis: 9.2.1. 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. 9.2.2. Identification of facilities, components, and configuration restrictions that are essential for meeting the NPIRs. 9.2.3. Types of planning and operational analyses performed specifically to support the NPIRs, including the frequency of studies and types of Contingencies and scenarios required.	R2: Where multiple Agreements with a single Transmission Entity are put into effect, the R9 elements must be addressed in aggregate within the Agreements; however, each Agreement does not have to contain each element. Where Agreements with multiple Transmission Entities are required, the Nuclear Plant Generator Operator has the responsibility for	elements in R9, but that the sum total of the agreements need to address the elements. In addition, for clarity in Part 9.4.1, the FYRT recommended that "affecting the NPIRs" be inserted following "Provisions for communications" and "applicable unique" be inserted following ""definitions of." The phrase “load shedding programs” in Requirement subpart 9.3.7 was deleted and replaced with the phrase “any programs that reduce or shed load based on underfrequency or undervoltage.” This was done to avoid potential conflicts with the Project 2008-02 Team which is attempting to make undervoltage loadshedding programs a NERC defined term.

Standard: NUC-001-3		
Requirement in Approved Standard	**Translation to New Standard or Other Action**	**Comments**
9.3. Operations and maintenance coordination 9.3.1. 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. 9.3.2. Identification of any maintenance requirements for equipment not owned or controlled by the Nuclear Plant Generator Operator that are necessary to meet the NPIRs. 9.3.3. Coordination of testing, calibration and maintenance of on-site and off-site power supply systems and related components. 9.3.4. 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.	ensuring all the R9 elements are addressed in aggregate within the Agreements with the Transmission Entities. The Agreements with each Transmission Entity do not have to contain each element; however, the Agreements with the multiple Transmission Entities, in the aggregate, must address all R9 elements. The Nuclear Plant Generator	

Standard: NUC-001-3		
Requirement in Approved Standard	**Translation to New Standard or Other Action**	**Comments**
9.3.5. Provision for considering, within the restoration process, the requirements and urgency of a nuclear plant that has lost all off-site and on-site AC power. 9.3.6. 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. 9.3.7. Coordination of the NPIRs with transmission system Special Protection Systems and underfrequency and undervoltage load shedding programs. 9.4. Communications and training Administrative elements: 9.4.1. Provisions for communications between the Nuclear Plant Generator Operator and Transmission Entities, including communications protocols, notification time requirements, and definitions of terms. 9.4.2. 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	Operator and the Transmission Entity have the responsibility to ensure the Agreement(s) with that Transmission Entity contains the elements of R9 applicable to that Transmission Entity." Requirement R9.1 approved for retirement by FERC January 2014.	

Standard: NUC-001-3		
Requirement in Approved Standard	**Translation to New Standard or Other Action**	**Comments**
to a normal state, and the actual time the system is returned to normal. 9.4.3. Provisions for coordinating investigations of causes of unplanned events affecting the NPIRs and developing solutions to minimize future risk of such events. 9.4.4. Provisions for supplying information necessary to report to government agencies, as related to NPIRs. 9.4.5. Provisions for personnel training, as related to NPIRs.	Inserted the words "affecting the NPIRs" between the words "communications" and "between" in R 9.4 Inserted the words "applicable unique" between the words "of" and "terms"	

Exhibit E

Five Year Review Team Recommended Revisions

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Five-Year Review Recommendation to Revise NUC-001-2

July 23, 2013

Introduction

The North American Electric Reliability Corporation (NERC) has an obligation to conduct a five-year review of each Reliability Standard developed through NERC's American National Standards Institute-accredited Reliability Standards development process.[1] Project 2012-13 – Nuclear Plant Interface Coordination was created to review NUC-001-2 as part of the current cycle of five-year reviews of standards due for review.

The NERC Standards Committee appointed seven nuclear industry subject matter experts to serve on the NUC-001-2 five-year review team (FYRT) on April 22, 2013.[2] The FYRT used background information on the standard and the questions set forth in the Five-Year Review Template developed by NERC and approved by the NERC Standards Committee, along with associated worksheets and reference documents, to determine whether NUC-001-2 should be: (1) affirmed as is (i.e., no changes needed); (2) revised (which may include revising or retiring one or more requirements); or (3) withdrawn.

As a result of this examination, The FYRT hereby recommends to **REVISE** NUC-001-2, and will therefore also develop and submit a draft Standard Authorization Request (SAR) outlining the proposed scope and technical justification for the revision once the current 45-day industry comment period concludes.

Applicable Reliability Standard: NUC-001-2

Note: NUC-001-2 is the mandatory and enforceable version of NUC-001 and has been enforceable since April 1, 2010. On April 11, 2012, the NERC Standards Committee approved capitalizing "Protection System" in accordance with the Implementation Plan for Project 2007-17. That recommendation has not yet been implemented. Additionally, the NERC Board of Trustees approved retiring R9.1 and its sub

[1] The currently effective Standard Processes Manual (SPM), which became effective on June 27, 2013, obligates NERC to conduct periodic reviews of all Reliability Standards at least once every ten years, and periodic reviews of those standards that are American National Standards (approved by the American National Standards Institute) at least once every five years. The NUC standard is not an American National Standard, and thus the NUC standard would only require a periodic review at least once every ten years under the current SPM. However, the former SPM, which became effective on January 31, 2012, required all standards to undergo a five-year review, and this five-year review process was launched under that SPM. The periodic review process is addressed on page 45 of the current SPM: http://www.nerc.com/pa/Stand/Resources/Documents/Appendix_3A_StandardsProcessesManual.pdf.

[2] The Standards Committee added the seventh FYRT member on May 21, 2013.

requirements on February 7, 2013 as part of the Paragraph 81 project (Project 2013-02) pending applicable regulatory approval. FERC issued a Notice of Proposed Rulemaking on April 18, 2013, proposing to, among other things, approve retiring R9.1 and its sub requirements.
FYRT Members (name and organization): 1. John Gyrath (Chair), Exelon Generation LLC (Nuclear) 2. George Attarian (Vice Chair), Duke Energy 3. Mukund "Mookie" Chander, Entergy Services Inc. 4. Kevin Donnelly, Consolidated Edison of NY 5. Pete Jenkins, Luminant Generation Company LLC 6. Jerry Whooley, PJM Interconnection 7. Les Carter, Ontario Power Generation
Date Review Completed: July 23, 2013

Background Information *(initially completed by NERC staff)*

1. Are there any outstanding Federal Energy Regulatory Commission directives associated with the Reliability Standard? (If so, NERC staff will attach a list of the directives with citations to associated FERC orders for inclusion in a SAR.)

   ☐ Yes

   ☒ No

   Note that several responses to FERC Order 693 directives require retaining specific NUC-001-2 language (relevant language noted in *italics*):

   - (S- Ref 10370 - Para 1608): Next-day analysis required of minimum voltages at nuclear power plant auxiliary buses. Next day analysis is required in proposed TOP-002-3, R1. A specified minimum voltage limit is by definition an SOL which must be studied in proposed TOP-002-3, Requirement R1. Additionally, *approved NUC-001-2, Requirements R3 & R4.1 require the transmission entity to incorporate NPIRs in their planning and operating analyses.* Approved FAC-011-2 and approved FAC-014-2, Requirement R2 require the Transmission Operator to incorporate SOLs into their analyses. All data required for Operational Planning Analyses is stipulated in proposed TOP-003-2. *Approved NUC-001-2, Requirements R3 & R8 covers the information flowing back to the nuclear plant operator*.
   - (S- Ref 10374): Directive applicable to TOP-002 is covered in NUC-001-1, which requires one to "[i]nform the nuclear plant operator in real-time if the auxiliary power bus voltages cannot be maintained."
   - (S- Ref 10391 - Para 1671): NRC has raised some significant issues regarding the consideration of nuclear power plants voltage requirements. Consider the NRCs comments on voltage requirements as part of the standards development process. Next day analysis is required in proposed TOP-002-3, R1. A specified minimum voltage limit is by definition an SOL which must be studied in proposed TOP-002-3, Requirement R1. Additionally, *approved NUC-001-2, Requirements R3 & R4.1 require the transmission entity to incorporate NPIRs in their planning and operating analyses*. Approved FAC-011-2 and approved FAC-014-2, Requirement R2 require the Transmission Operator to incorporate SOLs into their analyses. All data required for Operational Planning Analyses is stipulated in proposed TOP-003-2. *Approved NUC-001-2, Requirements R3 & R8 covers the information flowing back to the nuclear plant operator*.

2. Have stakeholders requested clarity on the Reliability Standard in the form of an Interpretation (outstanding, in progress, or approved), Compliance Application Notice (CAN) (outstanding, in progress, or approved), or an outstanding submission to NERC's Issues Database? (If there are,

NERC staff will include a list of the Interpretation(s), CAN(s), or stakeholder-identified issue(s) contained in the NERC Issues Database that apply to the Reliability Standard.)

☐ Yes

☒ No

3. Is the Reliability Standard one of the most violated Reliability Standards? If so, does the root cause of the frequent violation appear to be a lack of clarity in the language?

☐ Yes

☒ No

Please explain: Based on NERC staff's review of violations and possible violations over the past three years, the NUC Reliability Standard is one of the least-violated Reliability Standards.

4. Does the Reliability Standard need to be converted to the results-based standard (RBS) format as outlined in *Attachment 1: Results-Based Standards*? (Note that the intent of this question is to ensure that, as Reliability Standards are reviewed, the formatting is changed to be consistent with the current format of a Reliability Standard. If the answer is yes, the formatting should be updated when the Reliability Standard is revised.)

☒ Yes

☐ No

Note: The FYRT reviewed NUC-001-2 and determined that each requirement indentifies a clear and measurable expected outcome, such as: (1) a stated level of reliability performance; (2) a reduction in a specified reliability risk; or (3) a necessary competency. Therefore, no requirements require conversion to the RBS format.

Additional Questions Considered by the FYRT

If NERC staff answered "Yes" to any of the questions above, the Reliability Standard probably requires revision. The questions below are intended to further guide your review. Some of the questions reference documents provided by NERC staff as indicated in the Background questions above.

1. **Paragraph 81**: Does one or more of the requirements in the Reliability Standard meet criteria for retirement or modification based on Paragraph 81 concepts? Use *Attachment 2: Paragraph 81 Criteria* to make this determination.

   ☐ Yes

   ☒ No

   Please summarize your application of Paragraph 81 Criteria, if any: R9.1 has been retired under Paragraph 81 principles, pending applicable regulatory approval. The review team applied the criteria specified in *Attachment 2: Paragraph 81 Criteria* in reviewing the remainder of the NUC standard and determined that no additional requirements should be retired under Paragraph 81 principles.

2. **Clarity:** If the Reliability Standard has an Interpretation, CAN, or issue associated with it, or is frequently violated because of ambiguity, it probably needs to be revised for clarity. Beyond these indicators, is there any reason to believe that the Reliability Standard should be modified to address a lack of clarity? Consider:

   a. Is this a Version 0 Reliability Standard?
   b. Does the Reliability Standard have obviously ambiguous language or language that requires performance that is not measurable?
   c. Are the requirements consistent with the purpose of the Reliability Standard?

   ☒ Yes

   ☐ No

   Please summarize your assessment: The FYRT recommends the following sections of NUC-001-2 be revised to improve the clarity of the standard:

   1) Applicability Section 4.1: Add plural to "Nuclear Plant Generator Operator"
   2) Requirement R5: Revise for consistency with R4 and to clarify that nuclear plants must be operated to meet the Nuclear Plant Interface Requirements.

3) Requirement R7 and R8: Delete “Protection Systems” in requirements R7 and R8 since it is a subset of the "nuclear plant design" and "electric system design" elements currently contained in R7 and R8 respectively. Add parenthetical clause (e.g. protective setpoints) to R7 following "nuclear plant design" and parenthetical clause (e.g. relay setpoints) to R8 following "electric system design".
4) Requirement R9: Revise to clarify that all agreements do not have to discuss each of the elements in R9, but that the sum total of the agreements need to address the elements.
5) Requirement R9.4.1: Insert "affecting the NPIRs" following "Provisions for communications" and insert "applicable unique" following ""definitions of".
6) Regional Differences: Revise to remove reference to specific Nuclear Regulatory Commission regulations and to clarify that there are no Canadian Regulatory requirements for electrical power from the electric network to permit safe shutdown.

Reference the draft Standard Authorization Request (SAR) developed by the FYRT for additional information regarding the above recommended revisions.

3. **Definitions**: Do any of the defined terms used within the Reliability Standard need to be refined?

☐ Yes
☒ No

Please explain: The FYRT recommends that the defined term "Protection Systems" not be used in Requirements R7 and R8 since the definition is overly broad in application here, and has other NERC compliance implications. The original SDT use of "protection systems" was focused on the attributes that could impact the NPIRs such as frequency or voltage set points (i.e. relay settings) and not the expanded five elements of "Protection Systems" as defined in the NERC Glossary of Terms. The FYRT concurs with the original application of the term "protection systems" and therefore recommends deletion of the defined term "Protection Systems". Please see the attached Five-Year Review Position Paper on NUC-001-2 R7 and R8 for further details.

4. **Compliance Elements:** Are the compliance elements associated with the requirements (Measures, Data Retention, VRFs, and VSLs) consistent with the direction of the Reliability Assurance Initiative and FERC and NERC guidelines? If you answered “No,” please identify which elements require revision, and why:

☐ Yes
☒ No

M4-M8 do not give examples of what constitutes "evidence." R7/R8 "may," M7/M8 "would." M7 and M8 do not contain "actual or proposed" language as used in R7 and R8 respectively.

5. **Consistency with Other Reliability Standards:** Does the Reliability Standard need to be revised for formatting and language consistency among requirements within the Reliability Standard or consistency with other Reliability Standards? If you answered "Yes," please describe the changes needed to achieve formatting and language consistency:

   ☐ Yes
   ☒ No

6. **Changes in Technology, System Conditions, or other Factors:** Does the Reliability Standard need to be revised to account for changes in technology, system conditions, or other factors? If you answered "Yes," please describe the changes and specifically what the potential impact is to reliability if the Reliability Standard is not revised:

   ☐ Yes
   ☒ No

7. **Consideration of Generator Interconnection Facilities:** Is responsibility for generator interconnection Facilities appropriately accounted for in the Reliability Standard?

   ☒ Yes
   ☐ No

   Guiding Questions:

   If the Reliability Standard is applicable to GOs/GOPs, is there any ambiguity about the inclusion of generator interconnection Facilities? (If generation interconnection Facilities could be perceived to be excluded, specific language referencing the Facilities should be introduced in the Reliability Standard.)

   The FYRT did not identify any ambiguity.

   If the Reliability Standard is not applicable to GOs/GOPs, is there a reliability-related need for treating generator interconnection Facilities as transmission lines for the purposes of this Reliability Standard? (If so, GOs and GOPs that own or operate relevant generator interconnection Facilities should be explicit in the applicability section of the Reliability Standard.)

This standard is applicable to GOs/GOPs; therefore, this guiding question was not considered.

Recommendation

The answers to the questions above, along with a preliminary recommendation of the SMEs conducting the review of the Reliability Standard, will be posted for a 45-day informal comment period, and the comments publicly posted. The SMEs will review the comments to evaluate whether to modify their initial recommendation, and will document the final recommendation which will be presented to the Standards Committee.

Preliminary Recommendation (to be completed by the SME team after its review and prior to posting the results of the review for industry comment):

- ☐ AFFIRM
- ☒ REVISE
- ☐ RETIRE

Technical Justification: See attached draft SAR.

Preliminary Recommendation posted for industry comment (date): July 23, 2013

Final Recommendation (to be completed by the SME team after it has reviewed industry comments on the preliminary recommendation):

- ☐ AFFIRM *(This should only be checked if there are no outstanding directives, interpretations or issues identified by stakeholders.)*
- ☐ REVISE
- ☐ RETIRE

Technical Justification: TBD

Date submitted to NERC Staff: TBD

Attachment 1: Results-Based Standards

The fourth question for NERC staff asks if the Reliability Standard needs to be converted to the results-based standards (RBS) format. The information below will be used by NERC staff in making this determination, and is included here as a reference for the SME team and other stakeholders.

RBS standards employ a defense-in-depth strategy for Reliability Standards development where each requirement has a role in preventing system failures and the roles are complementary and reinforcing. Reliability Standards should be viewed as a portfolio of requirements designed to achieve an overall defense-in-depth strategy and comply with the quality objectives identified in the resource document titled, "Acceptance Criteria of a Reliability Standard."

A Reliability Standard that adheres to the RBS format should strive to achieve a portfolio of performance-, risk-, and competency-based mandatory reliability requirements that support an effective defense-in-depth strategy. Each requirement should identify a clear and measurable expected outcome, such as: a) a stated level of reliability performance, b) a reduction in a specified reliability risk, or c) a necessary competency.

a. **Performance-Based**—defines a particular reliability objective or outcome to be achieved. In its simplest form, a results-based requirement has four components: who, under what conditions (if any), shall perform what action, to achieve what particular result or outcome?

b. **Risk-Based**—preventive requirements to reduce the risks of failure to acceptable tolerance levels. A risk-based reliability requirement should be framed as: who, under what conditions (if any), shall perform what action, to achieve what particular result or outcome that reduces a stated risk to the reliability of the bulk power system?

c. **Competency-Based**—defines a minimum set of capabilities an entity needs to have to demonstrate it is able to perform its designated reliability functions. A competency-based reliability requirement should be framed as: who, under what conditions (if any), shall have what capability, to achieve what particular result or outcome to perform an action to achieve a result or outcome or to reduce a risk to the reliability of the bulk power system?

Additionally, each RBS-adherent Reliability Standard should enable or support one or more of the eight reliability principles listed below. Each Reliability Standard should also be consistent with all of the reliability principles.

1. Interconnected bulk power systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards.

2. The frequency and voltage of interconnected bulk power systems shall be controlled within defined limits through the balancing of real and reactive power supply and demand.

3. Information necessary for the planning and operation of interconnected bulk power systems shall be made available to those entities responsible for planning and operating the systems reliably.

4. Plans for emergency operation and system restoration of interconnected bulk power systems shall be developed, coordinated, maintained, and implemented.

5. Facilities for communication, monitoring, and control shall be provided, used, and maintained for the reliability of interconnected bulk power systems.

6. Personnel responsible for planning and operating interconnected bulk power systems shall be trained, qualified, and have the responsibility and authority to implement actions.

7. The reliability of the interconnected bulk power systems shall be assessed, monitored, and maintained on a wide-area basis.

8. Bulk power systems shall be protected from malicious physical or cyber attacks.

If the Reliability Standard does not provide for a portfolio of performance-, risk-, and competency-based requirements or consistency with NERC's reliability principles, NERC staff should recommend that the Reliability Standard be reformatted in accordance with RBS format.

Attachment 2: Paragraph 81 Criteria

The first question for the SME Review Team asks if one or more of the requirements in the Reliability Standard meet(s) criteria for retirement or modification based on Paragraph 81 concepts.[3] Use the Paragraph 81 criteria explained below to make this determination. Document the justification for the decisions throughout and provide them in the final assessment in the Five-Year Review worksheet.

For a Reliability Standard requirement to be proposed for retirement or modification based on Paragraph 81 concepts, it must satisfy **both**: (i) Criterion A (the overarching criterion) and (ii) at least one of the Criteria B listed below (identifying criteria). In addition, for each Reliability Standard requirement proposed for retirement or modification, the data and reference points set forth below in Criteria C should be considered for making a more informed decision.

Criterion A (Overarching Criterion)

The Reliability Standard requirement requires responsible entities ("entities") to conduct an activity or task that does little, if anything, to benefit or protect the reliable operation of the BES.

Section 215(a) (4) of the United States Federal Power Act defines "reliable operation" as: "… operating the elements of the bulk-power system within equipment and electric system thermal, voltage, and stability limits so that instability, uncontrolled separation, or cascading failures of such system will not occur as a result of a sudden disturbance, including a cybersecurity incident, or unanticipated failure of system elements."

Criteria B (Identifying Criteria)

B1. Administrative

The Reliability Standard requirement requires responsible entities to perform a function that is administrative in nature, does not support reliability and is needlessly burdensome.

This criterion is designed to identify requirements that can be retired or modified with little effect on reliability and whose retirement or modification will result in an increase in the efficiency of the ERO compliance program. Administrative functions may include a task that is related to developing procedures or plans, such as establishing communication contacts. Thus, for certain requirements, Criterion B1 is closely related to Criteria B2, B3 and B4. Strictly administrative functions do not inherently negatively impact reliability directly and, where possible, should be eliminated or modified for purposes of efficiency and to allow the ERO and entities to appropriately allocate resources.

[3] In most cases, satisfaction of the Paragraph 81 criteria will result in the retirement of a requirement. In some cases, however, there may be a way to modify a requirement so that it no longer satisfies Paragraph 81 criteria. Recognizing that, this document refers to both options.

B2. Data Collection/Data Retention
These are requirements that obligate responsible entities to produce and retain data which document prior events or activities, and should be collected via some other method under NERC's rules and processes.

This criterion is designed to identify requirements that can be retired or modified with little effect on reliability. The collection and/or retention of data do not necessarily have a reliability benefit and yet are often required to demonstrate compliance. Where data collection and/or data retention is unnecessary for reliability purposes, such requirements should be retired or modified in order to increase the efficiency of the ERO compliance program.

B3. Documentation
The Reliability Standard requirement requires responsible entities to develop a document (*e.g.,* plan, policy or procedure) which is not necessary to protect BES reliability.

This criterion is designed to identify requirements that require the development of a document that is unrelated to reliability or has no performance or results-based function. In other words, the document is required, but no execution of a reliability activity or task is associated with or required by the document.

B4. Reporting
The Reliability Standard requirement obligates responsible entities to report to a Regional Entity, NERC or another party or entity. These are requirements that obligate responsible entities to report to a Regional Entity on activities which have no discernible impact on promoting the reliable operation of the BES and if the entity failed to meet this requirement there would be little reliability impact.

B5. Periodic Updates
The Reliability Standard requirement requires responsible entities to periodically update (*e.g.,* annually) documentation, such as a plan, procedure or policy without an operational benefit to reliability.

This criterion is designed to identify requirements that impose an updating requirement that is out of sync with the actual operations of the BES, unnecessary, or duplicative.

B6. Commercial or Business Practice
The Reliability Standard requirement is a commercial or business practice, or implicates commercial rather than reliability issues.

This criterion is designed to identify those requirements that require: (i) implementing a best or outdated business practice or (ii) implicating the exchange of or debate on commercially sensitive information while doing little, if anything, to promote the reliable operation of the BES.

B7. Redundant
The Reliability Standard requirement is redundant with: (i) another FERC-approved Reliability Standard requirement(s); (ii) the ERO compliance and monitoring program; or (iii) a governmental regulation (*e.g.,* Open Access Transmission Tariff, North American Energy Standards Board ("NAESB"), etc.).

This criterion is designed to identify requirements that are redundant with other requirements and are, therefore, unnecessary. Unlike the other criteria listed in Criterion B, in the case of redundancy, the task or activity itself may contribute to a reliable BES, but it is not necessary to have two duplicative requirements on the same or similar task or activity. Such requirements can be retired or modified with little or no effect on reliability and removal will result in an increase in efficiency of the ERO compliance program.

Criteria C (Additional data and reference points)
Use the following data and reference points to assist in the determination of (and justification for) whether to proceed with retirement or modification of a Reliability Standard requirement that satisfies both Criteria A and B:

C1. Was the Reliability Standard requirement part of a FFT filing?
The application of this criterion involves determining whether the requirement was included in a FFT filing.

C2. Is the Reliability Standard requirement being reviewed in an ongoing Standards Development Project?
The application of this criterion involves determining whether the requirement proposed for retirement or modification is part of an active Standards Development Project, with consideration for the status of the project. If the requirement has been approved by Registered Ballot Body and is scheduled to be presented to the NERC Board of Trustees, in most cases it will not need to be addressed in the five-year review. The exception would be a requirement, such as the Critical Information Protection ("CIP") requirements for Version 3 and 4, that is not due to be retired for an extended period of time. Also, for informational purposes, whether the requirement is included in a future or pending Standards Development Project should be identified and discussed.

C3. What is the VRF of the Reliability Standard requirement?
The application of this criterion involves identifying the VRF of the requirement proposed for retirement or modification, with particular consideration of any requirement that has been assigned as having a Medium or High VRF. Also, the fact that a requirement has a Lower VRF is not dispositive that

it qualifies for retirement or modification. In this regard, Criterion C3 is considered in light of Criterion C5 (Reliability Principles) and C6 (Defense in Depth) to ensure that no reliability gap would be created by the retirement or modification of the Lower VRF requirement. For example, no requirement, including a Lower VRF requirement, should be retired or modified if doing so would harm the effectiveness of a larger scheme of requirements that are purposely designed to protect the reliable operation of the BES.

C4. In which tier of the most recent Actively Monitored List (AML) does the Reliability Standard requirement fall?

The application of this criterion involves identifying whether the requirement proposed for retirement or modification is on the most recent AML, with particular consideration for any requirement in the first tier of the AML.

C5. Is there a possible negative impact on NERC's published and posted reliability principles?

The application of this criterion involves consideration of the eight following reliability principles published on the NERC webpage.

> **Reliability Principles**
>
> NERC Reliability Standards are based on certain reliability principles that define the foundation of reliability for North American bulk power systems. Each reliability standard shall enable or support one or more of the reliability principles, thereby ensuring that each standard serves a purpose in support of reliability of the North American bulk power systems. Each reliability standard shall also be consistent with all of the reliability principles, thereby ensuring that no standard undermines reliability through an unintended consequence.
>
> > Principle 1. Interconnected bulk power systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards.
> >
> > Principle 2. The frequency and voltage of interconnected bulk power systems shall be controlled within defined limits through the balancing of real and reactive power supply and demand.
> >
> > Principle 3. Information necessary for the planning and operation of interconnected bulk power systems shall be made available to those entities responsible for planning and operating the systems reliably.
> >
> > Principle 4. Plans for emergency operation and system restoration of interconnected bulk power systems shall be developed, coordinated, maintained, and implemented.

Principle 5. Facilities for communication, monitoring, and control shall be provided, used, and maintained for the reliability of interconnected bulk power systems.

Principle 6. Personnel responsible for planning and operating interconnected bulk power systems shall be trained, qualified, and have the responsibility and authority to implement actions.

Principle 7. The reliability of the interconnected bulk power systems shall be assessed, monitored, and maintained on a wide-area basis.

Principle 8. Bulk power systems shall be protected from malicious physical or cyber attacks. (footnote omitted).

C6. Is there any negative impact on the defense in depth protection of the BES?
The application of this criterion considers whether the requirement proposed for retirement or modification is part of a defense in depth protection strategy. In order words, the assessment is to verify whether other requirements rely on the requirement proposed for retirement or modification to protect the BES.

C7. Does the retirement or modification promote results or performance based Reliability Standards?
The application of this criterion considers whether the requirement, if retired or modified, will promote the initiative to implement results- and/or performance-based Reliability Standards.

Exhibit F

Analysis of Violation Risk Factors and Violation Severity Levels

Project 2012-13- Nuclear Plant Interface Coordination

VRF and VSL Justifications

Note: Justifications for the requirements in which VRFs and VSLs that were changed are provided in the document below. The VRFs and VSLs for Requirements R2, R3, R4, and R5 were not substantively changed from the currently effective NUC-001-2.1 and as a result no additional justification has been provided.

VRF and VSL Justifications – NUC-001-3, R1.	
Proposed VRF	
NERC VRF Discussion	R1 is a planning requirement that mandates Nuclear Power Plant Generator Operators provide their respective transmission entities with a copy of their NPIRs and verify receipt. Interface between Nuclear Power Plant Generator Operators and transmission entities is important to ensure the safe and reliable operation as well as the startup and shutdown of nuclear power plants. If this requirement was violated, it could directly affect the electrical state or the capability of the bulk electric system, or the ability to effectively monitor and control the bulk electric system. The VRF for this requirement is "Medium," which is consistent with NERC guidelines.
FERC VRF G1 Discussion	**Guideline 1- Consistency w/ Blackout Report R1** Requirement R1 establishes communications protocols and data exchange.
FERC VRF G2 Discussion	**Guideline 2- Consistency within a Reliability Standard** Only one VRF is assigned for this requirement.
FERC VRF G3 Discussion	**Guideline 3- Consistency among Reliability Standards** There are no other standards which address Nuclear Plant Interface Coordination.
FERC VRF G4 Discussion	**Guideline 4- Consistency with NERC Definitions of VRFs** This is a planning requirement that requirement if violated, could directly affect the electrical state or the capability of the bulk electric system, or the ability to effectively monitor and control the bulk electric system.

VRF and VSL Justifications – NUC-001-3, R1.			
FERC VRF G5 Discussion	**Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation** Requirement R1 contains only one objective which is to require that Nuclear Plant Generator Operator's provide their proposed NPIRs to their respective Transmission Entities.		
Proposed VSL			
Lower	**Moderate**	**High**	**Severe**
The Nuclear Plant Generator Operator provided the NPIR's to the applicable entities but did not verify receipt.	The Nuclear Plant Generator Operator did not provide the proposed NPIR to one of the applicable entities unless there was only one entity.	The Nuclear Plant Generator Operator did not provide the proposed NPIR's to two of the applicable entities unless there was only two entities.	The Nuclear Plant Generator Operator did not provide the proposed NPIR's to more than two of applicable entities. OR For a particular Nuclear Power Plant, if the number of possible applicable transmission entities is equal to the number of applicable transmission entities not provided NPIRs.

VRF and VSL Justifications – NUC-001-3, R1.	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	Based on the VSL Guidance, the SDT developed four VSLs based on to what degree, if any a Nuclear Plant Generator Operator provided its NPIRs to its respective transmission entities. The VSL is varied based on the number of transmission entities the NPIRs were or were not provided. If a Nuclear Plant Generator Operator failed to provide any NPIRs to its transmission entities it is a Severe Violation.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	Guideline 2a: The VSL assignment for R1 is not binary. Guideline 2b: The proposed VSL does not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.

VRF and VSL Justifications – NUC-001-3, R1.	
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement, and is, therefore, consistent with the requirement. In addition, the VSLs are consistent with Requirement R1.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	The VSL is based on a single violation and not cumulative violations
FERC VSL G5 Requirements where a single lapse in protection can compromise computer network security, i.e., the 'weakest link' characteristic, should apply binary VSLs	The requirement does not address cyber security protection.

VRF and VSL Justifications – NUC-001-3, R1.	
FERC VSL G6 VSLs for cyber security requirements containing interdependent tasks of documentation and implementation should account for their interdependence	The requirement does not address cyber security protection.

VRF and VSL Justifications – NUC-001-3, R6.	
Proposed VRF	
NERC VRF Discussion	Requirement R6 is an Operational Planning requirement that mandates that Nuclear Plant Generator Operators and their respective Transmission Entities coordinate outages and maintenance activities which affect NIPRs. If violated this requirement could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures. Therefore, the VRF is High.
FERC VRF G1 Discussion	**Guideline 1- Consistency w/ Blackout Report** Requirement R6 is consistent with the Blackout Report because it mandates data exchange.
FERC VRF G2 Discussion	**Guideline 2- Consistency within a Reliability Standard** Only one VRF is assigned for this requirement.

VRF and VSL Justifications – NUC-001-3, R6.			
FERC VRF G3 Discussion	**Guideline 3- Consistency among Reliability Standards.** There are no other standards which address Nuclear Plant Interface Coordination		
FERC VRF G4 Discussion	**Guideline 4- Consistency with NERC Definitions of VRFs** Requirement R6 is an Operational Planning requirement that mandates that Nuclear Plant Generator Operators and their respective Transmission Entities coordinate outages and maintenance activities which affect NIPRs. If violated this requirement could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures. Therefore, the VRF is High.		
FERC VRF G5 Discussion	**Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation** This requirement is based on one obligation which is for Transmission Entities and Nuclear Plant Generator Operators to coordinate outages and maintenance activities.		
Proposed VSL			
Lower	**Moderate**	**High**	**Severe**
N/A	The Nuclear Plant Generator Operator or Transmission Entity failed to provide outage or maintenance schedules to the appropriate parties as described in the agreement or on a time period consistent with the agreements.	The Nuclear Plant Generator Operator or Transmission Entity failed to coordinate one or more outages or maintenance activities in accordance the requirements of the agreements.	N/A

VRF and VSL Justifications – NUC-001-3, R6.	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	Based on the VSL Guidance, the SDT developed two VSLs based on if a Nuclear Plant Generator Operator or a Transmission Entity failed to provide a maintenance or outage schedule (Moderate Violation) or if a Nuclear Plant Generator Operator or Transmission Entity failed to coordinate one or more outages or maintenance activities in accordance the requirements of the agreements.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	Guideline 2a: The VSL assignment for R6 is not binary. Guideline 2b: The proposed VSL does not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.

VRF and VSL Justifications – NUC-001-3, R6.	
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement, and is, therefore, consistent with the requirement. In addition, the VSLs are consistent with Requirement R6.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	The VSL is based on a single violation and not cumulative violations
FERC VSL G5 Requirements where a single lapse in protection can compromise computer network security, i.e., the 'weakest link' characteristic, should apply binary VSLs	The requirement does not address cyber security protection.

VRF and VSL Justifications – NUC-001-3, R6.	
FERC VSL G6 VSLs for cyber security requirements containing interdependent tasks of documentation and implementation should account for their interdependence	The requirement does not address cyber security protection.

VRF and VSL Justifications – NUC-001-3, R7.	
Proposed VRF	
NERC VRF Discussion	Requirement R7 is a requirement which mandates that Nuclear Power Generator Operators inform their applicable Transmission Entities of actual or proposed changes to Nuclear Plant design, configuration, operations, limits or capabilities that may affect the NPIRs. If this requirement was violated it could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures
FERC VRF G1 Discussion	**Guideline 1- Consistency w/ Blackout Report** Requirement R7 is consistent with the Blackout Report because it mandates data exchange.
FERC VRF G2 Discussion	**Guideline 2- Consistency within a Reliability Standard** Only one VRF is assigned for this requirement.
FERC VRF G3 Discussion	**Guideline 3- Consistency among Reliability Standards.** There are no other standards which address Nuclear Plant Interface Coordination

VRF and VSL Justifications – NUC-001-3, R7.			
FERC VRF G4 Discussion	**Guideline 4- Consistency with NERC Definitions of VRFs** Requirement R7 is a requirement which mandates that Nuclear Power Generator Operators inform their applicable Transmission Entities of actual or proposed changes to Nuclear Plant design, configuration, operations, limits or capabilities that may affect the NPIRs. If this requirement was violated it could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures.		
FERC VRF G5 Discussion	**Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation** The only obligation within this requirement is that Nuclear Power Generator Operators inform their applicable Transmission Entities of actual or proposed changes to Nuclear Plant design, configuration, operations, limits or capabilities that may affect the NPIRs.		
Proposed VSL			
Lower	**Moderate**	**High**	**Severe**
The Nuclear Plant Generator Operator did not inform the applicable Transmission Entities of proposed changes to nuclear plant design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.	N/A	The Nuclear Plant Generator Operator did not inform the applicable Transmission Entities of actual changes to nuclear plant design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.	The Nuclear Plant Generator Operator did not inform the applicable Transmission Entities of actual changes to nuclear plant design (e.g., protective relay setpoints), configuration, operations, limits or capabilities that directly impact the ability of the electric system to meet the NPIRs.

VRF and VSL Justifications – NUC-001-3, R7.	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	Based on the VSL Guidance, the SDT developed three VSLs based on if a Nuclear Power Plant Generator Operator failed to inform a Transmission Entity of changes to its design, configuration, operations, limits or capabilities and whether or not these were proposed or actual changes and whether or not those changes directly impact the ability of the electric system to meet the NPIRs.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	Guideline 2a: The VSL assignment for R7 is not binary. Guideline 2b: The proposed VSL does not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.

VRF and VSL Justifications – NUC-001-3, R7.	
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement, and is, therefore, consistent with the requirement. In addition, the VSLs are consistent with Requirement R7.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	The VSL is based on a single violation and not cumulative violations
FERC VSL G5 Requirements where a single lapse in protection can compromise computer network security, i.e., the 'weakest link' characteristic, should apply binary VSLs	The requirement does not address cyber security protection.

VRF and VSL Justifications – NUC-001-3, R7.	
FERC VSL G6 VSLs for cyber security requirements containing interdependent tasks of documentation and implementation should account for their interdependence	The requirement does not address cyber security protection.

VRF and VSL Justifications – NUC-001-3, R8.	
Proposed VRF	
NERC VRF Discussion	Requirement R8 is a requirement which mandates Transmission Entities shall inform the Nuclear Plant Generator Operator of actual or proposed changes to electric system design (e.g., protective relay setpoints), configuration, operations, limits, , or capabilities that may impact the ability of the electric system to meet the NPIRs. . If this requirement was violated it could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures.
FERC VRF G1 Discussion	**Guideline 1- Consistency w/ Blackout Report** Requirement R8 is consistent with the Blackout Report because it mandates data exchange.
FERC VRF G2 Discussion	**Guideline 2- Consistency within a Reliability Standard** Only one VRF is assigned for this requirement.
FERC VRF G3 Discussion	**Guideline 3- Consistency among Reliability Standards.** There are no other standards which address Nuclear Plant Interface Coordination
FERC VRF G4 Discussion	**Guideline 4- Consistency with NERC Definitions of VRFs**

VRF and VSL Justifications – NUC-001-3, R8.			
	Requirement R8 is a requirement which mandates Transmission Entities shall inform the Nuclear Plant Generator Operator of actual or proposed changes to electric system design (e.g., protective relay setpoints), configuration, operations, limits, , or capabilities that may impact the ability of the electric system to meet the NPIRs. ~~.~~ If this requirement was violated it could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures.		
FERC VRF G5 Discussion	**Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation** The only obligation within this requirement is that Transmission Entities inform their applicable Nuclear Power Generator Operators of actual or proposed changes to Nuclear Plant design, configuration, operations, limits or capabilities that may affect the NPIRs.		
Proposed VSL			
Lower	**Moderate**	**High**	**Severe**
The applicable Transmission Entities did not inform the Nuclear Plant Generator Operator of proposed changes to transmission system design, configuration (e.g. protective relay setpoints), operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.	N/A	The applicable Transmission Entities did not inform the Nuclear Plant Generator Operator of actual changes to transmission system design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.	The applicable Transmission Entities did not inform the Nuclear Plant Generator Operator of actual changes to transmission system design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that directly impacts the ability of the electric system to meet the NPIRs.

VRF and VSL Justifications – NUC-001-3, R8.	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	Based on the VSL Guidance, the SDT developed three VSLs based on if a Transmission Entity failed to inform a Nuclear Power Plant Generator Operator of changes to its design, configuration, operations, limits or capabilities and whether or not these were proposed or actual changes and whether or not those changes directly impact the ability of the electric system to meet the NPIRs.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	Guideline 2a: The VSL assignment for R8 is not binary. Guideline 2b: The proposed VSL does not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.

VRF and VSL Justifications – NUC-001-3, R8.	
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement, and is, therefore, consistent with the requirement. In addition, the VSLs are consistent with Requirement R8.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	The VSL is based on a single violation and not cumulative violations
FERC VSL G5 Requirements where a single lapse in protection can compromise computer network security, i.e., the 'weakest link' characteristic, should apply binary VSLs	The requirement does not address cyber security protection.

VRF and VSL Justifications – NUC-001-3, R8.	
FERC VSL G6 VSLs for cyber security requirements containing interdependent tasks of documentation and implementation should account for their interdependence	The requirement does not address cyber security protection.

VRF and VSL Justifications – NUC-001-3, R9.	
Proposed VRF	
NERC VRF Discussion	Requirement R9 is a requirement which mandates Nuclear Plant Generator Operator and the applicable Transmission Entities include a specific set of elements within their Agreements. If violated, this requirement could directly affect the electrical state or the capability of the bulk electric system, or the ability to effectively monitor and control the bulk electric system. Therefore this requirement has a medium VRF.
FERC VRF G1 Discussion	**Guideline 1- Consistency w/ Blackout Report** Requirement R9 is consistent with the Blackout Report because it mandates data exchange.
FERC VRF G2 Discussion	**Guideline 2- Consistency within a Reliability Standard** Only one VRF is assigned for this requirement.
FERC VRF G3 Discussion	**Guideline 3- Consistency among Reliability Standards.** There are no other standards which address Nuclear Plant Interface Coordination
FERC VRF G4 Discussion	**Guideline 4- Consistency with NERC Definitions of VRFs**

VRF and VSL Justifications – NUC-001-3, R9.			
	Requirement R9 is a requirement which mandates Nuclear Plant Generator Operator and the applicable Transmission Entities include a specific set of elements within their Agreements. If violated, this requirement could directly affect the electrical state or the capability of the bulk electric system, or the ability to effectively monitor and control the bulk electric system. Therefore this requirement has a medium VRF.		
FERC VRF G5 Discussion	**Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation** This requirement only has one obligation which is for Nuclear Power Plant Generator Operators and Transmission Entities to include all of the mandated elements within R9 in their Agreements in aggregate.		
Proposed VSL			
Lower	**Moderate**	**High**	**Severe**
N/A	The Agreement(s) identified in R2. between the Nuclear Plant Generator Operator and the applicable Transmission Entities failed to include up to 20% of the combined sub-components in Parts 9.2, 9.3 and 9.4 applicable to that entity.	The Agreement(s) identified in R2. between the Nuclear Plant Generator Operator and the applicable Transmission Entities failed to include greater than 20%, but less than 40% of the combined sub-components in Parts 9.2, 9.3 and 9.4 applicable to the entity.	The Agreement(s) identified in R2. between the Nuclear Plant Generator Operator and the applicable Transmission Entities failed to include 40% or more of the combined sub-components in Parts 9.2, 9.3 and 9.4 applicable to the entity.

VRF and VSL Justifications – NUC-001-3, R9.	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	Based on the VSL Guidance, the SDT developed four VSLs based on to what degree, if any Nuclear Power Plant Generator Operators and Transmission entities failed to include the elements listed within R9. The VSL is varied based on the percentage of sub-components that were not included.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	Guideline 2a: The VSL assignment for R9 is not binary. Guideline 2b: The proposed VSL does not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.

VRF and VSL Justifications – NUC-001-3, R9.	
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement, and is, therefore, consistent with the requirement. In addition, the VSLs are consistent with Requirement R9.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	The VSL is based on a single violation and not cumulative violations
FERC VSL G5 Requirements where a single lapse in protection can compromise computer network security, i.e., the 'weakest link' characteristic, should apply binary VSLs	The requirement does not address cyber security protection.

VRF and VSL Justifications – NUC-001-3, R9.	
FERC VSL G6 VSLs for cyber security requirements containing interdependent tasks of documentation and implementation should account for their interdependence	The requirement does not address cyber security protection.

Exhibit G

Summary of Development History and Complete Record of Development

Exhibit G—Summary of the Reliability Standard Development Proceeding and Complete Record of Development of Proposed Reliability Standard NUC-001-3

The development record for proposed Reliability Standard NUC-001-3 is summarized below.

I. Overview of the Standard Drafting Team

When evaluating a proposed Reliability Standard, the Commission is expected to give "due weight" to the technical expertise of the ERO.[1] The technical expertise of the ERO is derived from the standard drafting team. For this project, the standard drafting team consisted of industry experts, all with a diverse set of experiences. A roster of the team members is included in **Exhibit H**.

II. Standard Development History

A. Standard Authorization Request Development

A Standard Authorization Request ("SAR") was submitted on October 7, 2013 and approved by the Standards Committee ("SC") on October 17, 2013.

B. First Posting

Proposed Reliability Standard NUC-001-3 was posted for a public comment period from April 8, 2014 through May 22, 2014. There were 29 sets of responses, including comments from approximately 103 individuals from approximately 57 companies representing all 10 industry segments. Proposed Reliability Standard NUC-001-3 received a quorum of 80.6% and an approval 97.36%.

C. Final Ballot

[1] Section 215(d)(2) of the Federal Power Act; 16 U.S.C. §824(d)(2) (2006).

Proposed Reliability Standard NUC-001-3 was posted for a 10-day final ballot period on June 24, 2014 through July 3, 2014. The proposed Reliability Standard received a quorum of 88.63% and an approval rating of 97.23%.

D. Board of Trustees Approval

Proposed Reliability Standard NUC-001-3 was approved by the NERC Board of Trustees on August 14, 2014.

Project 2012-13 NUC - Nuclear Plant Interface Coordination

Related Files | NUC Five-Year Review Team

Status:
Adopted by the NERC Board of Trustees on August 14, 2014 and pending regulatory approval.

Draft	Actions	Dates	Results	Consideration of Comments
NUC-001-3 Clean **(22)**| Redline to Last Approved **(23)**	Final Ballot Info>> **(24)** Vote>>	06/24/14 – 07/03/14	Summary>> **(25)** Ballot Results>> **(26)**	
NUC-001-3 Clean **(6)**| Redline to Last Approved **(7)** Implementation Plan **(8)** **Supporting Documents:** Unofficial Comment Form (Word) **(9)** Standard Authorization Request **(10)** Mapping Document **(11)** VRF/VSL Justification **(12)** Draft RSAW **(13)**	Initial Ballot and Non-Binding Poll Updated Info>> **(14)** Info>> **(15)** Vote>>	05/13/14 - 05/22/14	Summary>> **(17)** Ballot Results>> **(18)** Non-Binding Poll Results>> **(19)**	Consideration of Comments>> **(21)**
	Comment Period Info>> **(16)** Submit Comments>>	04/08/14 – 05/22/14	Comments Received>> **(20)**	
	Join Ballot Pool>>	04/08/14 - 05/07/14		
Standard Authorization Request **(1)**	Comment Period Info>> **(4)**	02/12/14 - 03/13/14	Comments Received>> **(5)**	

Supporting Documents: Unofficial Comment Form (Word) **(2)** NUC Five Year Review Team Recommendation to Revise **(3)**	Submit Comments>>			

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standards Authorization Request Form

NERC welcomes suggestions to improve the reliability of the bulk power system through improved reliability standards. Please use this form to submit your request to propose a new or revised NERC Reliability Standard.

Request to propose a new or a revised Reliability Standard			
Title of Proposed Standard:	Nuclear Plant Interface Coordination – NUC-001-2.1 (Project 2012-13)		
Date Submitted:	October 1, 2013		
SAR Requester Information			
Name:	John Gyrath		
Organization:	Exelon Generation LLC (Nuclear)		
Telephone:	610.765.5692	E-mail:	john.gyrath@exeloncorp.com
SAR Type (Check as many as applicable)			
☐ New Standard		☐ Withdrawal of existing Standard	
☒ Revision to existing Standard		☐ Urgent Action	

SAR Information
Industry Need (What is the industry problem this request is trying to solve?):
The Standards Committee assigned seven subject matter experts to review the NUC standard as part of NERC's obligation to conduct periodic reviews of its standards. The Five-Year Review Team concluded that NUC-001-2.1 remains necessary for reliability by requiring coordination between Nuclear Plant Generator Operators and Transmission Entities to ensure nuclear plant safe operation and shutdown. The standard, however, requires revision to provide greater clarity and to sharpen industry focus on tasks that have a more direct impact on reliability.
Purpose or Goal (How does this request propose to address the problem described above?):
This SAR proposes revising NUC-001-2.1 in line with the recommendations of the NUC Five-Year Review Team as described in the *Five-Year Review Recommendation to Revise NUC-001-2.1*, (Attachment 1).

