NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standards Authorization Request Form

When completed, please email this form to:
sarcomm@nerc.com

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 a revision to a NERC's Reliability Standard.

Request to propose a new or a revision to a Reliability Standard			
Title of Proposed Reliability Standard:	Connecting New Facilities to the Bulk Electric System (FAC-001-1 – Facility Connection Requirements and FAC-002-1 – Coordination of Plans for New Generation, Transmission, and End-User Facilities)		
Date Submitted:	December 3, 2013		
SAR Requester Information			
Name:	The FAC Five-Year Review Team (Roster)		
Organization:	N/A		
Telephone:	N/A	E-mail:	N/A
SAR Type (Check as many as applicable)			
☐ New Reliability Standard ☒ Revision to existing Reliability Standards		☐ Withdrawal of existing Reliability Standard ☐ Urgent Action	

SAR Information
Industry Need (What is the industry problem this request is trying to solve?):
The Standards Committee assigned six subject matter experts to review the FAC family of Reliability Standards as part of NERC's obligation to conduct periodic reviews of its Reliability Standards. The Five-Year Review Team determined that FAC-001-1 and FAC-002-1 remain necessary for reliability to ensure that entities establish Facility connection requirements and then conduct assessments using those requirements before integrating new Facilities. Both Reliability Standards, however, require revision to

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refocus industry effort on those tasks that have a true impact on reliability.
Purpose or Goal (How does this request propose to address the problem described above?):
This SAR proposes revising FAC-001-1 and FAC-002-1 in line with the recommendations of the FAC Five-Year Review Team to add clarity, remove redundancy, retire requirements with no impact on the reliable operation of the Bulk Electric System (based on application of the Paragraph 81 criteria), and bring compliance elements in accordance with NERC guidelines.
Identify the Objectives of the proposed Reliability Standard's requirements (What specific reliability deliverables are required to achieve the goal?):
The objective of FAC-001-1 is to ensure that Transmission Owners and Generator Owners establish Facility requirements so that Facilities seeking interconnection will have the information necessary for considering and pursuing that interconnection. This objective supports reliability principle 3, which states that "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." The objective of FAC-002-1 is to ensure that the entities involved in the integration of new Facilities conduct assessments – using the connection requirements established in FAC-001-1 – before any interconnection occurs so that the interconnection is determined to be technically feasible and reliable. This objective supports reliability principle 1, which states that "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 Reliability Standards."
Brief Description (Provide a paragraph that describes the scope of this Reliability Standard action.)
FAC-001-1 should be revised to retire a requirement (R4) that is redundant with obligations already captured in the Rules of Procedure, to remove subparts of a requirement (R3) that are too prescriptive for inclusion in a Reliability Standard, and to remove parts of the requirement (R1) that are redundant or have no impact on reliability. The VRFs should also be modified for conformance with NERC's VRF guidelines. FAC-002-1 should be revised to make clear the responsibilities of the various entities to whom the Reliability Standard is applicable. R1 should also be revised to retire parts of the requirement that are

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redundant or have no impact on reliability. It may be determined, during the execution of this project, that FAC-001-1 and FAC-002-1 should be combined into one Reliability Standard.
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 Reliability Standard, including an assessment of the reliability and market interface impacts of implementing or not implementing the Reliability Standard action.)
Per the *FAC Five-Year Review Team Recommendation to Revise FAC-001-1*, the drafting team should consider: • Revising the title and purpose of the Reliability Standard to reflect the language in the requirements. • Retiring the following reference in R1: "…compliance with NERC Reliability Standards and applicable Regional Entity, subregional, Power Pool, and individual Transmission Owner planning criteria and Facility connection requirements" because it is redundant with FAC-002-1, R1.2 and built into the ERO framework established in Order 672. • Retiring all of the subparts in R3, except for R3.1.1 and R3.1.2, and moving them to a guidance document. • Modifying R3 to ensure that the impact on third parties is appropriately addressed. • Retiring R4. • Modifying the VRFs for conformance with NERC's VRF guidelines. • Adding Time Horizons to each requirement. Per the *FAC Five-Year Review Team Recommendation to Revise FAC-002-1*, the drafting team should consider: • Revising the title and purpose of the Reliability Standard to reflect the language in the requirements. • Changing "Planning Authority" in the applicability section to "Planning Coordinator" to reflect the Functional Model, as well as the recently revised TPL-001-4. • Splitting R1 into three requirements to add clarity and better distinguish the actions required of the applicable entities. One requirement should describe the Transmission Planner and Planning

