

122 FERC ¶ 61,254
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

18 CFR Part 40

Docket No. RM08-3-000

Mandatory Reliability Standard for Nuclear Plant Interface Coordination

(March 20, 2008)

AGENCY: Federal Energy Regulatory Commission.

ACTION: Notice of Proposed Rulemaking.

SUMMARY: Pursuant to section 215 of the Federal Power Act, the Commission proposes to approve the Nuclear Plant Interface Coordination Reliability Standard developed by the North American Electric Reliability Corporation (NERC). The proposed Reliability Standard requires a nuclear power plant operator and its suppliers of back-up power and related transmission and distribution services to coordinate concerning nuclear licensing requirements for safe nuclear plant operation and shutdown and system operating limits. The Commission also proposes to accept four related definitions for addition to the NERC Glossary of Terms and to direct various changes to proposed violation risk factors, which measure the potential impact of violations of the Reliability Standard on the reliability of the Bulk-Power System. The proposed rule would benefit the Reliable Operation of the Bulk-Power System by facilitating the provision of off-site power to ensure reliable and safe nuclear power plant operation and shutdown.

DATES: Comments are due [30 days after publication in the **FEDERAL REGISTER**].

ADDRESSES: Interested persons may submit comments, identified by Docket No.

RM08-3-000, by any of the following methods:

- **eFiling**: Comments may be filed electronically via the eFiling link on the Commission's web site at www.ferc.gov. Documents created electronically using word processing software should be filed in the native application or print-to-PDF format and not in a scanned format. This will enhance document retrieval for both the Commission and the public. The Commission accepts most standard word processing formats and commenters may attach additional files with supporting information in certain other file formats. Attachments that exist only in paper form may be scanned. Commenters filing electronically should not make a paper filing. Service of rulemaking comments is not required.
- **Mail/Hand Delivery**: Commenters that are not able to file electronically must mail or hand deliver an original and 14 copies of their comments to: Federal Energy Regulatory Commission, Secretary of the Commission, 888 First Street, NE, Washington, DC 20426.

Instructions: For detailed instructions on submitting comments and additional information on the rulemaking process, see the Comment Procedures Section of this document

FOR FURTHER INFORMATION CONTACT:

Richard M. Wartchow (Legal Information)
Office of the General Counsel
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426
(202) 502-8744

Christy Walsh (Legal Information)
Office of the General Counsel
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426
(202) 502-6523

Robert Snow (Technical Information)
Office of Electric Reliability
Division of Reliability Standards
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426
(202) 502-6716

Kevin Thundiyil (Technical Information)
Office of Electric Reliability
Division of Reliability Standards
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426
(202) 502-6490

SUPPLEMENTARY INFORMATION:

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Mandatory Reliability Standard for Nuclear Plant
Interface Coordination

Docket No. RM08-3-000

NOTICE OF PROPOSED RULEMAKING

(March 20, 2008)

TABLE OF CONTENTS

	<u>Paragraph Numbers</u>
I. Background	<u>2.</u>
A. EPAct 2005 and Mandatory Reliability Standards	<u>2.</u>
1. NERC’s Proposed Nuclear Reliability Standard	<u>4.</u>
2. Proposed NERC Glossary Definitions	<u>10.</u>
3. Nuclear Reliability Standard Requirements	<u>11.</u>
4. Nuclear Reliability Standard Development.....	<u>15.</u>
II. Discussion	<u>17.</u>
A. Applicability	<u>18.</u>
1. Notification of Parties to Interface Agreements	<u>20.</u>
2. Transmission Entities	<u>22.</u>
3. Agreement on NPIRs.....	<u>31.</u>
B. Scope of Agreements	<u>38.</u>
1. Generally.....	<u>39.</u>
2. Revisions to Interface Agreements to Reflect Interim Changes	<u>40.</u>
C. Coordination	<u>43.</u>
D. Proposed Terms for Addition to the NERC Glossary	<u>46.</u>
E. Violation Risk Factors	<u>48.</u>
F. Violation Severity Levels	<u>60.</u>
III. Information Collection Statement	<u>63.</u>
IV. Environmental Analysis	<u>73.</u>
V. Regulatory Flexibility Act Analysis	<u>74.</u>
VI. Comment Procedures	<u>77.</u>
VII. Document Availability.....	<u>81.</u>

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Mandatory Reliability Standard for Nuclear Plant
Interface Coordination

Docket No. RM08-3-000

NOTICE OF PROPOSED RULEMAKING

(March 20, 2008)