SAR Information
The proposed changes to the standard add clarity, remove redundancy, and bring compliance elements in accordance with NERC guidelines. The NUC Five-Year Review Team recommends revising R5 to make it consistent with R4, and to state that the Nuclear Plant Generator Operator shall operate the nuclear plant to meet the NPIRs. The team also recommends removing the reference in R7 and R8 to "Protection Systems" as defined in the NERC Glossary of Terms to focus the standard on attributes that could impact the NPIRs, such as frequency or voltage setpoints, and not the expanded five elements of the defined term. Protection systems are a subset of the nuclear plant design and electric system design attributes referenced in R7 and R8 respectively, and reference to setpoints will be made with these attributes. The team recommends revising the Effective Date section to account for jurisdictional differences in the Canadian provinces. The team recommends revising R9 to clarify that that all agreements do not have to discuss each of the elements in R9, but that the sum total of the agreements need to address the elements. The team also recommends revising the Regional Differences section to remove reference to specific Nuclear Regulatory Commission regulations and to clarify that there are no Canadian Regulatory requirements for electrical power from the electric network to permit safe shutdown, and to revise the definition of "NPLR" to remove the potential conflict with a NERC Glossary of Terms definition. Finally, the team also recommends several errata type changes throughout the standard, as identified in the *Five-Year Review Recommendation to Revise NUC-001-2.1*.
Identify the Objectives of the proposed standard's requirements (What specific reliability deliverables are required to achieve the goal?):
The objective of NUC-001-2 is to require coordination between Nuclear Plant Generator Operators and Transmission Entities to ensure nuclear plant safe operation and shutdown. This objective supports reliability principles 1, 2, 3, 4, and 8 by requiring: (1) the planning and operation of the Bulk Electric System (BES) to consider the unique requirements of nuclear plants; (2) consideration of the nuclear plant requirements in the defined frequency and voltage limits established for BES operation; (3) the nuclear plant unique information necessary for the planning and operation of interconnected bulk power systems be made available to those entities responsible for planning and operating the systems reliably; (4) plans for emergency operation and system restoration of interconnected bulk power system elements be coordinated with the requirements of nuclear plants; and (8) coordination of physical and cyber security protection of the BES at the nuclear plant interface.
Brief Description (Provide a paragraph that describes the scope of this standard action.)
The scope of this standard action is to revise NUC-001-2.1 in accordance with the recommendations made by the Five-Year Review Team in the *Five-Year Review Recommendation to Revise NUC-001-2.1*,

SAR Information
(Attachment 1), and consistent with industry consensus to make additional standard revisions to the extent such consensus develops.
Detailed Description (Provide a description of the proposed project with sufficient details for the standard drafting team to execute the SAR. Also provide a justification for the development or revision of the standard, including an assessment of the reliability and market interface impacts of implementing or not implementing the standard action.)
The Five-Year Review Team identified several ambiguous, deficient, or duplicative elements during its review. The revisions proposed in the *Five-Year Review Recommendation to Revise NUC-001-2.1* would enhance clarity in several requirements critical to reliability, and improve compliance efficiency by removing elements not necessary for reliability. Specifically, the Five-Year Review Team has identified the following sections and requirements for revision: • The standard applies to all Nuclear Plant Generator Operators. Therefore, the term "Nuclear Plant Generator Operator" should be pluralized in section A.4. Applicability. • R5 should be revised for consistency with R4 and to clarify that nuclear plants must be operated to meet the Nuclear Plant Interface Requirements. • As explained in the attached *Position Paper on NUC-001-2 R7 and R8*, the term "Protection Systems" should be omitted from requirements R7 and R8, and language should be added to clarify requirement applicability. • R9 and R9.4.1 should be revised to clarify requirement applicability. • Section E. Regional Differences should be revised to remove reference to specific Nuclear Regulatory Commission regulations and to clarify that there are no Canadian Regulatory requirements for electrical power from the electric network to permit safe shutdown. The term Canadian Nuclear Power Plant Licensing Requirements (CNPLR) is defined in the proposed revision to the standard as a means to differentiate the unique licensing requirements of the Canadian Nuclear Power Plants from those of the U.S. NPPs. • Modify the Violation Severity Level and Violation Risk Factor matrices to conform to NERC guidelines. • Revise measures to ensure appropriate clarity and applicability to each corresponding requirement. • Add Time Horizons to each requirement.

Reliability Functions		
The Standard will Apply to the Following Functions (Check each one that applies.)		
☒	Reliability Coordinator	Responsible for the real-time operating reliability of its Reliability Coordinator Area in coordination with its neighboring Reliability Coordinator's wide area view.
☒	Balancing Authority	Integrates resource plans ahead of time, and maintains load-interchange-resource balance within a Balancing Authority Area and supports Interconnection frequency in real time.
☐	Interchange Authority	Ensures communication of interchange transactions for reliability evaluation purposes and coordinates implementation of valid and balanced interchange schedules between Balancing Authority Areas.
☒	Planning Coordinator	Assesses the longer-term reliability of its Planning Coordinator Area.
☐	Resource Planner	Develops a >one year plan for the resource adequacy of its specific loads within a Planning Coordinator area.
☒	Transmission Planner	Develops a >one year plan for the reliability of the interconnected Bulk Electric System within its portion of the Planning Coordinator area.
☒	Transmission Service Provider	Administers the transmission tariff and provides transmission services under applicable transmission service agreements (e.g., the pro forma tariff).
☒	Transmission Owner	Owns and maintains transmission facilities.
☒	Transmission Operator	Ensures the real-time operating reliability of the transmission assets within a Transmission Operator Area.
☒	Distribution Provider	Delivers electrical energy to the End-use customer.
☒	Generator Owner	Owns and maintains generation facilities.
☒	Generator Operator	Operates generation unit(s) to provide real and reactive power.
☐	Purchasing-Selling Entity	Purchases or sells energy, capacity, and necessary reliability-related services as required.
☐	Market Operator	Interface point for reliability functions with commercial functions.

Reliability Functions	
☒ Load-Serving Entity	Secures energy and transmission service (and reliability-related services) to serve the End-use Customer.

Reliability and Market Interface Principles	
Applicable Reliability Principles (Check all that apply).	
☒	1. Interconnected bulk power systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards.
☒	2. The frequency and voltage of interconnected bulk power systems shall be controlled within defined limits through the balancing of real and reactive power supply and demand.
☒	3. Information necessary for the planning and operation of interconnected bulk power systems shall be made available to those entities responsible for planning and operating the systems reliably.
☒	4. Plans for emergency operation and system restoration of interconnected bulk power systems shall be developed, coordinated, maintained and implemented.
☒	5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk power systems.
☐	6. Personnel responsible for planning and operating interconnected bulk power systems shall be trained, qualified, and have the responsibility and authority to implement actions.
☐	7. The security of the interconnected bulk power systems shall be assessed, monitored and maintained on a wide area basis.
☒	8. Bulk power systems shall be protected from malicious physical or cyber attacks.
Does the proposed Standard comply with all of the following Market Interface Principles?	Enter (yes/no)
1. A reliability standard shall not give any market participant an unfair competitive advantage.	Yes
2. A reliability standard shall neither mandate nor prohibit any specific market structure.	Yes
3. A reliability standard shall not preclude market solutions to achieving compliance with that standard.	Yes
4. A reliability 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

Related Standards	
Standard No.	Explanation

Related SARs – N/A	
SAR ID	Explanation

Regional Variances – N/A	
Region	Explanation
ERCOT	
FRCC	
MRO	
NPCC	
RFC	

Regional Variances – N/A	
SERC	
SPP	
WECC	
	The FYRT proposed a definition change in section E. Regional Differences to eliminate a potential unintended conflict with a NERC Glossary term.

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NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Unofficial Comment Form

Project 2012-13 Nuclear Plant Interface Coordination Standard Authorization Request

Please **DO NOT** use this form for submitting comments. Please use the electronic form to submit comments on the Standard Authorization Request (SAR). The electronic comment form must be completed by **8 p.m. Eastern on Thursday, March 13, 2014**.

All documents and information about this project are available on the project page. If you have questions please contact Stephen Eldridge or by telephone at 404-446-9686.

Background Information

The Standards Committee assigned seven subject matter experts to review the standard NUC-001-2.1 as part of NERC's obligation to conduct periodic reviews of its standards. The Five-Year Review Team concluded that NUC-001-2.1 remains necessary for reliability by requiring coordination between Nuclear Plant Generator Operators and Transmission Entities to ensure nuclear plant safe operation and shutdown. The standard, however, requires revision to provide greater clarity and to sharpen industry focus on tasks that have a more direct impact on reliability.

The NUC FYRT's draft recommendation was posted for a 45-day comment period from July 26, 2013 through September 9, 2013. The NUC FYRT's recommendations as well as the associated documents are available on the NUC FYRT Project Page.

Stakeholders provided feedback on the draft recommendation and associated documents, including a proposed redlined standard and a draft SAR. Comments were generally supportive of the NUC FYRT's recommendation and proposed implementation. However, the NUC FYRT carefully reviewed each comment, and after further discussion with NUC FYRT members and industry observers the final recommendation to revise the standard and the accompanying documents were updated to adopt many of the commenters' suggestions.

On October 17th, 2013 the NERC Standards Committee took the following actions in regard to the FYRT's recommendations:

1. Accepted the work of the NUC FYRT.
2. Accepted the proposed Standard Authorization Request for standard development and authorized posting for informal comment; and
3. Appointed the existing NUC FYRT members as the standard drafting team to implement the recommendation in a formal standard development project.

You do not have to answer all questions. Enter comments in simple text format. Bullets, numbers, and special formatting will not be retained.

Questions

1. Do you agree with the scope and objectives of this SAR? If not, please explain why you do not agree, and, if possible, provide specific language revisions that would make it acceptable to you.

   Yes:

   No:

   Comments:

2. Are you aware of any Canadian provincial or other regulatory requirements that may need to be considered during this project in order to develop a continent-wide approach to the standards? If yes, please identify the jurisdiction and specific regulatory requirements.

   Yes:

   No:

   Comments:

3. Are there any other concerns with this SAR that haven't been covered in previous questions?

   Yes:

   No:

   Comments:

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NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Five-Year Review Recommendation to Revise NUC-001-2

July 23, 2013

Introduction

The North American Electric Reliability Corporation (NERC) has an obligation to conduct a five-year review of each Reliability Standard developed through NERC's American National Standards Institute-accredited Reliability Standards development process.[1] Project 2012-13 – Nuclear Plant Interface Coordination was created to review NUC-001-2 as part of the current cycle of five-year reviews of standards due for review.

The NERC Standards Committee appointed seven nuclear industry subject matter experts to serve on the NUC-001-2 five-year review team (FYRT) on April 22, 2013.[2] The FYRT used background information on the standard and the questions set forth in the Five-Year Review Template developed by NERC and approved by the NERC Standards Committee, along with associated worksheets and reference documents, to determine whether NUC-001-2 should be: (1) affirmed as is (i.e., no changes needed); (2) revised (which may include revising or retiring one or more requirements); or (3) withdrawn.

As a result of this examination, The FYRT hereby recommends to **REVISE** NUC-001-2, and will therefore also develop and submit a draft Standard Authorization Request (SAR) outlining the proposed scope and technical justification for the revision once the current 45-day industry comment period concludes.

Applicable Reliability Standard: NUC-001-2

Note: NUC-001-2 is the mandatory and enforceable version of NUC-001 and has been enforceable since April 1, 2010. On April 11, 2012, the NERC Standards Committee approved capitalizing "Protection System" in accordance with the Implementation Plan for Project 2007-17. That recommendation has not yet been implemented. Additionally, the NERC Board of Trustees approved retiring R9.1 and its sub

[1] The currently effective Standard Processes Manual (SPM), which became effective on June 27, 2013, obligates NERC to conduct periodic reviews of all Reliability Standards at least once every ten years, and periodic reviews of those standards that are American National Standards (approved by the American National Standards Institute) at least once every five years. The NUC standard is not an American National Standard, and thus the NUC standard would only require a periodic review at least once every ten years under the current SPM. However, the former SPM, which became effective on January 31, 2012, required all standards to undergo a five-year review, and this five-year review process was launched under that SPM. The periodic review process is addressed on page 45 of the current SPM: http://www.nerc.com/pa/Stand/Resources/Documents/Appendix_3A_StandardsProcessesManual.pdf.

[2] The Standards Committee added the seventh FYRT member on May 21, 2013.

requirements on February 7, 2013 as part of the Paragraph 81 project (Project 2013-02) pending applicable regulatory approval. FERC issued a Notice of Proposed Rulemaking on April 18, 2013, proposing to, among other things, approve retiring R9.1 and its sub requirements.
FYRT Members (name and organization): 1. John Gyrath (Chair), Exelon Generation LLC (Nuclear) 2. George Attarian (Vice Chair), Duke Energy 3. Mukund "Mookie" Chander, Entergy Services Inc. 4. Kevin Donnelly, Consolidated Edison of NY 5. Pete Jenkins, Luminant Generation Company LLC 6. Jerry Whooley, PJM Interconnection 7. Les Carter, Ontario Power Generation
Date Review Completed: July 23, 2013

Background Information *(initially completed by NERC staff)*

1. Are there any outstanding Federal Energy Regulatory Commission directives associated with the Reliability Standard? (If so, NERC staff will attach a list of the directives with citations to associated FERC orders for inclusion in a SAR.)

   ☐ Yes

   ☒ No

   Note that several responses to FERC Order 693 directives require retaining specific NUC-001-2 language (relevant language noted in *italics*):

   - (S- Ref 10370 - Para 1608): Next-day analysis required of minimum voltages at nuclear power plant auxiliary buses. Next day analysis is required in proposed TOP-002-3, R1. A specified minimum voltage limit is by definition an SOL which must be studied in proposed TOP-002-3, Requirement R1. Additionally, *approved NUC-001-2, Requirements R3 & R4.1 require the transmission entity to incorporate NPIRs in their planning and operating analyses.* Approved FAC-011-2 and approved FAC-014-2, Requirement R2 require the Transmission Operator to incorporate SOLs into their analyses. All data required for Operational Planning Analyses is stipulated in proposed TOP-003-2. *Approved NUC-001-2, Requirements R3 & R8 covers the information flowing back to the nuclear plant operator*.
   - (S- Ref 10374): Directive applicable to TOP-002 is covered in NUC-001-1, which requires one to "[i]nform the nuclear plant operator in real-time if the auxiliary power bus voltages cannot be maintained."
   - (S- Ref 10391 - Para 1671): NRC has raised some significant issues regarding the consideration of nuclear power plants voltage requirements. Consider the NRCs comments on voltage requirements as part of the standards development process. Next day analysis is required in proposed TOP-002-3, R1. A specified minimum voltage limit is by definition an SOL which must be studied in proposed TOP-002-3, Requirement R1. Additionally, *approved NUC-001-2, Requirements R3 & R4.1 require the transmission entity to incorporate NPIRs in their planning and operating analyses*. Approved FAC-011-2 and approved FAC-014-2, Requirement R2 require the Transmission Operator to incorporate SOLs into their analyses. All data required for Operational Planning Analyses is stipulated in proposed TOP-003-2. *Approved NUC-001-2, Requirements R3 & R8 covers the information flowing back to the nuclear plant operator*.

2. Have stakeholders requested clarity on the Reliability Standard in the form of an Interpretation (outstanding, in progress, or approved), Compliance Application Notice (CAN) (outstanding, in progress, or approved), or an outstanding submission to NERC's Issues Database? (If there are,

NERC staff will include a list of the Interpretation(s), CAN(s), or stakeholder-identified issue(s) contained in the NERC Issues Database that apply to the Reliability Standard.)

☐ Yes

☒ No

3. Is the Reliability Standard one of the most violated Reliability Standards? If so, does the root cause of the frequent violation appear to be a lack of clarity in the language?

☐ Yes

☒ No

Please explain: Based on NERC staff's review of violations and possible violations over the past three years, the NUC Reliability Standard is one of the least-violated Reliability Standards.

4. Does the Reliability Standard need to be converted to the results-based standard (RBS) format as outlined in *Attachment 1: Results-Based Standards*? (Note that the intent of this question is to ensure that, as Reliability Standards are reviewed, the formatting is changed to be consistent with the current format of a Reliability Standard. If the answer is yes, the formatting should be updated when the Reliability Standard is revised.)

☒ Yes

☐ No

Note: The FYRT reviewed NUC-001-2 and determined that each requirement indentifies a clear and measurable expected outcome, such as: (1) a stated level of reliability performance; (2) a reduction in a specified reliability risk; or (3) a necessary competency. Therefore, no requirements require conversion to the RBS format.

Additional Questions Considered by the FYRT

If NERC staff answered "Yes" to any of the questions above, the Reliability Standard probably requires revision. The questions below are intended to further guide your review. Some of the questions reference documents provided by NERC staff as indicated in the Background questions above.

1. **Paragraph 81**: Does one or more of the requirements in the Reliability Standard meet criteria for retirement or modification based on Paragraph 81 concepts? Use *Attachment 2: Paragraph 81 Criteria* to make this determination.

   ☐ Yes

   ☒ No

   Please summarize your application of Paragraph 81 Criteria, if any: R9.1 has been retired under Paragraph 81 principles, pending applicable regulatory approval. The review team applied the criteria specified in *Attachment 2: Paragraph 81 Criteria* in reviewing the remainder of the NUC standard and determined that no additional requirements should be retired under Paragraph 81 principles.

2. **Clarity:** If the Reliability Standard has an Interpretation, CAN, or issue associated with it, or is frequently violated because of ambiguity, it probably needs to be revised for clarity. Beyond these indicators, is there any reason to believe that the Reliability Standard should be modified to address a lack of clarity? Consider:

   a. Is this a Version 0 Reliability Standard?
   b. Does the Reliability Standard have obviously ambiguous language or language that requires performance that is not measurable?
   c. Are the requirements consistent with the purpose of the Reliability Standard?

   ☒ Yes

   ☐ No

   Please summarize your assessment: The FYRT recommends the following sections of NUC-001-2 be revised to improve the clarity of the standard:

   1) Applicability Section 4.1: Add plural to "Nuclear Plant Generator Operator"
   2) Requirement R5: Revise for consistency with R4 and to clarify that nuclear plants must be operated to meet the Nuclear Plant Interface Requirements.

3) Requirement R7 and R8: Delete “Protection Systems” in requirements R7 and R8 since it is a subset of the "nuclear plant design" and "electric system design" elements currently contained in R7 and R8 respectively. Add parenthetical clause (e.g. protective setpoints) to R7 following "nuclear plant design" and parenthetical clause (e.g. relay setpoints) to R8 following "electric system design".
4) Requirement R9: Revise to clarify that all agreements do not have to discuss each of the elements in R9, but that the sum total of the agreements need to address the elements.
5) Requirement R9.4.1: Insert "affecting the NPIRs" following "Provisions for communications" and insert "applicable unique" following ""definitions of".
6) Regional Differences: Revise to remove reference to specific Nuclear Regulatory Commission regulations and to clarify that there are no Canadian Regulatory requirements for electrical power from the electric network to permit safe shutdown.

Reference the draft Standard Authorization Request (SAR) developed by the FYRT for additional information regarding the above recommended revisions.

3. **Definitions**: Do any of the defined terms used within the Reliability Standard need to be refined?

☐ Yes
☒ No

Please explain: The FYRT recommends that the defined term "Protection Systems" not be used in Requirements R7 and R8 since the definition is overly broad in application here, and has other NERC compliance implications. The original SDT use of "protection systems" was focused on the attributes that could impact the NPIRs such as frequency or voltage set points (i.e. relay settings) and not the expanded five elements of "Protection Systems" as defined in the NERC Glossary of Terms. The FYRT concurs with the original application of the term "protection systems" and therefore recommends deletion of the defined term "Protection Systems". Please see the attached Five-Year Review Position Paper on NUC-001-2 R7 and R8 for further details.

4. **Compliance Elements:** Are the compliance elements associated with the requirements (Measures, Data Retention, VRFs, and VSLs) consistent with the direction of the Reliability Assurance Initiative and FERC and NERC guidelines? If you answered “No,” please identify which elements require revision, and why:

☐ Yes
☒ No

M4-M8 do not give examples of what constitutes "evidence." R7/R8 "may," M7/M8 "would." M7 and M8 do not contain "actual or proposed" language as used in R7 and R8 respectively.

5. **Consistency with Other Reliability Standards:** Does the Reliability Standard need to be revised for formatting and language consistency among requirements within the Reliability Standard or consistency with other Reliability Standards? If you answered "Yes," please describe the changes needed to achieve formatting and language consistency:

   ☐ Yes
   ☒ No

6. **Changes in Technology, System Conditions, or other Factors:** Does the Reliability Standard need to be revised to account for changes in technology, system conditions, or other factors? If you answered "Yes," please describe the changes and specifically what the potential impact is to reliability if the Reliability Standard is not revised:

   ☐ Yes
   ☒ No

7. **Consideration of Generator Interconnection Facilities:** Is responsibility for generator interconnection Facilities appropriately accounted for in the Reliability Standard?

   ☒ Yes
   ☐ No

   Guiding Questions:

   If the Reliability Standard is applicable to GOs/GOPs, is there any ambiguity about the inclusion of generator interconnection Facilities? (If generation interconnection Facilities could be perceived to be excluded, specific language referencing the Facilities should be introduced in the Reliability Standard.)

   The FYRT did not identify any ambiguity.

   If the Reliability Standard is not applicable to GOs/GOPs, is there a reliability-related need for treating generator interconnection Facilities as transmission lines for the purposes of this Reliability Standard? (If so, GOs and GOPs that own or operate relevant generator interconnection Facilities should be explicit in the applicability section of the Reliability Standard.)

This standard is applicable to GOs/GOPs; therefore, this guiding question was not considered.

Recommendation

The answers to the questions above, along with a preliminary recommendation of the SMEs conducting the review of the Reliability Standard, will be posted for a 45-day informal comment period, and the comments publicly posted. The SMEs will review the comments to evaluate whether to modify their initial recommendation, and will document the final recommendation which will be presented to the Standards Committee.

Preliminary Recommendation (to be completed by the SME team after its review and prior to posting the results of the review for industry comment):

- ☐ AFFIRM
- ☒ REVISE
- ☐ RETIRE

Technical Justification: See attached draft SAR.

Preliminary Recommendation posted for industry comment (date): July 23, 2013

Final Recommendation (to be completed by the SME team after it has reviewed industry comments on the preliminary recommendation):

- ☐ AFFIRM *(This should only be checked if there are no outstanding directives, interpretations or issues identified by stakeholders.)*
- ☐ REVISE
- ☐ RETIRE

Technical Justification: TBD

Date submitted to NERC Staff: TBD

Attachment 1: Results-Based Standards

The fourth question for NERC staff asks if the Reliability Standard needs to be converted to the results-based standards (RBS) format. The information below will be used by NERC staff in making this determination, and is included here as a reference for the SME team and other stakeholders.

RBS standards employ a defense-in-depth strategy for Reliability Standards development where each requirement has a role in preventing system failures and the roles are complementary and reinforcing. Reliability Standards should be viewed as a portfolio of requirements designed to achieve an overall defense-in-depth strategy and comply with the quality objectives identified in the resource document titled, "Acceptance Criteria of a Reliability Standard."

A Reliability Standard that adheres to the RBS format should strive to achieve a portfolio of performance-, risk-, and competency-based mandatory reliability requirements that support an effective defense-in-depth strategy. Each requirement should identify a clear and measurable expected outcome, such as: a) a stated level of reliability performance, b) a reduction in a specified reliability risk, or c) a necessary competency.

a. **Performance-Based**—defines a particular reliability objective or outcome to be achieved. In its simplest form, a results-based requirement has four components: who, under what conditions (if any), shall perform what action, to achieve what particular result or outcome?

b. **Risk-Based**—preventive requirements to reduce the risks of failure to acceptable tolerance levels. A risk-based reliability requirement should be framed as: who, under what conditions (if any), shall perform what action, to achieve what particular result or outcome that reduces a stated risk to the reliability of the bulk power system?

c. **Competency-Based**—defines a minimum set of capabilities an entity needs to have to demonstrate it is able to perform its designated reliability functions. A competency-based reliability requirement should be framed as: who, under what conditions (if any), shall have what capability, to achieve what particular result or outcome to perform an action to achieve a result or outcome or to reduce a risk to the reliability of the bulk power system?

Additionally, each RBS-adherent Reliability Standard should enable or support one or more of the eight reliability principles listed below. Each Reliability Standard should also be consistent with all of the reliability principles.

1. Interconnected bulk power systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards.

2. The frequency and voltage of interconnected bulk power systems shall be controlled within defined limits through the balancing of real and reactive power supply and demand.

3. Information necessary for the planning and operation of interconnected bulk power systems shall be made available to those entities responsible for planning and operating the systems reliably.

4. Plans for emergency operation and system restoration of interconnected bulk power systems shall be developed, coordinated, maintained, and implemented.

5. Facilities for communication, monitoring, and control shall be provided, used, and maintained for the reliability of interconnected bulk power systems.

6. Personnel responsible for planning and operating interconnected bulk power systems shall be trained, qualified, and have the responsibility and authority to implement actions.

7. The reliability of the interconnected bulk power systems shall be assessed, monitored, and maintained on a wide-area basis.

8. Bulk power systems shall be protected from malicious physical or cyber attacks.

If the Reliability Standard does not provide for a portfolio of performance-, risk-, and competency-based requirements or consistency with NERC's reliability principles, NERC staff should recommend that the Reliability Standard be reformatted in accordance with RBS format.

Attachment 2: Paragraph 81 Criteria

The first question for the SME Review Team asks if one or more of the requirements in the Reliability Standard meet(s) criteria for retirement or modification based on Paragraph 81 concepts.[3] Use the Paragraph 81 criteria explained below to make this determination. Document the justification for the decisions throughout and provide them in the final assessment in the Five-Year Review worksheet.

For a Reliability Standard requirement to be proposed for retirement or modification based on Paragraph 81 concepts, it must satisfy **both**: (i) Criterion A (the overarching criterion) and (ii) at least one of the Criteria B listed below (identifying criteria). In addition, for each Reliability Standard requirement proposed for retirement or modification, the data and reference points set forth below in Criteria C should be considered for making a more informed decision.

Criterion A (Overarching Criterion)

The Reliability Standard requirement requires responsible entities ("entities") to conduct an activity or task that does little, if anything, to benefit or protect the reliable operation of the BES.

Section 215(a) (4) of the United States Federal Power Act defines "reliable operation" as: "… operating the elements of the bulk-power system within equipment and electric system thermal, voltage, and stability limits so that instability, uncontrolled separation, or cascading failures of such system will not occur as a result of a sudden disturbance, including a cybersecurity incident, or unanticipated failure of system elements."

Criteria B (Identifying Criteria)

B1. Administrative

The Reliability Standard requirement requires responsible entities to perform a function that is administrative in nature, does not support reliability and is needlessly burdensome.

This criterion is designed to identify requirements that can be retired or modified with little effect on reliability and whose retirement or modification will result in an increase in the efficiency of the ERO compliance program. Administrative functions may include a task that is related to developing procedures or plans, such as establishing communication contacts. Thus, for certain requirements, Criterion B1 is closely related to Criteria B2, B3 and B4. Strictly administrative functions do not inherently negatively impact reliability directly and, where possible, should be eliminated or modified for purposes of efficiency and to allow the ERO and entities to appropriately allocate resources.

[3] In most cases, satisfaction of the Paragraph 81 criteria will result in the retirement of a requirement. In some cases, however, there may be a way to modify a requirement so that it no longer satisfies Paragraph 81 criteria. Recognizing that, this document refers to both options.

B2. Data Collection/Data Retention
These are requirements that obligate responsible entities to produce and retain data which document prior events or activities, and should be collected via some other method under NERC's rules and processes.

This criterion is designed to identify requirements that can be retired or modified with little effect on reliability. The collection and/or retention of data do not necessarily have a reliability benefit and yet are often required to demonstrate compliance. Where data collection and/or data retention is unnecessary for reliability purposes, such requirements should be retired or modified in order to increase the efficiency of the ERO compliance program.

B3. Documentation
The Reliability Standard requirement requires responsible entities to develop a document (*e.g.,* plan, policy or procedure) which is not necessary to protect BES reliability.

This criterion is designed to identify requirements that require the development of a document that is unrelated to reliability or has no performance or results-based function. In other words, the document is required, but no execution of a reliability activity or task is associated with or required by the document.

B4. Reporting
The Reliability Standard requirement obligates responsible entities to report to a Regional Entity, NERC or another party or entity. These are requirements that obligate responsible entities to report to a Regional Entity on activities which have no discernible impact on promoting the reliable operation of the BES and if the entity failed to meet this requirement there would be little reliability impact.

B5. Periodic Updates
The Reliability Standard requirement requires responsible entities to periodically update (*e.g.,* annually) documentation, such as a plan, procedure or policy without an operational benefit to reliability.

This criterion is designed to identify requirements that impose an updating requirement that is out of sync with the actual operations of the BES, unnecessary, or duplicative.

B6. Commercial or Business Practice
The Reliability Standard requirement is a commercial or business practice, or implicates commercial rather than reliability issues.

This criterion is designed to identify those requirements that require: (i) implementing a best or outdated business practice or (ii) implicating the exchange of or debate on commercially sensitive information while doing little, if anything, to promote the reliable operation of the BES.

B7. Redundant
The Reliability Standard requirement is redundant with: (i) another FERC-approved Reliability Standard requirement(s); (ii) the ERO compliance and monitoring program; or (iii) a governmental regulation (*e.g.,* Open Access Transmission Tariff, North American Energy Standards Board ("NAESB"), etc.).

This criterion is designed to identify requirements that are redundant with other requirements and are, therefore, unnecessary. Unlike the other criteria listed in Criterion B, in the case of redundancy, the task or activity itself may contribute to a reliable BES, but it is not necessary to have two duplicative requirements on the same or similar task or activity. Such requirements can be retired or modified with little or no effect on reliability and removal will result in an increase in efficiency of the ERO compliance program.

Criteria C (Additional data and reference points)
Use the following data and reference points to assist in the determination of (and justification for) whether to proceed with retirement or modification of a Reliability Standard requirement that satisfies both Criteria A and B:

C1. Was the Reliability Standard requirement part of a FFT filing?
The application of this criterion involves determining whether the requirement was included in a FFT filing.

C2. Is the Reliability Standard requirement being reviewed in an ongoing Standards Development Project?
The application of this criterion involves determining whether the requirement proposed for retirement or modification is part of an active Standards Development Project, with consideration for the status of the project. If the requirement has been approved by Registered Ballot Body and is scheduled to be presented to the NERC Board of Trustees, in most cases it will not need to be addressed in the five-year review. The exception would be a requirement, such as the Critical Information Protection ("CIP") requirements for Version 3 and 4, that is not due to be retired for an extended period of time. Also, for informational purposes, whether the requirement is included in a future or pending Standards Development Project should be identified and discussed.

C3. What is the VRF of the Reliability Standard requirement?
The application of this criterion involves identifying the VRF of the requirement proposed for retirement or modification, with particular consideration of any requirement that has been assigned as having a Medium or High VRF. Also, the fact that a requirement has a Lower VRF is not dispositive that

it qualifies for retirement or modification. In this regard, Criterion C3 is considered in light of Criterion C5 (Reliability Principles) and C6 (Defense in Depth) to ensure that no reliability gap would be created by the retirement or modification of the Lower VRF requirement. For example, no requirement, including a Lower VRF requirement, should be retired or modified if doing so would harm the effectiveness of a larger scheme of requirements that are purposely designed to protect the reliable operation of the BES.

C4. In which tier of the most recent Actively Monitored List (AML) does the Reliability Standard requirement fall?

The application of this criterion involves identifying whether the requirement proposed for retirement or modification is on the most recent AML, with particular consideration for any requirement in the first tier of the AML.

C5. Is there a possible negative impact on NERC's published and posted reliability principles?

The application of this criterion involves consideration of the eight following reliability principles published on the NERC webpage.

> **Reliability Principles**
>
> NERC Reliability Standards are based on certain reliability principles that define the foundation of reliability for North American bulk power systems. Each reliability standard shall enable or support one or more of the reliability principles, thereby ensuring that each standard serves a purpose in support of reliability of the North American bulk power systems. Each reliability standard shall also be consistent with all of the reliability principles, thereby ensuring that no standard undermines reliability through an unintended consequence.
>
> > Principle 1. Interconnected bulk power systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards.
> >
> > Principle 2. The frequency and voltage of interconnected bulk power systems shall be controlled within defined limits through the balancing of real and reactive power supply and demand.
> >
> > Principle 3. Information necessary for the planning and operation of interconnected bulk power systems shall be made available to those entities responsible for planning and operating the systems reliably.
> >
> > Principle 4. Plans for emergency operation and system restoration of interconnected bulk power systems shall be developed, coordinated, maintained, and implemented.

Principle 5. Facilities for communication, monitoring, and control shall be provided, used, and maintained for the reliability of interconnected bulk power systems.

Principle 6. Personnel responsible for planning and operating interconnected bulk power systems shall be trained, qualified, and have the responsibility and authority to implement actions.

Principle 7. The reliability of the interconnected bulk power systems shall be assessed, monitored, and maintained on a wide-area basis.

Principle 8. Bulk power systems shall be protected from malicious physical or cyber attacks. (footnote omitted).

C6. Is there any negative impact on the defense in depth protection of the BES?
The application of this criterion considers whether the requirement proposed for retirement or modification is part of a defense in depth protection strategy. In order words, the assessment is to verify whether other requirements rely on the requirement proposed for retirement or modification to protect the BES.

C7. Does the retirement or modification promote results or performance based Reliability Standards?
The application of this criterion considers whether the requirement, if retired or modified, will promote the initiative to implement results- and/or performance-based Reliability Standards.

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Standards Announcement

Project 2012-13 Nuclear Plant Interface Coordination Standard Authorization Request NUC-001-2.1

Informal Comment Period Now Open through March 13, 2014

Now Available

A 30-day comment period for the **NUC-001-2.1 – Nuclear Plant Interface Coordination** Standard Authorization Request is open through **8 p.m. Eastern on Thursday, March 13, 2014.**

Instructions for Commenting

The comment period is open through **8 p.m. Eastern on Thursday, March 13, 2014.** Please use the electronic form to submit comments on the SAR. If you experience any difficulties in using the electronic form, please contact Wendy Muller. An off-line, unofficial copy of the comment form is posted on the project page.

For information on the **Standards Development Process**, please refer to the Standard Processes Manual.

For more information or assistance, please contact Wendy Muller, Standards Development Administrator, or at 404-446-2560.

North American Electric Reliability Corporation
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Atlanta, GA 30326
404-446-2560 | www.nerc.com

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Consideration of Comments

Project 2012-13 NUC - Nuclear Plant Interface Coordination

The Nuclear Plant Interface Coordination SAR Drafting Team thanks all commenters who submitted comments on the SAR. These standards were posted for a 30-day public comment period from February 12, 2014 through March 13, 2014. Stakeholders were asked to provide feedback on the standards and associated documents through a special electronic comment form. There were 15 sets of comments, including comments from approximately 70 different people from approximately 51 companies representing 9 of the 10 Industry Segments as shown in the table on the following pages.

All comments submitted may be reviewed in their original format on the standard's project page.

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, Mark Lauby, at 404-446-2560 or at mark.lauby@nerc.net. In addition, there is a NERC Reliability Standards Appeals Process.[1]

[1] The appeals process is in the Standard Processes Manual: http://www.nerc.com/comm/SC/Documents/Appendix_3A_StandardsProcessesManual.pdf

Index to Questions, Comments, and Responses

The Industry Segments are:

1 — Transmission Owners
2 — RTOs, ISOs
3 — Load-serving Entities
4 — Transmission-dependent Utilities
5 — Electric Generators
6 — Electricity Brokers, Aggregators, and Marketers
7 — Large Electricity End Users
8 — Small Electricity End Users
9 — Federal, State, Provincial Regulatory or other Government Entities
10 — Regional Reliability Organizations, Regional Entities

Group/Individual		Commenter	Organization	Registered Ballot Body Segment									
				1	2	3	4	5	6	7	8	9	10
1.	Group	Guy Zito	Northeast Power Coordinating Council										X

	Additional Member	Additional Organization	Region	Segment Selection
1.	Alan Adamson	New York State Reliability Council, LLC	NPCC	10
2.	David Burke	Orange and Rockland Utilities Inc.	NPCC	3
3.	Greg Campoli	New York Independent System Operator	NPCC	2
4.	Sylvain Clermont	Hydro-Quebec TransEnergie	NPCC	1
5.	Chris de Graffenried	Consolidated Edison Co. of New York, Inc.	NPCC	1
6.	Gerry Dunbar	Northeast Power coordianting Council	NPCC	10
7.	Mike Garton	Dominion Resources Services, Inc.	NPCC	5
8.	Peter Yost	Consolidated Edison Co. of New York, Inc.	NPCC	3
9.	Michael Jones	National Grid	NPCC	1

Group/Individual	Commenter	Organization	Registered Ballot Body Segment									
			1	2	3	4	5	6	7	8	9	10

10.	Mark Kenny	Northeast Utilities	NPCC	1
11.	Christina Koncz	PSEG Power LLC	NPCC	5
12.	Helen Lainis	Independent Electricity System Operator	NPCC	2
13.	Michael Lombardi	Northeast Power Coordinating Council	NPCC	10
14.	Alan MacNaughton	New Brunswick Power Corporation	NPCC	9
15.	Bruce Metruck	New York Power Authority	NPCC	6
16.	Silvia Parada Mitchell	NextEra Energy, LLC	NPCC	5
17.	Lee Pedowicz	Northeast Power Coodinating Council	NPCC	10
18.	Robert Pellegrini	The Untied Illuminating Company	NPCC	1
19.	Si Truc Phan	Hydro-Quebec TransEnergie	NPCC	1
20.	David Ramkalawan	Ontario Power Generation, Inc.	NPCC	5
21.	Brian Robinson	Utility Services	NPCC	8
22.	Ayesha Sabouba	Hydro One Networks Inc,	NPCC	1
23.	Brian Shanahan	National Grid	NPCC	1
24.	Wayne Sipperly	New York Power Authority	NPCC	5
25.	Ben Wu	Orange and Rockland Utilities Inc.	NPCC	1

2.	Group	Cindy Stewart	FirstEnergy Corp	X		X	X	X	X				

Additional Member	Additional Organization	Region	Segment Selection
William Smith	FirstEnergy Corp	RFC	1
Cindy Stewart	FirstEnergy Corp	RFC	3
Doug Hohlbaugh	Ohio Edison	RFC	4
Kenneth Dresner	FirstEnergy Solutions	RFC	5
Kevin Querry	FirstEnergy Solutions	RFC	6
Rich Hoag		RFC	NA
Marissa Mclean		RFC	NA
Bill Duge		RFC	NA
Steve Wittenauer		RFC	NA

3.	Group	Joseph DePoorter	MRO NERC Standards Review Forum	X	X	X	X	X	X				

	Additional Member	Additional Organization	Region	Segment Selection
1.	Alice Ireland	Xcel Energy	MRO	1, 3, 5, 6
2.	Chuck Wicklund	Otter Tail Power Company	MRO	1, 3, 5

Group/Individual		Commenter	Organization	Registered Ballot Body Segment									
				1	2	3	4	5	6	7	8	9	10
3.	Dan Inman	Minnkota Power Cooperative	MRO	1, 3, 5, 6									
4.	Dave Rudolph	Basin Electric Power Cooperative	MRO	1, 3, 5, 6									
5.	Kayleigh Wilkerson	Lincoln Electric System	MRO	1, 3, 5, 6									
6.	Jodi Jensen	Western Area Power Administration	MRO	1, 6									
7.	Joseph DePoorter	Madison Gas & Electric	MRO	3, 4, 5, 6									
8.	Ken Goldsmith	Alliant Energy	MRO	4									
9.	Mahmood Safi	Omaha Public Power District	MRO	1, 3, 5, 6									
10.	Marie Knox	Midcontinent Independent System Operator	MRO	2									
11.	Mike Brytowski	Great River Energy	MRO	1, 3, 5, 6									
12.	Randi Nyholm	Minnesota Power	MRO	1, 5									
13.	Scott Bos	Muscatine Power & Water	MRO	1, 3, 5, 6									
14.	Terry Harbour	MidAmerican Energy	MRO	1, 3, 5, 6									
15.	Tom Breene	Wisconsin Public Service	MRO	3, 4, 5, 6									
16.	Tony Eddleman	Nebraska Public Power District	MRO	1, 3, 5									
4.	Group	Colby Bellville	Duke Energy	X		X		X	X				

	Additional Member	Additional Organization	Region	Segment Selection
1.	Doug Hils	Duke Energy	RFC	1
2.	Lee Schuster	Duke Energy	FRCC	3
3.	Dale Goodwine	Duke Energy	SERC	5
4.	Greg Cecil	Duke Energy	RFC	6

5.	Group	Mike Garton	Dominion	X		X		X	X				

Additional Member	Additional Organization	Region	Segment Selection
Louis Slade	Dominion Resources Services, Inc.	SERC	1, 3, 5, 6
Randi Heise	Dominion Resources Services, Inc.	MRO	6
Connie Lowe	Dominion Resources Services, Inc.	RFC	5, 6
Michael Crowley	Virginia Electric & Power Company	SERC	1, 3, 5, 6

6.	Group	Marcus Pelt	Southern Company: SOuthern Company Sercives,Inc.; Alabama Power Company; Georgia Power Company; Gulf Power Company; Mississippi Power Comapny;	X		X		X	X				

Group/Individual		Commenter	Organization	Registered Ballot Body Segment									
				1	2	3	4	5	6	7	8	9	10
			Southern Comapny Genertation; Southern Company Generation and Energy Marketing										
No Additional Responses													
7.	Individual	Bruce Wertz	Wertz & Associates, Inc.										
8.	Individual	Andrew Z. Pusztai	American Transmissionn Company, LLC	X									
9.	Individual	John Brockhan	CenterPoint Energy	X									
10.	Individual	Michael Falvo	Independent Electricity System Operator		X								
11.	Individual	David Thorne	Pepco Holdings Inc.	X		X							
12.	Individual	Tammy Porter	Oncor Electric Delivery Co. LLC	X		X							
13.	Individual	Thomas Foltz	American Electric Power	X		X		X	X				
14.	Individual	Catherine Wesley	PJM Interconnection										
15.	Individual	Lisa Martin	City of Austin dba Austin Energy	X		X	X	X	X				

If you support the comments submitted by another entity and would like to indicate you agree with their comments, please select "agree" below and enter the entity's name in the comment section (please provide the name of the organization, trade association, group, or committee, rather than the name of the individual submitter).

Summary Consideration:

Organization	Agree	Supporting Comments of "Entity Name"
Wertz & Associates, Inc.	Agree	Bruce D Wertz, PresidentWertz and Associates Inc

1. Do you agree with the scope and objectives of this SAR? If not, please explain why you do not agree, and, if possible, provide specific language revisions that would make it acceptable to you.

Summary Consideration:

Organization	Yes or No	Question 1 Comment
Northeast Power Coordinating Council	No	The proposed revisions of NUC-001-2.1 are not in depth enough to address P.81 and the consolidation of redundant requirements. Additionally, there are requirements in NUC-001 that should be moved to other families of standards. For example Requirement R3 should be moved to TPL-001-4, IRO-010-1a R1; Part R9.3.5 should be moved to EOP-005-2, EOP-006-2; Part R9.3.6 move to CIP Standards; Part R9.4.5 move to PER-005-1. NUC-001 should focus on the creation and communication of NPIRs by Nuclear Plant Generator Operators, the other standards should have requirements where applicable to implement the necessary controls around the NPIRs to ensure Nuclear Plants do not violate their NPLRs.
MRO NERC Standards Review Forum	No	In the Section on SAR Information, NSRF recommends that another bullet be added to address the Five Year Review Recommendation #4 on Page 4 which states that the NUC Standard needs to converted to the Results-based Standard (RBS) format as outlined in Attachment 1 at the next revision.
American Transmissionn Company, LLC	No	In the Section on SAR Information, ATC recommends that another bullet be added to address the Five Year Review Recommendation #4 on Page 4 which states that the NUC Standard needs to be converted to the Results-based standard (RBS) format as outlined in Attachment 1 at the next revision.

Organization	Yes or No	Question 1 Comment
CenterPoint Energy	No	CenterPoint Energy appreciates the efforts of Project 2012-13 NUC Standard Drafting Team. Additionally, CenterPoint Energy requests that the scope of the project be expanded to include a review of whether Load-Serving Entities can be removed from the Applicability section of NUC-001-2.1.In NERC's 2007-11-19 Petition for the approval of NUC-001-1, the SDT at the time stated that "the drafting team prefers at this time to keep the list of possible entities broad at this stage, with the option to drop some of the entities later."Furthermore, FERC's 2008-10-16 Order 716 which approved NUC-001-1 acknowledged "there is a significant amount of overlap among the entities that perform these functions."CenterPoint Energy believes that Load-Serving Entities do not perform any unique reliability tasks necessary during coordination with Nuclear Plant Generator Operators, and that all such necessary reliability tasks are already being performed by the other applicable functional entities of NUC-001-2.1. Thus, Project 2012-13 provides a good opportunity to delete the redundant Load-Serving Entities function from this Standard.
Duke Energy	Yes	Duke Energy agrees with the changes made by the 5-year Review Team.
PJM Interconnection	Yes	PJM supports the scope of the SAR with particular support for removing the reference to "Protection Systems" as referenced in R7 and R8 of NUC-001-2.1. The SAR, as written, supports development of a results-based standard.
FirstEnergy Corp	Yes	
Dominion	Yes	
Southern Company: SOuthern Company Sercives,Inc.; Alabama Power Company; Georgia Power Company; Gulf Power	Yes	

Organization	Yes or No	Question 1 Comment
Company; Mississippi Power Comapny; Southern Comapny Genertation; Southern Company Generation and Energy Marketing		
Independent Electricity System Operator	Yes	
Pepco Holdings Inc.	Yes	
Oncor Electric Delivery Co. LLC	Yes	
American Electric Power	Yes	
City of Austin dba Austin Energy	Yes	

2. Are you aware of any Canadian provincial or other regulatory requirements that may need to be considered during this project in order to develop a continent-wide approach to the standards? If yes, please identify the jurisdiction and specific regulatory requirements.