SAR Information
Coordinators' responsibility for conducting assessments. A second requirement should describe the Generator Owners' responsibility for coordinating and cooperating with the Transmission Planner and Planning Coordinator as those assessments are conducted. A third requirement should describe the Transmission Owners', Distribution Providers', and Load-Serving Entities' responsibility for coordinating and cooperating with the Transmission Planner and Planning Coordinator as those assessments are conducted. • Revising the subparts of R1 to remove elements that are more appropriate for Measures. • Modifying R1.1 to ensure that the impact on third parties is appropriately addressed. • Modifying R1.4 to update the reference to the TPL Reliability Standards to reflect the changes in proposed TPL-001-4. • Adding Time Horizons to each requirement.

Reliability Functions	
The Reliability Standards 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.

Reliability Functions		
☐	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.
☒	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 Reliability 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

Reliability and Market Interface Principles	
	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 Reliability 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 Reliability 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 Reliability Standards	
Reliability Standard No.	Explanation
TPL Family	FAC-002-1, R1.4 references TPL-001-0, TPL-002-0, and TPL-003-0. R1.4 requires that assessments include: "Evidence that the assessment included steady-state, short-circuit, and dynamics studies as necessary to evaluate system performance under both normal and contingency conditions in accordance with Reliability Standards TPL-001-0, TPL-002-0, and TPL-003-0." These Reliability Standards have been revised and combined in TPL-001-4, which will become enforceable on January 1, 2015. The drafting team should ensure that this reference is updated to either refer to TPL-001-4 or TPL Reliability Standards more generically.

Related SARs – N/A

Related SARs – N/A	
SAR ID	Explanation

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

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Five-Year Review Recommendation to Revise FAC-001-1: Facility Connection Requirements

Introduction

NERC has an obligation to conduct periodic reviews of each Reliability Standard developed through NERC's American National Standards Institute-accredited Reliability Standards development process.[1] FAC-001 is due for a review; it has not been substantially revised since it became enforceable on June 18, 2007.

The NERC Standards Committee appointed six industry experts to serve on the FAC five-year review team (FYRT) on April 22, 2013. FYRTs use the background information 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 guide a comprehensive review that results in a recommendation that the Reliability Standard should be (1) reaffirmed as is (i.e., no changes needed); (2) revised (which may include revising or retiring one or more requirements); or (3) withdrawn.

The FYRT's draft recommendation for FAC-001-1 was posted for a 45-day comment period from August 1 through September 16, 2013. Stakeholders provided feedback on the draft recommendation and associated documents, including a draft Standard Authorization Request (SAR) and recommendations related to other FAC standards. Comments were generally supportive of the FYRT's recommendation and proposed implementation. The FYRT carefully reviewed each comment, along with the recommendations of the Independent Experts Review Project (IERP), and after further discussion with FYRT members and industry observers, the final recommendation to revise the standard and the accompanying documents were updated to adopt many of the commenters' and IERP's suggestions.

The FYRT recommends **REVISING** FAC-001-1. Accompanying this recommendation is a SAR outlining the proposed scope and technical justification for the revision, and redlined version of the requirements in FAC-001-1 as a suggested implementation of the FYRT's recommendation. The FYRT

[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 only of those standards that are American National Standards (approved by the American National Standards Institute) at least once every five years. None of the FAC standards is an American National Standard, and thus the FAC standards would only require 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.

further requests that the Standards Committee prioritize revision of FAC-001-1 (together with FAC-002-1) as a drafting project in 2014.

Applicable Reliability Standard: FAC-001-1
Team Members: 1. John Beck (Chair), Consolidated Edison Co. of New York 2. Michael Steckelberg (Vice Chair), Great River Energy 3. Brian Dale, Georgia Power Company 4. Ruth Kloecker, ITC Holdings 5. Stewart Rake, Luminant Generation Company 6. Ganesh Velummylum, Northern Indiana Public Service Company 7. Mallory Huggins (Lead Standards Developer), NERC 8. Sean Cavote (Supporting Standards Developer), NERC 9. Ed Dobrowolski (Supporting Standards Developer), NERC
Date Review Completed: 10/02/13

Background Information *(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

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: FAC-001-0 was not among the 20 most violated standards in 2012.[2]

   All the requirements in FAC-001-0 do appear on the 2013 Actively Monitored List.[3] R2, R2.1, R2.1.1, R2.1.5, and R2.1.14 are Tier 1; R2.1.4 and R2.1.16 are Tier 2; R1 and its subparts, R2.1.1, R2.1.3, R2.1.6 through R2.1.13, R2.1.15, and R3 are Tier 3.

4. Does the Reliability Standard need to be converted to the results-based standard format as outlined in *Attachment 1: Results-Based Standards*? (Note that the intent of this question is to

[2] The 2012 Compliance Monitoring and Evaluation Annual Report can be found here: http://www.nerc.com/pa/comp/Reports%20DL/2012_CMEP_Report_Rev1.pdf.
[3] The 2013 Actively Monitored List can be found here: http://www.nerc.com/pa/comp/Resources/_layouts/xlviewer.aspx?id=/pa/comp/Resources/ResourcesDL/2013%20Actively_Monitored_Reliability_Standards_rev3.xlsx&Source=http%3A%2F%2Fwww%2Enerc%2Ecom%2Fpa%2Fcomp%2FResources%2FPages%2Fdefault%2Easpx&DefaultItemOpen=1&DefaultItemOpen=1.

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

Questions for SME Review Team

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: The FYRT believes that each of the requirements in FAC-001-1 contains elements that should be considered for retirement under Paragraph 81 criteria.

   Currently, R1 and R2 read as follows:

   R1. The Transmission Owner shall document, maintain, and publish Facility connection requirements to ensure compliance with NERC Reliability Standards and applicable Regional Entity, subregional, Power Pool, and individual Transmission Owner planning criteria and Facility connection requirements. The Transmission Owner's Facility connection requirements shall address connection requirements for:

   1.1. Generation Facilities,
   1.2. Transmission Facilities, and
   1.3. End-user Facilities

   R2. Each applicable Generator Owner shall, within 45 days of having an executed Agreement to evaluate the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the interconnected Transmission systems (under FAC-002-1), document and publish its Facility connection requirements to ensure compliance with NERC Reliability Standards and applicable Regional Entity, subregional, Power Pool, and individual Transmission Owner planning criteria and Facility connection requirements.

   Both R1 and R2 contain references to compliance with "NERC Reliability Standards and applicable Regional Entity, subregional, Power Pool, and individual Transmission Owner planning criteria and Facility connection requirements." A similar reference is contained in FAC-002-1, R1.2, which requires the ensurance of compliance with "NERC Reliability Standards and applicable Regional, subregional, Power Pool, and individual system planning criteria and Facility connection requirements of the impacted systems." While the entities to which these requirements are assigned differ, the concepts are redundant (Criterion B7) and do not need to be included in both standards. The FYRT recommends retaining the reference in FAC-002-1, R1.2 only.

Additionally, the FYRT believes that subparts R3.1 and R3.1.3 through R3.1.16 are not necessary for reliability (Criterion A) and are redundant (Criterion B7) or generally too prescriptive to be contained in a standard. Currently, R3 reads as follows:

R3. Each Transmission Owner and each applicable Generator Owner (in accordance with Requirement R2) shall address the following items in its Facility connection requirements:

3.1. Provide a written summary of its plans to achieve the required system performance as described in Requirements R1 or R2 throughout the planning horizon:

3.1.1. Procedures for coordinated joint studies of new Facilities and their impacts on the interconnected Transmission systems.
3.1.2. Procedures for notification of new or modified Facilities to others (those responsible for the reliability of the interconnected Transmission systems) as soon as feasible.
3.1.3. Voltage level and MW and MVAR capacity or demand at point of connection.
3.1.4. Breaker duty and surge protection.
3.1.5. System protection and coordination.
3.1.6. Metering and telecommunications.
3.1.7. Grounding and safety issues.
3.1.8. Insulation and insulation coordination.
3.1.9. Voltage, Reactive Power, and power factor control.
3.1.10. Power quality impacts.
3.1.11. Equipment Ratings.
3.1.12. Synchronizing of Facilities.
3.1.13. Maintenance coordination.
3.1.14. Operational issues (abnormal frequency and voltages).
3.1.15. Inspection requirements for existing or new Facilities.
3.1.16. Communications and procedures during normal and emergency operating conditions.