Summary Consideration:

Organization	Yes or No	Question 2 Comment
FirstEnergy Corp	No	US entity - not applicable
Northeast Power Coordinating Council	No	
Duke Energy	No	
Dominion	No	
Southern Company: SOuthern Company Sercives,Inc.; Alabama Power Company; Georgia Power Company; Gulf Power Company; Mississippi Power Comapny; Southern Comapny Genertation; Southern Company Generation and Energy Marketing	No	
CenterPoint Energy	No	

Organization	Yes or No	Question 2 Comment
Independent Electricity System Operator	No	
Pepco Holdings Inc.	No	
Oncor Electric Delivery Co. LLC	No	
American Electric Power	No	
PJM Interconnection	No	
City of Austin dba Austin Energy	No	
MRO NERC Standards Review Forum	Yes	This was identified by the FYRT when proposing a definition change in Section E, Regional Differences within the Standard to eliminate a potential unintended conflict with the NERC Glossary of Terms as it relates to Nuclear Plant Licensing Requirements in Canadian Provinces.
American Transmissionn Company, LLC	Yes	This was identified by the FYRT when proposing to definition change in Section E, Regional Differences within the Standard to eliminate a potential unintended conflict with the NERC Glossary of Terms as it relates to Nuclear Plant Licensing Requirements in Canadian Provinces.

3. Are there any other concerns with this SAR that haven't been covered in previous questions?

Summary Consideration:

Organization	Yes or No	Question 3 Comment
Dominion	No	Dominion offers the following suggestions:1. Under detailed description on Page 3 the below items listed suggests this is being converted to a risk-based standard, but it's not stated.2. Modify the Violation Severity Level and Violation Risk Factor matrices to conform to NERC guidelines. 3. Revise measures to ensure appropriate clarity and applicability to each corresponding requirement. 4. Add Time Horizons to each requirement. 5. Dominion suggests at the end of "conform to NERC guidelines" add for risk-based standards.
Southern Company: SOuthern Company Sercives,Inc.; Alabama Power Company; Georgia Power Company; Gulf Power Company; Mississippi Power Comapny; Southern Comapny Genertation; Southern Company Generation and Energy Marketing	No	
CenterPoint Energy	No	
Independent Electricity System Operator	No	

Organization	Yes or No	Question 3 Comment
Pepco Holdings Inc.	No	
Oncor Electric Delivery Co. LLC	No	
American Electric Power	No	
PJM Interconnection	No	
Northeast Power Coordinating Council	Yes	1. Making Nuclear Plant Generator Operator plural is not necessary. 2. Agree that R5 should be revised for consistency with R4 and to clarify that nuclear plants must be operated to meet the Nuclear Plant Interface Requirements. 3. The SDT proposes to replace the ambiguous term "Protection Systems" with language to clarify requirement applicability. To avoid complicating the Requirements, recommend the SDT include a Rationale Box for R7 and R8 that addresses the original Drafting Team's intent to identify what information is to be shared by affected entities. 4. Agree that R9 and R9.4.1 should be revised to clarify requirement applicability5. Disagree that Section E. Regional Differences should be revised to remove reference to specific Nuclear Regulatory Commission regulations and to clarify that there are no Canadian Regulatory requirements for electrical power from the electric network to permit safe shutdown. At a minimum a footnote should be provided for source of requirement (i.e. it is the NRC's NPLR's that drive most of the NPIRs being identified)6. Adding Time Horizons to each requirement is appropriate.
FirstEnergy Corp	Yes	Look at the use of "Agreement", "Agreements" and "Agreement(s)" language in the standard. Should these be consistent throughout the entire standard or is there a purpose for the language being different? If there is a reason for the variance in the usage of "Agreement", "Agreements" and "Agreement(s)", what is the intent or rational for the differences?
Duke Energy	Yes	Duke Energy believes that the term "electric systems" should be changed to Bulk Electric System (BES) to better align this standard and requirements with the NERC

Organization	Yes or No	Question 3 Comment
		Glossary of Terms. However, if this is not the proper definition, we seek clarification from the 5-year Review Team on the term "electric systems" used in NUC-001.NUC-001 should address coordination, between the Nuclear Plant Generator Operator and the applicable Transmission Entities, of power system design & operation required to support nuclear site emergency preparedness/response. Transmission entities need to ensure they are not doing things that purposely disable facilities relied on to mitigate site events.
City of Austin dba Austin Energy	Yes	City of Austin dba Austin Energy (AE) supports the efforts of the Project 2012-13 NUC Standard Drafting Team (SDT). AE requests the SDT expand the scope of the project to include a review of whether Load-Serving Entities can be removed from the Applicability section of NUC-001-2.1. AE supports CenterPoint Energy's comment in this regard.

END OF REPORT

Standard Development Timeline

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. SC authorized moving the SAR forward to standard development to implement recommendations of Five-year review of NUC-001-2 - October 17, 2013.
2. SAR posted for informal comment February 12-March 13, 2014.
3. NUC-001-3 for 45 day Comment Period and Initial Ballot April 8 – May 22, 2014.

Description of Current Draft

Draft 1 of NUC-001-3 implements recommendations from the NUC-001-2.1 Five-Year Review Team (NUC FYRT). The FYRT's recommendations were accepted by the Standards Committee in October 2013. This draft is being posted for a 45-day formal comment period and initial ballot.

Anticipated Actions	Anticipated Date
45-day Formal Comment Period with Parallel Initial Ballot	April 8, 2014
Recirculation ballot	June 2014
BOT adoption	August 2014

Effective Dates: First day of the first calendar quarter that is twelve months beyond the date that this standard is approved by applicable regulatory authorities or as otherwise provided for in a jurisdiction where approval by an applicable governmental authority is required for a standard to go into effect. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is twelve months after the date this standard is adopted by the NERC Board of Trustees or as otherwise provided for in that jurisdiction.

Version History

Version	Date	Action	Change Tracking
1	May 2, 2007	Approved by Board of Trustees	New
2	To be determined	Modifications for Order 716 to Requirement R9.3.5 and footnote 1; modifications to bring compliance elements into conformance with the latest version of the ERO Rules of Procedure.	Revision
2	August 5, 2009	Adopted by Board of Trustees	Revised
2	January 22, 2010	Approved by FERC on January 21, 2010 Added Effective Date	Update
2	February 7, 2013	R9.1, R9.1.1, R9.1.2, R9.1.3, and R9.1.4 and associated elements approved by NERC Board of Trustees for retirement as part of the Paragraph 81 project (Project 2013-02) pending applicable regulatory approval.	
2.1	April 11, 2012	Errata approved by the Standards Committee; (Capitalized “Protection System” in accordance with Implementation Plan for Project 2007-17 approval of revised definition of “Protection System”)	Errata associated with Project 2007-17
3	March, 2014	Modifications to implement the recommendations of the five-year review of NUC-001, which was accepted by the Standards Committee on October 17, 2013.	Revision

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.

None

When this standard has received ballot approval, the text boxes will be moved to the Application Guidelines Section of the Standard.

A. Introduction

1. Title: **Nuclear Plant Interface Coordination**

2. Number: **NUC-001-3**

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. Functional Entities:

4.1.1 Nuclear Plant Generator Operators.

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 Coordinators.

4.2.8 Distribution Providers.

4.2.9 Load-serving Entities.

4.2.10 Generator Owners.

4.2.11 Generator Operators.

5. Background:

Project 2012-13 Nuclear Power Interface Coordination seeks to implement the changes that were proposed by the NUC FYRT. The NUC FYRT was appointed by the Standards Committee Executive Committee on April 22, 2013. The NUC FYRT reviewed the NUC-001-2.1 standard to identify opportunities for consolidation and additional improvements. The NUC FYRT posted its recommendation to revise NUC-001-2.1 for industry comment on July 27, 2013. The NUC FYRT considered comments and submitted its final recommendation to revise NUC-001-2.1, along with a Standards Authorization Request (SAR) to the Standards Committee on October 17, 2013. The Standards Committee accepted the recommendation of the FYRT and appointed the team as the Standard Drafting Team (SDT) to implement the recommendation.

B. Requirements and Measures

R1. The Nuclear Plant Generator Operator shall provide the proposed NPIRs in writing to the applicable Transmission Entities and shall verify receipt. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M1. The Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, provide a copy of the transmittal and receipt of transmittal of the proposed NPIRs to the responsible Transmission Entities.

R2. The Nuclear Plant Generator Operator and the applicable Transmission Entities shall have in effect one or more Agreements[1] 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. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M2. The Nuclear Plant Generator Operator and each Transmission Entity shall each have a copy of the Agreement(s) addressing and implementing the NPIRs available for inspection upon request of the Compliance Enforcement Authority.

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.: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M3. Each Transmission Entity responsible for planning analyses in accordance with the Agreement shall, upon request of the Compliance Enforcement Authority, provide a copy of the planning analyses results transmitted to the Nuclear Plant Generator Operator, showing incorporation of the NPIRs. The Compliance Enforcement

[1]. Agreements may include mutually agreed upon procedures or protocols in effect between entities or between departments of a vertically integrated system.

Authority shall refer to the Agreements developed in accordance with this standard for specific requirements.

R4. Per the Agreements developed in accordance with this standard, the applicable Transmission Entities shall *[Violation Risk Factor: High] [Time Horizon: Operations Planning and Real-time Operations]*

4.1. Incorporate the NPIRs into their operating analyses of the electric system.

4.2. Operate the electric system to meet the NPIRs.

4.3. Inform the Nuclear Plant Generator Operator when the ability to assess the operation of the electric system affecting NPIRs is lost.

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 Enforcement Authority:

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

R5. Per the Agreements developed in accordance with this standard, the Nuclear Plant Generator Operator shall operate the nuclear plant to meet the NPIRs. *[Violation Risk Factor: High] [Time Horizon: Operations Planning]*

Rationale for R5: Rationale for R5: The FYRT recommended R5 be revised for consistency with R4 and to clarify that nuclear plants must be operated to meet the Nuclear Plant Interface Requirements.

M5. The Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, demonstrate or provide evidence that the Nuclear Power Plant is being operated consistent with the NPIRs.

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. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*

M6. The Transmission Entities and Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, provide evidence of the coordination between the Transmission Entities and the Nuclear Plant Generator Operator regarding outages and maintenance activities which affect the NPIRs.

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 (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs. *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*

M7. The Nuclear Plant Generator Operator shall provide evidence that it informed the applicable Transmission Entities of changes to nuclear plant design (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that would impact the ability of the Transmission Entities to meet the NPIRs.

Rationale for R7 and R8: The FYRT recommended deleting "Protection Systems" in Requirements R7 and R8 since it is a subset of the "nuclear plant design" and "electric system design" elements currently contained in R7 and R8 respectively; and adding a parenthetical clause (e.g. protective setpoints) to R7 following "nuclear plant design" and parenthetical clause (e.g. relay setpoints) to R8 following "electric system design."

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 (e.g., protective relay setpoints), configuration, operations, limits, , or capabilities that may impact the ability of the electric system to meet the NPIRs. *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*

M8. The Transmission Entities shall each provide evidence that it informed the Nuclear Plant Generator Operator of changes to electric system design (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that would impact the ability of the Nuclear Plant Generator Operator to meet the NPIRs.

R9. The Nuclear Plant Generator Operator and the applicable Transmission Entities shall include the following elements in aggregate within the Agreement(s) identified in R2.

- Where multiple Agreements with a single Transmission Entity are put into effect, the R9 elements must be addressed in aggregate within the Agreements; however, each Agreement does not have to contain each element. The Nuclear Plant Generator Operator and the Transmission Entity are responsible for ensuring all the R9 elements are addressed in aggregate within the Agreements.
- Where Agreements with multiple Transmission Entities are required, the Nuclear Plant Generator Operator is responsible for ensuring all the R9 elements are addressed in aggregate within the Agreements with the Transmission Entities. The Agreements with each Transmission Entity do not have to contain each element; however, the Agreements

Rationale for R9: The FYRT recommended that R9 be revised to clarify that all agreements do not have to discuss each of the elements in R9, but that the sum total of the agreements need to address the elements.
In addition, for clarity in Part 9.4.1, the FYRT recommended that "affecting the NPIRs" be inserted following "Provisions for communications" and "applicable unique" be inserted following ""definitions of."

with the multiple Transmission Entities, in the aggregate, must address all R9 elements. For each Agreement(s), the Nuclear Plant Generator Operator and the Transmission Entity are responsible to ensure the Agreement(s) contain(s) the elements of R9 applicable to that Transmission Entity. : *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

9.1. Retired. *[Note: Part 9.1 was retired under the Paragraph 81 project. The NUC SDT proposes to leave this Part blank to avoid renumbering Requirement parts that would impact existing agreements throughout the industry.]*

9.2. Technical requirements and analysis:

9.2.1. 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.

9.2.2. Identification of facilities, components, and configuration restrictions that are essential for meeting the NPIRs.

9.2.3. Types of planning and operational analyses performed specifically to support the NPIRs, including the frequency of studies and types of Contingencies and scenarios required.

9.3. Operations and maintenance coordination

9.3.1. 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.

9.3.2. Identification of any maintenance requirements for equipment not owned or controlled by the Nuclear Plant Generator Operator that are necessary to meet the NPIRs.

9.3.3. Coordination of testing, calibration and maintenance of on-site and off-site power supply systems and related components.

9.3.4. 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.

9.3.5. Provision for considering, within the restoration process, the requirements and urgency of a nuclear plant that has lost all off-site and on-site AC power.

9.3.6. Coordination of physical and cyber security protection at the nuclear plant interface to ensure each asset is covered under at least one entity's plan.

9.3.7. Coordination of the NPIRs with transmission system Special Protection Systems and any programs that reduce or shed load based on underfrequency or undervoltage.

9.4. Communications and training Administrative elements:

9.4.1. Provisions for communications affecting the NPIRs between the Nuclear Plant Generator Operator and Transmission Entities, including communications protocols, notification time requirements, and definitions of applicable unique terms.

9.4.2. 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.

9.4.3. Provisions for coordinating investigations of causes of unplanned events affecting the NPIRs and developing solutions to minimize future risk of such events.

9.4.4. Provisions for supplying information necessary to report to government agencies, as related to NPIRs.

9.4.5. Provisions for personnel training, as related to NPIRs.

M9. The Nuclear Plant Generator Operator shall have a copy of the Agreement(s) addressing the elements in Requirement 9 available for inspection upon request of the Compliance Enforcement Authority. Each Transmission Entity shall have a copy of the Agreement(s) addressing the elements in Requirement 9 for which it is responsible available for inspection upon request of the Compliance Enforcement Authority.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority

Regional Entity

1.2. Compliance Monitoring and Assessment Processes:

Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints Text

1.3. Data Retention

The Responsible Entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

- 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 a Responsible Entity is found non-compliant it shall keep information related to the noncompliance until found compliant.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

1.4. Additional Compliance Information

None

Table of Compliance Elements

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1		**Medium**	The Nuclear Plant Generator Operator provided the NPIR's to the applicable entities but did not verify receipt.	The Nuclear Plant Generator Operator did not provide the proposed NPIR to one of the applicable entities unless there was only one entity.	The Nuclear Plant Generator Operator did not provide the proposed NPIR's to two of the applicable entities unless there was only two entities.	The Nuclear Plant Generator Operator did not provide the proposed NPIR's to more than two of applicable entities. OR For a particular Nuclear Power Plant, if the number of possible applicable transmission entities is equal to the number of applicable transmission entities not provided NPIRs
R2		**Medium**	N/A	N/A	N/A	The Nuclear Plant Generator Operator or the applicable Transmission Entity does not have in effect one or more agreements that include mutually agreed to NPIRs and document the implementation of the NPIRs.
R3		**Medium**	N/A	The responsible entity incorporated the NPIRs into its planning analyses but did not communicate	N/A	The responsible entity did not incorporate the NPIRs into its planning analyses of the electric system.

				the results to the Nuclear Plant Generator Operator.		
R4		**High**	N/A	The responsible entity did not comply with sub-requirement R4.3.	The responsible entity did not comply with R4.1.	The responsible entity did not comply with R4.2.
R5		**High**	N/A	N/A	N/A	The Nuclear Plant Generator Operator failed to operate per the NPIRs developed in accordance with this standard.
R6		**Medium**	N/A	The Nuclear Plant Generator Operator or Transmission Entity failed to provide outage or maintenance schedules to the appropriate parties as described in the agreement or on a time period consistent with the agreements.	The Nuclear Plant Generator Operator or Transmission Entity failed to coordinate one or more outages or maintenance activities in accordance the requirements of the agreements.	N/A
R7		**High**	The Nuclear Plant Generator Operator did not inform the applicable Transmission Entities of proposed changes to nuclear plant design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.	N/A	The Nuclear Plant Generator Operator did not inform the applicable Transmission Entities of actual changes to nuclear plant design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.	The Nuclear Plant Generator Operator did not inform the applicable Transmission Entities of actual changes to nuclear plant design (e.g., protective relay setpoints), configuration, operations, limits or capabilities that directly impact the ability of the electric system to meet the NPIRs.
R8		**High**	The applicable Transmission Entities did not inform the Nuclear	N/A	The applicable Transmission Entities did not inform the Nuclear	The applicable Transmission Entities did not inform the Nuclear

			Plant Generator Operator of proposed changes to transmission system design, configuration (e.g. protective relay setpoints), operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.		Plant Generator Operator of actual changes to transmission system design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.	Plant Generator Operator of actual changes to transmission system design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that directly impacts the ability of the electric system to meet the NPIRs.
R9		**Medium**		The Agreement(s) identified in R2. between the Nuclear Plant Generator Operator and the applicable Transmission Entity failed to include up to 20% of the combined sub-components in Parts 9.2, 9.3 and 9.4 applicable to that entity.	The Agreement(s) identified in R2. between the Nuclear Plant Generator Operator and the applicable Transmission Entity failed to include greater than 20%, but less than 40% of the combined sub-components in Parts 9.2, 9.3 and 9.4 applicable to the entity.	The Agreement(s) identified in R2. between the Nuclear Plant Generator Operator and the applicable Transmission Entity failed to include 40% or more of the combined sub-components in Parts 9.2, 9.3 and 9.4 applicable to the entity.

D. Regional Variances

The design basis for Canadian (CANDU) Nuclear Power Plants (NPPs) does not result in the same licensing requirements as U.S. NPPs. Nuclear Regulatory Commission (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. There are no equivalent Canadian Regulatory requirements for electrical power from the electric network to be provided to permit safe shutdown. Therefore the definition of Nuclear Plant Licensing Requirements (NPLR) for Canadian CANDU NPPs will be as follows:

Canadian Nuclear Plant Licensing Requirements (CNPLR) 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.

E. Interpretations

None.

F. Associated Documents

None.

Standard Development Timeline

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. SC authorized moving the SAR forward to standard development to implement recommendations of Five-year review of NUC-001-2 - October 17, 2013.
2. SAR posted for informal comment February 12-March 13, 2014.
3. NUC-001-3 for 45 day Comment Period and I~~i~~nitial B~~b~~allot April 8 – May 22, 2014.

Description of Current Draft

~~(Describe~~Draft 1 of NUC-001-3 implements recommendations from the NUC-001-2.1 ~~type of action associated with this posting such as 30-day informal comment period, 30~~F~~f~~ive-Y~~y~~ear R~~r~~eview Team (NUC FYRT)~~of NUC-001-2~~. The FYRT's ~~These~~ recommendations ~~of the FYR team~~ were~~as~~ accepted by the Standards Committee in October 2013. This draft is being posted for a 45-day formal comment period~~, 45 day formal comment period with parallel~~ and initial ballot~~, 30-day formal comment period with parallel successive ballot, recirculation ballot).~~

Anticipated Actions	Anticipated Date
45-day Formal Comment Period with Parallel Initial Ballot	April 8, 2014
Recirculation ballot	June 2014
BOT adoption	August 2014

~~Effective Dates:~~ ~~April 1, 2010~~**Effective Dates:** First day of the first calendar quarter that is twelve months beyond the date that this standard is approved by applicable regulatory authorities or as otherwise provided for in a jurisdiction where approval by an applicable governmental authority is required for a standard to go into effect. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is twelve~~six~~ months after the date this standard is adopted by the NERC Board of Trustees or as otherwise provided for in that jurisdiction.

Version History

Version	Date	Action	Change Tracking
1	May 2, 2007	Approved by Board of Trustees	New
2	To be determined	Modifications for Order 716 to Requirement R9.3.5 and footnote 1; modifications to bring compliance elements into conformance with the latest version of the ERO Rules of Procedure.	Revision
2	August 5, 2009	Adopted by Board of Trustees	Revised
2	January 22, 2010	Approved by FERC on January 21, 2010 Added Effective Date	Update
2	February 7, 2013	R9.1, R9.1.1, R9.1.2, R9.1.3, and R9.1.4 and associated elements approved by NERC Board of Trustees for retirement as part of the Paragraph 81 project (Project 2013-02) pending applicable regulatory approval.	
2.1	April 11, 2012	Errata approved by the Standards Committee; (Capitalized “Protection System” in accordance with Implementation Plan for Project 2007-17 approval of revised definition of “Protection System”)	Errata associated with Project 2007-17
3	March, 2014	Modifications to implement the recommendations of the five-year review of NUC-001, which was accepted by the Standards Committee on October 17, 2013.	Revision

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.

~~**Term:** definition.~~

None

When this standard has received ballot approval, the text boxes will be moved to the Application Guidelines Section of the Standard.

A. Introduction

1. **Title:** **Nuclear Plant Interface Coordination**

2. **Number:** **NUC-001-~~2.1~~3**

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. Functional Entities:

   4.1.1 Nuclear Plant Generator Operators.

   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 Coordinators.

   4.2.8 Distribution Providers.

   4.2.9 Load-serving Entities.

   4.2.10 Generator Owners.

   4.2.11 Generator Operators.

5. Background:

Project 2012-13 Nuclear Power Interface Coordination seeks to implement the changes that were proposed by the NUC FYRT~~-001-2.1 Five Year Review Team~~. ~~-~~The NUC ~~Five Year Review Team (~~FYRT~~)~~ was appointed by the Standards Committee Executive Committee on April 22, 2013. The NUC FYRT reviewed the NUC-001-2.1 standard to identify opportunities for consolidation and additional improvements. The NUC FYRT posted its recommendation to revise NUC-001-2.1 for industry comment on July 27, 2013~~for industry comment its recommendation to revise NUC-001-2.1 on July 27, 2013.~~. The NUC FYRT considered comments and submitted its final recommendation to revise NUC-001-2.1, along with a Standards Authorization Request (SAR) to the Standards Committee on October 17, 2013~~ its final recommendation to revise NUC-001-2.1, along with a Standards Authorization Request (SAR) on October 17, 2013~~. The Standards Committee accepted the recommendation of the FYRT and appointed the team as the Standard Drafting Team (SDT) to implement the recommendation.

B. Requirements and Measures

R1. The Nuclear Plant Generator Operator shall provide the proposed NPIRs in writing to the applicable Transmission Entities and shall verify receipt. *[Violation Risk Factor: ~~Lower~~Medium] [Time Horizon: -Long-term Planning]*

M1. The Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, provide a copy of the transmittal and receipt of transmittal of the proposed NPIRs to the responsible Transmission Entities.

R2. The Nuclear Plant Generator Operator and the applicable Transmission Entities shall have in effect one or more Agreements[1] 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. *[Violation Risk Factor: Medium] [Time Horizon: ~~]~~ Long-term Planning]*

M2. The Nuclear Plant Generator Operator and each Transmission Entity shall each have a copy of the Agreement(s) addressing and implementing the ~~elements in Requirement 9~~NPIRs available for inspection upon request of the Compliance Enforcement Authority.

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.: *[Violation Risk Factor: Medium] [Time Horizon: ~~]~~ Long-term Planning]*

[1]. Agreements may include mutually agreed upon procedures or protocols in effect between entities or between departments of a vertically integrated system.

M3. Each Transmission Entity responsible for planning analyses in accordance with the Agreement shall, upon request of the Compliance Enforcement Authority, provide a copy of the planning analyses results transmitted to the Nuclear Plant Generator Operator, showing incorporation of the NPIRs. The Compliance Enforcement Authority shall refer to the Agreements developed in accordance with this standard for specific requirements.

R4. Per the Agreements developed in accordance with this standard, the applicable Transmission Entities shall *[Violation Risk Factor: High] [Time Horizon: Operations Planning and Real-time Operations]*

4.1. Incorporate the NPIRs into their operating analyses of the electric system.

4.2. Operate the electric system to meet the NPIRs.

4.3. Inform the Nuclear Plant Generator Operator when the ability to assess the operation of the electric system affecting NPIRs is lost.

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 Enforcement Authority:

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

R5. ~~The Nuclear Plant Generator Operator shall operate per~~Per the Agreements developed in accordance with this standard~~.~~, the Nuclear Plant Generator Operator shall operate the nuclear plant to meet the NPIRs. *[Violation Risk Factor: High] [Time Horizon: ~~]~~Operations Planning]*

Rationale for R5: Rationale for R5: The FYRT recommended R5 be revised for consistency with R4 and to clarify that nuclear plants must be operated to meet the Nuclear Plant Interface Requirements.

M5. The Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, demonstrate or provide evidence that the Nuclear Power Plant is being operated consistent with the NPIRs~~. as per the Agreements developed in accordance with this standard.~~

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. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*

M6. The Transmission Entities and Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, provide evidence of the coordination between the Transmission Entities and the Nuclear Plant Generator Operator regarding outages and maintenance activities which affect the NPIRs.

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~~,~~ (e.g., protective relay setpoints), configuration, operations, limits, ~~Protection Systems,~~ or capabilities that may impact the ability of the electric system to meet the NPIRs. *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*

M7. The Nuclear Plant Generator Operator shall provide evidence that it informed the applicable Transmission Entities of changes to nuclear plant design~~,~~ (e.g., protective relay setpoints), configuration, operations, limits~~, Protection Systems~~, or capabilities that would impact the ability of the Transmission Entities to meet the NPIRs.

Rationale for R7 and R8: The FYRT recommended deleting “Protection Systems” in Requirements R7 and R8 since it is a subset of the "nuclear plant design" and "electric system design" elements currently contained in R7 and R8 respectively; and adding a parenthetical clause (e.g. protective setpoints) to R7 following "nuclear plant design" and parenthetical clause (e.g. relay setpoints) to R8 following "electric system design."

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~~,~~ (e.g., protective relay setpoints), configuration, operations, limits, ~~Protection Systems~~, or capabilities that may impact the ability of the electric system to meet the NPIRs. *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*

M8. The Transmission Entities shall each provide evidence that it informed the Nuclear Plant Generator Operator of changes to electric system design~~,~~ (e.g., protective relay setpoints), configuration, operations, limits~~, Protection Systems~~, or capabilities that would impact the ability of the Nuclear Plant Generator Operator to meet the NPIRs.

R9. The Nuclear Plant Generator Operator and the applicable Transmission Entities shall include~~, as a minimum,~~ the following elements in aggregate within the ~~a~~Agreement(s) identified in R2.

- Where multiple Agreements with a single Transmission Entity are put into effect, the R9 elements must be addressed in aggregate within the Agreements; however, each Agreement does not have to contain each element. The Nuclear Plant Generator Operator and the Transmission Entity are responsible for ensuring all the R9 elements are addressed in aggregate within the Agreements.
- Where Agreements with multiple Transmission Entities are required, the Nuclear Plant Generator Operator is responsible for ensuring all the R9 elements are addressed in aggregate within the Agreements with the Transmission Entities. The Agreements with each Transmission Entity do not have to contain each element; however, the Agreements with the multiple Transmission Entities, in the aggregate, must address all R9 elements. For each Agreement(s), the Nuclear Plant Generator Operator and the Transmission Entity are responsible to ensure the Agreement(s) contain(s) the elements of R9 applicable to that Transmission Entity. : *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

Rationale for R9: The FYRT recommended that R9 be revised to clarify that all agreements do not have to discuss each of the elements in R9, but that the sum total of the agreements need to address the elements.
In addition, for clarity in Part 9.4.1, the FYRT recommended that "affecting the NPIRs" be inserted following "Provisions for communications" and "applicable unique" be inserted following ""definitions of."

~~8.1.~~ Retired~~Administrative elements:~~

~~8.1.1.~~ ~~Definitions of key terms used in the agreement.~~

~~8.1.2.~~ ~~Names of the responsible entities, organizational relationships, and responsibilities related to the NPIRs.~~

~~8.2.~~9.1. ~~A requirement to review the agreement(s) at least every three years. A dispute resolution mechanism.~~. *[Note: Part 9.1 was retired under the Paragraph 81 project~~.~~. The NUC SDT proposes to leave this Part blank to avoid renumbering Requirement parts that would impact existing agreements throughout the industry.]*

~~8.3.~~9.2. Technical requirements and analysis:

~~8.3.1.~~9.2.1. 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.

~~8.3.2.~~9.2.2. Identification of facilities, components, and configuration restrictions that are essential for meeting the NPIRs.

~~8.3.3.~~9.2.3. Types of planning and operational analyses performed specifically to support the NPIRs, including the frequency of studies and types of Contingencies and scenarios required.

~~8.4.~~9.3. Operations and maintenance coordination

8.4.1.9.3.1. 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.

8.4.2.9.3.2. Identification of any maintenance requirements for equipment not owned or controlled by the Nuclear Plant Generator Operator that are necessary to meet the NPIRs.

8.4.3.9.3.3. Coordination of testing, calibration and maintenance of on-site and off-site power supply systems and related components.

8.4.4.9.3.4. 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.

8.4.5.9.3.5. Provision for considering, within the restoration process, the requirements and urgency of a nuclear plant that has lost all off-site and on-site AC power.

8.4.6.9.3.6. 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.

8.4.7. Coordination of the NPIRs with transmission system Special Protection Systems and any programs that reduce or shed load based on underfrequency ~~and~~or undervoltage ~~load shedding programs~~.

9.3.7.

8.5.9.4. Communications and training Administrative elements:

8.5.1.9.4.1. Provisions for communications affecting the NPIRs between the Nuclear Plant Generator Operator and Transmission Entities, including communications protocols, notification time requirements, and definitions of applicable unique terms.

8.5.2.9.4.2. 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.

8.5.3.9.4.3. Provisions for coordinating investigations of causes of unplanned events affecting the NPIRs and developing solutions to minimize future risk of such events.

8.5.4.9.4.4. Provisions for supplying information necessary to report to government agencies, as related to NPIRs.

8.5.5.9.4.5. Provisions for personnel training, as related to NPIRs.

M9. 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 Enforcement Authority. Each Transmission Entity shall have a copy of the Agreement(s) addressing the elements in Requirement 9 for which it is responsible available for inspection upon request of the Compliance Enforcement Authority.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority

Regional Entity

1.2. Compliance Monitoring and Assessment Processes:

Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints Text

1.3. Data Retention

The Responsible Entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

- 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 ~~a~~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 a Responsible Entity is found non-compliant it shall keep information related to the noncompliance until found compliant.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

1.4. Additional Compliance Information

None

Table of Compliance Elements

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1		~~Lower~~**Medium**	The Nuclear Plant Generator Operator provided the NPIR's to the applicable entities but did not verify receipt.	The Nuclear Plant Generator Operator did not provide the proposed NPIR to one of the applicable entities~~.~~ unless there was only one entity.	The Nuclear Plant Generator Operator did not provide the proposed NPIR's to two of the applicable entities~~.~~ unless there was only two entities.	The Nuclear Plant Generator Operator did not provide the proposed NPIR's to more than two of applicable entities. OR For a particular Nuclear Power Plant, if the number of possible applicable transmission entities is equal to the number of applicable transmission entities not provided NPIRs
R2		**Medium**	N/A	N/A	N/A	The Nuclear Plant Generator Operator or the applicable Transmission Entity does not have in effect one or more agreements that include mutually agreed to NPIRs and document the implementation of the NPIRs.
R3		**Medium**	N/A	The responsible entity incorporated the NPIRs into its planning analyses but did not communicate	N/A	The responsible entity did not incorporate the NPIRs into its planning analyses of the electric system.

				the results to the Nuclear Plant Generator Operator.		
R4		**High**	N/A	The responsible entity did not comply with sub-requirement R4.3.	The responsible entity did not comply with R4.1.	The responsible entity did not comply with R4.2.
~~**R4.1**~~		~~**N/A**~~	~~N/A~~	~~The responsible entity did not comply with sub-requirement R4.3.~~	~~The responsible entity did not comply with R4.1.~~	~~The responsible entity did not comply with R4.2.~~
~~**R4.2**~~		~~**N/A**~~	~~N/A~~	~~The responsible entity did not comply with sub-requirement R4.3.~~	~~The responsible entity did not comply with R4.1.~~	~~The responsible entity did not comply with R4.2.~~
~~**R4.3**~~		~~**N/A**~~	~~N/A~~	~~The responsible entity did not comply with sub-requirement R4.3.~~	~~The responsible entity did not comply with R4.1.~~	~~The responsible entity did not comply with R4.2.~~
R5		**High**	N/A	N/A	N/A	The Nuclear Plant Generator Operator failed to operate per the NPIRs~~Agreements~~ developed in accordance with this standard.
R6		**Medium**	~~The Nuclear Operator or Transmission Entity failed to coordinate outages or maintenance activities in accordance with one or more of the administrative elements within the agreements.~~N/A	The Nuclear Plant Generator Operator or Transmission Entity failed to provide outage or maintenance schedules to the appropriate parties as described in the agreement or on a time period consistent with the agreements.	The Nuclear Plant Generator Operator or Transmission Entity failed to coordinate one or more outages or maintenance activities in accordance the requirements of the agreements.	N/A
R7		**High**	The Nuclear Plant Generator Operator did not inform the applicable Transmission Entities of proposed	~~The Nuclear Plant Generator Operator did not inform the applicable Transmission Entities of actual changes to nuclear~~	The Nuclear Plant Generator Operator did not inform the applicable Transmission Entities of actual changes to nuclear	~~N/A~~The Nuclear Plant Generator Operator did not inform the applicable Transmission Entities of actual changes to nuclear

			changes to nuclear plant design~~,~~ (e.g. protective relay setpoints), configuration, operations, limits, ~~protection systems,~~ or capabilities that may impact the ability of the electric system to meet the NPIRs.	~~plant design, configuration, operations, limits, protection systems, or capabilities that may impact the ability of the electric system to meet the NPIRs.~~N/A	plant design~~,~~ (e.g. protective relay setpoints), configuration, operations, limits, ~~protection systems,~~ or capabilities that ~~directly~~may impact the ability of the electric system to meet the NPIRs.	plant design (e.g., protective relay setpoints), configuration, operations, limits or capabilities that directly impact the ability of the electric system to meet the NPIRs.
R8		**High**	The applicable Transmission Entities did not inform the Nuclear Plant Generator Operator of proposed changes to transmission system design, configuration~~,~~ (e.g. protective relay setpoints), operations, limits, ~~protection systems,~~ or capabilities that may impact the ability of the electric system to meet the NPIRs.	~~The applicable Transmission Entities did not inform the Nuclear Plant Generator Operator of actual changes to transmission system design, configuration, operations, limits, protection systems, or capabilities that may impact the ability of the electric system to meet the NPIRs.~~N/A	The applicable Transmission Entities did not inform the Nuclear Plant Generator Operator of actual changes to transmission system design~~,~~ (e.g. protective relay setpoints), configuration, operations, limits, ~~protection systems,~~ or capabilities that ~~directly impacts~~may impact the ability of the electric system to meet the NPIRs.	~~N/A~~The applicable Transmission Entities did not inform the Nuclear Plant Generator Operator of actual changes to transmission system design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that directly impacts the ability of the electric system to meet the NPIRs.
R9		**Medium**	~~The agreement identified in R2. between the Nuclear Plant Generator Operator and the applicable Transmission Entities is missing one or more sub-components of R9.1.~~	The ~~agreement~~Agreement(s) identified in R2. between the Nuclear Plant Generator Operator and the applicable Transmission Entity~~ies is missing from one~~ failed to ~~five~~include up to 20% of the combined sub-components in ~~R9~~Parts 9.2, ~~R9~~9.3 and ~~R9~~9.4 applicable to that entity.	The ~~agreement~~Agreement(s) identified in R2. between the Nuclear Plant Generator Operator and the applicable Transmission Entity~~ies is missing from six~~ failed to ~~ten~~include greater than 20%, but less than 40% of the combined sub-components in ~~R9~~Parts	The ~~agreement~~Agreement(s) identified in R2. between the Nuclear Plant Generator Operator and the applicable Transmission Entity~~ies is missing eleven~~failed to include 40% or more of the combined sub-components in ~~R9~~Parts 9.2, ~~R9~~9.3 and ~~R9~~9.4 applicable to the entity.

					9.2, ~~R9~~9.3 and ~~R9~~9.4 applicable to the entity.	

D. Regional Variances

The design basis for Canadian (CANDU) Nuclear Power Plants (NPPs) does not result in the same licensing requirements as U.S. NPPs. Nuclear Regulatory Commission (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~~electrical power from the ~~licensing basis for CANDU NPPs.~~electric network to be provided to permit safe shutdown. Therefore the definition of Nuclear Plant Licensing Requirements (NPLR) for Canadian CANDU ~~units~~ NPPs will be as follows:

Canadian Nuclear Plant Licensing Requirements (CNPLR) 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.

E. Interpretations

None.

F. Associated Documents

None.

Implementation Plan

Project 2012-13 Nuclear Plant Interface Coordination

Requested Approvals

- NUC-001-3 – Nuclear Plant Interface Coordination

Requested Retirements

- NUC-001-2.1 – Nuclear Plant Interface Coordination

Prerequisite Approvals

None

Revisions to Defined Terms in the NERC Glossary

None

Background

The Project 2012-13 Nuclear Power Interface Coordination Standards Drafting Team (NPIC SDT) seeks to implement the changes that were proposed by the NUC-001-2.1 Five Year Review Team (FYTR). The NUC FYRT was appointed by the Standards Committee Executive Committee on April 22, 2013. The NUC FYRT reviewed the NUC-001-2.1 standard to identify opportunities for consolidation and additional improvements. The NUC FYRT posted for industry comment its recommendation to revise NUC-001-2.1 on July 27, 2013. The NUC FYRT considered comments and submitted to the Standards Committee its final recommendation to revise NUC-001-2.1, along with a Standards Authorization Request (SAR) on October 17, 2013. The Standards Committee accepted the recommendation of the FYRT and appointed the team as the NPIC SDT to implement the recommendation.

Applicable Entities

- Nuclear Plant Generator Operators.
- 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:
- Transmission Operators.
- Transmission Owners.
- Transmission Planners.
- Transmission Service Providers.
- Balancing Authorities.
- Reliability Coordinators.
- Planning Coordinators.
- Distribution Providers.
- Load-serving Entities.
- Generator Owners.
- Generator Operators.

Effective Date

First day of the first calendar quarter that is twelve months beyond the date that this standard is approved by applicable regulatory authorities or as otherwise provided for in a jurisdiction where approval by an applicable governmental authority is required for a standard to go into effect. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is twelve s months after the date this standard is adopted by the NERC Board of Trustees or as otherwise provided for in that jurisdiction.

Standards for Retirement

Midnight of the day immediately prior to the Effective Date of NUC-001-3 in the particular jurisdiction in which the new standard is becoming effective.

Revisions or Retirements to Already Approved Standards

The following tables identify the sections of the approved standard that shall be retired or revised when this standard is implemented. If the drafting team is recommending the retirement or revision of a requirement, that text is blue.

Already Approved Standard	Proposed Replacement Requirement(s)
NUC-001-2.1 **R5.** The Nuclear Plant Generator Operator shall operate per the Agreements developed in accordance with this standard. *[Violation Risk Factor: High] [Time Horizon: None]* **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. [Violation Risk Factor: High] [Time Horizon: None] **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. [Violation Risk Factor: High] [Time Horizon:]	NUC-001-3 R5. Per the Agreements developed in accordance with this standard, the Nuclear Plant Generator Operator shall operate the nuclear plant to meet the NPIRs. *[Violation Risk Factor: High] [Time Horizon: Operations Planning]* 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 (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs. *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]* 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 (e.g., protective relay setpoints), configuration, operations, limits, , or capabilities that may impact the ability of the electric system to meet the NPIRs. [Violation Risk Factor: High] [Time Horizon: Long-term Planning]
Notes:	

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: [Violation Risk Factor: Medium] [Time Horizon:] 9.1. Administrative elements: 9.1.1. Definitions of key terms used in the agreement. 9.1.2. Names of the responsible entities, organizational relationships, and responsibilities related to the NPIRs. 9.1.3. A requirement to review the agreement(s) at least every three years. A dispute resolution mechanism. 9.2. Technical requirements and analysis: 9.2.1. 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. 9.2.2. Identification of facilities, components, and configuration restrictions that are essential for meeting the NPIRs. 9.2.3. Types of planning and operational analyses performed specifically to support the NPIRs, including the frequency of studies and types of Contingencies and scenarios required. 9.3. Operations and maintenance coordination 9.3.1. 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. 9.3.2. Identification of any maintenance requirements for equipment not owned or controlled by the Nuclear Plant Generator Operator that are necessary to meet the NPIRs. 9.3.3. Coordination of testing, calibration and maintenance of on-site and off-site power supply systems and related components. 9.3.4. Provisions to address mitigating actions needed to avoid violating NPIRs and to address periods when responsible	R9. The Nuclear Plant Generator Operator and the applicable Transmission Entities shall include the following elements in aggregate within the Agreement(s) identified in R2. • Where multiple Agreements with a single Transmission Entity are put into effect, the R9 elements must be addressed in aggregate within the Agreements; however, each Agreement does not have to contain each element. The Nuclear Plant Generator Operator and the Transmission Entity are responsible for ensuring all the R9 elements are addressed in aggregate within the Agreements. • Where Agreements with multiple Transmission Entities are required, the Nuclear Plant Generator Operator is responsible for ensuring all the R9 elements are addressed in aggregate within the Agreements with the Transmission Entities. The Agreements with each Transmission Entity do not have to contain each element; however, the Agreements with the multiple Transmission Entities, in the aggregate, must address all R9 elements. For each Agreement(s), the Nuclear Plant Generator Operator and the Transmission Entity are responsible to ensure the Agreement(s) contain(s) the elements of R9 applicable to that Transmission Entity. : [Violation Risk Factor: Medium] [Time Horizon: Long-term Planning] 9.1. Not used. 9.2. Technical requirements and analysis: 9.2.1. 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. 9.2.2. Identification of facilities, components, and configuration restrictions that are essential for meeting the NPIRs. 9.2.3. Types of planning and operational analyses performed specifically to support the NPIRs, including the frequency of studies and types of Contingencies and scenarios required.

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. 9.3.5. Provision for considering, within the restoration process, the requirements and urgency of a nuclear plant that has lost all off-site and on-site AC power. 9.3.6. 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. 9.3.7. Coordination of the NPIRs with transmission system Special Protection Systems and underfrequency and undervoltage load shedding programs. 9.4. Communications and training Administrative elements: 9.4.1. Provisions for communications between the Nuclear Plant Generator Operator and Transmission Entities, including communications protocols, notification time requirements, and definitions of terms. 9.4.2. 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. 9.4.3. Provisions for coordinating investigations of causes of unplanned events affecting the NPIRs and developing solutions to minimize future risk of such events. 9.4.4. Provisions for supplying information necessary to report to government agencies, as related to NPIRs. 9.4.5. Provisions for personnel training, as related to NPIRs.	9.3. Operations and maintenance coordination 9.3.1. 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. 9.3.2. Identification of any maintenance requirements for equipment not owned or controlled by the Nuclear Plant Generator Operator that are necessary to meet the NPIRs. 9.3.3. Coordination of testing, calibration and maintenance of on-site and off-site power supply systems and related components. 9.3.4. 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. 9.3.5. Provision for considering, within the restoration process, the requirements and urgency of a nuclear plant that has lost all off-site and on-site AC power. 9.3.6. Coordination of physical and cyber security protection at the nuclear plant interface to ensure each asset is covered under at least one entity's plan. 9.3.7. Coordination of the NPIRs with transmission system Special Protection Systems and any programs that reduce or shed load based on underfrequency or undervoltage. 9.4. Communications and training Administrative elements: 9.4.1. Provisions for communications affecting the NPIRs between the Nuclear Plant Generator Operator and Transmission Entities, including communications protocols, notification time requirements, and definitions of applicable unique terms.

Already Approved Standard	Proposed Replacement Requirement(s)
	9.4.2. 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. 9.4.3. Provisions for coordinating investigations of causes of unplanned events affecting the NPIRs and developing solutions to minimize future risk of such events. 9.4.4. Provisions for supplying information necessary to report to government agencies, as related to NPIRs. 9.4.5. Provisions for personnel training, as related to NPIRs.
Notes: Requirement R9.1 retired under Paragraph 81 criteria. Retirement approved by FERC January 2014.	

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Unofficial Comment Form

Project 2012-13 Nuclear Plant Interface Coordination
NUC-001-3

Please **DO NOT** use this form for submitting comments. Please use the electronic form to submit comments on the Standard. The electronic comment form must be completed by 8:00 p.m. ET **Thursday, May 22, 2014**.

If you have questions please contact Stephen Eldridge or by telephone at 404-446-9686.

The project page may be accessed by clicking here.

Background Information

Project 2012-13 Nuclear Power Interface Coordination seeks to implement the changes that were proposed by the NUC-001-2.1 Five Year Review Team. The NUC Five Year Review Team (FYRT) was appointed by the Standards Committee Executive Committee on April 22, 2013. The NUC FYRT reviewed the NUC-001-2.1 standard to identify opportunities for consolidation and additional improvements. The NUC FYRT posted for industry comment its recommendation to revise NUC-001-2.1 on July 27, 2013. The NUC FYRT considered comments and submitted to the Standards Committee its final recommendation to revise NUC-001-2.1 on October 17, 2013. The Standards Authorization Request (SAR) to revise NUC-001-2.1 was developed in October 2013 and subsequently posted for a 30 day informal comment period from February 12th-March 13th of 2014. The NUC-001-3 Standards Drafting Team (SDT) met from March 18th-20th 2014 and made revisions to the currently effective NUC-001-2.1 standard for which it is requesting industry comment.

The following is a summary of changes the drafting team has made:

- Added Time Horizons to the Requirements
- Modified the language the Measurement M2 to enhance clarity
- Modified the language in Requirement R5 and Measure M5 to enhance clarity
- Removed the phrases “Protection Systems” and “undervoltage load shedding programs” in order to avoid conflict with other standards in development
- Removed the reference to Bulk Electric System in sub-requirement 9.3.6
- Modified Requirement R9 so that multiple agreements may be used to address all mandated elements
- Increased the VRF in Requirement R1 from “Lower” to “Medium”

- Modified and expaned the language within the VSLs to better align with the modified requirements

This posting solicits comment on the NUC-001-3 standard.

Questions on NUC-001-3

1. The FYRT recommended Requirement R5 be revised for consistency with R4 and to clarify that nuclear plants must be operated to meet the Nuclear Plant Interface Requirements, and the Project 2012-03 drafting team has implemented this recommendation. Do you agree or disagree with this requirement? If you disagree, please provide an alternative solution.

☐ Yes

☐ No

Comments:

2. The FYRT recommended that R9 be revised to clarify that all agreements do not have to discuss each of the elements in R9, but that the sum total of the agreements need to address the elements, and the Project 2012-03 drafting team has implemented this recommendation. Do you agree or disagree with this requirement? If you disagree, please provide an alternative solution.

☐ Yes

☐ No

Comments:

3. Do you agree with the VRFs and VSLs for Requirements R5 and R9? If not, please explain.

☐ Yes

☐ No

Comments:

4. Do you have any additional comments? Please provide them here.

☐ Yes

☐ No

Comments:

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Standards Authorization Request Form

NERC welcomes suggestions to improve the reliability of the bulk power system through improved reliability standards. Please use this form to submit your request to propose a new or revised NERC Reliability Standard.

Request to propose a new or a revised Reliability Standard			
Title of Proposed Standard:	Nuclear Plant Interface Coordination – NUC-001-2.1 (Project 2012-13)		
Date Submitted:	October 1, 2013		
SAR Requester Information			
Name:	John Gyrath		
Organization:	Exelon Generation LLC (Nuclear)		
Telephone:	610.765.5692	E-mail:	john.gyrath@exeloncorp.com
SAR Type (Check as many as applicable)			
☐ New Standard		☐ Withdrawal of existing Standard	
☒ Revision to existing Standard		☐ Urgent Action	

SAR Information
Industry Need (What is the industry problem this request is trying to solve?):
The Standards Committee assigned seven subject matter experts to review the NUC standard as part of NERC's obligation to conduct periodic reviews of its standards. The Five-Year Review Team concluded that NUC-001-2.1 remains necessary for reliability by requiring coordination between Nuclear Plant Generator Operators and Transmission Entities to ensure nuclear plant safe operation and shutdown. The standard, however, requires revision to provide greater clarity and to sharpen industry focus on tasks that have a more direct impact on reliability.
Purpose or Goal (How does this request propose to address the problem described above?):
This SAR proposes revising NUC-001-2.1 in line with the recommendations of the NUC Five-Year Review Team as described in the *Five-Year Review Recommendation to Revise NUC-001-2.1*, (Attachment 1).

SAR Information
The proposed changes to the standard add clarity, remove redundancy, and bring compliance elements in accordance with NERC guidelines. The NUC Five-Year Review Team recommends revising R5 to make it consistent with R4, and to state that the Nuclear Plant Generator Operator shall operate the nuclear plant to meet the NPIRs. The team also recommends removing the reference in R7 and R8 to "Protection Systems" as defined in the NERC Glossary of Terms to focus the standard on attributes that could impact the NPIRs, such as frequency or voltage setpoints, and not the expanded five elements of the defined term. Protection systems are a subset of the nuclear plant design and electric system design attributes referenced in R7 and R8 respectively, and reference to setpoints will be made with these attributes. The team recommends revising the Effective Date section to account for jurisdictional differences in the Canadian provinces. The team recommends revising R9 to clarify that that all agreements do not have to discuss each of the elements in R9, but that the sum total of the agreements need to address the elements. The team also recommends revising the Regional Differences section to remove reference to specific Nuclear Regulatory Commission regulations and to clarify that there are no Canadian Regulatory requirements for electrical power from the electric network to permit safe shutdown, and to revise the definition of "NPLR" to remove the potential conflict with a NERC Glossary of Terms definition. Finally, the team also recommends several errata type changes throughout the standard, as identified in the *Five-Year Review Recommendation to Revise NUC-001-2.1*.
Identify the Objectives of the proposed standard's requirements (What specific reliability deliverables are required to achieve the goal?):
The objective of NUC-001-2 is to require coordination between Nuclear Plant Generator Operators and Transmission Entities to ensure nuclear plant safe operation and shutdown. This objective supports reliability principles 1, 2, 3, 4, and 8 by requiring: (1) the planning and operation of the Bulk Electric System (BES) to consider the unique requirements of nuclear plants; (2) consideration of the nuclear plant requirements in the defined frequency and voltage limits established for BES operation; (3) the nuclear plant unique information necessary for the planning and operation of interconnected bulk power systems be made available to those entities responsible for planning and operating the systems reliably; (4) plans for emergency operation and system restoration of interconnected bulk power system elements be coordinated with the requirements of nuclear plants; and (8) coordination of physical and cyber security protection of the BES at the nuclear plant interface.
Brief Description (Provide a paragraph that describes the scope of this standard action.)
The scope of this standard action is to revise NUC-001-2.1 in accordance with the recommendations made by the Five-Year Review Team in the *Five-Year Review Recommendation to Revise NUC-001-2.1*,

SAR Information
(Attachment 1), and consistent with industry consensus to make additional standard revisions to the extent such consensus develops.
Detailed Description (Provide a description of the proposed project with sufficient details for the standard drafting team to execute the SAR. Also provide a justification for the development or revision of the standard, including an assessment of the reliability and market interface impacts of implementing or not implementing the standard action.)
The Five-Year Review Team identified several ambiguous, deficient, or duplicative elements during its review. The revisions proposed in the *Five-Year Review Recommendation to Revise NUC-001-2.1* would enhance clarity in several requirements critical to reliability, and improve compliance efficiency by removing elements not necessary for reliability. Specifically, the Five-Year Review Team has identified the following sections and requirements for revision: • The standard applies to all Nuclear Plant Generator Operators. Therefore, the term "Nuclear Plant Generator Operator" should be pluralized in section A.4. Applicability. • R5 should be revised for consistency with R4 and to clarify that nuclear plants must be operated to meet the Nuclear Plant Interface Requirements. • As explained in the attached *Position Paper on NUC-001-2 R7 and R8*, the term "Protection Systems" should be omitted from requirements R7 and R8, and language should be added to clarify requirement applicability. • R9 and R9.4.1 should be revised to clarify requirement applicability. • Section E. Regional Differences should be revised to remove reference to specific Nuclear Regulatory Commission regulations and to clarify that there are no Canadian Regulatory requirements for electrical power from the electric network to permit safe shutdown. The term Canadian Nuclear Power Plant Licensing Requirements (CNPLR) is defined in the proposed revision to the standard as a means to differentiate the unique licensing requirements of the Canadian Nuclear Power Plants from those of the U.S. NPPs. • Modify the Violation Severity Level and Violation Risk Factor matrices to conform to NERC guidelines. • Revise measures to ensure appropriate clarity and applicability to each corresponding requirement. • Add Time Horizons to each requirement.

Reliability Functions		
The Standard will Apply to the Following Functions (Check each one that applies.)		
☒	Reliability Coordinator	Responsible for the real-time operating reliability of its Reliability Coordinator Area in coordination with its neighboring Reliability Coordinator's wide area view.
☒	Balancing Authority	Integrates resource plans ahead of time, and maintains load-interchange-resource balance within a Balancing Authority Area and supports Interconnection frequency in real time.
☐	Interchange Authority	Ensures communication of interchange transactions for reliability evaluation purposes and coordinates implementation of valid and balanced interchange schedules between Balancing Authority Areas.
☒	Planning Coordinator	Assesses the longer-term reliability of its Planning Coordinator Area.
☐	Resource Planner	Develops a >one year plan for the resource adequacy of its specific loads within a Planning Coordinator area.
☒	Transmission Planner	Develops a >one year plan for the reliability of the interconnected Bulk Electric System within its portion of the Planning Coordinator area.
☒	Transmission Service Provider	Administers the transmission tariff and provides transmission services under applicable transmission service agreements (e.g., the pro forma tariff).
☒	Transmission Owner	Owns and maintains transmission facilities.
☒	Transmission Operator	Ensures the real-time operating reliability of the transmission assets within a Transmission Operator Area.
☒	Distribution Provider	Delivers electrical energy to the End-use customer.
☒	Generator Owner	Owns and maintains generation facilities.
☒	Generator Operator	Operates generation unit(s) to provide real and reactive power.
☐	Purchasing-Selling Entity	Purchases or sells energy, capacity, and necessary reliability-related services as required.
☐	Market Operator	Interface point for reliability functions with commercial functions.

Reliability Functions	
☒ Load-Serving Entity	Secures energy and transmission service (and reliability-related services) to serve the End-use Customer.

Reliability and Market Interface Principles	
Applicable Reliability Principles (Check all that apply).	
☒	1. Interconnected bulk power systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards.
☒	2. The frequency and voltage of interconnected bulk power systems shall be controlled within defined limits through the balancing of real and reactive power supply and demand.
☒	3. Information necessary for the planning and operation of interconnected bulk power systems shall be made available to those entities responsible for planning and operating the systems reliably.
☒	4. Plans for emergency operation and system restoration of interconnected bulk power systems shall be developed, coordinated, maintained and implemented.
☒	5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk power systems.
☐	6. Personnel responsible for planning and operating interconnected bulk power systems shall be trained, qualified, and have the responsibility and authority to implement actions.
☐	7. The security of the interconnected bulk power systems shall be assessed, monitored and maintained on a wide area basis.
☒	8. Bulk power systems shall be protected from malicious physical or cyber attacks.
Does the proposed Standard comply with all of the following Market Interface Principles?	Enter (yes/no)
1. A reliability standard shall not give any market participant an unfair competitive advantage.	Yes
2. A reliability standard shall neither mandate nor prohibit any specific market structure.	Yes
3. A reliability standard shall not preclude market solutions to achieving compliance with that standard.	Yes
4. A reliability 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

Related Standards	
Standard No.	Explanation

Related SARs – N/A	
SAR ID	Explanation

Regional Variances – N/A	
Region	Explanation
ERCOT	
FRCC	
MRO	
NPCC	
RFC	

Regional Variances – N/A	
SERC	
SPP	
WECC	
	The FYRT proposed a definition change in section E. Regional Differences to eliminate a potential unintended conflict with a NERC Glossary term.

Project 2012-13 Nuclear Plant Interface Coordination

Mapping Document

NUC-001-2.1 to NUC-001-3

Standard: NUC-001-3		
Requirement in Approved Standard	**Translation to New Standard or Other Action**	**Comments**
R5. The Nuclear Plant Generator Operator shall operate per the Agreements developed in accordance with this standard.	Replaced with NUC-001-3 R5. Per the Agreements developed in accordance with this standard, the Nuclear Plant Generator Operator shall operate the nuclear plant to meet the Nuclear Plant Interface	The FYRT recommended R5 be revised for consistency with R4 and to clarify that nuclear plants must be operated to meet the NPIRs.

Standard: NUC-001-3		
Requirement in Approved Standard	**Translation to New Standard or Other Action**	**Comments**
	Requirements (NPIRs).	
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.	Inserted (e.g., protective relay setpoints) after the words “nuclear power plant design”	The FYRT recommended deleting “Protection Systems” in Requirements R7 and R8 since it is a subset of the "nuclear plant design" and "electric system design" elements currently contained in R7 and R8 respectively; and adding a parenthetical clause (e.g. protective setpoints) to R7 following "nuclear plant design" and parenthetical clause (e.g. relay setpoints) to R8 following "electric system design."
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.	Inserted (e.g., protective relay setpoints) after the words “electric system design.” Deleted the words “Protection Systems”	Same comment as above.
R9. The Nuclear Plant Generator Operator and the applicable Transmission Entities shall include, as a	Inserted the following text after	The FYRT recommended that R9 be revised to clarify that all Agreements do not have to discuss each of the

Standard: NUC-001-3		
Requirement in Approved Standard	**Translation to New Standard or Other Action**	**Comments**
minimum, the following elements within the agreement(s) identified in R2: [Violation Risk Factor: Medium] [Time Horizon:] 9.1. Administrative elements: 9.1.1. Definitions of key terms used in the agreement. 9.1.2. Names of the responsible entities, organizational relationships, and responsibilities related to the NPIRs. 9.1.3. A requirement to review the agreement(s) at least every three years. A dispute resolution mechanism. 9.2. Technical requirements and analysis: 9.2.1. 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. 9.2.2. Identification of facilities, components, and configuration restrictions that are essential for meeting the NPIRs. 9.2.3. Types of planning and operational analyses performed specifically to support the NPIRs, including the frequency of studies and types of Contingencies and scenarios required.	R2: Where multiple Agreements with a single Transmission Entity are put into effect, the R9 elements must be addressed in aggregate within the Agreements; however, each Agreement does not have to contain each element. Where Agreements with multiple Transmission Entities are required, the Nuclear Plant Generator Operator has the responsibility for	elements in R9, but that the sum total of the agreements need to address the elements. In addition, for clarity in Part 9.4.1, the FYRT recommended that "affecting the NPIRs" be inserted following "Provisions for communications" and "applicable unique" be inserted following ""definitions of." The phrase “load shedding programs” in Requirement subpart 9.3.7 was deleted and replaced with the phrase “any programs that reduce or shed load based on underfrequency or undervoltage.” This was done to avoid potential conflicts with the Project 2008-02 Team which is attempting to make undervoltage loadshedding programs a NERC defined term.

Standard: NUC-001-3		
Requirement in Approved Standard	**Translation to New Standard or Other Action**	**Comments**
9.3. Operations and maintenance coordination 9.3.1. 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. 9.3.2. Identification of any maintenance requirements for equipment not owned or controlled by the Nuclear Plant Generator Operator that are necessary to meet the NPIRs. 9.3.3. Coordination of testing, calibration and maintenance of on-site and off-site power supply systems and related components. 9.3.4. 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.	ensuring all the R9 elements are addressed in aggregate within the Agreements with the Transmission Entities. The Agreements with each Transmission Entity do not have to contain each element; however, the Agreements with the multiple Transmission Entities, in the aggregate, must address all R9 elements. The Nuclear Plant Generator	

Standard: NUC-001-3		
Requirement in Approved Standard	**Translation to New Standard or Other Action**	**Comments**
9.3.5. Provision for considering, within the restoration process, the requirements and urgency of a nuclear plant that has lost all off-site and on-site AC power. 9.3.6. 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. 9.3.7. Coordination of the NPIRs with transmission system Special Protection Systems and underfrequency and undervoltage load shedding programs. 9.4. Communications and training Administrative elements: 9.4.1. Provisions for communications between the Nuclear Plant Generator Operator and Transmission Entities, including communications protocols, notification time requirements, and definitions of terms. 9.4.2. 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	Operator and the Transmission Entity have the responsibility to ensure the Agreement(s) with that Transmission Entity contains the elements of R9 applicable to that Transmission Entity." Requirement R9.1 approved for retirement by FERC January 2014.	

Standard: NUC-001-3		
Requirement in Approved Standard	**Translation to New Standard or Other Action**	**Comments**
to a normal state, and the actual time the system is returned to normal. 9.4.3. Provisions for coordinating investigations of causes of unplanned events affecting the NPIRs and developing solutions to minimize future risk of such events. 9.4.4. Provisions for supplying information necessary to report to government agencies, as related to NPIRs. 9.4.5. Provisions for personnel training, as related to NPIRs.	Inserted the words "affecting the NPIRs" between the words "communications" and "between" in R 9.4 Inserted the words "applicable unique" between the words "of" and "terms"	

Project 2012-13- Nuclear Plant Interface Coordination

VRF and VSL Justifications

Note: Justifications for the requirements in which VRFs and VSLs that were changed are provided in the document below. The VRFs and VSLs for Requirements R2, R3, R4, and R5 were not substantively changed from the currently effective NUC-001-2.1 and as a result no additional justification has been provided.

VRF and VSL Justifications – NUC-001-3, R1.	
Proposed VRF	
NERC VRF Discussion	R1 is a planning requirement that mandates Nuclear Power Plant Generator Operators provide their respective transmission entities with a copy of their NPIRs and verify receipt. Interface between Nuclear Power Plant Generator Operators and transmission entities is important to ensure the safe and reliable operation as well as the startup and shutdown of nuclear power plants. If this requirement was violated, it could directly affect the electrical state or the capability of the bulk electric system, or the ability to effectively monitor and control the bulk electric system. The VRF for this requirement is "Medium," which is consistent with NERC guidelines.
FERC VRF G1 Discussion	**Guideline 1- Consistency w/ Blackout Report R1** Requirement R1 establishes communications protocols and data exchange.
FERC VRF G2 Discussion	**Guideline 2- Consistency within a Reliability Standard** Only one VRF is assigned for this requirement.
FERC VRF G3 Discussion	**Guideline 3- Consistency among Reliability Standards** There are no other standards which address Nuclear Plant Interface Coordination.
FERC VRF G4 Discussion	**Guideline 4- Consistency with NERC Definitions of VRFs** This is a planning requirement that requirement if violated, could directly affect the electrical state or the capability of the bulk electric system, or the ability to effectively monitor and control the bulk electric system.

VRF and VSL Justifications – NUC-001-3, R1.			
FERC VRF G5 Discussion	**Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation** Requirement R1 contains only one objective which is to require that Nuclear Plant Generator Operator's provide their proposed NPIRs to their respective Transmission Entities.		
Proposed VSL			
Lower	**Moderate**	**High**	**Severe**
The Nuclear Plant Generator Operator provided the NPIR's to the applicable entities but did not verify receipt.	The Nuclear Plant Generator Operator did not provide the proposed NPIR to one of the applicable entities unless there was only one entity.	The Nuclear Plant Generator Operator did not provide the proposed NPIR's to two of the applicable entities unless there was only two entities.	The Nuclear Plant Generator Operator did not provide the proposed NPIR's to more than two of applicable entities. OR For a particular Nuclear Power Plant, if the number of possible applicable transmission entities is equal to the number of applicable transmission entities not provided NPIRs.

VRF and VSL Justifications – NUC-001-3, R1.	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	Based on the VSL Guidance, the SDT developed four VSLs based on to what degree, if any a Nuclear Plant Generator Operator provided its NPIRs to its respective transmission entities. The VSL is varied based on the number of transmission entities the NPIRs were or were not provided. If a Nuclear Plant Generator Operator failed to provide any NPIRs to its transmission entities it is a Severe Violation.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	Guideline 2a: The VSL assignment for R1 is not binary. Guideline 2b: The proposed VSL does not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.

VRF and VSL Justifications – NUC-001-3, R1.	
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement, and is, therefore, consistent with the requirement. In addition, the VSLs are consistent with Requirement R1.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	The VSL is based on a single violation and not cumulative violations
FERC VSL G5 Requirements where a single lapse in protection can compromise computer network security, i.e., the 'weakest link' characteristic, should apply binary VSLs	The requirement does not address cyber security protection.

VRF and VSL Justifications – NUC-001-3, R1.	
FERC VSL G6 VSLs for cyber security requirements containing interdependent tasks of documentation and implementation should account for their interdependence	The requirement does not address cyber security protection.

VRF and VSL Justifications – NUC-001-3, R6.	
Proposed VRF	
NERC VRF Discussion	Requirement R6 is an Operational Planning requirement that mandates that Nuclear Plant Generator Operators and their respective Transmission Entities coordinate outages and maintenance activities which affect NIPRs. If violated this requirement could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures. Therefore, the VRF is High.
FERC VRF G1 Discussion	**Guideline 1- Consistency w/ Blackout Report** Requirement R6 is consistent with the Blackout Report because it mandates data exchange.
FERC VRF G2 Discussion	**Guideline 2- Consistency within a Reliability Standard** Only one VRF is assigned for this requirement.

VRF and VSL Justifications – NUC-001-3, R6.			
FERC VRF G3 Discussion	**Guideline 3- Consistency among Reliability Standards.** There are no other standards which address Nuclear Plant Interface Coordination		
FERC VRF G4 Discussion	**Guideline 4- Consistency with NERC Definitions of VRFs** Requirement R6 is an Operational Planning requirement that mandates that Nuclear Plant Generator Operators and their respective Transmission Entities coordinate outages and maintenance activities which affect NIPRs. If violated this requirement could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures. Therefore, the VRF is High.		
FERC VRF G5 Discussion	**Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation** This requirement is based on one obligation which is for Transmission Entities and Nuclear Plant Generator Operators to coordinate outages and maintenance activities.		
Proposed VSL			
Lower	**Moderate**	**High**	**Severe**
N/A	The Nuclear Plant Generator Operator or Transmission Entity failed to provide outage or maintenance schedules to the appropriate parties as described in the agreement or on a time period consistent with the agreements.	The Nuclear Plant Generator Operator or Transmission Entity failed to coordinate one or more outages or maintenance activities in accordance the requirements of the agreements.	N/A

VRF and VSL Justifications – NUC-001-3, R6.	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	Based on the VSL Guidance, the SDT developed two VSLs based on if a Nuclear Plant Generator Operator or a Transmission Entity failed to provide a maintenance or outage schedule (Moderate Violation) or if a Nuclear Plant Generator Operator or Transmission Entity failed to coordinate one or more outages or maintenance activities in accordance the requirements of the agreements.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	Guideline 2a: The VSL assignment for R6 is not binary. Guideline 2b: The proposed VSL does not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.

VRF and VSL Justifications – NUC-001-3, R6.	
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement, and is, therefore, consistent with the requirement. In addition, the VSLs are consistent with Requirement R6.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	The VSL is based on a single violation and not cumulative violations
FERC VSL G5 Requirements where a single lapse in protection can compromise computer network security, i.e., the 'weakest link' characteristic, should apply binary VSLs	The requirement does not address cyber security protection.

VRF and VSL Justifications – NUC-001-3, R6.	
FERC VSL G6 VSLs for cyber security requirements containing interdependent tasks of documentation and implementation should account for their interdependence	The requirement does not address cyber security protection.

VRF and VSL Justifications – NUC-001-3, R7.	
Proposed VRF	
NERC VRF Discussion	Requirement R7 is a requirement which mandates that Nuclear Power Generator Operators inform their applicable Transmission Entities of actual or proposed changes to Nuclear Plant design, configuration, operations, limits or capabilities that may affect the NPIRs. If this requirement was violated it could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures
FERC VRF G1 Discussion	**Guideline 1- Consistency w/ Blackout Report** Requirement R7 is consistent with the Blackout Report because it mandates data exchange.
FERC VRF G2 Discussion	**Guideline 2- Consistency within a Reliability Standard** Only one VRF is assigned for this requirement.
FERC VRF G3 Discussion	**Guideline 3- Consistency among Reliability Standards.** There are no other standards which address Nuclear Plant Interface Coordination

VRF and VSL Justifications – NUC-001-3, R7.			
FERC VRF G4 Discussion	**Guideline 4- Consistency with NERC Definitions of VRFs** Requirement R7 is a requirement which mandates that Nuclear Power Generator Operators inform their applicable Transmission Entities of actual or proposed changes to Nuclear Plant design, configuration, operations, limits or capabilities that may affect the NPIRs. If this requirement was violated it could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures.		
FERC VRF G5 Discussion	**Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation** The only obligation within this requirement is that Nuclear Power Generator Operators inform their applicable Transmission Entities of actual or proposed changes to Nuclear Plant design, configuration, operations, limits or capabilities that may affect the NPIRs.		
Proposed VSL			
Lower	**Moderate**	**High**	**Severe**
The Nuclear Plant Generator Operator did not inform the applicable Transmission Entities of proposed changes to nuclear plant design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.	N/A	The Nuclear Plant Generator Operator did not inform the applicable Transmission Entities of actual changes to nuclear plant design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.	The Nuclear Plant Generator Operator did not inform the applicable Transmission Entities of actual changes to nuclear plant design (e.g., protective relay setpoints), configuration, operations, limits or capabilities that directly impact the ability of the electric system to meet the NPIRs.

VRF and VSL Justifications – NUC-001-3, R7.	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	Based on the VSL Guidance, the SDT developed three VSLs based on if a Nuclear Power Plant Generator Operator failed to inform a Transmission Entity of changes to its design, configuration, operations, limits or capabilities and whether or not these were proposed or actual changes and whether or not those changes directly impact the ability of the electric system to meet the NPIRs.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	Guideline 2a: The VSL assignment for R7 is not binary. Guideline 2b: The proposed VSL does not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.

VRF and VSL Justifications – NUC-001-3, R7.	
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement, and is, therefore, consistent with the requirement. In addition, the VSLs are consistent with Requirement R7.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	The VSL is based on a single violation and not cumulative violations
FERC VSL G5 Requirements where a single lapse in protection can compromise computer network security, i.e., the 'weakest link' characteristic, should apply binary VSLs	The requirement does not address cyber security protection.

VRF and VSL Justifications – NUC-001-3, R7.	
FERC VSL G6 VSLs for cyber security requirements containing interdependent tasks of documentation and implementation should account for their interdependence	The requirement does not address cyber security protection.

VRF and VSL Justifications – NUC-001-3, R8.	
Proposed VRF	
NERC VRF Discussion	Requirement R8 is a requirement which mandates Transmission Entities shall inform the Nuclear Plant Generator Operator of actual or proposed changes to electric system design (e.g., protective relay setpoints), configuration, operations, limits, , or capabilities that may impact the ability of the electric system to meet the NPIRs. . If this requirement was violated it could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures.
FERC VRF G1 Discussion	**Guideline 1- Consistency w/ Blackout Report** Requirement R8 is consistent with the Blackout Report because it mandates data exchange.
FERC VRF G2 Discussion	**Guideline 2- Consistency within a Reliability Standard** Only one VRF is assigned for this requirement.
FERC VRF G3 Discussion	**Guideline 3- Consistency among Reliability Standards.** There are no other standards which address Nuclear Plant Interface Coordination
FERC VRF G4 Discussion	**Guideline 4- Consistency with NERC Definitions of VRFs**

VRF and VSL Justifications – NUC-001-3, R8.			
	Requirement R8 is a requirement which mandates Transmission Entities shall inform the Nuclear Plant Generator Operator of actual or proposed changes to electric system design (e.g., protective relay setpoints), configuration, operations, limits, , or capabilities that may impact the ability of the electric system to meet the NPIRs. ~~.~~ If this requirement was violated it could directly cause or contribute to bulk electric system instability, separation, or a cascading sequence of failures, or could place the bulk electric system at an unacceptable risk of instability, separation, or cascading failures.		
FERC VRF G5 Discussion	**Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation** The only obligation within this requirement is that Transmission Entities inform their applicable Nuclear Power Generator Operators of actual or proposed changes to Nuclear Plant design, configuration, operations, limits or capabilities that may affect the NPIRs.		
Proposed VSL			
Lower	**Moderate**	**High**	**Severe**
The applicable Transmission Entities did not inform the Nuclear Plant Generator Operator of proposed changes to transmission system design, configuration (e.g. protective relay setpoints), operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.	N/A	The applicable Transmission Entities did not inform the Nuclear Plant Generator Operator of actual changes to transmission system design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.	The applicable Transmission Entities did not inform the Nuclear Plant Generator Operator of actual changes to transmission system design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that directly impacts the ability of the electric system to meet the NPIRs.

VRF and VSL Justifications – NUC-001-3, R8.	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	Based on the VSL Guidance, the SDT developed three VSLs based on if a Transmission Entity failed to inform a Nuclear Power Plant Generator Operator of changes to its design, configuration, operations, limits or capabilities and whether or not these were proposed or actual changes and whether or not those changes directly impact the ability of the electric system to meet the NPIRs.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	Guideline 2a: The VSL assignment for R8 is not binary. Guideline 2b: The proposed VSL does not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.

VRF and VSL Justifications – NUC-001-3, R8.	
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement, and is, therefore, consistent with the requirement. In addition, the VSLs are consistent with Requirement R8.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	The VSL is based on a single violation and not cumulative violations
FERC VSL G5 Requirements where a single lapse in protection can compromise computer network security, i.e., the 'weakest link' characteristic, should apply binary VSLs	The requirement does not address cyber security protection.

VRF and VSL Justifications – NUC-001-3, R8.	
FERC VSL G6 VSLs for cyber security requirements containing interdependent tasks of documentation and implementation should account for their interdependence	The requirement does not address cyber security protection.

VRF and VSL Justifications – NUC-001-3, R9.	
Proposed VRF	
NERC VRF Discussion	Requirement R9 is a requirement which mandates Nuclear Plant Generator Operator and the applicable Transmission Entities include a specific set of elements within their Agreements. If violated, this requirement could directly affect the electrical state or the capability of the bulk electric system, or the ability to effectively monitor and control the bulk electric system. Therefore this requirement has a medium VRF.
FERC VRF G1 Discussion	**Guideline 1- Consistency w/ Blackout Report** Requirement R9 is consistent with the Blackout Report because it mandates data exchange.
FERC VRF G2 Discussion	**Guideline 2- Consistency within a Reliability Standard** Only one VRF is assigned for this requirement.
FERC VRF G3 Discussion	**Guideline 3- Consistency among Reliability Standards.** There are no other standards which address Nuclear Plant Interface Coordination
FERC VRF G4 Discussion	**Guideline 4- Consistency with NERC Definitions of VRFs**

VRF and VSL Justifications – NUC-001-3, R9.			
	Requirement R9 is a requirement which mandates Nuclear Plant Generator Operator and the applicable Transmission Entities include a specific set of elements within their Agreements. If violated, this requirement could directly affect the electrical state or the capability of the bulk electric system, or the ability to effectively monitor and control the bulk electric system. Therefore this requirement has a medium VRF.		
FERC VRF G5 Discussion	**Guideline 5- Treatment of Requirements that Co-mingle More than One Obligation** This requirement only has one obligation which is for Nuclear Power Plant Generator Operators and Transmission Entities to include all of the mandated elements within R9 in their Agreements in aggregate.		
Proposed VSL			
Lower	**Moderate**	**High**	**Severe**
N/A	The Agreement(s) identified in R2. between the Nuclear Plant Generator Operator and the applicable Transmission Entities failed to include up to 20% of the combined sub-components in Parts 9.2, 9.3 and 9.4 applicable to that entity.	The Agreement(s) identified in R2. between the Nuclear Plant Generator Operator and the applicable Transmission Entities failed to include greater than 20%, but less than 40% of the combined sub-components in Parts 9.2, 9.3 and 9.4 applicable to the entity.	The Agreement(s) identified in R2. between the Nuclear Plant Generator Operator and the applicable Transmission Entities failed to include 40% or more of the combined sub-components in Parts 9.2, 9.3 and 9.4 applicable to the entity.

VRF and VSL Justifications – NUC-001-3, R9.	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	Based on the VSL Guidance, the SDT developed four VSLs based on to what degree, if any Nuclear Power Plant Generator Operators and Transmission entities failed to include the elements listed within R9. The VSL is varied based on the percentage of sub-components that were not included.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	Guideline 2a: The VSL assignment for R9 is not binary. Guideline 2b: The proposed VSL does not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations.

VRF and VSL Justifications – NUC-001-3, R9.	
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement, and is, therefore, consistent with the requirement. In addition, the VSLs are consistent with Requirement R9.
FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	The VSL is based on a single violation and not cumulative violations
FERC VSL G5 Requirements where a single lapse in protection can compromise computer network security, i.e., the 'weakest link' characteristic, should apply binary VSLs	The requirement does not address cyber security protection.

VRF and VSL Justifications – NUC-001-3, R9.	
FERC VSL G6 VSLs for cyber security requirements containing interdependent tasks of documentation and implementation should account for their interdependence	The requirement does not address cyber security protection.

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Reliability Standard Audit Worksheet[1]

NUC-001-3 – Nuclear Plant Interface Coordination [Developer to insert Reliability Standard Number and Title here]

This section to be completed by the Compliance Enforcement Authority.

Audit ID:	Audit ID if available; or REG-NCRnnnnn-YYYYMMDD
Registered Entity:	Registered name of entity being audited
NCR Number:	NCRnnnnn
Compliance Enforcement Authority:	Region or NERC performing audit
Compliance Assessment Date(s)[2]:	Month DD, YYYY, to Month DD, YYYY
Compliance Monitoring Method:	[On-site Audit | Off-site Audit | Spot Check]
Names of Auditors:	Supplied by CEA

Applicability of Requirements *[RSAW developer to insert correct applicability]*

	BA	DP	GO	GOP	IA	LSE	PA/C	PSE	RC	RP	RSG	TO	TOP	TP	TSP
R1				X[3]											
R2				X[3]											
R3	X[4]	X[4]	X[4]	X[4]		X[4]	X[4]		X[4]			X[4]	X[4]	X[4]	X[4]
R4	X[4]	X[4]	X[4]	X[4]		X[4]	X[4]		X[4]			X[4]	X[4]	X[4]	X[4]
R5				X[3]											
R6	X[4]	X[4]	X[4]	X[3,4]		X[4]	X[4]		X[4]			X[4]	X[4]	X[4]	X[4]
R7				X[3]											
R8	X[4]	X[4]	X[4]	X[4]		X[4]	X[4]		X[4]			X[4]	X[4]	X[4]	X[4]
R9	X[4]	X[4]	X[4]	X[3,4]		X[4]	X[4]		X[4]			X[4]	X[4]	X[4]	X[4]

[1] NERC developed this Reliability Standard Audit Worksheet (RSAW) language in order to facilitate NERC's and the Regional Entities' assessment of a registered entity's compliance with this Reliability Standard. The NERC RSAW language is written to specific versions of each NERC Reliability Standard. Entities using this RSAW should choose the version of the RSAW applicable to the Reliability Standard being assessed. While the information included in this RSAW provides some of the methodology that NERC has elected to use to assess compliance with the requirements of the Reliability Standard, this document should not be treated as a substitute for the Reliability Standard or viewed as additional Reliability Standard requirements. In all cases, the Regional Entity should rely on the language contained in the Reliability Standard itself, and not on the language contained in this RSAW, to determine compliance with the Reliability Standard. NERC's Reliability Standards can be found on NERC's website. Additionally, NERC Reliability Standards are updated frequently, and this RSAW may not necessarily be updated with the same frequency. Therefore, it is imperative that entities treat this RSAW as a reference document only, and not as a substitute or replacement for the Reliability Standard. It is the responsibility of the registered entity to verify its compliance with the latest approved version of the Reliability Standards, by the applicable governmental authority, relevant to its registration status.

The NERC RSAW language contained within this document provides a non-exclusive list, for informational purposes only, of examples of the types of evidence a registered entity may produce or may be asked to produce to demonstrate compliance with the Reliability Standard. A registered entity's adherence to the examples contained within this RSAW does not necessarily constitute compliance with the applicable Reliability Standard, and NERC and the Regional Entity using this RSAW reserves the right to request additional evidence from the registered entity that is not included in this RSAW. Additionally, this RSAW includes excerpts from FERC Orders and other regulatory references. The FERC Order cites are provided for ease of reference only, and this document does not necessarily include all applicable Order provisions. In the event of a discrepancy between FERC Orders, and the language included in this document, FERC Orders shall prevail.

[2] Compliance Assessment Date(s): The date(s) the actual compliance assessment (on-site audit, off-site spot check, etc.) occurs.
[3] Applicable to Generator Operators of nuclear plants.
[4] Defined as Transmission Entities in Section 4.2 of the Standard providing services related to Nuclear Plant Interface Requirements.

Legend:

Text with blue background:	Fixed text – do not edit
Text entry area with Green background:	Entity-supplied information
Text entry area with white background:	Auditor-supplied information

Findings

(This section to be completed by the Compliance Enforcement Authority)

Req.	Finding	Summary and Documentation	Functions Monitored
R1			
R2			
R3			
R4			

Req.	Areas of Concern

Req.	Recommendations

Req.	Positive Observations

Subject Matter Experts

Identify the Subject Matter Expert(s) responsible for this Reliability Standard.

Registered Entity Response (Required; Insert additional rows if needed):

SME Name	Title	Organization	Requirement(s)

R1 Supporting Evidence and Documentation

R1. The Nuclear Plant Generator Operator shall provide the proposed NPIRs in writing to the applicable Transmission Entities and shall verify receipt.

M1. The Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, provide a copy of the transmittal and receipt of transmittal of the proposed NPIRs to the responsible Transmission Entities.

Registered Entity Response (Required):

Compliance Narrative:

Provide a brief explanation, in your own words, of how you comply with this Requirement. References to supplied evidence, including links to the appropriate page, are recommended.

Evidence Requested[i]:

Provide the following evidence, or other evidence to demonstrate compliance.
List of Transmission Entities where the Nuclear Plant Generator Operator has an executed Nuclear Plant Interface Requirement (NPIR).
Evidence that proposed NPIRs were communicated to applicable Transmission Entities.
Evidence that applicable Transmission Entities received the proposed NPIRs.

Registered Entity Evidence (Required):

The following information is requested for each document submitted as evidence. Also, evidence submitted should be highlighted and bookmarked, as appropriate, to identify the exact location where evidence of compliance may be found.

File Name	Document Title	Revision or Version	Document Date	Relevant Page(s) or Section(s)	Description of Applicability of Document

Audit Team Evidence Reviewed (This section to be completed by the Compliance Enforcement Authority):

Compliance Assessment Approach Specific to NUC-001-3, R1

This section to be completed by the Compliance Enforcement Authority

	The RSAW Developer will complete this section with a set of detailed steps for the audit process. See the RSAW Developer's Guide for more information.
	Select all or a sample thereof from the list of Transmission Entities with an NPIR, and verify they were

	provided the proposed NPIRs and that the Nuclear Plant Generator Operator verified receipt.
Note to Auditor: The population of Transmission Entities that the auditor will select from should be those with executed NPIRs. Auditor should verify that the proposed NPIRs were provided prior to the date the NPIR was executed.	

Auditor Notes:

R2 Supporting Evidence and Documentation

R2. The Nuclear Plant Generator Operator and the applicable Transmission Entities shall have in effect one or more Agreements[Error! Bookmark not defined.] 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.

M2. The Nuclear Plant Generator Operator and each Transmission Entity shall each have a copy of the Agreement(s) addressing and implementing the NPIRs available for inspection upon request of the Compliance Enforcement Authority.

Registered Entity Response (Required):

Compliance Narrative:

Provide a brief explanation, in your own words, of how you comply with this Requirement. References to supplied evidence, including links to the appropriate page, are recommended.

Evidence Requested[i]:

Provide the following evidence, or other evidence to demonstrate compliance.
Agreement(s) addressing implementing the NPIR(s).

Registered Entity Evidence (Required):

The following information is requested for each document submitted as evidence. Also, evidence submitted should be highlighted and bookmarked, as appropriate, to identify the exact location where evidence of compliance may be found.					
File Name	**Document Title**	**Revision or Version**	**Document Date**	**Relevant Page(s) or Section(s)**	**Description of Applicability of Document**

Audit Team Evidence Reviewed (This section to be completed by the Compliance Enforcement Authority):

Compliance Assessment Approach Specific to NUC-001-3, R2

This section to be completed by the Compliance Enforcement Authority

	The RSAW Developer will complete this section with a set of detailed steps for the audit process. See the RSAW Developer's Guide for more information.
	Select all or a sample thereof from the list of Transmission Entities with an NPIR, and obtain the related

	Agreement(s) and verify it addresses implementing the NPIR(s).
Note to Auditor:	

Auditor Notes:

R3 Supporting Evidence and Documentation

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.

M3. Each Transmission Entity responsible for planning analyses in accordance with the Agreement shall, upon request of the Compliance Enforcement Authority, provide a copy of the planning analyses results transmitted to the Nuclear Plant Generator Operator, showing incorporation of the NPIRs. The Compliance Enforcement Authority shall refer to the Agreements developed in accordance with this standard for specific requirements.

[The RSAW Developer may ask questions of the entity which require a response.]

Registered Entity Response (Required):

Question: [Do you have any NPIRs with any Nuclear Plant Generator Operators?] ☐ Yes ☐ No

[Include additional information regarding the question here, including the type of response and format of the response requested, as appropriate.]

[Note: A separate spreadsheet or other document may be used. If so, provide the document reference below.]

Registered Entity Response (Required):

Compliance Narrative:

Provide a brief explanation, in your own words, of how you comply with this Requirement. References to supplied evidence, including links to the appropriate page, are recommended.

Evidence Requested[i]:

Provide the following evidence, or other evidence to demonstrate compliance.
NPIRs with Nuclear Plant Generator Operators.
Planning analyses incorporating the NPIRs.
Evidence of communication of the planning analyses to the Nuclear Plant Generator Operators.

Registered Entity Evidence (Required):

The following information is requested for each document submitted as evidence. Also, evidence submitted should be highlighted and bookmarked, as appropriate, to identify the exact location where evidence of compliance may be found.					
File Name	**Document Title**	**Revision or Version**	**Document Date**	**Relevant Page(s) or Section(s)**	**Description of Applicability of Document**

Audit Team Evidence Reviewed (This section to be completed by the Compliance Enforcement Authority):

Compliance Assessment Approach Specific to NUC-001-3, R3

This section to be completed by the Compliance Enforcement Authority

	The RSAW Developer will complete this section with a set of detailed steps for the audit process. See the RSAW Developer's Guide for more information.
	Select all or a sample thereof from the list of NPIR(s) with Nuclear Plant Operators, obtain the related planning analyses, and verify they incorporate the NPIR(s).
	Verify the planning analyses were communicated to the Nuclear Plant Operators.
Note to Auditor: See entity's answer to above Question. If auditor can verify the entity does not have any NPIRs, then Requirement R3 is not applicable.	

Auditor Notes:

R4 Supporting Evidence and Documentation

R4. Per the Agreements developed in accordance with this standard, the applicable Transmission Entities shall

- **4.1.** Incorporate the NPIRs into their operating analyses of the electric system.
- **4.2.** Operate the electric system to meet the NPIRs.
- **4.3.** Inform the Nuclear Plant Generator Operator when the ability to assess the operation of the electric system affecting NPIRs is lost.

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 Enforcement Authority:

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

[The RSAW Developer may ask questions of the entity which require a response.]

Registered Entity Response (Required):

Question: [Do you have any NPIRs with any Nuclear Plant Generator Operators?] ☐ Yes ☐ No

[Include additional information regarding the question here, including the type of response and format of the response requested, as appropriate.]

[Note: A separate spreadsheet or other document may be used. If so, provide the document reference below.]

Registered Entity Response (Required):

Compliance Narrative:

Provide a brief explanation, in your own words, of how you comply with this Requirement. References to supplied evidence, including links to the appropriate page, are recommended.

Evidence Requested[i]:

Provide the following evidence, or other evidence to demonstrate compliance.
(R4 Part 4.1) Operating analyses of the electric system.
(R4 Part 4.3) Notification of the Nuclear Plant Generator Operator in instances where the ability to assess the operation of the electric system affecting the NPIRs is lost.

Registered Entity Evidence (Required):

The following information is requested for each document submitted as evidence. Also, evidence submitted should be highlighted and bookmarked, as appropriate, to identify the exact location where evidence of compliance may be found.

File Name	Document Title	Revision or Version	Document Date	Relevant Page(s) or Section(s)	Description of Applicability of Document

Audit Team Evidence Reviewed (This section to be completed by the Compliance Enforcement Authority):

Compliance Assessment Approach Specific to NUC-001-3, R4

This section to be completed by the Compliance Enforcement Authority

	The RSAW Developer will complete this section with a set of detailed steps for the audit process. See the RSAW Developer's Guide for more information.
	(R4 Part 4.1) Select all or a sample thereof from the list of NPIR(s) with Nuclear Plant Operators, obtain the related operating analyses, and verify they incorporate the NPIR(s).
	(R4 Part 4.2) Understand entity's process for operating the electric system to meet the NPIR(s).
	(R4 Part 4.3) For instances where entity lost the ability to assess the operation of the electric system affecting an NPIR, examine evidence to verify entity informed the Nuclear Plant Generator Operator.

Note to Auditor: See entity's answer to above Question. If auditor can verify the entity does not have any NPIRs, then Requirement R4 is not applicable.

Depending on the risk of compliance with this requirement to the reliability of the Bulk Electric System (BES), the auditor should attempt to identify potential instances where entity may have lost the ability to assess the operation of the electric system affecting an NPIR and verify the applicable Nuclear Plant Generator Operator was informed. Potential instances can be gleaned from inquiries of Nuclear Plant Generator Operators or from auditor analysis of events occurring on the BES in the entity's area, in cases where the risk of noncompliance to the BES is higher. In cases where such risk is lower, inquiry of the entity regarding the occurrence of such events may be appropriate.

Auditor Notes:

R5 Supporting Evidence and Documentation

R5. Per the Agreements developed in accordance with this standard, the Nuclear Plant Generator Operator shall operate the nuclear plant to meet the NPIRs.

M5. The Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, demonstrate or provide evidence that the Nuclear Power Plant is being operated consistent with the NPIRs as per the Agreements developed in accordance with this standard.

Registered Entity Response (Required):

Compliance Narrative:

Provide a brief explanation, in your own words, of how you comply with this Requirement. References to supplied evidence, including links to the appropriate page, are recommended.

Evidence Requested[i]:

Provide the following evidence, or other evidence to demonstrate compliance.

Registered Entity Evidence (Required):

The following information is requested for each document submitted as evidence. Also, evidence submitted should be highlighted and bookmarked, as appropriate, to identify the exact location where evidence of compliance may be found.					
File Name	Document Title	Revision or Version	Document Date	Relevant Page(s) or Section(s)	Description of Applicability of Document

Audit Team Evidence Reviewed (This section to be completed by the Compliance Enforcement Authority):

Compliance Assessment Approach Specific to NUC-001-3, R5

This section to be completed by the Compliance Enforcement Authority

	The RSAW Developer will complete this section with a set of detailed steps for the audit process. See the RSAW Developer's Guide for more information.
	Understand entity's process for operating the nuclear plant to meet the NPIR(s).

Note to Auditor: Depending on the risk of compliance with this requirement to the reliability of the Bulk Electric System (BES), the auditor should attempt to identify potential instances where entity may not have operated its nuclear plant to meet an NPIR. Potential instances can be gleaned from inquiries of Transmission Entities or from auditor analysis of events occurring on the BES in the entity's area, in cases where the risk of noncompliance to the BES is higher. In cases where such risk is lower, inquiry of the entity regarding their processes of operating nuclear plants to meet NPIRs should suffice.

Auditor Notes:

R6 Supporting Evidence and Documentation

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.

M6. The Transmission Entities and Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, provide evidence of the coordination between the Transmission Entities and the Nuclear Plant Generator Operator regarding outages and maintenance activities which affect the NPIRs.

[The RSAW Developer may ask questions of the entity which require a response.]

Registered Entity Response (Required):

Question: [Do you have any NPIRs with any Nuclear Plant Generator Operators?] ☐ Yes ☐ No

[Include additional information regarding the question here, including the type of response and format of the response requested, as appropriate.]

[Note: A separate spreadsheet or other document may be used. If so, provide the document reference below.]

Registered Entity Response (Required):

Compliance Narrative:

Provide a brief explanation, in your own words, of how you comply with this Requirement. References to supplied evidence, including links to the appropriate page, are recommended.

Evidence Requested[i]:

Provide the following evidence, or other evidence to demonstrate compliance.
List of outages related to NPIRs occurring over the audit period.
Evidence of coordination.

Registered Entity Evidence (Required):

The following information is requested for each document submitted as evidence. Also, evidence submitted should be highlighted and bookmarked, as appropriate, to identify the exact location where evidence of compliance may be found.					
File Name	**Document Title**	**Revision or Version**	**Document Date**	**Relevant Page(s) or Section(s)**	**Description of Applicability of Document**

Audit Team Evidence Reviewed (This section to be completed by the Compliance Enforcement Authority):

Compliance Assessment Approach Specific to NUC-001-3, R6

This section to be completed by the Compliance Enforcement Authority

	The RSAW Developer will complete this section with a set of detailed steps for the audit process. See the RSAW Developer's Guide for more information.
	For a sample of outages, examine evidence to verify that outage was appropriately coordinated in accordance with Requirement R6.
Note to Auditor: See entity's answer to above Question. If auditor can verify the entity does not have any NPIRs, then Requirement R6 is not applicable.	

Auditor Notes:

R7 Supporting Evidence and Documentation

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 (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.