R3.1 is redundant with the main requirement and reads like a Measure. The FYRT recommends that R3.1 be retired. The list of items in 3.1.3 through 3.1.16 is too prescriptive; the purpose of the standard is to require entities to have Facility connection requirements, not to prescribe what is contained within those requirements. For instance, the requirements to address "grounding and safety issues" in 3.1.7 and "power quality impacts" in 3.1.10 are distribution level matters that are under the purview of state public service commissions. The FYRT believes that only subparts 3.1.1 and 3.1.2, which require Transmission Owners and applicable Generator Owners to have procedures for studying the impact of new Facilities on the Transmission system and procedures for notifying others about new Facilities, relate to reliability and should remain in the standard. Thus, R3.1 and R3.1.3 through R3.1.16 should also be considered for retirement under P81 criteria, and possibly for transfer into a guidance document.

Finally, the FYRT recommends that Requirement R4 be considered for removal in its entirety because it is not reliability-related (Criterion A) and it is redundant both with Requirement R1 and with NERC's Rules of Procedure (Criterion B7). Currently, R4 reads as follows:

> **R4.** The Transmission Owner shall maintain and update its Facility connection requirements as required. The Transmission Owner shall make documentation of these requirements available to the users of the transmission system, the Regional Entity, and ERO on request (five business days).

The requirement to maintain and update Facility connection requirements in Requirement R4 is partly contained in Requirement R1's current language to "document, maintain, and publish." The FYRT believes that the requirements to document, maintain, publish, and update are all contained in the new recommended language in R1 ("The Transmission Owner shall document Facility connection requirements, update them as needed, and make them available upon request") and R2 ("The applicable Generator Owner…shall document Facility connection requirements and make them available upon request"). The second sentence of the current Requirement R4, which requires Transmission Owners to make documentation available, is redundant with the recommended changes to R1 and R2. Further, requests to share data or information to Regional Entities and the ERO upon request are already addressed in Section 1600 of NERC's Rules of Procedure. The FYRT recommends retiring R4 under P81 criteria.

During Phase 1 of the Paragraph 81 process, the review team received some comments suggesting that R1 and R2 of FAC-001-0 be retired because they relate to documentation. While the FYRT agrees that many documentation requirements are not related to reliability, the team believes that this FAC-001 is about more than documentation; it requires the *establishment* of Facility connection requirements. The development and documentation of these Facility connection requirements facilitates the assessment process that takes place in FAC-002-1.

Although Facility connection requirements for public utilities are typically covered in Open Access Transmission Tariffs (OATTs) under Sections 205 and 206 of the Federal Power Act, this leaves out electric utilities such as municipalities, cooperatives, and federal entities (e.g., the Bonneville Power Administration and the Tennessee Valley Authority), which are addressed under Section 215 of the Federal Power Act. OATTs also would not apply to non-jurisdictional entities that fall in NERC's footprint (e.g., Canadian entities). Ultimately, the team agreed that Facility connection requirements are necessary for reliability and should continue to be explicitly addressed in NERC standards.

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: This is a Version 0 Reliability Standard, and the FYRT believes there are opportunities to add clarity to some of the requirements.

Based on industry feedback and recommendations from the IERP, the FYRT recommends changing the potentially unclear term "publish," currently in R1 and R2, to "make available upon request."

Based on industry feedback, the FYRT also recommends changing the current reference to "the interconnected Transmission Systems" in R3.1.1 and R3.1.2 to "affected Transmission system(s)" to capture appropriate third party impacts without overly broadening the scope of the requirement.

Finally, the purpose of the standard reads: "To avoid adverse impacts on reliability, Transmission Owners must establish Facility connection and performance requirements." The FYRT recommends striking "and performance" from the Purpose, because performance requirements are not included in the standard.