M7. The Nuclear Plant Generator Operator shall provide evidence that it informed the applicable Transmission Entities of changes to nuclear plant design (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that would impact the ability of the Transmission Entities to meet the NPIRs.

Registered Entity Response (Required):

Compliance Narrative:

Provide a brief explanation, in your own words, of how you comply with this Requirement. References to supplied evidence, including links to the appropriate page, are recommended.

Evidence Requested[i]:

Provide the following evidence, or other evidence to demonstrate compliance.
List of actual and proposed changes to nuclear plant design, configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.
Evidence of communication with Transmission Entities.

Registered Entity Evidence (Required):

The following information is requested for each document submitted as evidence. Also, evidence submitted should be highlighted and bookmarked, as appropriate, to identify the exact location where evidence of compliance may be found.					
File Name	**Document Title**	**Revision or Version**	**Document Date**	**Relevant Page(s) or Section(s)**	**Description of Applicability of Document**

Audit Team Evidence Reviewed (This section to be completed by the Compliance Enforcement Authority):

Compliance Assessment Approach Specific to NUC-001-3, R7

This section to be completed by the Compliance Enforcement Authority

The RSAW Developer will complete this section with a set of detailed steps for the audit process. See the RSAW Developer's Guide for more information.

	For a sample of actual or proposed changes, examine evidence to verify that change was communicated to Transmission Entity with related NPIR.

Note to Auditor: In order to establish a population to sample, auditor should determine the types of changes that would impact the ability of the electric system to meet the NPIRs and inquire of the entity whether any such changes occurred during the audit period. In addition, auditors may also obtain sample items through inquiries of Transmission Entities with related NPIRs regarding changes made and whether they were communicated. Also, auditor analysis of events in the entity's area may reveal changes that were not communicated.

Auditor Notes:

R8 Supporting Evidence and Documentation

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 (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.

M8. The Transmission Entities shall each provide evidence that it informed the Nuclear Plant Generator Operator of changes to electric system design (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that would impact the ability of the Nuclear Plant Generator Operator to meet the NPIRs.

[The RSAW Developer may ask questions of the entity which require a response.]

Registered Entity Response (Required):

Question: [Do you have any NPIRs with any Nuclear Plant Generator Operators?] ☐ Yes ☐ No

[Include additional information regarding the question here, including the type of response and format of the response requested, as appropriate.]

[Note: A separate spreadsheet or other document may be used. If so, provide the document reference below.]

Registered Entity Response (Required):

Compliance Narrative:

Provide a brief explanation, in your own words, of how you comply with this Requirement. References to supplied evidence, including links to the appropriate page, are recommended.

Evidence Requested[i]:

Provide the following evidence, or other evidence to demonstrate compliance.
List of actual and proposed changes to nuclear plant design, configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.
Evidence of communication with Nuclear Plant Operators.

Registered Entity Evidence (Required):

The following information is requested for each document submitted as evidence. Also, evidence submitted should be highlighted and bookmarked, as appropriate, to identify the exact location where evidence of compliance may be found.					
File Name	**Document Title**	**Revision or Version**	**Document Date**	**Relevant Page(s) or Section(s)**	**Description of Applicability of Document**

Audit Team Evidence Reviewed (This section to be completed by the Compliance Enforcement Authority):

Compliance Assessment Approach Specific to NUC-001-3, R8

This section to be completed by the Compliance Enforcement Authority

	The RSAW Developer will complete this section with a set of detailed steps for the audit process. See the RSAW Developer's Guide for more information.
	For a sample of actual or proposed changes, examine evidence to verify that change was communicated to Nuclear Plant Operators with related NPIR.

Note to Auditor: See entity's answer to above Question. If auditor can verify the entity does not have any NPIRs, then Requirement R8 is not applicable.

In order to establish a population to sample, auditor should determine the types of changes that would impact the ability of the electric system to meet the NPIRs and inquire of the entity whether any such changes occurred during the audit period. In addition, auditors may also obtain sample items through inquiries of Nuclear Plant Operators with related NPIRs regarding changes made and whether they were communicated. Also, auditor analysis of events in the entity's area may reveal changes that were not communicated.

Auditor Notes:

R9 Supporting Evidence and Documentation

R9. The Nuclear Plant Generator Operator and the applicable Transmission Entities shall include the following elements in aggregate within the Agreement(s) identified in R2.

- Where multiple Agreements with a single Transmission Entity are put into effect, the R9 elements must be addressed in aggregate within the Agreements; however, each Agreement does not have to contain each element. The Nuclear Plant Generator Operator and the Transmission Entity are responsible for ensuring all the R9 elements are addressed in aggregate within the Agreements.
- Where Agreements with multiple Transmission Entities are required, the Nuclear Plant Generator Operator is responsible for ensuring all the R9 elements are addressed in aggregate within the Agreements with the Transmission Entities. The Agreements with each Transmission Entity do not have to contain each element; however, the Agreements with the multiple Transmission Entities, in the aggregate, must address all R9 elements. For each Agreement(s), the Nuclear Plant Generator Operator and the Transmission Entity are responsible to ensure the Agreement(s) contain(s) the elements of R9 applicable to that Transmission Entity. :

9.1. Not used. *[Note: Part 9.1 was retired under the Paragraph 81 project.. The NUC SDT proposes to leave this Part blank to avoid renumbering Requirement parts.]*

9.2. Technical requirements and analysis:

9.2.1. 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.

9.2.2. Identification of facilities, components, and configuration restrictions that are essential for meeting the NPIRs.

9.2.3. Types of planning and operational analyses performed specifically to support the NPIRs, including the frequency of studies and types of Contingencies and scenarios required.

9.3. Operations and maintenance coordination

9.3.1. 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.

9.3.2. Identification of any maintenance requirements for equipment not owned or controlled by the Nuclear Plant Generator Operator that are necessary to meet the NPIRs.

9.3.3. Coordination of testing, calibration and maintenance of on-site and off-site power supply systems and related components.

9.3.4. 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.

9.3.5. Provision for considering, within the restoration process, the requirements and urgency of a nuclear plant that has lost all off-site and on-site AC power.

9.3.6. Coordination of physical and cyber security protection at the nuclear plant interface to ensure each asset is covered under at least one entity's plan.

Coordination of the NPIRs with transmission system Special Protection Systems and any programs that reduce or shed load based on underfrequency or undervoltage.

9.4. Communications and training Administrative elements:

9.4.1. Provisions for communications affecting the NPIRs between the Nuclear Plant Generator Operator and Transmission Entities, including communications protocols, notification time requirements, and definitions of applicable unique terms.

9.4.2. 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.

9.4.3. Provisions for coordinating investigations of causes of unplanned events affecting the NPIRs and developing solutions to minimize future risk of such events.

9.4.4. Provisions for supplying information necessary to report to government agencies, as related to NPIRs.

9.4.5. Provisions for personnel training, as related to NPIRs.

M9. The Nuclear Plant Generator Operator shall have a copy of the Agreement(s) addressing the elements in Requirement 9 available for inspection upon request of the Compliance Enforcement Authority. Each Transmission Entity shall have a copy of the Agreement(s) addressing the elements in Requirement 9 for which it is responsible available for inspection upon request of the Compliance Enforcement Authority.

Registered Entity Response (Required):

Compliance Narrative:

Provide a brief explanation, in your own words, of how you comply with this Requirement. References to supplied evidence, including links to the appropriate page, are recommended.

Evidence Requested[i]:

Provide the following evidence, or other evidence to demonstrate compliance.
Copy of the Agreement(s) addressing the elements in Requirement R9 for which entity is responsible.

Registered Entity Evidence (Required):

The following information is requested for each document submitted as evidence. Also, evidence submitted should be highlighted and bookmarked, as appropriate, to identify the exact location where evidence of compliance may be found.

File Name	Document Title	Revision or Version	Document Date	Relevant Page(s) or Section(s)	Description of Applicability of Document

Audit Team Evidence Reviewed (This section to be completed by the Compliance Enforcement Authority):

Compliance Assessment Approach Specific to NUC-001-3, R8

This section to be completed by the Compliance Enforcement Authority

	The RSAW Developer will complete this section with a set of detailed steps for the audit process. See the RSAW Developer's Guide for more information.
	Review evidence and verify that either the multiple Agreements with a single Transmission Entity, or multiple Agreements with multiple Transmission Entities address the following in the aggregate in accordance with Requirement R9:
	(Part 9.2.1) 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.
	(Part 9.2.2) Identification of facilities, components, and configuration restrictions that are essential for meeting the NPIRs.
	(Part 9.2.3) Types of planning and operational analyses performed specifically to support the NPIRs, including the frequency of studies and types of Contingencies and scenarios required.
	(Part 9.3.1) 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.
	(Part 9.3.2) Identification of any maintenance requirements for equipment not owned or controlled by the Nuclear Plant Generator Operator that are necessary to meet the NPIRs.
	(Part 9.3.3) Coordination of testing, calibration and maintenance of on-site and off-site power supply systems and related components.
	(Part 9.3.4) 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.
	(Part 9.3.5) Provision for considering, within the restoration process, the requirements and urgency of a nuclear plant that has lost all off-site and on-site AC power.
	(Part 9.3.6) Coordination of physical and cyber security protection at the nuclear plant interface to ensure each asset is covered under at least one entity's plan.
	(Part 9.3.7) Coordination of the NPIRs with transmission system Special Protection Systems and any

	programs that reduce or shed load based on underfrequency or undervoltage.
	(Part 9.4.1) Provisions for communications affecting the NPIRs between the Nuclear Plant Generator Operator and Transmission Entities, including communications protocols, notification time requirements, and definitions of applicable unique terms.
	(Part 9.4.2) 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.
	(Part 9.4.3) Provisions for coordinating investigations of causes of unplanned events affecting the NPIRs and developing solutions to minimize future risk of such events.
	(Part 9.4.4) Provisions for supplying information necessary to report to government agencies, as related to NPIRs.
	(Part 9.4.5) Provisions for personnel training, as related to NPIRs.
Note to Auditor:	

Auditor Notes:

Additional Information:

Reliability Standard

The RSAW developer should provide the following information without hyperlinks. Update the information below as appropriate.

The full text of NUC-001-3 may be found on the NERC Web Site (www.nerc.com) under "Program Areas & Departments", "Reliability Standards."

In addition to the Reliability Standard, there is an applicable Implementation Plan available on the NERC Web Site.

In addition to the Reliability Standard, there is background information available on the NERC Web Site.

Capitalized terms in the Reliability Standard refer to terms in the NERC Glossary, which may be found on the NERC Web Site.

Sampling Methodology [If developer deems reference applicable]

Sampling is essential for auditing compliance with NERC Reliability Standards since it is not always possible or practical to test 100% of either the equipment, documentation, or both, associated with the full suite of enforceable standards. The Sampling Methodology Guidelines and Criteria (see NERC website), or sample guidelines, provided by the Electric Reliability Organization help to establish a minimum sample set for monitoring and enforcement uses in audits of NERC Reliability Standards.

Regulatory Language [Developer to ensure RSAW has been provided to NERC Legal for links to appropriate Regulatory Language – See example below]

E.g. FERC Order No. 742 paragraph 34: "Based on NERC's…….

E.g. FERC Order No. 742 Paragraph 55, Commission Determination: "We affirm NERC's…….

Selected Glossary Terms [If developer deems applicable]

The following Glossary terms are provided for convenience only. Please refer to the NERC web site for the current enforceable terms.

Revision History for RSAW

Version	Date	Reviewers	Revision Description
1	XX/XX/XXXX	RSAW Working Group	New Document

[i] Items in the Evidence Requested section are suggested evidence that may, but will not necessarily, demonstrate compliance. These items are not mandatory and other forms and types of evidence may be submitted at the entity's discretion.

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NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standards Announcement

Project 2012-13 Nuclear Plant Interface Coordination NUC-001-3

Initial Ballot and Non-Binding Poll Now Open through May 22, 2014

Now Available

An initial ballot **Project 2012-13 Nuclear Plant Interface Coordination (NUC-001-3)** and non-binding poll of the associated Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs) is open **through Thursday, May 22, 2014.**

If you have questions please contact Stephen Eldridge via email or by telephone at (404) 446-9686.

Background information for this project can be found on the project page.

Instructions for Commenting

Please use the electronic form to submit comments on the standard. If you experience any difficulties in using the electronic form, please contact Wendy Muller. An off-line, unofficial copy of the comment form is posted on the project page.

Next Steps

The ballot results will be announced and posted on the project page. The drafting team will consider all comments received during the formal comment period and, if needed, make revisions to the standards. If the comments do not show the need for significant revisions, the standards will proceed to a final ballot.

For information on the **Standards Development Process**, please refer to the Standard Processes Manual.

For more information or assistance, please contact Wendy Muller, Standards Development Administrator, or at 404-446-2560.

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NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standards Announcement

Project 2012-13 Nuclear Plant Interface Coordination NUC-001-3

Formal Comment Period Now Open through May 22, 2014
Ballot Pools Forming Now through May 7, 2014

Now Available

A 45-day formal comment period for **Project 2012-13 Nuclear Plant Interface Coordination (NUC-001-3)** is open through **8 p.m. Eastern on Thursday, May 22, 2014.**

If you have questions please contact Stephen Eldridge via email or by telephone at (404) 446-9686.

Background information for this project can be found on the project page.

Instructions for Commenting

Please use the electronic form to submit comments on the standard. If you experience any difficulties in using the electronic form, please contact Wendy Muller. An off-line, unofficial copy of the comment form is posted on the project page.

Instructions for Joining Ballot Pools

Ballots pools are being formed for the standard and non-binding poll for NUC-001-3. Registered Ballot Body members must join both ballot pools to be eligible to vote in the balloting of NUC-001-3 and to submit an opinion for the non-binding poll of the associated Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs). Registered Ballot Body members may join the ballot pools at the following page: Join Ballot Pool.

During the pre-ballot window, members of the ballot pool may communicate with one another by using their "ballot pool list server." (Once the balloting begins, ballot pool members are prohibited from using the ballot pool list servers.) The list servers for this project are:

Ballot for NUC-001-3: bp-2012-13_NUC-001-3_in@nerc.com
Non-Binding Poll for NUC-001-3: bp-2012-13_NUC-001-3_NB_in@nerc.com

Next Steps

An initial ballot period for the standard and non-binding poll of the associated VRFs and VSLs will be conducted **May 13-22, 2014**.

For information on the **Standards Development Process**, please refer to the Standard Processes Manual.

For more information or assistance, please contact Wendy Muller, Standards Development Administrator, or at 404-446-2560.

North American Electric Reliability Corporation
3353 Peachtree Rd, NE
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Atlanta, GA 30326
404-446-2560 | www.nerc.com

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standards Announcement

Project 2012-13 Nuclear Plant Interface Coordination NUC-001-3

Formal Comment Period Now Open through May 22, 2014
Ballot Pools Forming Now through May 7, 2014

Now Available

A 45-day formal comment period for **Project 2012-13 Nuclear Plant Interface Coordination (NUC-001-3)** is open through **8 p.m. Eastern on Thursday, May 22, 2014.**

If you have questions please contact Stephen Eldridge via email or by telephone at (404) 446-9686.

Background information for this project can be found on the project page.

Instructions for Commenting

Please use the electronic form to submit comments on the standard. If you experience any difficulties in using the electronic form, please contact Wendy Muller. An off-line, unofficial copy of the comment form is posted on the project page.

Instructions for Joining Ballot Pools

Ballots pools are being formed for the standard and non-binding poll for NUC-001-3. Registered Ballot Body members must join both ballot pools to be eligible to vote in the balloting of NUC-001-3 and to submit an opinion for the non-binding poll of the associated Violation Risk Factors (VRFs) and Violation Severity Levels (VSLs). Registered Ballot Body members may join the ballot pools at the following page: Join Ballot Pool.

During the pre-ballot window, members of the ballot pool may communicate with one another by using their "ballot pool list server." (Once the balloting begins, ballot pool members are prohibited from using the ballot pool list servers.) The list servers for this project are:

Ballot for NUC-001-3: bp-2012-13_NUC-001-3_in@nerc.com
Non-Binding Poll for NUC-001-3: bp-2012-13_NUC-001-3_NB_in@nerc.com

Next Steps

An initial ballot period for the standard and non-binding poll of the associated VRFs and VSLs will be conducted **May 13-22, 2014**.

For information on the **Standards Development Process**, please refer to the Standard Processes Manual.

For more information or assistance, please contact Wendy Muller, Standards Development Administrator, or at 404-446-2560.

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Standards Announcement

Project 2012-13 Nuclear Plant Interface Coordination
NUC-001-3

Ballot and Non-Binding Poll Results

Now Available

A ballot for **NUC-001-3 – Nuclear Plant Interface Coordination** and non-binding poll of the associated Violation Risk Factors and Violation Severity Levels concluded at **8 p.m. Eastern on Thursday, May 22, 2014**.

The standard achieved a quorum and received sufficient affirmative votes for approval. Voting statistics are listed below, and the Ballot Results page provides a link to the detailed results for the ballots.

Ballot Results	Non-Binding Poll Results
Quorum /Approval	Quorum/Supportive Opinions
80.60% / 97.36%	80.95% / 97.22%

Background information for this project can be found on the project page.

Next Steps

The drafting team will consider all comments received during the formal comment period and, if needed, make revisions to the standard. If the comments do not show the need for significant revisions, the standard will proceed to a final ballot.

For information on the **Standards Development Process**, please refer to the Standard Processes Manual.

For more information or assistance, please contact Wendy Muller (via email), Standards Development Administrator, or at 404-446-2560.

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Ballot Results	
Ballot Name:	Project 2012-13 Nuclear Plant Interface Coordination NUC-001-3
Ballot Period:	5/13/2014 - 5/22/2014
Ballot Type:	Initial
Total # Votes:	241
Total Ballot Pool:	299
Quorum:	**80.60 % The Quorum has been reached**
Weighted Segment Vote:	97.36 %
Ballot Results:	**The ballot has closed**

Summary of Ballot Results

Segment	Ballot Pool	Segment Weight	Affirmative # Votes	Affirmative Fraction	Negative # Votes	Negative Fraction	Negative Vote without a Comment	Abstain	No Vote
1 - Segment 1	78	1	50	0.98	1	0.02	0	11	16
2 - Segment 2	9	0.4	3	0.3	1	0.1	0	2	3
3 - Segment 3	66	1	38	0.974	1	0.026	0	15	12
4 - Segment 4	22	1	14	1	0	0	0	6	2
5 - Segment 5	63	1	35	0.972	1	0.028	0	11	16
6 - Segment 6	47	1	30	1	0	0	0	9	8
7 - Segment 7	0	0	0	0	0	0	0	0	0
8 - Segment 8	4	0.3	3	0.3	0	0	0	0	1
9 - Segment 9	2	0.2	2	0.2	0	0	0	0	0

10 - Segment 10	8	0.7	7	0.7	0	0	0	1	0
Totals	**299**	**6.6**	**182**	**6.426**	**4**	**0.174**	**0**	**55**	**58**

Individual Ballot Pool Results

Segment	Organization	Member	Ballot	NERC Notes
1	Ameren Services	Eric Scott	Affirmative	
1	American Electric Power	Paul B Johnson	Affirmative	
1	American Transmission Company, LLC	Andrew Z Pusztai	Affirmative	
1	Arizona Public Service Co.	Robert Smith	Affirmative	
1	Associated Electric Cooperative, Inc.	John Bussman		
1	Austin Energy	James Armke	Affirmative	
1	Balancing Authority of Northern California	Kevin Smith	Affirmative	
1	Baltimore Gas & Electric Company	Christopher J Scanlon	Affirmative	
1	Black Hills Corp	Wes Wingen	Abstain	
1	Bonneville Power Administration	Donald S. Watkins	Affirmative	
1	Bryan Texas Utilities	John C Fontenot	Affirmative	
1	CenterPoint Energy Houston Electric, LLC	John Brockhan	Affirmative	
1	Central Electric Power Cooperative	Michael B Bax	Abstain	
1	City of Tacoma, Department of Public Utilities, Light Division, dba Tacoma Power	Chang G Choi	Abstain	
1	Clark Public Utilities	Jack Stamper	Affirmative	
1	Colorado Springs Utilities	Shawna Speer	Affirmative	
1	Consolidated Edison Co. of New York	Christopher L de Graffenried	Affirmative	
1	CPS Energy	Glenn Pressler	Affirmative	
1	Dominion Virginia Power	Larry Nash	Affirmative	
1	Duke Energy Carolina	Doug E Hils	Affirmative	
1	Duquesne Light Co.	Hugh R Conley		
1	Entergy Transmission	Oliver A Burke	Affirmative	
1	FirstEnergy Corp.	William J Smith	Affirmative	
1	Florida Keys Electric Cooperative Assoc.	Dennis Minton	Abstain	
1	Florida Power & Light Co.	Mike O'Neil	Affirmative	
1	Gainesville Regional Utilities	Richard Bachmeier	Affirmative	
1	Georgia Transmission Corporation	Jason Snodgrass	Affirmative	
1	Great River Energy	Gordon Pietsch	Affirmative	
1	Hydro One Networks, Inc.	Muhammed Ali	Affirmative	
1	International Transmission Company Holdings Corp	Michael Moltane	Affirmative	
1	JDRJC Associates	Jim D Cyrulewski	Affirmative	
1	JEA	Ted E Hobson	Affirmative	
1	KAMO Electric Cooperative	Walter Kenyon		
1	Kansas City Power & Light Co.	Daniel Gibson	Affirmative	
1	Keys Energy Services	Stanley T Rzad		
1	Lakeland Electric	Larry E Watt	Affirmative	
1	Lee County Electric Cooperative	John Chin		
1	Lincoln Electric System	Doug Bantam		
1	Long Island Power Authority	Robert Ganley		
1	M & A Electric Power Cooperative	William Price		
1	MidAmerican Energy Co.	Terry Harbour	Affirmative	
1	N.W. Electric Power Cooperative, Inc.	Mark Ramsey		
1	National Grid USA	Michael Jones	Affirmative	
1	NB Power Corporation	Alan MacNaughton	Abstain	
1	Nebraska Public Power District	Jamison Cawley	Negative	SUPPORTS THIRD PARTY COMMENTS - (Nebraska Public Power District Comments)
1	New York Power Authority	Bruce Metruck	Affirmative	
1	Northeast Missouri Electric Power Cooperative	Kevin White		
1	Northeast Utilities	William Temple	Affirmative	
1	Northern Indiana Public Service Co.	Julaine Dyke	Abstain	

1	Ohio Valley Electric Corp.	Scott R Cunningham		
1	Omaha Public Power District	Doug Peterchuck		
1	Oncor Electric Delivery	Jen Fiegel	Affirmative	
1	Pacific Gas and Electric Company	Bangalore Vijayraghavan	Affirmative	
1	Platte River Power Authority	John C. Collins	Abstain	
1	Portland General Electric Co.	John T Walker		
1	Potomac Electric Power Co.	David Thorne	Affirmative	
1	PPL Electric Utilities Corp.	Brenda L Truhe	Affirmative	
1	Public Service Company of New Mexico	Laurie Williams	Abstain	
1	Public Service Electric and Gas Co.	Kenneth D. Brown	Affirmative	
1	Rochester Gas and Electric Corp.	John C. Allen	Affirmative	
1	Sacramento Municipal Utility District	Tim Kelley	Affirmative	
1	Salt River Project	Robert Kondziolka	Affirmative	
1	SaskPower	Wayne Guttormson	Abstain	
1	Seattle City Light	Pawel Krupa	Affirmative	
1	Seminole Electric Cooperative, Inc.	Glenn Spurlock	Abstain	
1	Sho-Me Power Electric Cooperative	Denise Stevens		
1	Snohomish County PUD No. 1	Long T Duong	Affirmative	
1	South Carolina Electric & Gas Co.	Tom Hanzlik	Affirmative	
1	Southern California Edison Company	Steven Mavis	Affirmative	
1	Southern Company Services, Inc.	Robert A. Schaffeld	Affirmative	
1	Tampa Electric Co.	Beth Young		
1	Tennessee Valley Authority	Howell D Scott	Affirmative	
1	Tucson Electric Power Co.	John Tolo	Abstain	
1	U.S. Bureau of Reclamation	Richard T Jackson	Affirmative	
1	Vermont Electric Power Company, Inc.	Kim Moulton		
1	Westar Energy	Allen Klassen	Affirmative	
1	Western Area Power Administration	Lloyd A Linke	Affirmative	
1	Xcel Energy, Inc.	Gregory L Pieper	Affirmative	
2	BC Hydro	Venkataramakrishnan Vinnakota		
2	California ISO	Rich Vine	Affirmative	
2	Electric Reliability Council of Texas, Inc.	Cheryl Moseley	Abstain	
2	Independent Electricity System Operator	Leonard Kula	Negative	COMMENT RECEIVED
2	ISO New England, Inc.	Matthew F Goldberg	Affirmative	
2	MISO	Marie Knox		
2	New York Independent System Operator	Gregory Campoli		
2	PJM Interconnection, L.L.C.	stephanie monzon	Affirmative	
2	Southwest Power Pool, Inc.	Charles H. Yeung	Abstain	
3	AEP	Michael E Deloach	Affirmative	
3	Alabama Power Company	Robert S Moore	Affirmative	
3	APS	Sarah Kist	Affirmative	
3	Associated Electric Cooperative, Inc.	Todd Bennett	Abstain	
3	Atlantic City Electric Company	NICOLE BUCKMAN	Affirmative	
3	BC Hydro and Power Authority	Pat G. Harrington	Abstain	
3	Bonneville Power Administration	Rebecca Berdahl	Affirmative	
3	Central Electric Power Cooperative	Adam M Weber		
3	City of Anaheim Public Utilities Department	Dennis M Schmidt	Abstain	
3	City of Austin dba Austin Energy	Andrew Gallo	Affirmative	
3	City of Clewiston	Lynne Mila		
3	City of Green Cove Springs	Mark Schultz	Abstain	
3	Colorado Springs Utilities	Jean Mueller	Affirmative	
3	ComEd	John Bee	Affirmative	
3	Consolidated Edison Co. of New York	Peter T Yost	Affirmative	
3	Consumers Energy Company	Gerald G Farringer		
3	Cowlitz County PUD	Russell A Noble	Affirmative	
3	CPS Energy	Jose Escamilla	Affirmative	
3	Delmarva Power & Light Co.	Michael R. Mayer	Affirmative	
3	Dominion Resources, Inc.	Connie B Lowe	Affirmative	
3	DTE Electric	Kent Kujala	Affirmative	
3	FirstEnergy Corp.	Cindy E Stewart	Affirmative	
3	Florida Keys Electric Cooperative	Tom B Anthony	Abstain	
3	Florida Municipal Power Agency	Joe McKinney	Affirmative	
3	Florida Power Corporation	Lee Schuster	Affirmative	
3	Georgia System Operations Corporation	Scott McGough	Affirmative	
3	Great River Energy	Brian Glover	Affirmative	

3	Hydro One Networks, Inc.	Ayesha Sabouba	Affirmative	
3	JEA	Garry Baker	Abstain	
3	KAMO Electric Cooperative	Theodore J Hilmes		
3	Kansas City Power & Light Co.	Joshua D Bach		
3	Kissimmee Utility Authority	Gregory D Woessner		
3	Lakeland Electric	Mace D Hunter	Abstain	
3	Lee County Electric Cooperative	David A Hadzima		
3	Lincoln Electric System	Jason Fortik	Abstain	
3	Louisville Gas and Electric Co.	Charles A. Freibert	Affirmative	
3	M & A Electric Power Cooperative	Stephen D Pogue		
3	MEAG Power	Roger Brand	Affirmative	
3	MidAmerican Energy Co.	Thomas C. Mielnik	Affirmative	
3	Muscatine Power & Water	John S Bos		
3	National Grid USA	Brian E Shanahan	Affirmative	
3	Nebraska Public Power District	Tony Eddleman	Negative	SUPPORTS THIRD PARTY COMMENTS - (Nebraska Public Power District comments)
3	New York Power Authority	David R Rivera	Affirmative	
3	Northern Indiana Public Service Co.	Ramon J Barany	Abstain	
3	NW Electric Power Cooperative, Inc.	David McDowell		
3	Ocala Utility Services	Randy Hahn		
3	Omaha Public Power District	Blaine R. Dinwiddie	Affirmative	
3	Orlando Utilities Commission	Ballard K Mutters	Abstain	
3	Owensboro Municipal Utilities	Thomas T Lyons	Abstain	
3	Pacific Gas and Electric Company	John H Hagen	Affirmative	
3	Platte River Power Authority	Terry L Baker	Abstain	
3	PNM Resources	Michael Mertz	Abstain	
3	Potomac Electric Power Co.	Mark Yerger	Affirmative	
3	Public Service Electric and Gas Co.	Jeffrey Mueller	Affirmative	
3	Sacramento Municipal Utility District	James Leigh-Kendall	Affirmative	
3	Salt River Project	John T. Underhill	Affirmative	
3	Seattle City Light	Dana Wheelock	Affirmative	
3	Seminole Electric Cooperative, Inc.	James R Frauen	Abstain	
3	Sho-Me Power Electric Cooperative	Jeff L Neas		
3	Snohomish County PUD No. 1	Mark Oens	Affirmative	
3	South Carolina Electric & Gas Co.	Hubert C Young	Affirmative	
3	Southern California Edison Company	Lujuanna Medina	Affirmative	
3	Tacoma Power	Marc Donaldson	Abstain	
3	Tennessee Valley Authority	Ian S Grant	Affirmative	
3	Westar Energy	Bo Jones	Affirmative	
3	Xcel Energy, Inc.	Michael Ibold	Affirmative	
4	Alliant Energy Corp. Services, Inc.	Kenneth Goldsmith	Abstain	
4	Blue Ridge Power Agency	Duane S Dahlquist	Abstain	
4	City of Austin dba Austin Energy	Reza Ebrahimian	Affirmative	
4	City Utilities of Springfield, Missouri	John Allen	Abstain	
4	Constellation Energy Control & Dispatch, L.L.C.	Margaret Powell	Affirmative	
4	Consumers Energy Company	Tracy Goble		
4	Cowlitz County PUD	Rick Syring	Affirmative	
4	DTE Electric	Daniel Herring	Affirmative	
4	Florida Municipal Power Agency	Frank Gaffney	Affirmative	
4	Georgia System Operations Corporation	Guy Andrews	Affirmative	
4	Herb Schrayshuen	Herb Schrayshuen	Affirmative	
4	Illinois Municipal Electric Agency	Bob C. Thomas	Affirmative	
4	Madison Gas and Electric Co.	Joseph DePoorter	Abstain	
4	Ohio Edison Company	Douglas Hohlbaugh	Affirmative	
4	Public Utility District No. 1 of Snohomish County	John D Martinsen	Affirmative	
4	Sacramento Municipal Utility District	Mike Ramirez	Affirmative	
4	Seattle City Light	Hao Li	Affirmative	
4	Seminole Electric Cooperative, Inc.	Steven R Wallace	Abstain	
4	South Mississippi Electric Power Association	Steve McElhaney	Affirmative	
4	Tacoma Public Utilities	Keith Morisette	Abstain	
4	Utility Services, Inc.	Brian Evans-Mongeon	Affirmative	

4	Wisconsin Energy Corp.	Anthony Jankowski		
5	Amerenue	Sam Dwyer	Affirmative	
5	American Electric Power	Thomas Foltz	Affirmative	
5	Arizona Public Service Co.	Scott Takinen	Affirmative	
5	Boise-Kuna Irrigation District/dba Lucky peak power plant project	Mike D Kukla	Affirmative	
5	Bonneville Power Administration	Francis J. Halpin	Affirmative	
5	Calpine Corporation	Hamid Zakery		
5	City of Austin dba Austin Energy	Jeanie Doty		
5	Cleco Power	Stephanie Huffman		
5	Cogentrix Energy Power Management, LLC	Mike D Hirst		
5	Colorado Springs Utilities	Kaleb Brimhall	Affirmative	
5	Con Edison Company of New York	Brian O'Boyle	Affirmative	
5	Cowlitz County PUD	Bob Essex	Affirmative	
5	Dominion Resources, Inc.	Mike Garton	Affirmative	
5	DTE Electric	Mark Stefaniak		
5	Duke Energy	Dale Q Goodwine	Affirmative	
5	E.ON Climate & Renewables North America, LLC	Dana Showalter	Abstain	
5	EDP Renewables North America LLC	Heather Bowden	Abstain	
5	El Paso Electric Company	Gustavo Estrada		
5	Electric Power Supply Association	John R Cashin		
5	Entergy Services, Inc.	Tracey Stubbs	Affirmative	
5	Exelon Nuclear	Mark F Draper	Affirmative	
5	First Wind	John Robertson		
5	FirstEnergy Solutions	Kenneth Dresner	Affirmative	
5	Florida Municipal Power Agency	David Schumann	Affirmative	
5	Great River Energy	Preston L Walsh	Affirmative	
5	JEA	John J Babik	Affirmative	
5	Kansas City Power & Light Co.	Brett Holland	Affirmative	
5	Kissimmee Utility Authority	Mike Blough	Affirmative	
5	Liberty Electric Power LLC	Daniel Duff	Abstain	
5	Lincoln Electric System	Dennis Florom		
5	Los Angeles Department of Water & Power	Kenneth Silver		
5	Luminant Generation Company LLC	Rick Terrill		
5	Manitoba Hydro	Chris Mazur		
5	Massachusetts Municipal Wholesale Electric Company	David Gordon	Abstain	
5	MEAG Power	Steven Grego	Affirmative	
5	Muscatine Power & Water	Mike Avesing	Abstain	
5	Nebraska Public Power District	Don Schmit	Negative	COMMENT RECEIVED
5	New York Power Authority	Wayne Sipperly	Affirmative	
5	NextEra Energy	Allen D Schriver	Affirmative	
5	Northern Indiana Public Service Co.	Michael D Melvin		
5	Oglethorpe Power Corporation	Bernard Johnson	Affirmative	
5	Omaha Public Power District	Mahmood Z. Safi	Affirmative	
5	Ontario Power Generation Inc.	David Ramkalawan	Affirmative	
5	Orlando Utilities Commission	Richard K Kinas		
5	Pacific Gas and Electric Company	Alex Chua	Abstain	
5	Platte River Power Authority	Christopher R Wood	Abstain	
5	Portland General Electric Co.	Matt E. Jastram	Abstain	
5	PPL Generation LLC	Annette M Bannon	Affirmative	
5	PSEG Fossil LLC	Tim Kucey	Affirmative	
5	Puget Sound Energy, Inc.	Lynda Kupfer	Abstain	
5	Sacramento Municipal Utility District	Susan Gill-Zobitz	Affirmative	
5	Salt River Project	William Alkema	Affirmative	
5	Seattle City Light	Michael J. Haynes	Affirmative	
5	Seminole Electric Cooperative, Inc.	Brenda K. Atkins		
5	Snohomish County PUD No. 1	Sam Nietfeld	Affirmative	
5	South Carolina Electric & Gas Co.	Edward Magic		
5	Southern California Edison Company	Denise Yaffe	Affirmative	
5	Southern Company Generation	William D Shultz	Affirmative	
5	Tacoma Power	Chris Mattson	Abstain	
5	Tampa Electric Co.	RJames Rocha	Abstain	
5	Tennessee Valley Authority	David Thompson	Affirmative	
5	USDI Bureau of Reclamation	Erika Doot	Affirmative	
5	Westar Energy	Bryan Taggart	Affirmative	

6	AEP Marketing	Edward P. Cox	Affirmative	
6	Ameren Missouri	Robert Quinlivan		
6	APS	Randy A. Young	Affirmative	
6	Associated Electric Cooperative, Inc.	Brian Ackermann		
6	Bonneville Power Administration	Brenda S. Anderson	Affirmative	
6	City of Austin dba Austin Energy	Lisa Martin	Affirmative	
6	Cleco Power LLC	Robert Hirchak		
6	Colorado Springs Utilities	Shannon Fair	Affirmative	
6	Con Edison Company of New York	David Balban	Affirmative	
6	Constellation Energy Commodities Group	David J Carlson	Affirmative	
6	Dominion Resources, Inc.	Louis S. Slade	Affirmative	
6	Duke Energy	Greg Cecil		
6	FirstEnergy Solutions	Kevin Querry	Affirmative	
6	Florida Municipal Power Agency	Richard L. Montgomery	Affirmative	
6	Florida Municipal Power Pool	Thomas Washburn	Abstain	
6	Florida Power & Light Co.	Silvia P Mitchell	Affirmative	
6	Great River Energy	Donna Stephenson		
6	Kansas City Power & Light Co.	Jessica L Klinghoffer	Affirmative	
6	Lakeland Electric	Paul Shipps	Affirmative	
6	Lincoln Electric System	Eric Ruskamp	Abstain	
6	Los Angeles Department of Water & Power	Brad Packer		
6	Lower Colorado River Authority	Michael Shaw	Abstain	
6	Luminant Energy	Brenda Hampton	Affirmative	
6	Muscatine Power & Water	John Stolley		
6	New York Power Authority	Shivaz Chopra	Affirmative	
6	Northern Indiana Public Service Co.	Joseph O'Brien	Abstain	
6	Oglethorpe Power Corporation	Donna Johnson	Affirmative	
6	Omaha Public Power District	Douglas Collins	Affirmative	
6	PacifiCorp	Sandra L Shaffer	Affirmative	
6	Platte River Power Authority	Carol Ballantine	Abstain	
6	Portland General Electric Co.	Shawn P Davis	Abstain	
6	Power Generation Services, Inc.	Stephen C Knapp	Affirmative	
6	PPL EnergyPlus LLC	Elizabeth Davis	Affirmative	
6	PSEG Energy Resources & Trade LLC	Peter Dolan	Affirmative	
6	Sacramento Municipal Utility District	Diane Enderby	Affirmative	
6	Salt River Project	William Abraham	Affirmative	
6	Seattle City Light	Dennis Sismaet	Affirmative	
6	Seminole Electric Cooperative, Inc.	Trudy S. Novak	Abstain	
6	Snohomish County PUD No. 1	Kenn Backholm	Affirmative	
6	Southern California Edison Company	Joseph T Marone	Affirmative	
6	Southern Company Generation and Energy Marketing	John J. Ciza	Affirmative	
6	Tacoma Public Utilities	Michael C Hill	Abstain	
6	Tampa Electric Co.	Benjamin F Smith II		
6	Tennessee Valley Authority	Marjorie S. Parsons	Affirmative	
6	Westar Energy	Grant L Wilkerson	Affirmative	
6	Western Area Power Administration - UGP Marketing	Peter H Kinney	Abstain	
6	Xcel Energy, Inc.	Peter Colussy	Affirmative	
8		Roger C Zaklukiewicz	Affirmative	
8		David L Kiguel	Affirmative	
8	Massachusetts Attorney General	Frederick R Plett	Affirmative	
8	Volkmann Consulting, Inc.	Terry Volkmann		
9	Commonwealth of Massachusetts Department of Public Utilities	Donald Nelson	Affirmative	
9	New York State Public Service Commission	Diane J Barney	Affirmative	
10	Florida Reliability Coordinating Council	Linda C Campbell	Affirmative	
10	Midwest Reliability Organization	Russel Mountjoy	Affirmative	
10	New York State Reliability Council	Alan Adamson	Affirmative	
10	Northeast Power Coordinating Council	Guy V. Zito	Affirmative	
10	ReliabilityFirst	Anthony E Jablonski	Affirmative	
10	SERC Reliability Corporation	Joseph W Spencer	Affirmative	
10	Southwest Power Pool RE	Bob Reynolds	Abstain	
10	Western Electricity Coordinating Council	Steven L. Rueckert	Affirmative	

Legal and Privacy : 404.446.2560 voice : 404.467.0474 fax : 3353 Peachtree Road, N.E. : Suite 600, North Tower : Atlanta, GA 30326
Washington Office: 1325 G Street, N.W. : Suite 600 : Washington, DC 20005-3801

Account Log-In/Register

Non-Binding Poll Results

Project 2012-13 Nuclear Plant Interface Coordination

Non-Binding Poll Results	
Non-Binding Poll Name:	Project 2012-13 NUC-001-3
Poll Period:	5/13/2014 - 5/22/2014
Total # Opinions:	221
Total Ballot Pool:	273
Summary Results:	80.95% of those who registered to participate provided an opinion or an abstention; 97.22% of those who provided an opinion indicated support for the VRFs and VSLs

Individual Ballot Pool Results

Segment	Organization	Member	Opinions	NERC Notes
1	Ameren Services	Eric Scott	Abstain	
1	American Electric Power	Paul B Johnson	Abstain	
1	Arizona Public Service Co.	Robert Smith	Affirmative	
1	Austin Energy	James Armke	Affirmative	
1	Avista Utilities	Heather Rosentrater		
1	Balancing Authority of Northern California	Kevin Smith	Affirmative	
1	Black Hills Corp	Wes Wingen	Abstain	
1	Bonneville Power Administration	Donald S. Watkins	Affirmative	
1	Bryan Texas Utilities	John C Fontenot	Affirmative	
1	CenterPoint Energy Houston Electric, LLC	John Brockhan	Abstain	
1	City of Tacoma, Department of Public Utilities, Light Division, dba Tacoma Power	Chang G Choi	Abstain	
1	Clark Public Utilities	Jack Stamper	Affirmative	
1	Colorado Springs Utilities	Shawna Speer	Affirmative	
1	Consolidated Edison Co. of New York	Christopher L de Graffenried	Affirmative	
1	CPS Energy	Glenn Pressler	Affirmative	
1	Dominion Virginia Power	Larry Nash	Abstain	
1	Duke Energy Carolina	Doug E Hils	Affirmative	
1	Entergy Transmission	Oliver A Burke	Affirmative	
1	FirstEnergy Corp.	William J Smith	Affirmative	
1	Florida Keys Electric Cooperative Assoc.	Dennis Minton	Abstain	

1	Florida Power & Light Co.	Mike O'Neil	Affirmative	
1	Gainesville Regional Utilities	Richard Bachmeier	Affirmative	
1	Georgia Transmission Corporation	Jason Snodgrass	Affirmative	
1	Great River Energy	Gordon Pietsch	Affirmative	
1	Hydro One Networks, Inc.	Muhammed Ali	Affirmative	
1	International Transmission Company Holdings Corp	Michael Moltane	Abstain	
1	JDRJC Associates	Jim D Cyrulewski	Affirmative	
1	JEA	Ted E Hobson	Affirmative	
1	KAMO Electric Cooperative	Walter Kenyon		
1	Kansas City Power & Light Co.	Daniel Gibson	Affirmative	
1	Keys Energy Services	Stanley T Rzad		
1	Lakeland Electric	Larry E Watt	Affirmative	
1	Lee County Electric Cooperative	John Chin		
1	Lincoln Electric System	Doug Bantam		
1	Long Island Power Authority	Robert Ganley		
1	MidAmerican Energy Co.	Terry Harbour	Affirmative	
1	N.W. Electric Power Cooperative, Inc.	Mark Ramsey		
1	National Grid USA	Michael Jones	Affirmative	
1	NB Power Corporation	Alan MacNaughton	Abstain	
1	Nebraska Public Power District	Jamison Cawley	Negative	SUPPORTS THIRD PARTY COMMENTS - (Nebraska Public Power District comments)
1	New York Power Authority	Bruce Metruck	Affirmative	
1	Northeast Utilities	William Temple	Affirmative	
1	Northern Indiana Public Service Co.	Julaine Dyke	Abstain	
1	Ohio Valley Electric Corp.	Scott R Cunningham		
1	Omaha Public Power District	Doug Peterchuck		
1	Oncor Electric Delivery	Jen Fiegel	Affirmative	
1	Pacific Gas and Electric Company	Bangalore Vijayraghavan	Affirmative	
1	Platte River Power Authority	John C. Collins	Abstain	
1	Portland General Electric Co.	John T Walker		
1	PPL Electric Utilities Corp.	Brenda L Truhe	Affirmative	
1	Public Service Company of New Mexico	Laurie Williams	Abstain	
1	Public Service Electric and Gas Co.	Kenneth D. Brown	Abstain	
1	Rochester Gas and Electric Corp.	John C. Allen	Affirmative	
1	Sacramento Municipal Utility District	Tim Kelley	Affirmative	
1	Salt River Project	Robert Kondziolka	Affirmative	
1	SaskPower	Wayne Guttormson	Abstain	
1	Seattle City Light	Pawel Krupa	Abstain	
1	Seminole Electric Cooperative, Inc.	Glenn Spurlock	Abstain	

1	Sho-Me Power Electric Cooperative	Denise Stevens		
1	Snohomish County PUD No. 1	Long T Duong	Affirmative	
1	South Carolina Electric & Gas Co.	Tom Hanzlik	Affirmative	
1	Southern California Edison Company	Steven Mavis	Affirmative	
1	Southern Company Services, Inc.	Robert A. Schaffeld	Affirmative	
1	Tampa Electric Co.	Beth Young		
1	Tennessee Valley Authority	Howell D Scott	Abstain	
1	Tucson Electric Power Co.	John Tolo	Abstain	
1	U.S. Bureau of Reclamation	Richard T Jackson	Affirmative	
1	Vermont Electric Power Company, Inc.	Kim Moulton		
1	Westar Energy	Allen Klassen	Affirmative	
1	Western Area Power Administration	Lloyd A Linke	Affirmative	
2	BC Hydro	Venkataramakrishnan Vinnakota		
2	California ISO	Rich Vine	Affirmative	
2	Electric Reliability Council of Texas, Inc.	Cheryl Moseley	Abstain	
2	Independent Electricity System Operator	Leonard Kula	Affirmative	
2	ISO New England, Inc.	Matthew F Goldberg	Affirmative	
2	MISO	Marie Knox		
2	New York Independent System Operator	Gregory Campoli		
2	PJM Interconnection, L.L.C.	stephanie monzon	Affirmative	
2	Southwest Power Pool, Inc.	Charles H. Yeung	Affirmative	
3	AEP	Michael E Deloach	Abstain	
3	Alabama Power Company	Robert S Moore	Affirmative	
3	APS	Sarah Kist	Affirmative	
3	Associated Electric Cooperative, Inc.	Todd Bennett	Abstain	
3	BC Hydro and Power Authority	Pat G. Harrington	Abstain	
3	Bonneville Power Administration	Rebecca Berdahl	Affirmative	
3	Central Electric Power Cooperative	Adam M Weber		
3	City of Anaheim Public Utilities Department	Dennis M Schmidt	Abstain	
3	City of Austin dba Austin Energy	Andrew Gallo	Affirmative	
3	City of Clewiston	Lynne Mila		
3	City of Green Cove Springs	Mark Schultz	Abstain	
3	Colorado Springs Utilities	Jean Mueller	Affirmative	
3	Consolidated Edison Co. of New York	Peter T Yost	Affirmative	
3	Consumers Energy Company	Gerald G Farringer		
3	Cowlitz County PUD	Russell A Noble	Affirmative	
3	CPS Energy	Jose Escamilla	Affirmative	
3	Dominion Resources, Inc.	Connie B Lowe	Abstain	
3	DTE Electric	Kent Kujala	Affirmative	
3	FirstEnergy Corp.	Cindy E Stewart	Affirmative	
3	Florida Keys Electric Cooperative	Tom B Anthony	Abstain	
3	Florida Municipal Power Agency	Joe McKinney	Affirmative	
3	Florida Power Corporation	Lee Schuster	Affirmative	
3	Georgia System Operations Corporation	Scott McGough	Affirmative	