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

☐ Yes

☒ No

Please explain: None of the defined terms used within the Reliability Standard need to be refined. However, the drafting team should review the standard and ensure that all NERC Glossary Terms that should be capitalized (e.g., Facility, Transmission) are appropriately capitalized.

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

The FAC-001-1 VSLs and Measures are consistent with NERC and FERC guidelines, but if a drafting team revises the standard, the VSLs and Measures will need to be updated. A drafting team should also incorporate Time Horizons into the requirements. And while the Data Retention section of the standard is currently appropriate, the FYRT notes that the boilerplate language should be reviewed for continued accuracy at the time that the standard is revised.

The FYRT also believes that the currently assigned VRFs are inconsistent with VRF guidelines and with other standards. Currently, all of the requirements are assigned a Medium VRF. The requirements in FAC-001-1 are administrative in nature and take place in the planning horizon – both factors that can lead to a Lower VRF assignment. Additionally, R3 of FAC-003-2, which requires documented maintenance strategies or procedures or processes or specifications and takes place in the planning horizon, is assigned a Lower VRF, and VRFs are to be consistent across standards. Thus, the FYRT believes that each requirement in FAC-001-1 should be reconsidered for a Lower VRF.

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.) No. Generator interconnection Facilities were already proposed for incorporation into FAC-001-1 by the Project 2010-07: Generator Requirements at the Transmission Interface drafting team.

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.) Not applicable.

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 from the FYRT:

- ☐ REAFFIRM
- ☒ REVISE
- ☐ RETIRE

Technical Justification *(If the SME team recommends that the Reliability Standard be revised, a draft SAR may be included and the technical justification included in the SAR)*: As considered in more detail above, to eliminate requirements with no impact on the reliable operation of the Bulk Electric System, add clarity, remove redundancy, and bring compliance elements into conformance with NERC guidelines, the FYRT recommends revising FAC-001-1. The standard should also be transferred to the new Results-Based Standard template.

Preliminary Recommendation posted for industry comment (date): 08/01/13

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

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

Technical Justification *(If the SME team recommends that the Reliability Standard be revised, a draft SAR may be included and the technical justification included in the SAR)*: The FYRT confirms its original recommendation. As explained in more detail above, to eliminate requirements with no impact on the reliable operation of the Bulk Electric System, add clarity, remove redundancy, bring compliance elements into conformance with NERC guidelines, and address some concerns raised by stakeholder commenters and IERP, the FYRT recommends revising FAC-001-1. The standard should also be transferred to the new Results-Based Standard template.

Date submitted to NERC Staff: 10/02/13

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.[4] 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.

[4] 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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Five-Year Review Recommendation to Revise FAC-002-1: Coordination of Plans for New Facilities

Introduction

NERC has an obligation to conduct periodic reviews of each Reliability Standard developed through NERC's American National Standards Institute-accredited Reliability Standards development process.[1] While FAC-002-1 became enforceable on October 1, 2011, it has not been substantively revised and thus is being reviewed as part of the overall FAC five-year review process.

The NERC Standards Committee appointed six industry experts to serve on the FAC five-year review team (FYRT) on April 22, 2013. FYRTs use the background information 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 guide a comprehensive review that results in a recommendation that the Reliability Standard should be (1) reaffirmed as is (i.e., no changes needed); (2) revised (which may include revising or retiring one or more requirements); or (3) withdrawn.

The FYRT's draft recommendation for FAC-002-1 was posted for a 45-day comment period from August 1 through September 16, 2013. Stakeholders provided feedback on the draft recommendation and associated documents, including a draft Standard Authorization Request (SAR) and recommendations related to other FAC standards. Comments were generally supportive of the FYRT's recommendation and proposed implementation. The FYRT carefully reviewed each comment, along with the recommendations of the Independent Experts Review Project (IERP), and after further discussion with FYRT members and industry observers, the final recommendation to revise the standard and the accompanying documents were updated to adopt some of the commenters' and IERP's suggestions.

The FYRT recommends **REVISING** FAC-002-1. Accompanying this recommendation is a SAR outlining the proposed scope and technical justification for the revision, and a redlined version of the requirements in FAC-002-1 as a suggested implementation of the FYRT's recommendation. The FYRT

[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 only of those standards that are American National Standards (approved by the American National Standards Institute) at least once every five years. None of the FAC standards is an American National Standard, and thus the FAC standards would only require 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.

further requests that the Standards Committee to prioritize revision of FAC-002-1 (together with FAC-001-1) as a drafting project in 2014.