3	Great River Energy	Brian Glover	Affirmative	
3	Hydro One Networks, Inc.	Ayesha Sabouba	Affirmative	
3	JEA	Garry Baker	Abstain	
3	Kansas City Power & Light Co.	Joshua D Bach		
3	Lakeland Electric	Mace D Hunter	Abstain	
3	Lee County Electric Cooperative	David A Hadzima		
3	Lincoln Electric System	Jason Fortik	Abstain	
3	Louisville Gas and Electric Co.	Charles A. Freibert		
3	Manitoba Hydro	Greg C. Parent		
3	MEAG Power	Roger Brand	Affirmative	
3	MidAmerican Energy Co.	Thomas C. Mielnik	Affirmative	
3	Muscatine Power & Water	John S Bos		
3	National Grid USA	Brian E Shanahan	Affirmative	
3	Nebraska Public Power District	Tony Eddleman	Negative	SUPPORTS THIRD PARTY COMMENTS - (Nebraska Public Power District comments)
3	New York Power Authority	David R Rivera	Affirmative	
3	Northern Indiana Public Service Co.	Ramon J Barany	Abstain	
3	NW Electric Power Cooperative, Inc.	David McDowell		
3	Ocala Utility Services	Randy Hahn		
3	Omaha Public Power District	Blaine R. Dinwiddie	Affirmative	
3	Orlando Utilities Commission	Ballard K Mutters	Abstain	
3	Owensboro Municipal Utilities	Thomas T Lyons	Abstain	
3	Pacific Gas and Electric Company	John H Hagen	Affirmative	
3	Platte River Power Authority	Terry L Baker	Abstain	
3	PNM Resources	Michael Mertz	Abstain	
3	Public Service Electric and Gas Co.	Jeffrey Mueller	Abstain	
3	Sacramento Municipal Utility District	James Leigh-Kendall	Affirmative	
3	Salt River Project	John T. Underhill	Affirmative	
3	Seminole Electric Cooperative, Inc.	James R Frauen	Abstain	
3	Snohomish County PUD No. 1	Mark Oens	Affirmative	
3	South Carolina Electric & Gas Co.	Hubert C Young	Affirmative	
3	Southern California Edison Company	Lujuanna Medina	Affirmative	
3	Tacoma Power	Marc Donaldson	Abstain	
3	Tennessee Valley Authority	Ian S Grant	Abstain	
3	Westar Energy	Bo Jones	Affirmative	
3	Xcel Energy, Inc.	Michael Ibold	Abstain	
4	Alliant Energy Corp. Services, Inc.	Kenneth Goldsmith	Abstain	
4	Blue Ridge Power Agency	Duane S Dahlquist	Abstain	
4	City of Austin dba Austin Energy	Reza Ebrahimian	Affirmative	
4	City Utilities of Springfield, Missouri	John Allen	Abstain	

4	Consumers Energy Company	Tracy Goble		
4	Cowlitz County PUD	Rick Syring	Affirmative	
4	DTE Electric	Daniel Herring	Affirmative	
4	Florida Municipal Power Agency	Frank Gaffney	Affirmative	
4	Georgia System Operations Corporation	Guy Andrews	Affirmative	
4	Herb Schrayshuen	Herb Schrayshuen	Affirmative	
4	Illinois Municipal Electric Agency	Bob C. Thomas	Abstain	
4	Madison Gas and Electric Co.	Joseph DePoorter	Abstain	
4	Ohio Edison Company	Douglas Hohlbaugh	Affirmative	
4	Public Utility District No. 1 of Snohomish County	John D Martinsen	Affirmative	
4	Sacramento Municipal Utility District	Mike Ramirez	Affirmative	
4	Seminole Electric Cooperative, Inc.	Steven R Wallace	Abstain	
4	South Mississippi Electric Power Association	Steve McElhaney	Affirmative	
4	Tacoma Public Utilities	Keith Morisette	Abstain	
4	Utility Services, Inc.	Brian Evans-Mongeon	Abstain	
4	Wisconsin Energy Corp.	Anthony Jankowski		
5	Amerenue	Sam Dwyer	Abstain	
5	American Electric Power	Thomas Foltz	Abstain	
5	Arizona Public Service Co.	Scott Takinen	Affirmative	
5	Boise-Kuna Irrigation District/dba Lucky peak power plant project	Mike D Kukla		
5	Bonneville Power Administration	Francis J. Halpin	Affirmative	
5	City of Austin dba Austin Energy	Jeanie Doty		
5	Cleco Power	Stephanie Huffman		
5	Cogentrix Energy Power Management, LLC	Mike D Hirst		
5	Colorado Springs Utilities	Kaleb Brimhall	Affirmative	
5	Con Edison Company of New York	Brian O'Boyle	Affirmative	
5	Cowlitz County PUD	Bob Essex	Affirmative	
5	Dominion Resources, Inc.	Mike Garton	Abstain	
5	DTE Electric	Mark Stefaniak		
5	Duke Energy	Dale Q Goodwine	Affirmative	
5	E.ON Climate & Renewables North America, LLC	Dana Showalter	Abstain	
5	EDP Renewables North America LLC	Heather Bowden	Abstain	
5	El Paso Electric Company	Gustavo Estrada		
5	Electric Power Supply Association	John R Cashin		
5	Entergy Services, Inc.	Tracey Stubbs	Affirmative	
5	First Wind	John Robertson		
5	FirstEnergy Solutions	Kenneth Dresner	Affirmative	
5	Florida Municipal Power Agency	David Schumann	Affirmative	
5	Great River Energy	Preston L Walsh	Affirmative	
5	JEA	John J Babik	Affirmative	
5	Kansas City Power & Light Co.	Brett Holland	Affirmative	
5	Kissimmee Utility Authority	Mike Blough	Affirmative	
5	Liberty Electric Power LLC	Daniel Duff	Affirmative	

5	Lincoln Electric System	Dennis Florom		
5	Los Angeles Department of Water & Power	Kenneth Silver		
5	Luminant Generation Company LLC	Rick Terrill		
5	Manitoba Hydro	Chris Mazur		
5	Massachusetts Municipal Wholesale Electric Company	David Gordon	Abstain	
5	MEAG Power	Steven Grego	Affirmative	
5	Muscatine Power & Water	Mike Avesing	Abstain	
5	Nebraska Public Power District	Don Schmit	Negative	COMMENT RECEIVED
5	New York Power Authority	Wayne Sipperly	Affirmative	
5	NextEra Energy	Allen D Schriver	Affirmative	
5	Northern Indiana Public Service Co.	Michael D Melvin		
5	Oglethorpe Power Corporation	Bernard Johnson	Affirmative	
5	Omaha Public Power District	Mahmood Z. Safi	Affirmative	
5	Ontario Power Generation Inc.	David Ramkalawan	Affirmative	
5	Orlando Utilities Commission	Richard K Kinas		
5	Pacific Gas and Electric Company	Alex Chua	Abstain	
5	Platte River Power Authority	Christopher R Wood	Abstain	
5	Portland General Electric Co.	Matt E. Jastram	Abstain	
5	PPL Generation LLC	Annette M Bannon	Affirmative	
5	PSEG Fossil LLC	Tim Kucey	Abstain	
5	Puget Sound Energy, Inc.	Lynda Kupfer	Abstain	
5	Sacramento Municipal Utility District	Susan Gill-Zobitz	Affirmative	
5	Salt River Project	William Alkema	Affirmative	
5	Seattle City Light	Michael J. Haynes	Abstain	
5	Seminole Electric Cooperative, Inc.	Brenda K. Atkins		
5	Snohomish County PUD No. 1	Sam Nietfeld	Affirmative	
5	South Carolina Electric & Gas Co.	Edward Magic		
5	Southern California Edison Company	Denise Yaffe	Affirmative	
5	Southern Company Generation	William D Shultz	Affirmative	
5	Tacoma Power	Chris Mattson	Abstain	
5	Tampa Electric Co.	RJames Rocha	Abstain	
5	Tennessee Valley Authority	David Thompson	Affirmative	
5	USDI Bureau of Reclamation	Erika Doot	Affirmative	
6	AEP Marketing	Edward P. Cox	Abstain	
6	Ameren Missouri	Robert Quinlivan	Negative	
6	APS	Randy A. Young	Affirmative	
6	Associated Electric Cooperative, Inc.	Brian Ackermann		
6	Bonneville Power Administration	Brenda S. Anderson	Affirmative	
6	City of Austin dba Austin Energy	Lisa Martin	Affirmative	
6	Cleco Power LLC	Robert Hirchak		
6	Colorado Springs Utilities	Shannon Fair	Affirmative	
6	Con Edison Company of New York	David Balban	Affirmative	
6	Duke Energy	Greg Cecil		
6	FirstEnergy Solutions	Kevin Querry	Affirmative	

6	Florida Municipal Power Agency	Richard L. Montgomery	Affirmative	
6	Florida Municipal Power Pool	Thomas Washburn	Abstain	
6	Florida Power & Light Co.	Silvia P Mitchell	Affirmative	
6	Great River Energy	Donna Stephenson		
6	Kansas City Power & Light Co.	Jessica L Klinghoffer	Affirmative	
6	Lakeland Electric	Paul Shipps	Affirmative	
6	Lincoln Electric System	Eric Ruskamp	Abstain	
6	Los Angeles Department of Water & Power	Brad Packer		
6	Lower Colorado River Authority	Michael Shaw	Abstain	
6	Luminant Energy	Brenda Hampton	Affirmative	
6	Muscatine Power & Water	John Stolley		
6	New York Power Authority	Shivaz Chopra	Affirmative	
6	Northern Indiana Public Service Co.	Joseph O'Brien	Abstain	
6	Oglethorpe Power Corporation	Donna Johnson	Affirmative	
6	Omaha Public Power District	Douglas Collins	Affirmative	
6	PacifiCorp	Sandra L Shaffer	Affirmative	
6	Platte River Power Authority	Carol Ballantine	Abstain	
6	Portland General Electric Co.	Shawn P Davis	Abstain	
6	Power Generation Services, Inc.	Stephen C Knapp	Affirmative	
6	PPL EnergyPlus LLC	Elizabeth Davis	Affirmative	
6	PSEG Energy Resources & Trade LLC	Peter Dolan	Abstain	
6	Sacramento Municipal Utility District	Diane Enderby	Affirmative	
6	Salt River Project	William Abraham	Affirmative	
6	Seattle City Light	Dennis Sismaet	Affirmative	
6	Seminole Electric Cooperative, Inc.	Trudy S. Novak	Abstain	
6	Snohomish County PUD No. 1	Kenn Backholm	Affirmative	
6	Southern California Edison Company	Joseph T Marone	Affirmative	
6	Southern Company Generation and Energy Marketing	John J. Ciza	Affirmative	
6	Tacoma Public Utilities	Michael C Hill	Abstain	
6	Tampa Electric Co.	Benjamin F Smith II		
6	Tennessee Valley Authority	Marjorie S. Parsons	Abstain	
6	Western Area Power Administration - UGP Marketing	Peter H Kinney	Abstain	
8		Roger C Zaklukiewicz	Affirmative	
8		David L Kiguel	Affirmative	
8	Massachusetts Attorney General	Frederick R Plett	Affirmative	
8	Volkmann Consulting, Inc.	Terry Volkmann		
9	Commonwealth of Massachusetts Department of Public Utilities	Donald Nelson	Affirmative	
10	Florida Reliability Coordinating Council	Linda C Campbell	Affirmative	
10	Midwest Reliability Organization	Russel Mountjoy	Affirmative	
10	New York State Reliability Council	Alan Adamson	Affirmative	
10	Northeast Power Coordinating Council	Guy V. Zito	Affirmative	
10	ReliabilityFirst	Anthony E Jablonski	Negative	COMMENT RECEIVED
10	SERC Reliability Corporation	Joseph W Spencer	Affirmative	

10	Southwest Power Pool RE	Bob Reynolds	Abstain	
10	Western Electricity Coordinating Council	Steven L. Rueckert	Abstain	

Individual or group. (29 Responses)
Name (15 Responses)
Organization (15 Responses)
Group Name (14 Responses)
Lead Contact (14 Responses)
Contact Organization (14 Responses)
IF YOU WISH TO EXPRESS SUPPORT FOR ANOTHER ENTITY'S COMMENTS WITHOUT ENTERING ANY ADDITIONAL COMMENTS, YOU MAY DO SO HERE. (2 Responses)
Comments (29 Responses)
Question 1 (26 Responses)
Question 1 Comments (27 Responses)
Question 2 (26 Responses)
Question 2 Comments (27 Responses)
Question 3 (26 Responses)
Question 3 Comments (27 Responses)
Question 4 (14 Responses)
Question 4 Comments (14 Responses)

Group
Northeast Power Coordinating Council
Guy Zito
Northeast Power Coordinating Council
Yes
Yes
Yes
Yes
Real-time Operations should be added to the Time Horizon for R5 so as to be consistent with those stipulated for R4 (which is applicable to the Transmission Entities). In Section D. Regional Variances, add the words “and nuclear plant safe operation” as follows: Canadian Nuclear Plant Licensing Requirements (CNPLR) 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 and nuclear plant safe operation as a result of an electric system disturbance, transient, or condition.
Group

Florida Power & Light
Mike O'Neil
Florida Power & Light
Yes
Yes
Yes
Group
Arizona Public Service Company
Janet Smith
Arizona Public Service Company
Yes
Yes
Yes
Group
FirstEnergy Corp
Cindy Stewart
FirstEnergy Corp
Yes
Yes
ADDITIONAL COMMENTS: FirstEnergy acknowledges that Part 9.1 was retired under the Paragraph 81 project. We also agree with not renumbering Requirement parts that would impact existing agreements throughout the industry. However, we strongly suggest that Part 9.1 be marked Retired instead of being left blank as this could lead to future confusion. Our concern is that someone not aware of the history of NUC-001 may do unnecessary research to understand why Part 9.1 is blank. Stating “Retired” will provide clarity and eliminate the possibility of any confusion.
Yes

Individual
Andrew Z. Pusztai
American Transmission Company, LLC
Yes
Agree.
Yes
Agree
Yes
Group
Dominion
Mike Garton
Dominion Resources Services, Inc.
Yes
Dominion agrees with the changes to R5, but suggests M5 be updated; where 'Nuclear Power Plant' is used, change this to 'nuclear power plant' (lower case), as this is not a defined term. Also in section D - Regional Variances - Nuclear Power Plant is also capitalized here and it should not be capatilized and suggest changing this to 'nuclear power plant'.
Yes
No
Dominion does not see how the VSLs in R6 can have N/A under Severe. According to the last sentence on page 2 of the VSL guideline and combine that with the chart at the top of the page, it seems that failure to coordinate one or more outages or maintenance activities which affect the NPIRs, indicates that the entity failed to meet the performance of the requirement. Therefore Dominion suggests that the VSL currently marked High be changed to Severe. Question 4 Comments: 1. The impact identified in Requirement R8 does not match the impact identified in Measure M8 . Specifically, R8 "impact the ability of the electric system to meet the NPIRs" while M8 "impact the ability of the Nuclear Plant Generator Operator to meet the NPIRs." Dominion believes the language in M8 is correct and suggest revising R8 accordingly. 2. The Data Retention section addresses Measure M4.3 but does not address M4.1 or M4.2. 3. Requirements R7 and R8 uses the term 'may impact the ability of the electric system' and the M7 and M8 uses the term 'would impact the ability of the electric system'. Dominion suggests that the SDT replace 'may' with 'will' in requirements R7 and R8, or delete both "may" and "would" and simply use present tense "impact' in the Requirements and past tense "impacted" in the Measures.
Individual
Tammy Porter

Oncor Electric Delivery
Yes
Yes
Yes
Individual
David Thorne
Pepco Holdings Inc.
Yes
Yes
Yes
Individual
Leonard Kula
Independent Electricity System Operator
Yes
Yes
Yes
Question 4: Additional Comments Provided a. R3 as written has a very broad scope and mandate for the Transmission Entities as it implies that the Transmission Entities need to communication the results of all planning analyses that have NPIRs incorporated, either as assumption or in the model, to the Nuclear Plant Generator Operator (NPGO), regardless of the potential impacts on the NPGO. This is unnecessary, and the amount of information provided to the NPGO can be overwhelming. We suggest revising R3 as follows: 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 analysis results to those Nuclear Plant Generator Operators that may be affected by such results. With the proposed revision, the Transmission Entities do not have to communicate the results of all analyses that have NPIRs incorporated, and the NPGO will not be inundate by analysis results that do not affect them. b. Real-time Opertions should be

added to the Time Horizon for R5 so as to be consistent with those stipulated for R4 (which is applicable to the Transmission Entities). c. The MEDIUM VRF for R1 stipualted in the VSL should be LOWER, not MEDIUM as it is inconsistent with the LOWER VRF stipulated in the requirement itself.
Individual
Don Schmit
Nebraska Public Power District
No
We recommend that R5 revert back to version 2 wording as follows: “R5 - The Nuclear Plant Generator Operator shall operate per the Agreements developed in accordance with this standard.” (The reason for reversion back to the version 2 R5 is identified in our comments in #4 below.) We would also recommend that the Time Horizon change for R5 to match R4 [Operations Planning and Real-time Operations]. Since Q4 from the draft comment form does not show up on this Official comment site we are including Q4 (any other comments) here: The Glossary of Terms for the definition of NPIRs [Nuclear Plant Interface Requirements] needs revision (along with our other Standard revisions noted in comments above) in order for version 3 of NUC-001 to capture the requirements put upon the Nuclear Plant Operator for operation of the nuclear plant; and the requirements placed upon the Nuclear Plant Operator and the Transmission Entity for interface requirements between the two based upon the NPLR’s. NPLR’s or Nuclear Plant Licensing Requirements are the license requirements that the Nuclear Plant Operator must operate to [the Nuclear Plant Operator does not operate to the NPIR’s as suggested under R5]. The NPIR’s are indeed the mutually agreed upon requirements between the Nuclear Plant Operator and the Transmission Entity that are based upon the NPLR’s. The NPIR’s are not Bulk Electric System (BES) requirements “mutually” agreed upon between the Nuclear Plant Operator and the Transmission Entity as suggested by the current definition of NPIR. BES requirements are applicable to the Nuclear Plant Operator as a Generator Owner under other NERC Standards and Requirements and are not “mutually agreeable” between the two entities. In alignment with the stated Purpose of this Standard, NPPD suggests that the definition of NPIR be changed to “The requirements based on NPLR’s that have been mutually agreed to by the Nuclear Plant Operator and the applicable Transmission Entities to ensure nuclear plant safe operation and shutdown”. Please note that the definition of NPLR (as referenced in the NPIR proposed definition) already has the applicable parameters [plant design basis and statutorily mandated for operation; and including off-site power supply and avoiding preventable challenges to nuclear safety as a result of electric system disturbance, transient, or condition]. When the NPIR’s are agreed upon between the Nuclear Plant Operator and the Transmission Entity then they both operate to the Agreements between the two. R4 is correct in stating that the Transmission Entity application shall be “per the Agreement”. Likewise R5 should require the Nuclear Plant Operator to follow the Agreements as agreed to (see comment changes in #1 above) for R5; which we state that R5 should revert back to version 2 language.
Yes

No
Change the VSL for R5 based on our comments in #1 and #4. Change the reference to “NPIRs” in this VSL to “Agreement’s”. R9 VSL’s: Please revert back to version 2 VSL’s for R9. A percentage basis as used in version 3 will lead to improper application by regulators. Version 2 is a much cleaner approach.
Individual
Ayesha Sabouba
Hydro One
Agree
NPCC-RSC
Group
SERC OC Review Group
Jim Porter
TVA
Yes
The SERC OC Review Group recommends that M5 be updated to use the term “nuclear power plant” (without capitalization) instead of “Nuclear Power Plant” as this is not a defined term. Current M5 language: The Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, demonstrate or provide evidence that the Nuclear Power Plant is being operated consistent with the NPIRs. Proposed M5 language: The Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, demonstrate or provide evidence that the nuclear power plant is being operated consistent with the NPIRs. If this change is acceptable then R1 VSL Severe is recommended for modification for consistency. Current R1 VSL Severe language: The Nuclear Plant Generator Operator did not provide the proposed NPIR's to more than two of applicable entities. OR For a particular Nuclear Power Plant, if the number of possible applicable transmission entities is equal to the number of applicable transmission entities not provided NPIRs Proposed R1 VSL Severe language: The Nuclear Plant Generator Operator did not provide the proposed NPIR's to more than two of applicable entities. OR For a particular nuclear power plant, if the number of possible applicable transmission entities is equal to the number of applicable transmission entities not provided NPIRs
Yes
No
The SERC OC Review Team requests clarification as to why the SDT chose to use the “high” VSL category and not the “severe” VSL category. Using the VSL guideline (page 2 last sentence) it appears that failure to coordinate one or more outages or maintenance activities which affect the NPIRs indicates that the entity failed to meet the performance of the requirement. Thus, it may be appropriate that the “severe” VSL should be utilized. Software

did not allow access to Question 4. Please see additional comments below. The SERC OC Review Team respectfully requests clarification on the use of “may” vs. “would” in R7 and M7. The same clarification is requested for R8 and M7. The concern is the interpretation that is used for “may” and “would”. An example is included below: 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 (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs. [Violation Risk Factor: High] [Time Horizon: Long-term Planning] M7. The Nuclear Plant Generator Operator shall provide evidence that it informed the applicable Transmission Entities of changes to nuclear plant design (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that would impact the ability of the Transmission Entities to meet the NPIRs. Data Retention: The SERC OC Review Group noticed that M4.1 and M4.2 are not included in the Data Retention section. It is requested that the SDT review and evaluate whether or not M4.1 and M4.2 should be included in the Data Retention section. The comments expressed herein represent a consensus of the views of the above named members of the SERC OC Review Group only and should not be construed as the position of the SERC Reliability Corporation, or its board or its officers.
Individual
Joshua Andersen
Salt River Project
Yes
Yes
Yes
Individual
Anthony Jablonski
ReliabilityFirst
No
ReliabilityFirst submits the following comments for consideration (question 4 was missing from the online form so we submitted it here): Requirement R7 and R8 – Without the terms “nuclear plant design” or “electric system design” being defined in the standard, ReliabilityFirst believes the original intent of requiring the entity to inform the Transmission Entities of changes to the Protection System may be getting lost. The original standard required information regarding changes to Protection Systems and ReliabilityFirst requests the justification for no longer requiring elements such as Protective relays, communications

systems, voltage and current sensing devices, station dc supply and control circuitry be included as being reportable to the Transmission Entities in the standard.
No
ReliabilityFirst submits the following comments for consideration: Requirement R9 – Even though the intent of Requirement R9 is understood, ReliabilityFirst believes it can be stated in a more clear and concise manner. ReliabilityFirst recommends the following for consideration: "The Nuclear Plant Generator Operator and the applicable Transmission Entities shall include the following elements in aggregate within the Agreement(s) identified in R2. Regardless if there are single or multiple Agreements with single or multiple Transmission Entities, all elements under Requirement R9 need to be addressed, in aggregate, within the Agreement(s)"
No
ReliabilityFirst submits the following comments for consideration: VSL for Requirement R4 – For consistency, all VSLs under Requirement R4 should reference "sub-parts" and not "sub-requirements". VSL for Requirement R6 – For consistency with the language in Requirement R6, the Moderate VSL should reference "maintenance activities" and not "maintenance schedules".
Individual
Thomas Foltz
American Electric Power
Yes
Yes
No
The correct pluralization of NPIR is "NPIRs", without an apostrophe. There are a number of instances in the VSL table where an apostrophe is incorrectly used.
Individual
Robert Coughlin
ISO New England Inc.
Yes
ISO-NE suggests that the SDT clarify the definition of Nuclear Plant Interface Requirements (NPIRs). Adding a second sentence to the definition would help to avoid inappropriate identification of NPIRs. 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. NPIRs reflect limits, parameters, equipment configuration control or administrative tasks associated with maintaining the NPLRs or BES requirements. Rationale: As currently defined, NPIRs are tied to both Nuclear Plant License Requirements (NPLRs) and Bulk Electric System (BES) requirements. NPLRs and BES requirements are each typically expressed as measurable values, specified facilities, or specified equipment configurations. NPLRs are defined by the Nuclear Regulatory Commission (NRC) through the 10 CFR Part 50 process (Domestic Licensing of "Production and Utilization Facilities"), which defines the requirements for the licensing of nuclear power plants in the United States. From these requirements, design basis scenarios are created to identify limits, parameters or configuration control (e.g., minimum number of lines to the station) that must be met to operate/maintain the plant within the license requirements. NPLRs could also include administrative tasks required by the NRC, also expressed in terms of a measurable value (e.g. certain studies must be reviewed on a prescribed timeframe). BES requirements are also typically expressed as values (e.g., transmission system limit). This clarification would help to avoid inappropriate identification of actions to address and implement a NPIR as a NPIR itself. Actions to address and implement a NPIR are required by NUC-001-3 R2, but those actions should not be identified as NPIRs themselves because they are not directly related to either licensing requirements or BES requirements.
Individual
Chris Scanlon
Exelon Corporation
Yes
Yes
Yes
No
Group
Florida Municipal Power Agency
Frank Gaffney
Florida Municipal Power Agency
Yes
Yes

Yes
Yes
FMPA suggests that Applicability Section 4.2.9 Load Serving Entity should be removed from the list. FERC's 2008-10-16 Order 716 which approved NUC-001-1 acknowledged "there is a significant amount of overlap among the entities that perform these functions." FMPA believes that Load-Serving Entities do not perform any unique reliability tasks necessary during coordination with Nuclear Plant Generator Operators, and that all such necessary reliability tasks are already being performed by the other applicable functional entities of NUC-001-2.1. Thus, Project 2012-13 provides a good opportunity to delete the redundant Load-Serving Entities function from this Standard.
Individual
Bob Thomas
Illinois Municipal Electric Agency
Agree
Florida Municipal Power Agency
Individual
RoLynda Shumpert
South Carolina Electric and Gas
Yes
Yes
Yes
No
Group
Southern Company: Southern Company Services,Inc.; Alabama Power Company; Georgia Power Company; Gulf Power Company; Mississippi Power COmpany; Southern Company Generation; Southern Company Generation and Energy Marketing
Marcus Pelt
Southern Company Operations Compliance
Yes
Yes

Yes
No
Individual
David Ramkalawan
OPG
Yes
Yes
Yes
Yes
In section D. Regional Variances, OPG would like to add the words “and nuclear plant safe operation” as follows: Canadian Nuclear Plant Licensing Requirements (CNPLR) 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 and nuclear plant safe operation as a result of an electric system disturbance, transient, or condition.
Group
Tennessee Valley Authority
Brandy Spraker
NERC Regulatory Compliance
Yes
Recommend to follow the SERC OC comment that M5 be updated to use the term “nuclear power plant” (without capitalization) instead of “Nuclear Power Plant” as this is not a defined term. Current M5 language: The Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, demonstrate or provide evidence that the Nuclear Power Plant is being operated consistent with the NPIRs. Proposed M5 language: The Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, demonstrate or provide evidence that the nuclear power plant is being operated consistent with the NPIRs. If this change is acceptable then R1 VSL Severe is recommended for modification for consistency. Current R1 VSL Severe language: The Nuclear Plant Generator Operator did not provide the proposed NPIR's to more than two of applicable entities. OR For a particular Nuclear Power Plant, if the number of possible applicable transmission entities is equal to the number of applicable transmission entities not provided NPIRs Proposed R1 VSL

Severe language: The Nuclear Plant Generator Operator did not provide the proposed NPIR's to more than two of applicable entities. OR For a particular nuclear power plant, if the number of possible applicable transmission entities is equal to the number of applicable transmission entities not provided NPIRs
Yes
Yes
Yes
Recommend to follow the SERC OC comments following: The SERC OC Review Team respectfully requests clarification on the use of “may” vs. “would” in R7 and M7. The same clarification is requested for R8 and M7. The concern is the interpretation that is used for “may” and “would”. An example is included below: 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 (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs. [Violation Risk Factor: High] [Time Horizon: Long-term Planning] M7. The Nuclear Plant Generator Operator shall provide evidence that it informed the applicable Transmission Entities of changes to nuclear plant design (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that would impact the ability of the Transmission Entities to meet the NPIRs. Data Retention: The SERC OC Review Group noticed that M4.1 and M4.2 are not included in the Data Retention section. It is requested that the SDT review and evaluate whether or not M4.1 and M4.2 should be included in the Data Retention section.
Group
ACES Standards Collaborators
Brian Van Gheem
ACES
Yes
We commend the NUC Five-Year Review Team for this recommendation and the SDT with its implementation to revise R5 and make it consistent with R4. Following this revision, Nuclear Plant Generator Operators will be obligated to operate their nuclear plants in a manner to meet the NPIRs, which will address possible reliability concerns that result when operations are outside of these requirements.
Yes
We commend the NUC Five-Year Review Team for this recommendation and the SDT with its implementation to revise R9. This clarification allows entities to address the elements of Requirement R9 across several agreements and not limit them to just one.
No

We believe the VRFs identified for requirements R5 and R9 are appropriate for their level of impact to the BES. However, we do have concerns regards the VSLs for these requirements. The VSL for Requirement R5 is binary in nature and should be modified to a graduated severity level. We feel that weighing each NPIR equally does not identify the significance of some NPIRs, such as power supply restoration times and safety. We also find the percentage approach taken for R9 confusing and that the previous approach identifying a specific number of elements easier.
Yes
(1) We appreciate the SDT with their efforts to incorporate the various recommendations from the NUC Five-Year Review Team in this revision of NERC Standard NUC-001. In particular, we welcome the clarification in Requirement R5 regarding nuclear plant operations meeting the NPIRs. We also welcome the omission of the NERC Glossary Term “Protection Systems” from requirements R7 and R8 to better identify the intent of those requirements. Finally, we welcome the administrative details taken to identify appropriate timing horizons, clarify measures, and modify the VSLs and VRFs. (2) However, we feel that further revision is still needed. We feel a communication gap exists when Nuclear Plant Generator Operators neglect to communicate with Transmission Entities when Nuclear Plant Generator Operators lose the ability to assess the operation of their plants and ability to meet the NPIRs. We believe addressing this gap will be a step towards situational awareness for all affected Parties involved. (3) We feel the number of elements listed under Requirement R9 should be limited to those elements affecting the NPIRs. For example, Requirement R9.3.3 identifies a need for coordination of testing, calibration, and maintenance of power supplies within the aggregated agreements. While we agree with the importance of testing, calibrating, and maintaining power supplies, we believe such activities are already addressed by the owner of such facilities through other NERC Standards. Likewise, Requirement R9.3.6 identifies the coordination of physical and cyber security protection of assets near the nuclear plant interface. While we agree with the importance of physical and cyber security protection, we believe such activities are already addressed with existing NERC Critical Infrastructure Protection requirements. Moreover, these activities will be further enhanced with Revision 5 of these NERC Critical Infrastructure Protection standards. (4) Finally, we thank you for the opportunity to comment.
Group
Duke Energy
Colby Bellville
Duke Energy
Yes
Duke Energy agrees with the revisions made by the SDT.
Yes
Duke Energy agrees with the revisions made by the SDT.
Yes

No
Group
DTE Electric
Kathleen Black
NERC Training & Standards Development
Yes
Yes
Yes
There is a question as to why R5's VRF and VSL are called out. The VRF remains at High and the VSL is High for the NPGOP to operate to the NPIRs.
No
Individual
Catherine Wesley
PJM Interconnection
Yes
Yes
Yes
Yes
PJM has also signed onto the SRC's comments.
Group
ISO/RTO Council Standards Review Committee
Greg Campoli
NYISO
Yes
Yes
Yes

Yes
a. Measure M2 is unclear: M2. The Nuclear Plant Generator Operator and each Transmission Entity shall each have a copy of the Agreement(s) [addressing and implementing the NPIRs] available for inspection upon request of the Compliance Enforcement Authority. The Agreement doesn't "address and implement" the NPIRs – it describes how the entities address and implement them. The measure should simply state that the responsible entity has a copy of the agreement – i.e. we suggest to delete the language in [bracket]. b. R3 as written has a very broad scope and mandate for the Transmission Entities as it implies that the Transmission Entities need to communicate the results of all planning analyses that have NPIRs incorporated, either as an assumption or in the model, to the Nuclear Plant Generator Operator (NPGO) regardless of the potential impacts on the NPGO. This is unnecessary, and the amount of information provided to the NPGO can be overwhelming. We suggest revising R3 as follows: 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 those analysis results that affect the relevant Nuclear Plant Generator Operators that may be affected by such results. With the proposed revision, there will not be a suggestion that Transmission Entities have to communicate the results of all analyses that have NPIRs incorporated, and the NPGO will not be inundated by analysis results that do not affect them. c. Requirement R4: There appears to be an inconsistency between R4 and Measure M4 which has created some confusion in assessing compliance. It is our understanding that most Agreements between Nuclear Plant Generator Operators and Transmission Entities include specific tasks/actions that both parties need to perform. Hence, each Transmission Entity has specific tasks assigned but is not held responsible for all aspects of a plant's NPIRs or those performed by other Transmission Entities associated with that plant. To ensure the Transmission Entity is assessed only on its specific tasks per the Agreement, we suggest to deleted the word "current" from Measure M4.1, and add "per the Agreements" to Measures M4.2 and M4.3, as follows: 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 Enforcement Authority: M4.1: The NPIRs have been incorporated into the current operating analysis of the electric system. (Requirement 4.1) requirement R4 does not specify "current", and one may not know what this means, which can be current as at the day of the audit. We suggest deleting the word "current". M4.2 The electric system was operated to meet the NPIRs per the agreements. (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 per the agreements. d. Real-time Operations should be added to the Time Horizon for R5 so as to be consistent with those stipulated for R4 (which is applicable to the Transmission Entities). e. Requirements R1, R2, R3, R7, R8, and R9 specify the Time Horizon as "Long-term Planning", which differs somewhat from the NERC Glossary defined term of "Long-Term Transmission Planning Horizon", which NERC defines as covering years 6 – 10 and beyond. We suggest adding "Near-Term Planning" to the Time Horizon, which NERC defines as covering years 1 – 5. With the Near-Term Planning and Long- Term Planning included in the Time Horizon, the one to ten year planning

horizon would be covered. This is particularly relevant to Requirements R3 and R9 (i.e., R9.2.3) where they are specific to planning analyses. Similarly, it's relevant to Requirement R8, where the analysis to identify system changes to the electric system should include year's 1 - 5 in the planning horizon and planning analyses. f. The MEDIUM VRF for R1 stipulated in the VSL should be LOWER, not MEDIUM as it is inconsistent with the LOWER VRF stipulated in the requirement itself.
Group
Bonneville Power Administration
Andrea Jessup
Transmission Reliability Standards Group
Yes
BPA concurs the NPIRS should drive the interface requirements; however NPIRS must be concurred between transmission provider and nuclear plant prior to inclusion in an Interface Agreement.
Yes
Yes
No

Question 4 – Response: Yes

Comments: The Implementation Plan can be read that it obligates applicable entities to complete the initial risk assessment in Requirement R1, on or before the effective date of the standard. The implementation plan should be adjusted.

The following is a suggestion to facilitate reading of the standard and stay whitn defined terms without introfucing new terms which are undefined: For all requirements: Replace the expression "Transmission stations and Transmission substations" with "Transmission facilities". Otherwise, please explain why such a distinction is necessary.

While the requirement for unaffiliated third party verification of the physical security plan is something required by the FERC in its order, the mandate is misguided and will lead to security breaches while at the same time adding no incremental value to the physical security plan. The utility, which owns the assets, is already highly incentivized to put together a good security plan to avoid loss of its facilities to terrorism without third party verification. The utility may decide to use security consultants to help develop the plan if it involves new, state of the art physical security topics outside the utilities experience base. On balance the third party verification requirement outlined in R6 regarding the physical security plan is unneeded.

Additional comment received from Marcus Pelt, Southern Company

"The wording of Requirement R2.s, as it stands currently, could be interpreted to place requirements on the unaffiliated third party verifier when the responsible entity is actually the Transmission Owner. Southern recommends that R2.2 be reworded as follows to address this concern:

Proposed R2.2
2.2 The responsible Transmission Owner shall ensure the unaffiliated third party verification is completed within 90 calendar days following the completion of the Requirement R1 risk assessment. The unaffiliated third party verification may, but is not required to, include recommended additions or deletions of Transmission station(s) or Transmission substation(s)."

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Consideration of Comments

Project 2012-13 NUC - Nuclear Plant Interface Coordination

The Nuclear Plant Interface Coordination Drafting Team thanks all commenters who submitted comments on the standard. These standards were posted for a 30-day public comment period from April 8, 2014 through May 22, 2014. Stakeholders were asked to provide feedback on the standards and associated documents through a special electronic comment form. There were 29 sets of comments, including comments from approximately 103 different people from approximately 57 companies representing all 10 Industry Segments as shown in the table on the following pages.

All comments submitted may be reviewed in their original format on the standard's project page.

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, Valerie Agnew, at 404-446-2566 or at valerie.agnew@nerc.net . In addition, there is a NERC Reliability Standards Appeals Process.[1]

[1] The appeals process is in the Standard Processes Manual: http://www.nerc.com/comm/SC/Documents/Appendix_3A_StandardsProcessesManual.pdf

Index to Questions, Comments, and Responses

The Industry Segments are:

1 — Transmission Owners
2 — RTOs, ISOs
3 — Load-Serving Entities
4 — Transmission-dependent Utilities
5 — Electric Generators
6 — Electricity Brokers, Aggregators, and Marketers
7 — Large Electricity End Users
8 — Small Electricity End Users
9 — Federal, State, Provincial Regulatory or other Government Entities
10 — Regional Reliability Organizations, Regional Entities

Group/Individual		Commenter	Organization	Registered Ballot Body Segment									
				1	2	3	4	5	6	7	8	9	10
1.	Group	Guy Zito	Northeast Power Coordinating Council										X

	Additional Member	Additional Organization	Region	Segment Selection
1.	Alan Adamson	New York State Reliability Council, LLC	NPCC	10
2.	David Burke	Orange and Rockland Utilities Inc.	NPCC	3
3.	Greg Campoli	New York Independent System Operator	NPCC	2
4.	Sylvain Clermont	Hydro-Québec TransÉnergie	NPCC	1
5.	Ben Wu	Orange and Rockland Utilities Inc.	NPCC	1
6.	Gerry Dunbar	Northeast Power Coordinating Council	NPCC	10
7.	Mike Garton	Dominion Resources Services, Inc.	NPCC	5
8.	Matt Goldberg	ISO - New England	NPCC	2
9.	Michael Jones	National Grid	NPCC	1
10.	Mark Kenny	Northeast Utilities	NPCC	1

Group/Individual	Commenter	Organization	Registered Ballot Body Segment									
			1	2	3	4	5	6	7	8	9	10
11. Christina Koncz	PSEG Power, LLC	NPCC 5										
12. Helen Lainis	Independent Electricity System Operator	NPCC 2										
13. Wayne Sipperly	New York Power Authority	NPCC 5										
14. Alan MacNaughton	New Brunswick Power Corp.	NPCC 9										
15. Bruce Metruck	New York Power Authority	NPCC 6										
16. Silvia Parada Mitchell	NextEra Energy, LLC	NPCC 5										
17. Lee Pedowicz	Northeast Power Coordinating Council	NPCC 10										
18. Robert Pellegrini	The United Illuminating Company	NPCC 1										
19. Si Truc Phan	Hydro-Québec TransÉnergie	NPCC 1										
20. David Ramkalawan	Ontario Power Generation, Inc.	NPCC 5										
21. Brian Robinson	Utility Services	NPCC 8										
22. Ayesha Sabouba	Hydro One Networks Inc.	NPCC 1										
23. Brian Shanahan	National Grid	NPCC 1										
2. Group	Mike O'Neil	Florida Power & Light	X									
No Additional Responses												
3. Group	Janet Smith	Arizona Public Service Company	X		X		X	X				
No Additional Responses												
4. Group	Cindy Stewart	FirstEnergy Corp	X		X	X	X	X				

	Additional Member	Additional Organization	Region	Segment Selection
1.	William Smith	FirstEnergy Corp.	RFC	1
2.	Douglas Hohlbaugh	Ohio Edison	RFC	4
3.	Kenneth Dresner	FirstEnergy Solutions Corp.	RFC	5
4.	Kevin Querry	FirstEnergy Solutions Corp.	RFC	6

5. Group	Mike Garton	Dominion	X		X		X	X				

Additional Member	Additional Organization	Region	Segment Selection

Group/Individual		Commenter	Organization	Registered Ballot Body Segment									
				1	2	3	4	5	6	7	8	9	10
1.	Connie Lowe	NERC Compliance Policy	NA - Not Applicable	1, 3, 5, 6									
2.	Louis Slade	NERC Compliance Policy	NA - Not Applicable	1, 3, 5, 6									
3.	Randi Heise	NERC Compliance Policy	NA - Not Applicable	1, 3, 5, 6									
4.	Chip Humphrey	Power Generation Compliance	NA - Not Applicable	5									
5.	Dan Goyne	Power Generation Compliance	NA - Not Applicable	5									
6.	Jarad L. Morton	Power Generation Compliance	NPCC	5									
7.	Larry Whanger	Power Generation Compliance	SERC	5									
8.	Nancy Ashberry	Power Generation Compliance	RFC	5									
9.	Angela Park	Electric Transmission Compliance	SERC	1, 3									
10.	Candace L. Marshall	Electric Transmission Compliance	SERC	1, 3									
11.	John Calder	Electric Transmission Compliance	SERC	1, 3									
12.	Larry Nash	Electric Transmission Compliance	SERC	1, 3									
13.	Larry W. Bateman	Electric Transmission Compliance	SERC	1, 3									
14.	Jeffrey N. Bailey	Nuclear Compliance	SERC	5									
15.	Tom Huber	Nuclear Compliance	NPCC	5									
6.	Group	Jim Porter	SERC OC Review Group	X		X		X	X				

	Additional Member	Additional Organization	Region	Segment Selection
1.	Connie Lowe	Dominion	SERC	1, 3, 6
2.	Mike Garton	Dominion	SERC	1, 3, 6

Group/Individual		Commenter	Organization	Registered Ballot Body Segment									
				1	2	3	4	5	6	7	8	9	10
7.	Group	Frank Gaffney	Florida Municipal Power Agency	X		X	X	X	X				

	Additional Member	Additional Organization	Region	Segment Selection
1.	Tim Beyrle	City of New Smyrna Beach	FRCC	4
2.	Jim Howard	Lakeland Electric	FRCC	3
3.	Greg Woessner	Kissimmee Utility Authority	FRCC	3
4.	Lynne Mila	City of Clewiston	FRCC	3
5.	Cairo Vanegas	Fort Pierce Utility Authority	FRCC	4
6.	Randy Hahn	Ocala Utility Services	FRCC	3
7.	Stanley Rzad	Keys Energy Services	FRCC	1
8.	Don Cuevas	Beaches Energy Services	FRCC	1
9.	Mark Schultz	City of Green Cove Springs	FRCC	3

8.	Group	Marcus Pelt	Southern Company: Southern Company Services, Inc.; Alabama Power Company; Georgia Power Company; Gulf Power Company; Mississippi Power Company; Southern Company Generation; Southern Company Generation and Energy Marketing	X		X		X	X				

No Additional Responses

9.	Group	Brandy Spraker	Tennessee Valley Authority	X		X		X	X				

	Additional Member	Additional Organization	Region	Segment Selection
1.	Lee Thomas		SERC	5
2.	Darrin Church		SERC	1
3.	Marjorie Parsons		SERC	6
4.	DeWayne Scott		SERC	1
5.	David Thompson		SERC	5
6.	Ian Grant		SERC	3

10.	Group	Brian Van Gheem	ACES Standards Collaborators						X				

	Additional Member	Additional Organization	Region	Segment Selection
1.	David Viar	Southern Maryland Electric Coop.	RFC	3
2.	Michael Brytowski	Great River Energy	MRO	1, 3, 5, 6
3.	Brian Hobbs	Western Farmers Electric Coop.	ERCOT	1, 5

Group/Individual		Commenter	Organization	Registered Ballot Body Segment									
				1	2	3	4	5	6	7	8	9	10
4.	Ellen Watkins	Sunflower Electric Power Corp.	SPP 1										
11.	Group	Colby Bellville	Duke Energy	X		X		X	X				

	Additional Member	Additional Organization	Region	Segment Selection
1.	Doug Hils	Duke Energy	RFC	1
2.	Lee Schuster	Duke Energy	FRCC	3
3.	Dale Goodwine	Duke Energy	SERC	5
4.	Greg Cecil	Duke Energy	RFC	6

12.	Group	Kathleen Black	DTE Electric			X	X	X					

	Additional Member	Additional Organization	Region	Segment Selection
1.	Kent Kujala	NERC Compliance	RFC	3
2.	Daniel Herring	NERC Training & Standards Development	NPCC	4
3.	Mark Stefaniak	Regulated Marketing	RFC	5
4.	Karie Barczak	NERC Compliance		
5.	Barbara Holland	DO SOC		
6.	Joseph Staniak	DO SOC		

13.	Group	Greg Campoli	ISO/RTO Council Standards Review Committee		X								

	Additional Member	Additional Organization	Region	Segment Selection
1.	Matt Goldberg	ISO-NE	NPCC	2
2.	Ali Miremadi	CAISO	WECC	2
3.	Terry Bilke	MISO	MRO	2
4.	Charles Yeung	SPP	SPP	2
5.	Al DiCaprio	PJM	RFC	2
6.	Cheryl Moseley	ERCOT	ERCOT	2
7.	Ben Li	IESO	NPCC	2

14.	Group	Andrea Jessup	Bonneville Power Administration	X		X		X		X			

	Additional Member	Additional Organization	Region	Segment Selection
1.	Charles Sweeney	Transmission Sales	WECC	1

15.	Individual	Andrew Z. Pusztai	American Transmission Company, LLC	X									
16.	Individual	Tammy Porter	Oncor Electric Delivery	X		X							

Group/Individual		Commenter	Organization	Registered Ballot Body Segment									
				1	2	3	4	5	6	7	8	9	10
17.	Individual	David Thorne	Pepco Holdings, Inc.	X		X							
18.	Individual	Leonard Kula	Independent Electricity System Operator		X								
19.	Individual	Don Schmit	Nebraska Public Power District	X		X		X					
20.	Individual	Ayesha Sabouba	Hydro One			X							
21.	Individual	Joshua Andersen	Salt River Project	X		X		X	X				
22.	Individual	Anthony Jablonski	ReliabilityFirst Corp.										X
23.	Individual	Thomas Foltz	American Electric Power	X		X		X	X				
24.	Individual	Robert Coughlin	ISO New England, Inc.		X								
25.	Individual	Chris Scanlon	Exelon Corp.	X		X	X	X	X				
26.	Individual	Bob Thomas	Illinois Municipal Electric Agency				X						
27.	Individual	RoLynda Shumpert	South Carolina Electric and Gas	X		X		X	X				
28.	Individual	David Ramkalawan	OPG					X					
29.	Individual	Catherine Wesley	PJM Interconnection		X								

If you support the comments submitted by another entity and would like to indicate you agree with their comments, please select "agree" below and enter the entity's name in the comment section (please provide the name of the organization, trade association, group, or committee, rather than the name of the individual submitter).

Organization	Agree	Supporting Comments of "Entity Name"
Hydro One	Agree	NPCC-RSC
Illinois Municipal Electric Agency	Agree	Florida Municipal Power Agency

1. **The FYRT recommended Requirement R5 be revised for consistency with R4 and to clarify that nuclear plants must be operated to meet the Nuclear Plant Interface Requirements, and the Project 2012-03 drafting team has implemented this recommendation. Do you agree or disagree with this requirement? If you disagree, please provide an alternative solution.**

Summary Consideration: The NUC SDT appreciates all the stakeholders who submitted comments in response to Question 1. In response to the comments, the NUC SDT added Real-time Operations to the Time Horizon for Requirement R5 and un-capitalized the term "nuclear power plant" as it is not a NERC defined term. Some commenters suggested that the wording in Requirements R4 and R5 should be reverted back to the previous version. However, the NUC SDT chose not to make those changes. This is because the NUC SDT asserts that Nuclear Plant Generator Operators should operate to meet NPIRs and not the Agreements themselves.

See individual responses below.

Organization	Yes or No	Question 1 Comment
Nebraska Public Power District	No	We recommend that R5 revert back to version 2 wording as follows: "R5 - The Nuclear Plant Generator Operator shall operate per the Agreements developed in accordance with this standard."(The reason for reversion back to the version 2 R5 is identified in our comments in #4 below.) **The SDT believes Requirement R5 should be consistent with Requirement R4 in requiring the Nuclear Power Plant to operate to the NPIRs as required of the Transmission Entities in R4.** We would also recommend that the Time Horizon change for R5 to match R4 [Operations Planning and Real-time Operations]. **The SDT agrees and will make this change in the draft standard.** Since Q4 from the draft comment form does not show up on this Official comment site we are including Q4 (any other comments) here: The Glossary of Terms for the definition of NPIRs [Nuclear Plant Interface Requirements] needs revision (along with our other Standard revisions

Organization	Yes or No	Question 1 Comment
		noted in comments above) in order for version 3 of NUC-001 to capture the requirements put upon the Nuclear Plant Operator for operation of the nuclear plant; and the requirements placed upon the Nuclear Plant Operator and the Transmission Entity for interface requirements between the two based upon the NPLR's. NPLR's or Nuclear Plant Licensing Requirements are the license requirements that the Nuclear Plant Operator must operate to [the Nuclear Plant Operator does not operate to the NPIR's as suggested under R5]. The NPIR's are indeed the mutually agreed upon requirements between the Nuclear Plant Operator and the Transmission Entity that are based upon the NPLR's. The NPIR's are not Bulk Electric System (BES) requirements "mutually" agreed upon between the Nuclear Plant Operator and the Transmission Entity as suggested by the current definition of NPIR. BES requirements are applicable to the Nuclear Plant Operator as a Generator Owner under other NERC Standards and Requirements and are not "mutually agreeable" between the two entities. In alignment with the stated Purpose of this Standard, NPPD suggests that the definition of NPIR be changed to "The requirements based on NPLR's that have been mutually agreed to by the Nuclear Plant Operator and the applicable Transmission Entities to ensure nuclear plant safe operation and shutdown". Please note that the definition of NPLR (as referenced in the NPIR proposed definition) already has the applicable parameters [plant design basis and statutorily mandated for operation; and including off-site power supply and avoiding preventable challenges to nuclear safety as a result of electric system disturbance, transient, or condition].When the NPIR's are agreed upon between the Nuclear Plant Operator and the Transmission Entity then they both operate to the Agreements between the two. R4 is correct in stating that the Transmission Entity application shall be "per the Agreement". Likewise R5 should require the Nuclear Plant Operator to follow the Agreements as agreed to (see comment changes in

Organization	Yes or No	Question 1 Comment
		#1 above) for R5; which we state that R5 should revert back to version 2 language. **The NUC-001 SDT recognizes that the content of the NPIRs will vary among nuclear plants and their interfacing transmission entities due to differing licensing requirements and equipment configurations. The SDT is not of the opinion that the addition of the proposed "second sentence" would add clarity to avoid inappropriate identification of NPIRs. The SDT understands the concern with regard to inclusion of actions to address and implement a NPIR in addition to the NPIR itself, however, in some cases it may not be possible to separate the two, and this issue is best left to the nuclear plant and the associated transmission entities to resolve as part of the process of attaining the mutually agreed upon NPIRs. The proposed "second sentence" appropriately includes the terms "…configuration control or administrative tasks," in an attempt to encompass requirements that are more than simply numeric, however, this points out the difficultly in refining the definition. The SDT believes the NPIR definition is acceptable as currently written and does not believe the "second sentence" will provide the desired clarity.**
ReliabilityFirst	No	ReliabilityFirst submits the following comments for consideration (question 4 was missing from the online form so we submitted it here): Requirement R7 and R8 - Without the terms "nuclear plant design" or "electric system design" being defined in the standard, ReliabilityFirst believes the original intent of requiring the entity to inform the Transmission Entities of changes to the Protection System may be getting lost. The original standard required information regarding changes to Protection Systems and ReliabilityFirst requests the justification for no longer requiring elements such as Protective relays, communications systems, voltage and current

Organization	Yes or No	Question 1 Comment
		sensing devices, station dc supply and control circuitry be included as being reportable to the Transmission Entities in the standard. **The SDT believes the revision to R7 and R8 are consistent with the original intent of the NUC-001-1 authors. The SDT deleted "Protection Systems" in Requirements R7 and R8 since it is a subset of "nuclear plant design" and "electric system design," and because the SDT did not want to limit itself to the NERC defined definition of Protection Systems. The use of "e.g. protective relay setpoints," provides for a more inclusive requirement that encompasses elements such as protective relays without creating an exhaustive list of all possible elements within the requirement. Additionally, the requirement contains the language, "that may impact the ability of electric system (or Transmission Entities) to meet the NPIRs," which is designed to capture any element that could interfere with the ability to meet NPIRs.**
Northeast Power Coordinating Council	Yes	
Florida Power & Light	Yes	
Arizona Public Service Company	Yes	
FirstEnergy Corp	Yes	
Dominion	Yes	Dominion agrees with the changes to R5, but suggests M5 be updated; where 'Nuclear Power Plant' is used, change this to 'nuclear power plant' (lower case), as this is not a defined term. Also in section D - Regional Variances - Nuclear Power Plant is also capitalized here and it should not be capatilized and suggest changing this to 'nuclear power plant'.

Organization	Yes or No	Question 1 Comment
		The drafting team agrees with this comment and will make the change.
SERC OC Review Group	Yes	The SERC OC Review Group recommends that M5 be updated to use the term “nuclear power plant” (without capitalization) instead of “Nuclear Power Plant” as this is not a defined term. Current M5 language: The Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, demonstrate or provide evidence that the Nuclear Power Plant is being operated consistent with the NPIRs. Proposed M5 language: The Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, demonstrate or provide evidence that the nuclear power plant is being operated consistent with the NPIRs. If this change is acceptable then R1 VSL Severe is recommended for modification for consistency. Current R1 VSL Severe language: The Nuclear Plant Generator Operator did not provide the proposed NPIR's to more than two of applicable entities. OR For a particular Nuclear Power Plant, if the number of possible applicable transmission entities is equal to the number of applicable transmission entities not provided NPIRs Proposed R1 VSL Severe language: The Nuclear Plant Generator Operator did not provide the proposed NPIR's to more than two of applicable entities. OR For a particular nuclear power plant, if the number of possible

Organization	Yes or No	Question 1 Comment
		applicable transmission entities is equal to the number of applicable transmission entities not provided NPIRs **The drafting team agrees with this comment and will make the change.**
Florida Municipal Power Agency	Yes	
Southern Company: Southern Company Services,Inc.; Alabama Power Company; Georgia Power Company; Gulf Power Company; Mississippi Power COmpany; Southern Company Generation; Southern Company Generation and Energy Marketing	Yes	
Tennessee Valley Authority	Yes	Recommend to follow the SERC OC comment that M5 be updated to use the term “nuclear power plant” (without capitalization) instead of “Nuclear Power Plant” as this is not a defined term. Current M5 language: The Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, demonstrate or provide evidence that the Nuclear Power Plant is being operated consistent with the NPIRs. Proposed M5 language: The Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, demonstrate or provide evidence that the nuclear power plant is being operated consistent with the NPIRs. If this change is acceptable then R1 VSL Severe is recommended for modification for consistency. Current R1 VSL Severe language: The Nuclear Plant Generator Operator did not provide the proposed NPIR's to more than two of applicable entities. OR For a particular Nuclear Power Plant, if the number of possible applicable transmission entities is equal to the number

Organization	Yes or No	Question 1 Comment
		of applicable transmission entities not provided NPIRsProposed R1 VSL Severe language: The Nuclear Plant Generator Operator did not provide the proposed NPIR's to more than two of applicable entities. OR For a particular nuclear power plant, if the number of possible applicable transmission entities is equal to the number of applicable transmission entities not provided NPIRs **The drafting team agrees with this comment and will make the change.**
ACES Standards Collaborators	Yes	We commend the NUC Five-Year Review Team for this recommendation and the SDT with its implementation to revise R5 and make it consistent with R4. Following this revision, Nuclear Plant Generator Operators will be obligated to operate their nuclear plants in a manner to meet the NPIRs, which will address possible reliability concerns that result when operations are outside of these requirements.
Duke Energy	Yes	Duke Energy agrees with the revisions made by the SDT.
DTE Electric	Yes	
ISO/RTO Council Standards Review Committee	Yes	
Bonneville Power Administration	Yes	BPA concurs the NPIRS should drive the interface requirements; however NPIRS must be concurred between transmission provider and nuclear plant prior to inclusion in an Interface Agreement.

Organization	Yes or No	Question 1 Comment
		The SDT believes that NPIRs need to be agreed to by the Nuclear Plant Generator Operator and all Transmission Entities.
American Transmission Company, LLC	Yes	Agree.
Oncor Electric Delivery	Yes	
Pepco Holdings Inc.	Yes	
Independent Electricity System Operator	Yes	
Salt River Project	Yes	
American Electric Power	Yes	
Exelon Corporation	Yes	
South Carolina Electric and Gas	Yes	
OPG	Yes	
PJM Interconnection	Yes	

2. The FYRT recommended that R9 be revised to clarify that all agreements do not have to discuss each of the elements in R9, but that the sum total of the agreements need to address the elements, and the Project 2012-03 drafting team has implemented this recommendation. Do you agree or disagree with this requirement? If you disagree, please provide an alternative solution.

Summary Consideration: The NUC SDT thanks all stakeholders who provided comments in response to Question 2. While one entity felt that the language within Requirement R9 was too ambiguous, the NUC SDT chose to keep the language in Requirement R9 the same because it felt the Requirement was sufficiently clear. See individual responses below.

Organization	Yes or No	Question 2 Comment
ReliabilityFirst	No	ReliabilityFirst submits the following comments for consideration: Requirement R9 - Even though the intent of Requirement R9 is understood, ReliabilityFirst believes it can be stated in a more clear and concise manner. ReliabilityFirst recommends the following for consideration: "The Nuclear Plant Generator Operator and the applicable Transmission Entities shall include the following elements in aggregate within the Agreement(s) identified in R2. Regardless if there are single or multiple Agreements with single or multiple Transmission Entities, all elements under Requirement R9 need to be addressed, in aggregate, within the Agreement(s)" **The SDT reviewed and discussed the above language, however, ultimately the drafting team agreed the current language is sufficiently clear and not ambiguous.**
Northeast Power Coordinating Council	Yes	
Florida Power & Light	Yes	
Arizona Public Service Company	Yes	

Organization	Yes or No	Question 2 Comment
FirstEnergy Corp	Yes	ADDITIONAL COMMENTS: FirstEnergy acknowledges that Part 9.1 was retired under the Paragraph 81 project. We also agree with not renumbering Requirement parts that would impact existing agreements throughout the industry. However, we strongly suggest that Part 9.1 be marked Retired instead of being left blank as this could lead to future confusion. Our concern is that someone not aware of the history of NUC-001 may do unnecessary research to understand why Part 9.1 is blank. Stating "Retired" will provide clarity and eliminate the possibility of any confusion. **Requirement R9.1 will continue to state that the sub-part is "Retired" as it currently is in the draft standard. It will not be left blank to avoid confusion.**
Dominion	Yes	
SERC OC Review Group	Yes	
Florida Municipal Power Agency	Yes	
Southern Company: Southern Company Services,Inc.; Alabama Power Company; Georgia Power Company; Gulf Power Company; Mississippi Power COmpany; Southern Company Generation; Southern Company Generation and Energy Marketing	Yes	

Organization	Yes or No	Question 2 Comment
Tennessee Valley Authority	Yes	
ACES Standards Collaborators	Yes	We commend the NUC Five-Year Review Team for this recommendation and the SDT with its implementation to revise R9. This clarification allows entities to address the elements of Requirement R9 across several agreements and not limit them to just one. **The SDT thanks you for your comment.**
Duke Energy	Yes	Duke Energy agrees with the revisions made by the SDT.
DTE Electric	Yes	
ISO/RTO Council Standards Review Committee	Yes	
Bonneville Power Administration	Yes	
American Transmission Company, LLC	Yes	Agree
Oncor Electric Delivery	Yes	
Pepco Holdings Inc.	Yes	
Independent Electricity System Operator	Yes	
Nebraska Public Power District	Yes	

Organization	Yes or No	Question 2 Comment
Salt River Project	Yes	
American Electric Power	Yes	
Exelon Corporation	Yes	
South Carolina Electric and Gas	Yes	
OPG	Yes	
PJM Interconnection	Yes	

3. Do you agree with the VRFs and VSLs for Requirements R5 and R9? If not, please explain.

Summary Consideration: The NUC SDT appreciates all the stakeholders who submitted comments in response to Question 3. In response to the comments that were submitted, the NUC SDT made minor grammar changes including changing "NPIR's" to "NPIRs" and updating the Data Retention section. Some commenters felt that the High VSL for Requirement R6 should be changed to Severe, however the NUC SDT chose not to change the VSLs because of the high number of maintenance activities that occur between a Transmission Entity and a Nuclear Plant Generator Operator. Additionally, other commenters suggested minor language revisions, which the NUC SDT ultimately chose not to adopt because the Team felt the requirements were sufficiently clear. See individual responses below.

Organization	Yes or No	Question 3 Comment
Dominion	No	Dominion does not see how the VSLs in R6 can have N/A under Severe. According to the last sentence on page 2 of the VSL guideline and combine that with the chart at the top of the page, it seems that failure to coordinate one or more outages or maintenance activities which affect the NPIRs, indicates that the entity failed to meet the performance of the requirement. Therefore Dominion suggests that the VSL currently marked High be changed to Severe. **The SDT has considered this comment; however, given the number of maintenance activities that need to be scheduled between a Nuclear Plant Generator Operator and Transmission Entities, failure to coordinate one or several would not constitute a Severe Violation, and the SDT believes the High severity level is appropriate. Entities that would continue to violate this requirement would be subject to penalties associated with repeat occurrences.** Question 4 Comments: 1. The impact identified in Requirement R8 does not match the impact identified in Measure M8. Specifically, R8 "impact the ability of the electric system to meet the NPIRs" while M8 "impact the ability of the Nuclear Plant Generator Operator to meet the NPIRs." Dominion believes the language in M8 is correct and suggest revising R8 accordingly.

Organization	Yes or No	Question 3 Comment
		The SDT believes that this language should be consistent and will revise Measure M8 to be consistent with the language in Requirement R8. 2. The Data Retention section addresses Measure M4.3 but does not address M4.1 or M4.2.3. **The SDT agrees with this comment and has made this change.** Requirements R7 and R8 uses the term 'may impact the ability of the electric system' and the M7 and M8 uses the term 'would impact the ability of the electric system'. Dominion suggests that the SDT replace 'may' with 'will' in requirements R7 and R8, or delete both "may" and "would" and simply use present tense "impact' in the Requirements and past tense "impacted" in the Measures. **The SDT agrees with this comment and will make this change.**
SERC OC Review Group	No	The SERC OC Review Team requests clarification as to why the SDT chose to use the "high" VSL category and not the "severe" VSL category. Using the VSL guideline (page 2 last sentence) it appears that failure to coordinate one or more outages or maintenance activities which affect the NPIRs indicates that the entity failed to meet the performance of the requirement. Thus, it may be appropriate that the "severe" VSL should be utilized. **The SDT has considered this comment; however, given the number of maintenance activities that need to be scheduled between a Nuclear Plant Generator Operator and Transmission Entities, failure to coordinate one or several would not constitute**

Organization	Yes or No	Question 3 Comment
		a Severe Violation, and the SDT believes the High severity level is appropriate. Entities that would continue to violate this requirement would be subject to penalties associated with repeat occurrences. Software did not allow access to Question 4. Please see additional comments below. The SERC OC Review Team respectfully requests clarification on the use of "may" vs. "would" in R7 and M7. The same clarification is requested for R8 and M7. The concern is the interpretation that is used for "may" and "would". An example is included below: 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 (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs. [Violation Risk Factor: High] [Time Horizon: Long-term Planning]M7. The Nuclear Plant Generator Operator shall provide evidence that it informed the applicable Transmission Entities of changes to nuclear plant design (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that would impact the ability of the Transmission Entities to meet the NPIRs. **The SDT agrees with this comment and will make this change.** Data Retention: The SERC OC Review Group noticed that M4.1 and M4.2 are not included in the Data Retention section. It is requested that the SDT review and evaluate whether or not M4.1 and M4.2 should be included in the Data Retention section. The comments expressed herein represent a consensus of the views of the above named members of the SERC OC Review Group only and should not be construed as the position of the SERC Reliability Corporation, or its board or its officers. **The SDT agrees with this comment and will make this change.**

Organization	Yes or No	Question 3 Comment
ACES Standards Collaborators	No	We believe the VRFs identified for requirements R5 and R9 are appropriate for their level of impact to the BES. However, we do have concerns regards the VSLs for these requirements. The VSL for Requirement R5 is binary in nature and should be modified to a graduated severity level. We feel that weighing each NPIR equally does not identify the significance of some NPIRs, such as power supply restoration times and safety. We also find the percentage approach taken for R9 confusing and that the previous approach identifying a specific number of elements easier. **The SDT has reviewed this comment, but contends that there are very few NPIRs that require Nuclear Plant Generator Operator action, therefore, the SDT chose to maintain this Requirement as binary. A graded approach with such a few number of required actions would not be plausible.** **The SDT believes the approach of using percentages in Requirement R9 is the most workable solution to developing the VSLs, and that attempting to weigh them in accordance with specific elements of the Agreements would be extremely difficult.**
Nebraska Public Power District	No	Change the VSL for R5 based on our comments in #1 and #4. **The SDT believes Requirement R5 should be consistent with Requirement R4 in requiring the Nuclear Power Plant to operate to the NPIRs as required of the Transmission Entities in R4.** Change the reference to “NPIRs” in this VSL to “Agreement’s”.R9 VSL’s: Please revert back to version 2 VSL’s for R9. A percentage basis as used in version 3 will lead to improper application by regulators. Version 2 is a much cleaner approach.

Organization	Yes or No	Question 3 Comment
		The SDT believes the approach of using percentages in Requirement R9 is the most workable solution to developing the VSLs, and that attempting to weigh them in accordance with specific elements of the Agreements would be extremely difficult.
ReliabilityFirst	No	ReliabilityFirst submits the following comments for consideration:VSL for Requirement R4 - For consistency, all VSLs under Requirement R4 should reference "sub-parts" and not "sub-requirements". **The SDT agrees with this comment and will make changes where needed.** VSL for Requirement R6 - For consistency with the language in Requirement R6, the Moderate VSL should reference "maintenance activities" and not "maintenance schedules". **The SDT has reviewed this comment, but asserts that the current language is correct. The intent of Requirement R6 is to ensure applicable Transmission Entities and Nuclear Plant Generator Operators coordinate outages and maintenance activities. The moderate VSL for Requirement R6 is designed to penalize entities that fail to give their respective Transmission or Nuclear Plant Generator Operator advanced notice, via a schedule, of planned outages or maintenance activities that have not yet occurred. The High VSL represents a more significant violation of this requirement as it is applied to entities who initiate a maintenance or outage activity without coordinating this activity with their respective Transmission Entities or Nuclear Plant Generator Operator.**
American Electric Power	No	The correct pluralization of NPIR is "NPIRs", without an apostrophe. There are a number of instances in the VSL table where an apostrophe is incorrectly used. **The SDT agrees with this comment and will make changes where needed.**

Organization	Yes or No	Question 3 Comment
Northeast Power Coordinating Council	Yes	
Florida Power & Light	Yes	
Arizona Public Service Company	Yes	
FirstEnergy Corp	Yes	
Florida Municipal Power Agency	Yes	
Southern Company: Southern Company Services,Inc.; Alabama Power Company; Georgia Power Company; Gulf Power Company; Mississippi Power COmpany; Southern Company Generation; Southern Company Generation and Energy Marketing	Yes	
Tennessee Valley Authority	Yes	
Duke Energy	Yes	
DTE Electric	Yes	There is a question as to why R5's VRF and VSL are called out. The VRF remains at High and the VSL is High for the NPGOP to operate to the NPIRs.

Organization	Yes or No	Question 3 Comment
		The SDT has reviewed this comment and determined that the only change made to Requirement R5 was to replace "Agreements" with "NPIRs."
ISO/RTO Council Standards Review Committee	Yes	
Bonneville Power Administration	Yes	
American Transmission Company, LLC	Yes	
Oncor Electric Delivery	Yes	
Pepco Holdings Inc.	Yes	
Independent Electricity System Operator	Yes	Question 4: Additional Comments Provided. R3 as written has a very broad scope and mandate for the Transmission Entities as it implies that the Transmission Entities need to communication the results of all planning analyses that have NPIRs incorporated, either as assumption or in the model, to the Nuclear Plant Generator Operator (NPGO), regardless of the potential impacts on the NPGO. This is unnecessary, and the amount of information provided to the NPGO can be overwhelming. We suggest revising R3 as follows: 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 analysis results to those Nuclear Plant Generator Operators that may be affected by such results.

Organization	Yes or No	Question 3 Comment
		With the proposed revision, the Transmission Entities do not have to communicate the results of all analyses that have NPIRs incorporated, and the NPGO will not be inundate by analysis results that do not affect them. **The SDT has reviewed the requested revision, but asserts per Requirement R 9.2.3 that the Agreement between the Transmission Entity and the Nuclear Plant Generator Operator will define what type of planning information needs to be provided to Nuclear Plant Generator Operator.** Real-time Operations should be added to the Time Horizon for R5 so as to be consistent with those stipulated for R4 (which is applicable to the Transmission Entities).c. **The SDT agrees with this comment and will make the change.** The MEDIUM VRF for R1 stipulated in the VSL should be LOWER, not MEDIUM as it is inconsistent with the LOWER VRF stipulated in the requirement itself. **The VRF for Requirement R1 was corrected to Medium for consistency. The intent of the SDT was for the VRF for Requirement R1 to be Medium.**
Salt River Project	Yes	
Exelon Corporation	Yes	
South Carolina Electric and Gas	Yes	

Organization	Yes or No	Question 3 Comment
OPG	Yes	
PJM Interconnection	Yes	

4. Do you have any additional comments? Please provide them here.

Summary Consideration: The NUC SDT appreciates all the stakeholders who submitted comments in response to Question 4. Some commenters felt that Load Serving Entities should not be an applicable entity in this standard and that the elements within Requirement R9 should be modified. The NUC SDT considered these comments but asserts that LSEs should be a part of this standard as they have a unique relationship with Nuclear Plant Generator Operators. Additionally, the NUC SDT believes the language in Requirement R9 encompasses all of the critical elements that need to be in the Agreements, while also not being overly prescriptive. See individual responses below.

Organization	Yes or No	Question 4 Comment
Southern Company: Southern Company Services,Inc.; Alabama Power Company; Georgia Power Company; Gulf Power Company; Mississippi Power COmpany; Southern Company Generation; Southern Company Generation and Energy Marketing	No	
Duke Energy	No	
DTE Electric	No	
Bonneville Power Administration	No	
Exelon Corporation	No	

Organization	Yes or No	Question 4 Comment
South Carolina Electric and Gas	No	
Northeast Power Coordinating Council	Yes	Real-time Operations should be added to the Time Horizon for R5 so as to be consistent with those stipulated for R4 (which is applicable to the Transmission Entities). **The SDT agrees and will make this change.** In Section D. Regional Variances, add the words “and nuclear plant safe operation” as follows: Canadian Nuclear Plant Licensing Requirements (CNPLR) 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 and nuclear plant safe operation as a result of an electric system disturbance, transient, or condition. **The SDT believes the revised wording is consistent with the licensing requirement for the Canadian Nuclear Plants. See reference to OPG comment above.**
Florida Municipal Power Agency	Yes	FMPA suggests that Applicability Section 4.2.9 Load Serving Entity should be removed from the list. FERC's 2008-10-16 Order 716 which approved NUC-001-1 acknowledged "there is a significant amount of overlap among the entities that perform these functions." FMPA believes that Load-Serving Entities do not perform any unique reliability tasks necessary during coordination with Nuclear Plant Generator Operators, and that all such necessary reliability tasks are already being performed by the other applicable functional entities of NUC-001-2.1. Thus, Project 2012-13 provides a good

Organization	Yes or No	Question 4 Comment
		opportunity to delete the redundant Load-Serving Entities function from this Standard. **The SDT asserts that LSEs need to be an applicable entity to this standard because when nuclear plants are off-line (planned or unplanned) electric power is supplied to a nuclear plant by an entity that may include a Load Serving Entity (LSE). During instances where an LSE is providing such services, they may be providing a NPIR related function to a nuclear plant. Therefore, SDT decided not to remove LSE's from the applicability section.**
Tennessee Valley Authority	Yes	Recommend to follow the SERC OC comments following: The SERC OC Review Team respectfully requests clarification on the use of "may" vs. "would" in R7 and M7. The same clarification is requested for R8 and M7. The concern is the interpretation that is used for "may" and "would". An example is included below: 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 (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs. [Violation Risk Factor: High] [Time Horizon: Long-term Planning] M7. The Nuclear Plant Generator Operator shall provide evidence that it informed the applicable Transmission Entities of changes to nuclear plant design (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that would impact the ability of the Transmission Entities to meet the NPIRs. Data Retention: The SERC OC Review Group noticed that M4.1 and M4.2 are not included in the Data Retention section. It is requested that the SDT review and evaluate whether or not M4.1 and M4.2 should be included in the Data Retention section. **Please see response to SERC OC.**

Organization	Yes or No	Question 4 Comment
ACES Standards Collaborators	Yes	(1) We appreciate the SDT with their efforts to incorporate the various recommendations from the NUC Five-Year Review Team in this revision of NERC Standard NUC-001. In particular, we welcome the clarification in Requirement R5 regarding nuclear plant operations meeting the NPIRs. We also welcome the omission of the NERC Glossary Term "Protection Systems" from requirements R7 and R8 to better identify the intent of those requirements. Finally, we welcome the administrative details taken to identify appropriate timing horizons, clarify measures, and modify the VSLs and VRFs.(2) However, we feel that further revision is still needed. We feel a communication gap exists when Nuclear Plant Generator Operators neglect to communicate with Transmission Entities when Nuclear Plant Generator Operators lose the ability to assess the operation of their plants and ability to meet the NPIRs. We believe addressing this gap will be a step towards situational awareness for all affected Parties involved.â€ƒ(3) **The SDT has reviewed this comment and asserts that Nuclear Plants Generator Operator capability to assess operation of the nuclear plant is governed by applicable nuclear regulations and the SDT cannot draw a parallel to Requirement R4.3.** We feel the number of elements listed under Requirement R9 should be limited to those elements affecting the NPIRs. For example, Requirement R9.3.3 identifies a need for coordination of testing, calibration, and maintenance of power supplies within the aggregated agreements. While we agree with the importance of testing, calibrating, and maintaining power supplies, we believe such activities are already addressed by the owner of such facilities through other NERC Standards. Likewise, Requirement R9.3.6 identifies the coordination of physical and cyber security protection of assets near the nuclear plant interface. While we agree with the importance of physical and cyber security protection, we believe such activities are already addressed with existing NERC Critical Infrastructure Protection requirements.

Organization	Yes or No	Question 4 Comment
		Moreover, these activities will be further enhanced with Revision 5 of these NERC Critical Infrastructure Protection standards. **The SDT has reviewed these comments, and the elements in Requirement R9, and believes those elements are necessary to bring the desired interface between the Transmission Entities and the Nuclear Plant Generator to achieve the stated purpose of the standard.** (4) Finally, we thank you for the opportunity to comment.
ISO/RTO Council Standards Review Committee	Yes	a. Measure M2 is unclear: M2. The Nuclear Plant Generator Operator and each Transmission Entity shall each have a copy of the Agreement(s) [addressing and implementing the NPIRs] available for inspection upon request of the Compliance Enforcement Authority. The Agreement doesn't "address and implement" the NPIRs - it describes how the entities address and implement them. The measure should simply state that the responsible entity has a copy of the agreement - i.e. we suggest to delete the language in [bracket]. **In response to this comment, the SDT has made changes to the language in M2 to improve the clarity of the measure.** b. R3 as written has a very broad scope and mandate for the Transmission Entities as it implies that the Transmission Entities need to communicate the results of all planning analyses that have NPIRs incorporated, either as an assumption or in the model, to the Nuclear Plant Generator Operator (NPGO) regardless of the potential impacts on the NPGO. This is unnecessary, and the amount of information provided to the NPGO can be overwhelming. We suggest revising R3 as follows: 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 those analysis results that affect the relevant Nuclear Plant Generator Operators that may be affected by such results. With the proposed revision, there will not be a suggestion that Transmission Entities have to

Organization	Yes or No	Question 4 Comment
		communicate the results of all analyses that have NPIRs incorporated, and the NPGO will not be inundated by analysis results that do not affect them. **The SDT has reviewed the requested revision, but asserts per Requirement R 9.2.3, that the Agreement between the Transmission Entity and the Nuclear Plant Generator Operator will define what type of planning information needs to be provided to Nuclear Plant Generator Operator.** c. Requirement R4: There appears to be an inconsistency between R4 and Measure M4 which has created some confusion in assessing compliance. It is our understanding that most Agreements between Nuclear Plant Generator Operators and Transmission Entities include specific tasks/actions that both parties need to perform. Hence, each Transmission Entity has specific tasks assigned but is not held responsible for all aspects of a plant's NPIRs or those performed by other Transmission Entities associated with that plant. To ensure the Transmission Entity is assessed only on its specific tasks per the Agreement, we suggest to deleted the word "current" from Measure M4.1, and add "per the Agreements" to Measures M4.2 and M4.3, as follows: M4. Each Transmission Entity responsible for operating the electric system in accordance with the Agreement shall demonstrate or provide evidence of the following, uponrequest of the Compliance Enforcement Authority: M4.1: The NPIRs have been incorporated into the current operating analysis of the electric system. (Requirement 4.1) requirement R4 does not specify "current", and one may not know what this means, which can be current as at the day of the audit. We suggest deleting the word "current". M4.2 The electric system was operated to meet the NPIRs per the agreements. (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 per the agreements.

Organization	Yes or No	Question 4 Comment
		The SDT asserts that the word 'current' in M4.1 is equivalent to 'latest.' It is implicit that any audit would be looking at the most recent operating analysis of the electrical system. As such, the SDT does not believe deleting the word 'current' from the measure will have any impact on the measure's purpose. d. Real-time Operations should be added to the Time Horizon for R5 so as to be consistent with those stipulated for R4 (which is applicable to the Transmission Entities). **The SDT agrees and will make this change.** e. Requirements R1, R2, R3, R7, R8, and R9 specify the Time Horizon as "Long-term Planning", which differs somewhat from the NERC Glossary defined term of "Long-Term Transmission Planning Horizon", which NERC defines as covering years 6 - 10 and beyond. We suggest adding "Near-Term Planning" to the Time Horizon, which NERC defines as covering years 1 - 5. With the Near-Term Planning and Long- Term Planning included in the Time Horizon, the one to ten year planning horizon would be covered. This is particularly relevant to Requirements R3 and R9 (i.e., R9.2.3) where they are specific to planning analyses. Similarly, it's relevant to Requirement R8, where the analysis to identify system changes to the electric system should include year's 1 - 5 in the planning horizon and planning analyses. **The NERC Time Horizons document, which has been approved by the Standards Committee, defines Long-term Planning as "a planning horizon of one year or longer." On the contrary, Long-Term Transmission Planning only refers to transmission planning, and is defined in the NERC Glossary of Terms as a "Transmission planning period that covers years six through ten…" Long-Term Transmission Planning is not a standard's time horizon and may only be used when specifically discussing planning periods for transmission.** f. The MEDIUM VRF for R1 stipulated in the VSL should be LOWER, not MEDIUM as it is inconsistent with the LOWER VRF stipulated in the requirement itself.

Organization	Yes or No	Question 4 Comment
		In the current version of the draft Standard that is posted, the VRF for listed in the Requirement and in the VRF/VSL table is medium. This matches the intent of the SDT which was to make the VRF for Requirement R1 medium.
ISO New England Inc.	Yes	ISO-NE suggests that the SDT clarify the definition of Nuclear Plant Interface Requirements (NPIRs). Adding a second sentence to the definition would help to avoid inappropriate identification of NPIRs. 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. NPIRs reflect limits, parameters, equipment configuration control or administrative tasks associated with maintaining the NPLRs or BES requirements. Rationale: As currently defined, NPIRs are tied to both Nuclear Plant License Requirements (NPLRs) and Bulk Electric System (BES) requirements. NPLRs and BES requirements are each typically expressed as measurable values, specified facilities, or specified equipment configurations. NPLRs are defined by the Nuclear Regulatory Commission (NRC) through the 10 CFR Part 50 process (Domestic Licensing of "Production and Utilization Facilities"), which defines the requirements for the licensing of nuclear power plants in the United States. From these requirements, design basis scenarios are created to identify limits, parameters or configuration control (e.g., minimum number of lines to the station) that must be met to operate/maintain the plant within the license requirements. NPLRs could also include administrative tasks required by the NRC, also expressed in terms of a measurable value (e.g. certain studies must be reviewed on a prescribed timeframe). BES requirements are also typically expressed as values (e.g., transmission system limit). This clarification would help to avoid inappropriate identification of actions to address and implement a NPIR as a NPIR itself. Actions to address and implement a NPIR are required by NUC-001-3 R2, but those actions should not be identified as NPIRs themselves because they are not directly related to either licensing requirements or BES requirements.

Organization	Yes or No	Question 4 Comment
		The NUC-001 SDT recognizes that the content of the NPIRs will vary among nuclear plants and their interfacing transmission entities due to differing licensing requirements and equipment configurations. The SDT is not of the opinion that the addition of the proposed "second sentence" would add clarity to avoid inappropriate identification of NPIRs. The SDT understands the concern with regard to including actions to address and implement a NPIR in addition to the NPIR itself, however, in some cases it may not be possible to separate the two, and this issue is best left to the nuclear plant and the associated transmission entities to resolve as part of the process of attaining the mutually agreed upon NPIRs. The proposed "second sentence" appropriately includes the terms "…configuration control or administrative tasks" in an attempt to encompass requirements that are more than simply numeric, however, this points out the difficultly in refining the definition. The SDT believes the NPIR definition is acceptable as currently written and does not believe the "second sentence" will provide the desired clarity.
OPG	Yes	In section D. Regional Variances, OPG would like to add the words "and nuclear plant safe operation" as follows: Canadian Nuclear Plant Licensing Requirements (CNPLR) 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 and nuclear plant safe operation as a result of an electric system disturbance, transient, or condition. **Per subsequent discussion by a SDT member who is associated with the entity that submitted this comment, the comment has been rescinded.**
PJM Interconnection	Yes	PJM has also signed onto the SRC's comments.

Organization	Yes or No	Question 4 Comment
		Please see the SDT's response to SRC's comments above.

END OF REPORT

Standard Development Timeline

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. SC authorized moving the SAR forward to standard development to implement recommendations of Five-year review of NUC-001-2 - October 17, 2013.
2. SAR posted for informal comment February 12 – March 13, 2014.
3. NUC-001-3 for 45 day Comment Period and Initial Ballot April 8 – May 22, 2014.

Description of Current Draft

Draft 2 of NUC-001-3 includes minor, non-substantive revisions that were made in response to the comments that were received following the initial posting of NUC-001-3. These changes included adding clarifying language to Measure M2, revising the Time Horizons in Requirement R4 and R5 for consistency, and grammar corrections. Additionally, to align with on-going NERC standards development in Project 2010-05.2: Special Protection Systems, the term "Special Protection Systems" in Requirement R 9.3.7 was replaced by the term "Remedial Action Schemes." These terms are synonymous in the NERC Glossary of Terms. NUC-001-3 was posted for a 45 day Comment and Ballot from April-May 2014. The initial posting of Draft 1 of NUC-001-3 received a 97.36% approval rating. The purpose of NUC-001-3 is to implement the recommendations from the NUC-001-2.1 Five-Year Review Team (NUC FYRT). The NUC FYRT's recommendations were accepted by the Standards Committee in October 2013. This draft is being posted for a final 10 day recirculation ballot.

Anticipated Actions	Anticipated Date
Final ballot	June 2014
Board of Trustees adoption	August 2014

Effective Dates: First day of the first calendar quarter that is twelve months beyond the date that this standard is approved by applicable regulatory authorities, or as otherwise provided for in a jurisdiction where approval by an applicable governmental authority is required for a standard to go into effect. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is twelve months after the date this standard is adopted by the NERC Board of Trustees or as otherwise provided for in that jurisdiction.

Version History

Version	Date	Action	Change Tracking
1	May 2, 2007	Approved by Board of Trustees	New
2	To be determined	Modifications for Order 716 to Requirement R9.3.5 and footnote 1; modifications to bring compliance elements into conformance with the latest version of the ERO Rules of Procedure.	Revision
2	August 5, 2009	Adopted by Board of Trustees	Revised
2	January 22, 2010	Approved by FERC on January 21, 2010 Added Effective Date	Update
2	February 7, 2013	R9.1, R9.1.1, R9.1.2, R9.1.3, and R9.1.4 and associated elements approved by NERC Board of Trustees for retirement as part of the Paragraph 81 project (Project 2013-02) pending applicable regulatory approval.	
2.1	April 11, 2012	Errata approved by the Standards Committee; (Capitalized “Protection System” in accordance with Implementation Plan for Project 2007-17 approval of revised definition of “Protection System”)	Errata associated with Project 2007-17
3	March 2014	Modifications to implement the recommendations of the five-year review of NUC-001, which was accepted by the Standards Committee on October 17, 2013.	Revision

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.

None

When this standard has received ballot approval, the text boxes will be moved to the Application Guidelines Section of the Standard.

A. Introduction

1. Title: **Nuclear Plant Interface Coordination**

2. Number: **NUC-001-3**

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. Functional Entities:

4.1.1 Nuclear Plant Generator Operators.

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 Coordinators.

4.2.8 Distribution Providers.

4.2.9 Load-Serving Entities.

4.2.10 Generator Owners.

4.2.11 Generator Operators.

5. Background:

Project 2012-13 Nuclear Power Interface Coordination seeks to implement the changes that were proposed by the NUC FYRT. The NUC FYRT was appointed by the Standards Committee Executive Committee on April 22, 2013. The NUC FYRT reviewed the NUC-001-2.1 standard to identify opportunities for consolidation and additional improvements. The NUC FYRT posted its recommendation to revise NUC-001-2.1 for industry comment on July 27, 2013. The NUC FYRT considered comments and submitted its final recommendation to revise NUC-001-2.1, along with a Standards Authorization Request (SAR) to the Standards Committee on October 17, 2013. The Standards Committee accepted the recommendation of the FYRT and appointed the team as the Standard Drafting Team (SDT) to implement the recommendation.

B. Requirements and Measures

R1. The Nuclear Plant Generator Operator shall provide the proposed NPIRs in writing to the applicable Transmission Entities and shall verify receipt. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M1. The Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, provide a copy of the transmittal and receipt of transmittal of the proposed NPIRs to the responsible Transmission Entities.

R2. The Nuclear Plant Generator Operator and the applicable Transmission Entities shall have in effect one or more Agreements[1] 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. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M2. The Nuclear Plant Generator Operator and each Transmission Entity shall each have a copy of the currently effective Agreement(s) which document how the Nuclear Plant Generator Operator and the applicable Transmission Entities address and implement the NPIRs available for inspection upon request of the Compliance Enforcement Authority.

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.: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M3. Each Transmission Entity responsible for planning analyses in accordance with the Agreement shall, upon request of the Compliance Enforcement Authority, provide a copy of the planning analyses results transmitted to the Nuclear Plant Generator

[1]. Agreements may include mutually agreed upon procedures or protocols in effect between entities or between departments of a vertically integrated system.

Operator, showing incorporation of the NPIRs. The Compliance Enforcement Authority shall refer to the Agreements developed in accordance with this standard for specific requirements.

R4. Per the Agreements developed in accordance with this standard, the applicable Transmission Entities shall *[Violation Risk Factor: High] [Time Horizon: Operations Planning and Real-time Operations]*

4.1. Incorporate the NPIRs into their operating analyses of the electric system.

4.2. Operate the electric system to meet the NPIRs.

4.3. Inform the Nuclear Plant Generator Operator when the ability to assess the operation of the electric system affecting NPIRs is lost.

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 Enforcement Authority:

- The NPIRs have been incorporated into the current operating analysis of the electric system. (Requirement 4.1)
- The electric system was operated to meet the NPIRs. (Requirement 4.2)
- 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

R5. Per the Agreements developed in accordance with this standard, the Nuclear Plant Generator Operator shall operate the nuclear plant to meet the NPIRs. *[Violation Risk Factor: High] [Time Horizon: Operations Planning and Real-time Operations]*

Rationale for R5: Rationale for R5: The NUC FYRT recommended R5 be revised for consistency with R4 and to clarify that nuclear plants must be operated to meet the Nuclear Plant Interface Requirements.

M5. The Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, demonstrate or provide evidence that the nuclear power plant is being operated consistent with the NPIRs.

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. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*

M6. The Transmission Entities and Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, provide evidence of the coordination between the Transmission Entities and the Nuclear Plant Generator Operator regarding outages and maintenance activities which affect the NPIRs.

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 (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs. *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*

M7. The Nuclear Plant Generator Operator shall provide evidence that it informed the applicable Transmission Entities of changes to nuclear plant design (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the Transmission Entities to meet the NPIRs.

Rationale for R7 and R8: The NUC FYRT recommended deleting “Protection Systems” in Requirements R7 and R8 since it is a subset of the "nuclear plant design" and "electric system design" elements currently contained in R7 and R8 respectively; and adding a parenthetical clause (e.g. protective setpoints) to R7 following "nuclear plant design" and parenthetical clause (e.g. relay setpoints) to R8 following "electric system design."

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 (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs. *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*

M8. The Transmission Entities shall each provide evidence that the entities informed the Nuclear Plant Generator Operator of changes to electric system design (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the Nuclear Plant Generator Operator to meet the NPIRs.

R9. The Nuclear Plant Generator Operator and the applicable Transmission Entities shall include the following elements in aggregate within the Agreement(s) identified in R2.

- Where multiple Agreements with a single Transmission Entity are put into effect, the R9 elements must be addressed in aggregate within the Agreements; however, each Agreement does not have to contain each element. The Nuclear Plant Generator Operator and the Transmission Entity are responsible for ensuring all the R9 elements are addressed in aggregate within the Agreements.
- Where Agreements with multiple Transmission Entities are required, the Nuclear Plant Generator Operator is responsible for ensuring all the R9 elements are addressed in aggregate within the Agreements with the Transmission Entities. The Agreements with each Transmission Entity do not have to contain each element; however, the Agreements

Rationale for R9: The NUC FYRT recommended that R9 be revised to clarify that all agreements do not have to discuss each of the elements in R9, but that the sum total of the agreements need to address the elements. In addition, for clarity in Part 9.4.1, the NUC FYRT recommended that "affecting the NPIRs" be inserted following "Provisions for communications" and "applicable unique" be inserted following ""definitions of."

with the multiple Transmission Entities, in the aggregate, must address all R9 elements. For each Agreement(s), the Nuclear Plant Generator Operator and the Transmission Entity are responsible to ensure the Agreement(s) contain(s) the elements of R9 applicable to that Transmission Entity. : *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

9.1. Retired. *[Note: Part 9.1 was retired under the Paragraph 81 project. The NUC SDT proposes to leave this Part blank to avoid renumbering Requirement parts that would impact existing agreements throughout the industry.]*

9.2. Technical requirements and analysis:

9.2.1. 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.

9.2.2. Identification of facilities, components, and configuration restrictions that are essential for meeting the NPIRs.

9.2.3. Types of planning and operational analyses performed specifically to support the NPIRs, including the frequency of studies and types of Contingencies and scenarios required.

9.3. Operations and maintenance coordination

9.3.1. 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.

9.3.2. Identification of any maintenance requirements for equipment not owned or controlled by the Nuclear Plant Generator Operator that are necessary to meet the NPIRs.

9.3.3. Coordination of testing, calibration and maintenance of on-site and off-site power supply systems and related components.

9.3.4. 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.

9.3.5. Provision for considering, within the restoration process, the requirements and urgency of a nuclear plant that has lost all off-site and on-site AC power.

9.3.6. Coordination of physical and cyber security protection at the nuclear plant interface to ensure each asset is covered under at least one entity’s plan.

9.3.7. Coordination of the NPIRs with transmission system Remedial Action Schemes and any programs that reduce or shed load based on underfrequency or undervoltage.

Rationale for R9.3.7.: The term "Special Protection Systems" (SPS) was replaced with "Remedial Action Schemes" (RAS) in order to align with other current NERC standards development work in Project 2010-05.2: Special Protection Systems. Project 2010-05.2 has proposed to replace SPS with RAS throughout all of the NERC Standards in order to move to the use of a single term. RAS and SPS have the same definition in the NERC Glossary of Terms.

9.4. Communications and training Administrative elements:

9.4.1. Provisions for communications affecting the NPIRs between the Nuclear Plant Generator Operator and Transmission Entities, including communications protocols, notification time requirements, and definitions of applicable unique terms.

9.4.2. 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.

9.4.3. Provisions for coordinating investigations of causes of unplanned events affecting the NPIRs and developing solutions to minimize future risk of such events.