Applicable Reliability Standard: FAC-002-1
Team Members: 1. John Beck (Chair), Consolidated Edison Co. of New York 2. Michael Steckelberg (Vice Chair), Great River Energy 3. Brian Dale, Georgia Power Company 4. Ruth Kloecker, ITC Holdings 5. Stewart Rake, Luminant Generation Company 6. Ganesh Velummylum, Northern Indiana Public Service Company 7. Mallory Huggins (Lead Standards Developer), NERC 8. Sean Cavote (Supporting Standards Developer), NERC 9. Ed Dobrowolski (Supporting Standards Developer), NERC
Date Review Completed: 10/02/13

Background Information *(completed by NERC staff)*

1. Are there any outstanding Federal Energy Regulatory Commission directives associated with the Reliability Standard?

   ☒ Yes

   ☐ No

   There are two outstanding directives from FERC Order 693[2] that apply to FAC-002-0. The first directs NERC to consider incorporating a reference to TPL-004-0 in FAC-002-0. This directive is outdated. FERC has issued a Notice of Proposed Rulemaking proposing to approve TPL-001-4, which will combine the four TPL standards. The reference in FAC-002 was changed to reference "TPL Reliability Standards, as applicable."

   The second outstanding directive related to FAC-002-0 asked NERC to consider the comments of various entities asking for clarification of R1.

   - APPA requested that the Reliability Standard be clarified to state that the required assessment must be performed only by the Transmission Planner and the Planning Authority. Related, TAPS expressed concern that Load-Serving Entities are not equipped to perform assessments. California Cogeneration expressed a similar concern about Generator Owners' ability to perform an assessment.
     - The FYRT recommends addressing these concerns by trifurcating R1 into three requirements that better clarify the responsibilities of all entities involved. As envisioned by the FYRT, a new R1 would focus exclusively on the Transmission Planner and Planning Authority's responsibility for conducting assessments, and a new R2 and R3 would separate out the requirement for Generator Owners, Transmission Owners, Distribution Providers, and Load-Serving Entities to simply coordinate and cooperate on those assessments.
   - Xcel requested that the Commission clarify that only one required assessment needs to be done when new facilities are added, and that all the listed entities should participate in that single assessment.
     - The FYRT agrees that it is possible that only one assessment may be necessary, and in that case all entities could simply participate and sign on to that assessment, but in other cases, multiple assessments might be conducted and later coordinated.
   - FirstEnergy requested that NERC clarify what is considered a new facility and asks if, for example, up-rates should be included as new facilities.

[2] FERC Order No. 693, which approved 83 Reliability Standards as mandatory and effective, is available here: http://www.nerc.com/FilingsOrders/us/FERCOrdersRules/ORDER%20693.pdf.

  - The FYRT believes the determination of whether an up-rate needs to be assessed the same way as a new facility is up to the entity that's conducting the study, and that such decisions will vary by region.
- Six Cities requested that this Reliability Standard clarify that all applicable entities must make available data necessary for all other responsible entities to perform the required assessment.
  - The FYRT believes that the requirement to coordinate and cooperate requires the sharing of all data necessary for conducting an assessment.
- Six Cities also suggested that the transmission operator be added as an entity to which this Reliability Standard is applicable, at least from the perspective that it make necessary data available to all other entities responsible for assessment.
  - The FYRT believes that data from the Transmission Owner would account for the necessary data from the transmission side. It would be the responsibility of the Transmission Planner or Planning Authority to include any relevant operations data.
- FirstEnergy stated that both MISO and PJM already have Large Generator Interconnection Procedures (LGIP) in place that provide a formal process that meets the requirements listed under R1, and asks that the Commission state that complying with the interconnection agreement and/or OATT satisfies this requirement.
  - While requirements for interconnection for public utilities are typically covered in Open Access Transmission Tariffs (OATTs) under Sections 205 and 206 of the Federal Power Act, this leaves out electric utilities such as municipalities, cooperatives, and federal entities (e.g., the Bonneville Power Administration and the Tennessee Valley Authority), which are addressed under Section 215 of the Federal Power Act. OATTs also would not apply to non-jurisdictional entities that fall in NERC's footprint (e.g., Canadian entities). For consistency, facility connection requirements and pre-interconnection assessments should continue to be explicitly addressed in NERC standards.

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: FAC-002-1 is not one of the most frequently violated Reliability Standards, but all of the requirements in FAC-002-1 do appear on the 2013 Actively Monitored List.[3] R1 and R1.3 are Tier 1; R1.1, R1.2, R1.4, and R1.5 are Tier 2.

4. Does the Reliability Standard need to be converted to the results-based standard 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

[3] The 2013 Actively Monitored List can be found here: http://www.nerc.com/pa/comp/Resources/_layouts/xlviewer.aspx?id=/pa/comp/Resources/ResourcesDL/2013%20Actively_Monitored_Reliability_Standards_rev3.xlsx&Source=http%3A%2F%2Fwww%2Enerc%2Ecom%2Fpa%2Fcomp%2FResources%2FPages%2Fdefault%2Easpx&DefaultItemOpen=1&DefaultItemOpen=1.

Questions for SME Review Team

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: R2 has already been proposed for retirement by the Paragraph 81 review team.

   The FYRT discussed whether R1, which requires that assessments be conducted, is redundant with TPL-001-4, R2, which requires Transmission Planners and Planning Coordinators to prepare Planning Assessments for their portions of the BES. The team determined that the assessment requirement in FAC-002-1 is distinct from TPL-001-4, R2; a Planning Assessment under TPL would be for existing Facilities or interconnections, whereas FAC-002 requires a similar kind of assessment to TPL, but it's a *pre-interconnection* assessment for new Facilities that may or may not end up interconnecting. Once the Facilities are interconnected, they would be covered under TPL, but until then, the potential impact is evaluated under FAC-002.

   During Phase 1 of the Paragraph 81 process, the review team received one comment expressing concern about R1, stating that the requirement assigns responsibility to the wrong functional entity. The FYRT believes this concern could be addressed by trifurcating R1 into three requirements that better clarify the responsibilities of all entities involved, as considered below.

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: For clarity and consistency with the proposed TPL-001-4 and the Functional Model, the FYRT recommends changing the applicable functional entity of "Planning Authority" to "Planning Coordinator."

FAC-002-1, R1 is necessary for reliability, but the FYRT believes that it is unclear as written, especially in the manner in which it assigns responsibility by functional entity. The FYRT recommends trifurcating R1 into three requirements to add clarity and better distinguish among the required actions. Additionally, the team recommends revising some of the original R1 subparts, because they currently read like Measures rather than requirements. Currently, R1 reads as follows:

> **R1.** The Generator Owner, Transmission Owner, Distribution Provider, and Load-Serving Entity seeking to integrate generation facilities, transmission facilities, and electricity end-user facilities shall each coordinate and cooperate on its assessments with its Transmission Planner and Planning Authority. The assessment shall include:
>
> **1.1.** Evaluation of the reliability impact of the new facilities and their connections on the interconnected transmission systems.
> **1.2.** Ensurance of compliance with NERC Reliability Standards and applicable Regional, subregional, Power Pool, and individual system planning criteria and facility connection requirements.
> **1.3.** Evidence that the parties involved in the assessment have coordinated and cooperated on the assessment of the reliability impacts of new facilities on the interconnected transmission systems. While these studies may be performed independently, the results shall be jointly evaluated and coordinated by the entities involved.
> **1.4.** Evidence that the assessment included steady-state, short-circuit, and dynamics studies as necessary to evaluate system performance under both normal and contingency conditions in accordance with Reliability Standards TPL-001-0, TPL-002-0, and TPL-003-0.
> **1.5.** Documentation that the assessment included study assumptions, system performance, alternatives considered, and jointly coordinated recommendations.

The FYRT recommends trifurcating R1 into the following three requirements: one requiring the Transmission Planner and Planning Coordinator to conduct assessments (new R1), one requiring Generator Owners to coordinate and cooperate with the Transmission Planner and Planning Coordinator as those assessments are conducted (new R2), and one requiring Transmission Owners, Distribution Providers, and Load-Serving Entities to coordinate and cooperate with the Transmission Planner and Planning Coordinator as those assessments are conducted (new R3). The FYRT recommends ordering the requirements so that the new R1, which focuses on what needs to be included in an assessment, comes before R2 and R3, which focus on the entities that need to coordinate and cooperate with the entities conducting the assessments.