9.4.4. Provisions for supplying information necessary to report to government agencies, as related to NPIRs.

9.4.5. Provisions for personnel training, as related to NPIRs.

M9. The Nuclear Plant Generator Operator shall have a copy of the Agreement(s) addressing the elements in Requirement 9 available for inspection upon request of the Compliance Enforcement Authority. Each Transmission Entity shall have a copy of the Agreement(s) addressing the elements in Requirement 9 for which it is responsible available for inspection upon request of the Compliance Enforcement Authority.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority

Regional Entity

1.2. Compliance Monitoring and Assessment Processes:

Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints Text

1.3. Data Retention

The Responsible Entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

- 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, 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 a Responsible Entity is found non-compliant it shall keep information related to the noncompliance until found compliant.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

1.4. Additional Compliance Information

None

Table of Compliance Elements

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1		**Medium**	The Nuclear Plant Generator Operator provided the NPIRs to the applicable entities but did not verify receipt.	The Nuclear Plant Generator Operator did not provide the proposed NPIR to one of the applicable entities unless there was only one entity.	The Nuclear Plant Generator Operator did not provide the proposed NPIRs to two of the applicable entities unless there were only two entities.	The Nuclear Plant Generator Operator did not provide the proposed NPIRs to more than two of applicable entities. OR For a particular nuclear power plant, if the number of possible applicable transmission entities is equal to the number of applicable transmission entities not provided NPIRs
R2		**Medium**	N/A	N/A	N/A	The Nuclear Plant Generator Operator or the applicable Transmission Entity does not have in effect one or more agreements that include mutually agreed to NPIRs and document the implementation of the NPIRs.
R3		**Medium**	N/A	The responsible entity incorporated the NPIRs into its planning analyses but did not communicate	N/A	The responsible entity did not incorporate the NPIRs into its planning analyses of the electric system.

				the results to the Nuclear Plant Generator Operator.		
R4		**High**	N/A	The responsible entity did not comply with Requirement R4, Part 4.3.	The responsible entity did not comply with Requirement R4, Part R4.1.	The responsible entity did not comply with Requirement R4, Part R4.2.
R5		**High**	N/A	N/A	N/A	The Nuclear Plant Generator Operator failed to operate per the NPIRs developed in accordance with this standard.
R6		**Medium**	N/A	The Nuclear Plant Generator Operator or Transmission Entity failed to provide outage or maintenance schedules to the appropriate parties as described in the agreement or on a time period consistent with the agreements.	The Nuclear Plant Generator Operator or Transmission Entity failed to coordinate one or more outages or maintenance activities in accordance the requirements of the agreements.	N/A
R7		**High**	The Nuclear Plant Generator Operator did not inform the applicable Transmission Entities of proposed changes to nuclear plant design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.	N/A	The Nuclear Plant Generator Operator did not inform the applicable Transmission Entities of actual changes to nuclear plant design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.	The Nuclear Plant Generator Operator did not inform the applicable Transmission Entities of actual changes to nuclear plant design (e.g., protective relay setpoints), configuration, operations, limits or capabilities that directly impact the ability of the electric system to meet the NPIRs.
R8		**High**	The applicable Transmission Entities did not inform the Nuclear	N/A	The applicable Transmission Entities did not inform the Nuclear	The applicable Transmission Entities did not inform the Nuclear

			Plant Generator Operator of proposed changes to transmission system design, configuration (e.g. protective relay setpoints), operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.		Plant Generator Operator of actual changes to transmission system design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.	Plant Generator Operator of actual changes to transmission system design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that directly impacts the ability of the electric system to meet the NPIRs.
R9		**Medium**		The Agreement(s) identified in R2. between the Nuclear Plant Generator Operator and the applicable Transmission Entity failed to include up to 20% of the combined sub-components in Requirement R9 Parts 9.2, 9.3 and 9.4 applicable to that entity.	The Agreement(s) identified in R2. between the Nuclear Plant Generator Operator and the applicable Transmission Entity failed to include greater than 20%, but less than 40% of the combined sub-components in Requirement R9 Parts 9.2, 9.3 and 9.4 applicable to the entity.	The Agreement(s) identified in R2. between the Nuclear Plant Generator Operator and the applicable Transmission Entity failed to include 40% or more of the combined sub-components in Requirement R9 Parts 9.2, 9.3 and 9.4 applicable to the entity.

D. Regional Variances

The design basis for Canadian (CANDU) nuclear power plants (NPPs) does not result in the same licensing requirements as U.S. NPPs. Nuclear Regulatory Commission (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. There are no equivalent Canadian Regulatory requirements for electrical power from the electric network to be provided to permit safe shutdown. Therefore the definition of Nuclear Plant Licensing Requirements (NPLR) for Canadian CANDU NPPs will be as follows:

Canadian Nuclear Plant Licensing Requirements (CNPLR) 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.

E. Interpretations

None.

F. Associated Documents

None

Standard Development Timeline

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. SC authorized moving the SAR forward to standard development to implement recommendations of Five-year review of NUC-001-2 - October 17, 2013.
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3. NUC-001-3 for 45 day Comment Period and Initial Ballot April 8 – May 22, 2014.

Description of Current Draft

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Anticipated Actions	Anticipated Date
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Board of Trustees adoption	August 2014

Effective Dates: First day of the first calendar quarter that is twelve months beyond the date that this standard is approved by applicable regulatory authorities, or as otherwise provided for in a jurisdiction where approval by an applicable governmental authority is required for a standard to go into effect. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is twelve months after the date this standard is adopted by the NERC Board of Trustees or as otherwise provided for in that jurisdiction.

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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.

None

When this standard has received ballot approval, the text boxes will be moved to the Application Guidelines Section of the Standard.

A. Introduction

1. Title: **Nuclear Plant Interface Coordination**

2. Number: **NUC-001-3**

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. Functional Entities:

4.1.1 Nuclear Plant Generator Operators.

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 Coordinators.

4.2.8 Distribution Providers.

4.2.9 Load-Serving Entities.

4.2.10 Generator Owners.

4.2.11 Generator Operators.

5. Background:

Project 2012-13 Nuclear Power Interface Coordination seeks to implement the changes that were proposed by the NUC FYRT.~~-~~ The NUC FYRT was appointed by the Standards Committee Executive Committee on April 22, 2013. The NUC FYRT reviewed the NUC-001-2.1 standard to identify opportunities for consolidation and additional improvements. The NUC FYRT posted its recommendation to revise NUC-001-2.1 for industry comment on July 27, 2013.~~-~~ The NUC FYRT considered comments and submitted its final recommendation to revise NUC-001-2.1, along with a Standards Authorization Request (SAR) to the Standards Committee on October 17, 2013. ~~-~~The Standards Committee accepted the recommendation of the FYRT and appointed the team as the Standard Drafting Team (SDT) to implement the recommendation.

B. Requirements and Measures

R1. The Nuclear Plant Generator Operator shall provide the proposed NPIRs in writing to the applicable Transmission Entities and shall verify receipt. *[Violation Risk Factor: Medium] [Time Horizon:~~-~~ Long-term Planning]*

M1. The Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, provide a copy of the transmittal and receipt of transmittal of the proposed NPIRs to the responsible Transmission Entities.

R2. The Nuclear Plant Generator Operator and the applicable Transmission Entities shall have in effect one or more Agreements[1] 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. *[Violation Risk Factor: Medium] [Time Horizon: ~~-~~Long-term Planning]*

M2. The Nuclear Plant Generator Operator and each Transmission Entity shall each have a copy of the currently effective Agreement(s) which document how the Nuclear Plant Generator Operator and the applicable Transmission Entities address~~ing~~ and implement~~ing~~ the NPIRs available for inspection upon request of the Compliance Enforcement Authority.

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.: *[Violation Risk Factor: Medium] [Time Horizon: ~~-~~Long-term Planning]*

M3. Each Transmission Entity responsible for planning analyses in accordance with the Agreement shall, upon request of the Compliance Enforcement Authority, provide a copy of the planning analyses results transmitted to the Nuclear Plant Generator

[1]. Agreements may include mutually agreed upon procedures or protocols in effect between entities or between departments of a vertically integrated system.

Operator, showing incorporation of the NPIRs. The Compliance Enforcement Authority shall refer to the Agreements developed in accordance with this standard for specific requirements.

R4. Per the Agreements developed in accordance with this standard, the applicable Transmission Entities shall *[Violation Risk Factor: High] [Time Horizon: Operations Planning and Real-time Operations]*

4.1. Incorporate the NPIRs into their operating analyses of the electric system.
4.2. Operate the electric system to meet the NPIRs.

4.3. Inform the Nuclear Plant Generator Operator when the ability to assess the operation of the electric system affecting NPIRs is lost.

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 Enforcement Authority:

- The NPIRs have been incorporated into the current operating analysis of the electric system. (Requirement 4.1)
- The electric system was operated to meet the NPIRs. (Requirement 4.2)
- 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

R5. Per the Agreements developed in accordance with this standard, the Nuclear Plant Generator Operator shall operate the nuclear plant to meet the NPIRs. *[Violation Risk Factor: High] [Time Horizon: Operations Planning and Real-time Operations]*

Rationale for R5: Rationale for R5: The NUC FYRT recommended R5 be revised for consistency with R4 and to clarify that nuclear plants must be operated to meet the Nuclear Plant Interface Requirements.

M5. The Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, demonstrate or provide evidence that the nNuclear pPower pPlant is being operated consistent with the NPIRs.

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. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*

M6. The Transmission Entities and Nuclear Plant Generator Operator shall, upon request of the Compliance Enforcement Authority, provide evidence of the coordination between the Transmission Entities and the Nuclear Plant Generator Operator regarding outages and maintenance activities which affect the NPIRs.

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 (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs. *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*

M7. The Nuclear Plant Generator Operator shall provide evidence that it informed the applicable Transmission Entities of changes to nuclear plant design (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that ~~would~~may impact the ability of the Transmission Entities to meet the NPIRs.

Rationale for R7 and R8: The NUC FYRT recommended deleting "Protection Systems" in Requirements R7 and R8 since it is a subset of the "nuclear plant design" and "electric system design" elements currently contained in R7 and R8 respectively; and adding a parenthetical clause (e.g. protective setpoints) to R7 following "nuclear plant design" and parenthetical clause (e.g. relay setpoints) to R8 following "electric system design."

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 (e.g., protective relay setpoints), configuration, operations, limits, ~~,~~ or capabilities that may impact the ability of the electric system to meet the NPIRs. *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*

M8. The Transmission Entities shall each provide evidence that the entities~~it~~ informed the Nuclear Plant Generator Operator of changes to electric system design (e.g., protective relay setpoints), configuration, operations, limits, or capabilities that may~~would~~ impact the ability of the Nuclear Plant Generator Operator to meet the NPIRs.

R9. The Nuclear Plant Generator Operator and the applicable Transmission Entities shall include the following elements in aggregate within the Agreement(s) identified in R2.

- Where multiple Agreements with a single Transmission Entity are put into effect, the R9 elements must be addressed in aggregate within the Agreements; however, each Agreement does not have to contain each element. The Nuclear Plant Generator Operator and the Transmission Entity are responsible for ensuring all the R9 elements are addressed in aggregate within the Agreements.
- Where Agreements with multiple Transmission Entities are required, the Nuclear Plant Generator Operator is responsible for ensuring all the R9 elements are addressed in aggregate within the Agreements with the Transmission Entities. The Agreements with each Transmission Entity do not have to contain each element; however, the Agreements

Rationale for R9: The NUC FYRT recommended that R9 be revised to clarify that all agreements do not have to discuss each of the elements in R9, but that the sum total of the agreements need to address the elements. In addition, for clarity in Part 9.4.1, the NUC FYRT recommended that "affecting the NPIRs" be inserted following "Provisions for communications" and "applicable unique" be inserted following ""definitions of."

with the multiple Transmission Entities, in the aggregate, must address all R9 elements. For each Agreement(s), the Nuclear Plant Generator Operator and the Transmission Entity are responsible to ensure the Agreement(s) contain(s) the elements of R9 applicable to that Transmission Entity. : -*[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

9.1. Retired. -*[Note: Part 9.1 was retired under the Paragraph 81 project. -The NUC SDT proposes to leave this Part blank to avoid renumbering Requirement parts that would impact existing agreements throughout the industry.]*

9.2. Technical requirements and analysis:

9.2.1. 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.

9.2.2. Identification of facilities, components, and configuration restrictions that are essential for meeting the NPIRs.

9.2.3. Types of planning and operational analyses performed specifically to support the NPIRs, including the frequency of studies and types of Contingencies and scenarios required.

9.3. Operations and maintenance coordination

9.3.1. 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.

9.3.2. Identification of any maintenance requirements for equipment not owned or controlled by the Nuclear Plant Generator Operator that are necessary to meet the NPIRs.

9.3.3. Coordination of testing, calibration and maintenance of on-site and off-site power supply systems and related components.

9.3.4. 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.

9.3.5. Provision for considering, within the restoration process, the requirements and urgency of a nuclear plant that has lost all off-site and on-site AC power.

9.3.6. Coordination of physical and cyber security protection –at the nuclear plant interface to ensure each asset is covered under at least one entity's plan.

9.3.7. Coordination of the NPIRs with transmission system ~~Special Protection Systems~~ Remedial Action Schemes and any programs that reduce or shed load based on underfrequency or undervoltage.

9.4. Communications and training Administrative elements:

9.4.1. Provisions for communications affecting the NPIRs between the Nuclear Plant Generator Operator and Transmission Entities, including communications protocols, notification time requirements, and definitions of applicable unique terms.

9.4.2. 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.

9.4.3. Provisions for coordinating investigations of causes of unplanned events affecting the NPIRs and developing solutions to minimize future risk of such events.

9.4.4. Provisions for supplying information necessary to report to government agencies, as related to NPIRs.

9.4.5. Provisions for personnel training, as related to NPIRs.

Rationale for R9.3.7.: The term "Special Protection Systems" (SPS) was replaced with "Remedial Action Schemes" (RAS) in order to align with other current NERC standards development work in Project 2010-05.2: Special Protection Systems. -Project 2010-05.2 has proposed to replace SPS with RAS throughout all of the NERC Standards in order to move to the use of a single term. -RAS and SPS have the same definition in the NERC Glossary of Terms.

M9. -The Nuclear Plant Generator Operator shall- have a copy of the Agreement(s) addressing the elements in Requirement 9 available for inspection upon request of the Compliance Enforcement Authority. -Each Transmission Entity shall have a copy of the Agreement(s) addressing the elements in Requirement 9 for which it is responsible available for inspection upon request of the Compliance Enforcement Authority.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority

Regional Entity

1.2. Compliance Monitoring and Assessment Processes:

Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints Text

1.3. Data Retention

The Responsible Entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation:

- 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 a Responsible Entity is found non-compliant it shall keep information related to the noncompliance until found compliant.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

1.4. Additional Compliance Information

None

Table of Compliance Elements

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1		**Medium**	The Nuclear Plant Generator Operator provided the NPIR~~'~~s to the applicable entities but did not verify receipt.	The Nuclear Plant Generator Operator did not provide the proposed NPIR to one of the applicable entities unless there was only one entity.	The Nuclear Plant Generator Operator did not provide the proposed NPIR~~'~~s to two of the applicable entities unless there were only two entities.	The Nuclear Plant Generator Operator did not provide the proposed NPIR~~'~~s to more than two of applicable entities. OR For a particular n~~N~~uclear p~~P~~ower p~~P~~lant, if the number of possible applicable transmission entities is equal to the number of applicable transmission entities not provided NPIRs
R2		**Medium**	N/A	N/A	N/A	The Nuclear Plant Generator Operator or the applicable Transmission Entity does not have in effect one or more agreements that include mutually agreed to NPIRs and document the implementation of the NPIRs.
R3		**Medium**	N/A	The responsible entity incorporated the NPIRs into its planning analyses but did not communicate	N/A	The responsible entity did not incorporate the NPIRs into its planning analyses of the electric system.

				the results to the Nuclear Plant Generator Operator.		
R4		**High**	N/A	The responsible entity did not comply with Requirement R4, Part 4.3.	The responsible entity did not comply with Requirement R4, Part R4.1.	The responsible entity did not comply with Requirement R4, Part R4.2.
R5		**High**	N/A	N/A	N/A	The Nuclear Plant Generator Operator failed to operate per the NPIRs developed in accordance with this standard.
R6		**Medium**	N/A	The Nuclear Plant Generator Operator or Transmission Entity failed to provide outage or maintenance schedules to the appropriate parties as described in the agreement or on a time period consistent with the agreements.	The Nuclear Plant Generator Operator or Transmission Entity failed to coordinate one or more outages or maintenance activities in accordance the requirements of the agreements.	N/A
R7		**High**	The Nuclear Plant Generator Operator did not inform the applicable Transmission Entities of proposed changes to nuclear plant design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.	N/A	The Nuclear Plant Generator Operator did not inform the applicable Transmission Entities of actual changes to nuclear plant design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.	The Nuclear Plant Generator Operator did not inform the applicable Transmission Entities of actual changes to nuclear plant design (e.g., protective relay setpoints), configuration, operations, limits or capabilities that directly impact the ability of the electric system to meet the NPIRs.
R8		**High**	The applicable Transmission Entities did not inform the Nuclear	N/A	The applicable Transmission Entities did not inform the Nuclear	The applicable Transmission Entities did not inform the Nuclear

			Plant Generator Operator of proposed changes to transmission system design, configuration (e.g. protective relay setpoints), operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.		Plant Generator Operator of actual changes to transmission system design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that may impact the ability of the electric system to meet the NPIRs.	Plant Generator Operator of actual changes to transmission system design (e.g. protective relay setpoints), configuration, operations, limits, or capabilities that directly impacts the ability of the electric system to meet the NPIRs.
R9		**Medium**		The Agreement(s) identified in R2. between the Nuclear Plant Generator Operator and the applicable Transmission Entity failed to include up to 20% of the combined sub-components in Requirement R9 Parts 9.2, 9.3 and 9.4 applicable to that entity.	The Agreement(s) identified in R2. between the Nuclear Plant Generator Operator and the applicable Transmission Entity failed to include greater than 20%, but less than 40% of the combined sub-components in Requirement R9 Parts 9.2, 9.3 and 9.4 applicable to the entity.	The Agreement(s) identified in R2. between the Nuclear Plant Generator Operator and the applicable Transmission Entity failed to include 40% or more of the combined sub-components in Requirement R9 Parts 9.2, 9.3 and 9.4 applicable to the entity.

D. Regional Variances

The design basis for Canadian (CANDU) nNuclear pPower pPlants (NPPs) does not result in the same licensing requirements as U.S. NPPs. Nuclear Regulatory Commission (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. There are no equivalent Canadian Regulatory requirements for electrical power from the electric network to be provided to permit safe shutdown. -Therefore the definition of Nuclear Plant Licensing Requirements (NPLR) for Canadian CANDU -NPPs will be as follows:

Canadian Nuclear Plant Licensing Requirements (CNPLR) 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.

E. Interpretations

None.

F. Associated Documents

None

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standards Announcement

Project 2012-13 Nuclear Plant Interface Coordination NUC-001-3

Final Ballot Now Open through July 2, 2014

Now Available

A final ballot for **NUC-001-3 – Nuclear Plant Interface Coordination** is open through **Monday, July 2, 2014.**

If you have questions please contact Stephen Eldridge via email or by telephone at (404) 446-9686.

Background information for this project can be found on the project page.

Instructions for Balloting

In the final ballot, votes are counted by exception. Only members of the ballot pool may cast a ballot; all ballot pool members may change their previously cast votes. A ballot pool member who failed to cast a vote during the last ballot window may cast a vote in the final ballot window. If a ballot pool member cast a vote in the previous ballot and does not participate in the final ballot, that member's vote will be carried over in the final ballot.

Members of the ballot pool associated with this project may log in and submit their vote for the standards by clicking here.

For information on the **Standards Development Process**, please refer to the Standard Processes Manual.

For more information or assistance, please contact Wendy Muller, Standards Development Administrator, or at 404-446-2560.

North American Electric Reliability Corporation
3353 Peachtree Rd, NE
Suite 600, North Tower
Atlanta, GA 30326
404-446-2560 | www.nerc.com

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standards Announcement

Project 2012-13 Nuclear Plant Interface Coordination NUC-001-3

Final Ballot Results

Now Available

A final ballot for **NUC-001-3 – Nuclear Plant Interface Coordination** concluded at **8 p.m. Eastern on Thursday, July 3, 2014**.

The standard achieved a quorum and received sufficient affirmative votes for approval. Voting statistics are listed below, and the Ballot Results page provides a link to the detailed results for the ballot.

Ballot Results
Quorum /Approval
88.63% / 97.23%

Background information for this project can be found on the project page.

Next Steps

The standard will be submitted to the Board of Trustees for adoption and then filed with the appropriate regulatory authorities.

For information on the **Standards Development Process**, please refer to the Standard Processes Manual.

For more information or assistance, please contact Wendy Muller (via email), Standards Development Administrator, or at 404-446-2560.

North American Electric Reliability Corporation
3353 Peachtree Rd.NE
Suite 600, North Tower
Atlanta, GA 30326
404-446-2560 | www.nerc.com

Ballot Results	
Ballot Name:	Project 2012-13 Nuclear Plant Interface Coordination NUC-001-3
Ballot Period:	6/23/2014 - 7/3/2014
Ballot Type:	Final
Total # Votes:	265
Total Ballot Pool:	299
Quorum:	**88.63 % The Quorum has been reached**
Weighted Segment Vote:	97.23 %
Ballot Results:	**A quorum was reached and there were sufficient affirmative votes for approval.**

Summary of Ballot Results

Segment	Ballot Pool	Segment Weight	Affirmative # Votes	Affirmative Fraction	Negative # Votes	Negative Fraction	Negative Vote without a Comment	Abstain	No Vote
1 - Segment 1	78	1	51	0.981	1	0.019	0	12	14
2 - Segment 2	9	0.6	5	0.5	1	0.1	0	3	0
3 - Segment 3	66	1	42	0.955	2	0.045	0	15	7
4 - Segment 4	22	1	13	1	0	0	0	8	1
5 - Segment 5	63	1	41	0.976	1	0.024	0	16	5
6 - Segment 6	47	1	30	1	0	0	0	10	7
7 - Segment 7	0	0	0	0	0	0	0	0	0
8 - Segment 8	4	0.4	4	0.4	0	0	0	0	0
9 - Segment 9	2	0.2	2	0.2	0	0	0	0	0

10 - Segment 10	8	0.6	6	0.6	0	0	0	2	0
Totals	**299**	**6.8**	**194**	**6.612**	**5**	**0.188**	**0**	**66**	**34**

Individual Ballot Pool Results

Segment	Organization	Member	Ballot	NERC Notes
1	Ameren Services	Eric Scott	Affirmative	
1	American Electric Power	Paul B Johnson	Affirmative	
1	American Transmission Company, LLC	Andrew Z Pusztai	Affirmative	
1	Arizona Public Service Co.	Robert Smith	Affirmative	
1	Associated Electric Cooperative, Inc.	John Bussman		
1	Austin Energy	James Armke	Affirmative	
1	Balancing Authority of Northern California	Kevin Smith	Affirmative	
1	Baltimore Gas & Electric Company	Christopher J Scanlon	Affirmative	
1	Black Hills Corp	Wes Wingen	Abstain	
1	Bonneville Power Administration	Donald S. Watkins	Affirmative	
1	Bryan Texas Utilities	John C Fontenot	Affirmative	
1	CenterPoint Energy Houston Electric, LLC	John Brockhan	Affirmative	
1	Central Electric Power Cooperative	Michael B Bax	Abstain	
1	City of Tacoma, Department of Public Utilities, Light Division, dba Tacoma Power	Chang G Choi	Abstain	
1	Clark Public Utilities	Jack Stamper	Affirmative	
1	Colorado Springs Utilities	Shawna Speer	Affirmative	
1	Consolidated Edison Co. of New York	Christopher L de Graffenried	Affirmative	
1	CPS Energy	Glenn Pressler	Affirmative	
1	Dominion Virginia Power	Larry Nash	Affirmative	
1	Duke Energy Carolina	Doug E Hils	Affirmative	
1	Duquesne Light Co.	Hugh R Conley		
1	Entergy Transmission	Oliver A Burke	Affirmative	
1	FirstEnergy Corp.	William J Smith	Affirmative	
1	Florida Keys Electric Cooperative Assoc.	Dennis Minton	Abstain	
1	Florida Power & Light Co.	Mike O'Neil	Affirmative	
1	Gainesville Regional Utilities	Richard Bachmeier	Affirmative	
1	Georgia Transmission Corporation	Jason Snodgrass	Affirmative	
1	Great River Energy	Gordon Pietsch	Affirmative	
1	Hydro One Networks, Inc.	Muhammed Ali	Affirmative	
1	International Transmission Company Holdings Corp	Michael Moltane	Affirmative	
1	JDRJC Associates	Jim D Cyrulewski	Affirmative	
1	JEA	Ted E Hobson	Affirmative	
1	KAMO Electric Cooperative	Walter Kenyon		
1	Kansas City Power & Light Co.	Daniel Gibson	Affirmative	
1	Keys Energy Services	Stanley T Rzad		
1	Lakeland Electric	Larry E Watt	Affirmative	
1	Lee County Electric Cooperative	John Chin		
1	Lincoln Electric System	Doug Bantam		
1	Long Island Power Authority	Robert Ganley		
1	M & A Electric Power Cooperative	William Price		
1	MidAmerican Energy Co.	Terry Harbour	Affirmative	
1	N.W. Electric Power Cooperative, Inc.	Mark Ramsey		
1	National Grid USA	Michael Jones	Affirmative	
1	NB Power Corporation	Alan MacNaughton	Abstain	
1	Nebraska Public Power District	Jamison Cawley	Negative	SUPPORTS THIRD PARTY COMMENTS
1	New York Power Authority	Bruce Metruck	Affirmative	
1	Northeast Missouri Electric Power Cooperative	Kevin White		
1	Northeast Utilities	William Temple	Affirmative	
1	Northern Indiana Public Service Co.	Julaine Dyke	Abstain	
1	Ohio Valley Electric Corp.	Scott R Cunningham		
1	Omaha Public Power District	Doug Peterchuck	Affirmative	
1	Oncor Electric Delivery	Jen Fiegel	Affirmative	

1	Pacific Gas and Electric Company	Bangalore Vijayraghavan	Affirmative	
1	Platte River Power Authority	John C. Collins	Abstain	
1	Portland General Electric Co.	John T Walker	Abstain	
1	Potomac Electric Power Co.	David Thorne	Affirmative	
1	PPL Electric Utilities Corp.	Brenda L Truhe	Affirmative	
1	Public Service Company of New Mexico	Laurie Williams	Abstain	
1	Public Service Electric and Gas Co.	Kenneth D. Brown	Affirmative	
1	Rochester Gas and Electric Corp.	John C. Allen	Affirmative	
1	Sacramento Municipal Utility District	Tim Kelley	Affirmative	
1	Salt River Project	Robert Kondziolka	Affirmative	
1	SaskPower	Wayne Guttormson	Abstain	
1	Seattle City Light	Pawel Krupa	Affirmative	
1	Seminole Electric Cooperative, Inc.	Glenn Spurlock	Abstain	
1	Sho-Me Power Electric Cooperative	Denise Stevens		
1	Snohomish County PUD No. 1	Long T Duong	Affirmative	
1	South Carolina Electric & Gas Co.	Tom Hanzlik	Affirmative	
1	Southern California Edison Company	Steven Mavis	Affirmative	
1	Southern Company Services, Inc.	Robert A. Schaffeld	Affirmative	
1	Tampa Electric Co.	Beth Young		
1	Tennessee Valley Authority	Howell D Scott	Affirmative	
1	Tucson Electric Power Co.	John Tolo	Abstain	
1	U.S. Bureau of Reclamation	Richard T Jackson	Affirmative	
1	Vermont Electric Power Company, Inc.	Kim Moulton		
1	Westar Energy	Allen Klassen	Affirmative	
1	Western Area Power Administration	Lloyd A Linke	Affirmative	
1	Xcel Energy, Inc.	Gregory L Pieper	Affirmative	
2	BC Hydro	Venkataramakrishnan Vinnakota	Abstain	
2	California ISO	Rich Vine	Affirmative	
2	Electric Reliability Council of Texas, Inc.	Cheryl Moseley	Affirmative	
2	Independent Electricity System Operator	Leonard Kula	Negative	COMMENT RECEIVED
2	ISO New England, Inc.	Matthew F Goldberg	Affirmative	
2	MISO	Marie Knox	Affirmative	
2	New York Independent System Operator	Gregory Campoli	Abstain	
2	PJM Interconnection, L.L.C.	stephanie monzon	Affirmative	
2	Southwest Power Pool, Inc.	Charles H. Yeung	Abstain	
3	AEP	Michael E Deloach	Affirmative	
3	Alabama Power Company	Robert S Moore	Affirmative	
3	APS	Sarah Kist	Affirmative	
3	Associated Electric Cooperative, Inc.	Todd Bennett	Abstain	
3	Atlantic City Electric Company	NICOLE BUCKMAN	Affirmative	
3	BC Hydro and Power Authority	Pat G. Harrington	Abstain	
3	Bonneville Power Administration	Rebecca Berdahl	Affirmative	
3	Central Electric Power Cooperative	Adam M Weber		
3	City of Anaheim Public Utilities Department	Dennis M Schmidt	Abstain	
3	City of Austin dba Austin Energy	Andrew Gallo	Affirmative	
3	City of Clewiston	Lynne Mila	Affirmative	
3	City of Green Cove Springs	Mark Schultz	Affirmative	
3	Colorado Springs Utilities	Jean Mueller	Affirmative	
3	ComEd	John Bee	Affirmative	
3	Consolidated Edison Co. of New York	Peter T Yost	Affirmative	
3	Consumers Energy Company	Gerald G Farringer		
3	Cowlitz County PUD	Russell A Noble	Affirmative	
3	CPS Energy	Jose Escamilla	Affirmative	
3	Delmarva Power & Light Co.	Michael R. Mayer	Affirmative	
3	Dominion Resources, Inc.	Connie B Lowe	Affirmative	
3	DTE Electric	Kent Kujala	Affirmative	
3	FirstEnergy Corp.	Cindy E Stewart	Affirmative	
3	Florida Keys Electric Cooperative	Tom B Anthony	Abstain	
3	Florida Municipal Power Agency	Joe McKinney	Affirmative	
3	Florida Power Corporation	Lee Schuster	Affirmative	
3	Georgia System Operations Corporation	Scott McGough	Abstain	
3	Great River Energy	Brian Glover	Affirmative	
3	Hydro One Networks, Inc.	Ayesha Sabouba	Affirmative	
3	JEA	Garry Baker	Abstain	
3	KAMO Electric Cooperative	Theodore J Hilmes	Negative	

3	Kansas City Power & Light Co.	Joshua D Bach	Affirmative	
3	Kissimmee Utility Authority	Gregory D Woessner	Abstain	
3	Lakeland Electric	Mace D Hunter	Abstain	
3	Lee County Electric Cooperative	David A Hadzima		
3	Lincoln Electric System	Jason Fortik	Abstain	
3	Louisville Gas and Electric Co.	Charles A. Freibert	Affirmative	
3	M & A Electric Power Cooperative	Stephen D Pogue		
3	MEAG Power	Roger Brand	Affirmative	
3	MidAmerican Energy Co.	Thomas C. Mielnik	Affirmative	
3	Muscatine Power & Water	John S Bos		
3	National Grid USA	Brian E Shanahan	Affirmative	
3	Nebraska Public Power District	Tony Eddleman	Negative	SUPPORTS THIRD PARTY COMMENTS
3	New York Power Authority	David R Rivera	Affirmative	
3	Northern Indiana Public Service Co.	Ramon J Barany	Abstain	
3	NW Electric Power Cooperative, Inc.	David McDowell		
3	Ocala Utility Services	Randy Hahn	Affirmative	
3	Omaha Public Power District	Blaine R. Dinwiddie	Affirmative	
3	Orlando Utilities Commission	Ballard K Mutters	Affirmative	
3	Owensboro Municipal Utilities	Thomas T Lyons	Abstain	
3	Pacific Gas and Electric Company	John H Hagen	Affirmative	
3	Platte River Power Authority	Terry L Baker	Abstain	
3	PNM Resources	Michael Mertz	Abstain	
3	Potomac Electric Power Co.	Mark Yerger	Affirmative	
3	Public Service Electric and Gas Co.	Jeffrey Mueller	Affirmative	
3	Sacramento Municipal Utility District	James Leigh-Kendall	Affirmative	
3	Salt River Project	John T. Underhill	Affirmative	
3	Seattle City Light	Dana Wheelock	Affirmative	
3	Seminole Electric Cooperative, Inc.	James R Frauen	Abstain	
3	Sho-Me Power Electric Cooperative	Jeff L Neas		
3	Snohomish County PUD No. 1	Mark Oens	Affirmative	
3	South Carolina Electric & Gas Co.	Hubert C Young	Affirmative	
3	Southern California Edison Company	Lujuanna Medina	Affirmative	
3	Tacoma Power	Marc Donaldson	Abstain	
3	Tennessee Valley Authority	Ian S Grant	Affirmative	
3	Westar Energy	Bo Jones	Affirmative	
3	Xcel Energy, Inc.	Michael Ibold	Affirmative	
4	Alliant Energy Corp. Services, Inc.	Kenneth Goldsmith	Abstain	
4	Blue Ridge Power Agency	Duane S Dahlquist	Abstain	
4	City of Austin dba Austin Energy	Reza Ebrahimian	Affirmative	
4	City Utilities of Springfield, Missouri	John Allen	Abstain	
4	Constellation Energy Control & Dispatch, L.L.C.	Margaret Powell	Affirmative	
4	Consumers Energy Company	Tracy Goble	Abstain	
4	Cowlitz County PUD	Rick Syring	Affirmative	
4	DTE Electric	Daniel Herring	Affirmative	
4	Florida Municipal Power Agency	Frank Gaffney	Affirmative	
4	Georgia System Operations Corporation	Guy Andrews	Abstain	
4	Herb Schrayshuen	Herb Schrayshuen	Affirmative	
4	Illinois Municipal Electric Agency	Bob C. Thomas	Affirmative	
4	Madison Gas and Electric Co.	Joseph DePoorter	Abstain	
4	Ohio Edison Company	Douglas Hohlbaugh	Affirmative	
4	Public Utility District No. 1 of Snohomish County	John D Martinsen	Affirmative	
4	Sacramento Municipal Utility District	Mike Ramirez	Affirmative	
4	Seattle City Light	Hao Li	Affirmative	
4	Seminole Electric Cooperative, Inc.	Steven R Wallace	Abstain	
4	South Mississippi Electric Power Association	Steve McElhaney	Affirmative	
4	Tacoma Public Utilities	Keith Morisette	Abstain	
4	Utility Services, Inc.	Brian Evans-Mongeon	Affirmative	
4	Wisconsin Energy Corp.	Anthony Jankowski		
5	Amerenue	Sam Dwyer	Affirmative	
5	American Electric Power	Thomas Foltz	Affirmative	
5	Arizona Public Service Co.	Scott Takinen	Affirmative	
5	Boise-Kuna Irrigation District/dba Lucky peak power plant project	Mike D Kukla	Abstain	

5	Bonneville Power Administration	Francis J. Halpin	Affirmative	
5	Calpine Corporation	Hamid Zakery	Abstain	
5	City of Austin dba Austin Energy	Jeanie Doty	Affirmative	
5	Cleco Power	Stephanie Huffman	Abstain	
5	Cogentrix Energy Power Management, LLC	Mike D Hirst	Abstain	
5	Colorado Springs Utilities	Kaleb Brimhall	Affirmative	
5	Con Edison Company of New York	Brian O'Boyle	Affirmative	
5	Cowlitz County PUD	Bob Essex	Affirmative	
5	Dominion Resources, Inc.	Mike Garton	Affirmative	
5	DTE Electric	Mark Stefaniak	Affirmative	
5	Duke Energy	Dale Q Goodwine	Affirmative	
5	E.ON Climate & Renewables North America, LLC	Dana Showalter	Abstain	
5	EDP Renewables North America LLC	Heather Bowden	Abstain	
5	El Paso Electric Company	Gustavo Estrada		
5	Electric Power Supply Association	John R Cashin		
5	Entergy Services, Inc.	Tracey Stubbs	Affirmative	
5	Exelon Nuclear	Mark F Draper	Affirmative	
5	First Wind	John Robertson	Affirmative	
5	FirstEnergy Solutions	Kenneth Dresner	Affirmative	
5	Florida Municipal Power Agency	David Schumann	Affirmative	
5	Great River Energy	Preston L Walsh	Affirmative	
5	JEA	John J Babik	Affirmative	
5	Kansas City Power & Light Co.	Brett Holland	Affirmative	
5	Kissimmee Utility Authority	Mike Blough	Affirmative	
5	Liberty Electric Power LLC	Daniel Duff	Affirmative	
5	Lincoln Electric System	Dennis Florom	Abstain	
5	Los Angeles Department of Water & Power	Kenneth Silver		
5	Luminant Generation Company LLC	Rick Terrill	Affirmative	
5	Manitoba Hydro	Chris Mazur		
5	Massachusetts Municipal Wholesale Electric Company	David Gordon	Abstain	
5	MEAG Power	Steven Grego	Affirmative	
5	Muscatine Power & Water	Mike Avesing	Abstain	
5	Nebraska Public Power District	Don Schmit	Negative	COMMENT RECEIVED
5	New York Power Authority	Wayne Sipperly	Affirmative	
5	NextEra Energy	Allen D Schriver	Affirmative	
5	Northern Indiana Public Service Co.	Michael D Melvin	Abstain	
5	Oglethorpe Power Corporation	Bernard Johnson	Affirmative	
5	Omaha Public Power District	Mahmood Z. Safi	Affirmative	
5	Ontario Power Generation Inc.	David Ramkalawan	Affirmative	
5	Orlando Utilities Commission	Richard K Kinas		
5	Pacific Gas and Electric Company	Alex Chua	Affirmative	
5	Platte River Power Authority	Christopher R Wood	Abstain	
5	Portland General Electric Co.	Matt E. Jastram	Abstain	
5	PPL Generation LLC	Annette M Bannon	Affirmative	
5	PSEG Fossil LLC	Tim Kucey	Affirmative	
5	Puget Sound Energy, Inc.	Lynda Kupfer	Abstain	
5	Sacramento Municipal Utility District	Susan Gill-Zobitz	Affirmative	
5	Salt River Project	William Alkema	Affirmative	
5	Seattle City Light	Michael J. Haynes	Affirmative	
5	Seminole Electric Cooperative, Inc.	Brenda K. Atkins	Abstain	
5	Snohomish County PUD No. 1	Sam Nietfeld	Affirmative	
5	South Carolina Electric & Gas Co.	Edward Magic	Affirmative	
5	Southern California Edison Company	Denise Yaffe	Affirmative	
5	Southern Company Generation	William D Shultz	Affirmative	
5	Tacoma Power	Chris Mattson	Abstain	
5	Tampa Electric Co.	RJames Rocha	Abstain	
5	Tennessee Valley Authority	David Thompson	Affirmative	
5	USDI Bureau of Reclamation	Erika Doot	Affirmative	
5	Westar Energy	Bryan Taggart	Affirmative	
6	AEP Marketing	Edward P. Cox	Affirmative	
6	Ameren Missouri	Robert Quinlivan		
6	APS	Randy A. Young	Affirmative	
6	Associated Electric Cooperative, Inc.	Brian Ackermann		
6	Bonneville Power Administration	Brenda S. Anderson	Affirmative	
6	City of Austin dba Austin Energy	Lisa Martin	Affirmative	

6	Cleco Power LLC	Robert Hirchak	Abstain	
6	Colorado Springs Utilities	Shannon Fair	Affirmative	
6	Con Edison Company of New York	David Balban	Affirmative	
6	Constellation Energy Commodities Group	David J Carlson	Affirmative	
6	Dominion Resources, Inc.	Louis S. Slade	Affirmative	
6	Duke Energy	Greg Cecil		
6	FirstEnergy Solutions	Kevin Querry	Affirmative	
6	Florida Municipal Power Agency	Richard L. Montgomery	Affirmative	
6	Florida Municipal Power Pool	Thomas Washburn	Abstain	
6	Florida Power & Light Co.	Silvia P Mitchell	Affirmative	
6	Great River Energy	Donna Stephenson		
6	Kansas City Power & Light Co.	Jessica L Klinghoffer	Affirmative	
6	Lakeland Electric	Paul Shipps	Affirmative	
6	Lincoln Electric System	Eric Ruskamp	Abstain	
6	Los Angeles Department of Water & Power	Brad Packer		
6	Lower Colorado River Authority	Michael Shaw	Abstain	
6	Luminant Energy	Brenda Hampton	Affirmative	
6	Muscatine Power & Water	John Stolley		
6	New York Power Authority	Shivaz Chopra	Affirmative	
6	Northern Indiana Public Service Co.	Joseph O'Brien	Abstain	
6	Oglethorpe Power Corporation	Donna Johnson	Affirmative	
6	Omaha Public Power District	Douglas Collins	Affirmative	
6	PacifiCorp	Sandra L Shaffer	Affirmative	
6	Platte River Power Authority	Carol Ballantine	Abstain	
6	Portland General Electric Co.	Shawn P Davis	Abstain	
6	Power Generation Services, Inc.	Stephen C Knapp	Affirmative	
6	PPL EnergyPlus LLC	Elizabeth Davis	Affirmative	
6	PSEG Energy Resources & Trade LLC	Peter Dolan	Affirmative	
6	Sacramento Municipal Utility District	Diane Enderby	Affirmative	
6	Salt River Project	William Abraham	Affirmative	
6	Seattle City Light	Dennis Sismaet	Affirmative	
6	Seminole Electric Cooperative, Inc.	Trudy S. Novak	Abstain	
6	Snohomish County PUD No. 1	Kenn Backholm	Affirmative	
6	Southern California Edison Company	Joseph T Marone	Affirmative	
6	Southern Company Generation and Energy Marketing	John J. Ciza	Affirmative	
6	Tacoma Public Utilities	Michael C Hill	Abstain	
6	Tampa Electric Co.	Benjamin F Smith II		
6	Tennessee Valley Authority	Marjorie S. Parsons	Affirmative	
6	Westar Energy	Grant L Wilkerson	Affirmative	
6	Western Area Power Administration - UGP Marketing	Peter H Kinney	Abstain	
6	Xcel Energy, Inc.	Peter Colussy	Affirmative	
8		David L Kiguel	Affirmative	
8		Roger C Zaklukiewicz	Affirmative	
8	Massachusetts Attorney General	Frederick R Plett	Affirmative	
8	Volkmann Consulting, Inc.	Terry Volkmann	Affirmative	
9	Commonwealth of Massachusetts Department of Public Utilities	Donald Nelson	Affirmative	
9	New York State Public Service Commission	Diane J Barney	Affirmative	
10	Florida Reliability Coordinating Council	Linda C Campbell	Affirmative	
10	Midwest Reliability Organization	Russel Mountjoy	Affirmative	
10	New York State Reliability Council	Alan Adamson	Affirmative	
10	Northeast Power Coordinating Council	Guy V. Zito	Affirmative	
10	ReliabilityFirst	Anthony E Jablonski	Affirmative	
10	SERC Reliability Corporation	Joseph W Spencer	Affirmative	
10	Southwest Power Pool RE	Bob Reynolds	Abstain	
10	Western Electricity Coordinating Council	Steven L. Rueckert	Abstain	

Account Log-In/Register

Exhibit H

Standard Drafting Team Roster

Project 2012-13 Nuclear Plant Interface Coordination
Standard Drafting Team

Name and Title	Company and Address	Contact Info	Bio
John Gyrath Chair	Exelon Generation LLC (Nuclear) 200 Exelon Way, Kennett Square, PA 19348	610-765-5692 john.gyrath@exeloncorp.com	Member of the NUC-001 drafting team. Responsible for the interfaces between ten nuclear stations and the interconnected transmission owners. The stations are in both the RFC and SERC regions and involve both affiliated and non-affiliated transmission owners. Member of the PJM Nuclear Generator Owners and Operators Users Group (also past chairman), PJM Planning Committee, and PJM Reliability Standards and Compliance Subcommittee. Responsible for implementation of a subset of NERC standards including NUC-001 in Exelon Nuclear. On the Nuclear Energy Institute (NEI) NERC Standards Task Force.
George Attarian Vice Chair	Duke Energy 410 S. Wilmington Street, Raleigh, NC 27601	919-546-4573 george.attarian@pgnmail.com	Major contributor to and drafting team member for NUC-001 from the Nuclear generator side. Chair of IEEE working group 4.6 for standard IEEE Recommended Practice 1792 "Recommended Practice for Nuclear Power Generating Stations" and IEEE Recommended Practice 1792" Recommended Practice for Nuclear Power Generating Station Preferred Power Supply Reliability. Author of grid/nuclear plant interface documents prior to NERC NUC-001. Co-author of two IEEE papers concerning Degraded Grid and Impact to Nuclear Power Stations.
Mukund "Mookie" Chander	Entergy Services Inc. 639, Loyola Ave, L-ENT-17A, New Orleans, LA 70113	504-576-5085 mchande@entergy.com	Overall experience 28 plus years, four years of electrical system design, 11 years experience in nuclear power plant electrical system design, and 13 years of experience in transmission planning and transmission system analysis. Former Chair/member of SERC's Short Circuit

Name and Title	Company and Address	Contact Info	Bio
			Database Working Group, former member of SERC's Engineering Compliance Advisory Group, and former member of NERC's NUC-001 drafting team.
Kevin Donnelly	Consolidated Edison of NY 128 West End Ave, NY, NY 10023	212-580-6791 donnellyk@coned.com	North American Transmission Forum representative on Transmission / NPP Interface Practices Group. Past SRO licensed operator at Commercial Nuclear Power plant. Senior System Operator for Transmission Owner, Con Edison.
Pete Jenkins	Luminant Generation Company LLC PO Box 1002 Glen Rose, Texas 76043	817-357-7962 james.jenkins@luminant.com	26 years experience of protection and control experience in a nuclear power plant interfacing with switchyard protection and coordination. Served for the last three years as the switchyard coordinator for the Comanche Peak Nuclear Power Plant. Instrumental in developing the original NPIRs for the facility and in developing the Nuclear Plant Interface agreements between the nuclear power plant, the transmission owner, transmission operator, and generator operator. Responsible for the ongoing review and management of the current nuclear interface agreements.
Jerry Whooley	PJM Interconnection 955 Jefferson Avenue, Norristown, PA 19403	610-666-8861 whoolj@pjm.com	Currently serving as PJM coordinator for Nuclear Generator Owner User Group (NGOUG). Coordination of regular NGOUG meetings, updates to plant specific Nuclear Plant Interface Requirements (NPIRs) and updates to PJM Manual M39 (Nuclear Plant Interface Coordination).
Les Carter	Carter & Associates Inc. 89 German Mills Road, Thornhill, Ontario, Canada L3T 4H9	416-676-5647 les-carter@rogers.com	Les Carter is a nuclear professional who has spent over 30 years in the nuclear power business. While with Ontario Power Generation, he held various positions of authority including in Operations as a Certified Shift Manager and Duty Manager, Outage Manager, Performance Engineering Manager, Refurbishment Shift Manager and inspection specialist. He was also responsible for the

Name and Title	Company and Address	Contact Info	Bio
			development and oversight of loss of off-site power testing required as part of returning refurbished units to service. Through his own consulting company, Les is currently providing specialized Engineering and Operational expertise to the nuclear industry. Les is a Licensed Professional Engineer in the province of Ontario and has a Master's degree in Mechanical Engineering from the University of Toronto.