The FYRT also recommends moving the current R1.1-1.5 under the new R1, with deletion of most of R1.3. R1.3 reads like a Measure for the coordination and cooperation aspect of the standard, but the last sentence of original R1.3, "While these studies may be performed independently, the results shall be jointly evaluated and coordinated by the entities involved," should be added to the new R1.1 to ensure that some reference to coordinating with third parties and end users is included. Similarly, the FYRT recommends changing the reference to "the interconnected transmission Systems" in R1.1 to "affected Transmission system(s)" to capture appropriate third party impacts without overly broadening the scope of the requirement.

The FYRT also recommends editing R1.2 to replace the reference to "individual system planning requirements" with a reference to "Transmission Owner planning requirements." The FYRT also recommends the modification of the current R1.4 and R1.5 to make them read more like subparts of a requirement and less like Measures. For instance, the team recommends that phrases like "evidence that…" be deleted.

The FYRT also identified a possible gap regarding the responsibilities of the Transmission Owners and applicable Generator Owners that have received requests to interconnect to their Facilities. The FYRT recommends adding a new requirement (R4) similar to the proposed new R2 and R3.

After developing these proposed modifications, the FYRT discussed whether the actions "coordinate and cooperate" were appropriately measurable. The team considered instead proposing a construction similar to the one in TOP-003-2—Operational Reliability Data, which requires the lead entities develop and distribute a documented specification for the data necessary to perform an analysis and requires the participating entities to satisfy the obligations of the data request. The FYRT believes that "coordinate and cooperate" involve more than the sharing of data, and that the requirement can be satisfied with evidence of in-person and web- or phone-based meetings ("coordination and cooperation") among involved entities. The FYRT will leave it up to the FAC-001-1 and FAC-002-1 drafting team and the industry to determine whether the construction used in the proposed TOP-003-2 is preferable.

Finally, the FYRT recommends modifying the purpose statement to better reflect the requirements and delete the reference to performance that does not appear in the standard.

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

   ☐ Yes

   ☒ No

Please explain: None of the defined terms used within the Reliability Standard need to be refined. However, the drafting team should review the standard and ensure that all NERC Glossary Terms that could be capitalized (e.g., Facility, Transmission) are appropriately capitalized.

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

   FAC-002-1 VSLs, VRFs, and Measures are consistent with NERC and FERC guidelines, but if a drafting team revises the standard, the VSLs, VRFs, and Measures will all need to be revised and incorporated into the body of the standard. Time Horizons will also need to be incorporated into the requirements. The Data Retention section of the standard also should be updated. These changes are necessary to ensure that the standard is consistent with current NERC guidance on compliance language within a standard.

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.) No.

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.) Not applicable.

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 from the FYRT:

- ☐ REAFFIRM
- ☒ REVISE
- ☐ RETIRE

Technical Justification *(If the SME team recommends that the Reliability Standard be revised, a draft SAR may be included and the technical justification included in the SAR)*: As considered in more detail above, to eliminate redundancy, clarify the responsibilities of all entities involved in the standard, and update references to TPL standards, the FYRT recommends revising FAC-002-1. The standard should also be transferred to the new Results-Based Standard template.

Preliminary Recommendation posted for industry comment (date): 08/01/13

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

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

Technical Justification *(If the SME team recommends that the Reliability Standard be revised, a draft SAR may be included and the technical justification included in the SAR)*: The FYRT confirms its original recommendation. As explained in more detail above, to eliminate redundancy, clarify the responsibilities of all entities involved in the standard, and update references to TPL standards, the FYRT recommends revising FAC-002-1. This revision includes the addition of a new requirement to address a perceived gap regarding the responsibilities of the Transmission Owners and applicable Generator Owners that have received requests to interconnect to their Facilities. The standard should also be transferred to the new Results-Based Standard template.

Date submitted to NERC Staff: 10/02/13

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.[4] 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.

[4] 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.