1. Pursuant to section 215 of the Federal Power Act (FPA), the Commission proposes to approve the Nuclear Plant Interface Coordination Reliability Standard (NUC-001-1) developed by the North American Electric Reliability Corporation (NERC). The proposed Reliability Standard requires a nuclear power plant operator and its suppliers of back-up power and transmission and distribution services¹ to coordinate concerning nuclear licensing requirements for safe nuclear plant operation and shutdown and system operating limits (SOLs). The Commission also proposes to accept four related definitions for addition to the NERC Glossary of Terms² and to direct various changes to proposed violation risk factors, which measure the potential impact of violations of the Reliability Standard on the reliability of the Bulk-Power System. The proposed rule

¹ The Reliability Standard defines those suppliers who provide such generation, transmission and distribution services pursuant to agreements under the Nuclear Reliability Standard as “transmission entities,” as discussed below.

² See the NERC Glossary of Terms Used in Reliability Standards (as revised) (Glossary), originally filed in Mandatory Reliability Standards for the Bulk-Power System, NERC Request for Approval of Reliability Standards, Docket No. RM06-16-000 (Apr. 4, 2006), and affirmed by Order No. 693, 72 FR 16416 (Apr. 4, 2007), FERC Stats. and Regs. ¶ 31,242 (2007), order on reh’g, Order No. 693-A, 72 FR 40717 (July 25, 2007), 120 FERC ¶ 61,053 (2007).

would benefit the Reliable Operation of the Bulk-Power System by facilitating the provision of off-site power to ensure reliable and safe nuclear power plant operation and shutdown.³

I. Background

A. EPAct 2005 and Mandatory Reliability Standards

2. On August 8, 2005, the Electricity Modernization Act of 2005 was enacted as Title XII, Subtitle A, of the Energy Policy Act of 2005 (EPAct 2005).⁴ EPAct 2005 added section 215 to the FPA, requiring the Commission-certified Electric Reliability Organization (ERO) to develop mandatory and enforceable Reliability Standards, subject to Commission review and approval. Once approved, the Reliability Standards may be enforced by the ERO, subject to Commission oversight, or by the Commission independently.⁵
3. On February 3, 2006, the Commission issued Order No. 672, implementing section 215.⁶ Pursuant to Order No. 672, the Commission certified NERC as the ERO.⁷

³ The Commission is not proposing any new or modified text to its regulations. Rather, as set forth in 18 CFR Part 40, a proposed Reliability Standard will not become effective until approved by the Commission, and the Electric Reliability Organization (ERO) must post on its website each effective Reliability Standard.

⁴ Energy Policy Act of 2005, Pub. L. No. 109-58, Title XII, Subtitle A, 119 Stat. 594, 941 (2005), 16 U.S.C. 824o (2000 & Supp. V 2005).

⁵ 16 U.S.C. 824o(e)(3).

⁶ Rules Concerning Certification of the Electric Reliability Organization; and Procedures for the Establishment, Approval, and Enforcement of Electric Reliability Standards, Order No. 672, 71 FR 8662 (Feb. 17, 2006), FERC Stats. & Regs. ¶ 31,204, order on reh'g, Order No. 672-A, 71 FR 19814 (Apr. 18, 2006), FERC Stats. & Regs. ¶ 31,212 (2006).

The ERO is required to develop Reliability Standards, subject to Commission review and approval, applicable to users, owners and operators of the Bulk-Power System, as set forth in each Reliability Standard.

1. NERC's Proposed Nuclear Reliability Standard

4. On November 19, 2007, NERC filed its petition for Commission approval of the Nuclear Plant Interface Coordination Reliability Standard, designated NUC-001-1 (November 19, 2007 Petition). NERC supplemented the filing on December 11, 2007 (December 11, 2007 Supplement) to propose four related NERC Glossary terms: “Nuclear Plant Generator Operator,” “Nuclear Plant Off-site Power Supply (Off-site Power),” “Nuclear Plant Licensing Requirements (NPLRs),” and “Nuclear Plant Interface Requirements (NPIRs).” The November 19, 2007 Petition states that the proposed Reliability Standard addresses the coordination of interface requirements for two domains: (i) Bulk-Power System planning and operations; and (ii) nuclear power plant licensing requirements for off-site power necessary to enable safe nuclear plant operation and shutdown.

5. The Nuclear Reliability Standard applies to nuclear plant generator operators (generally nuclear power plant owners and operators, including licensees) and “transmission entities,” defined in the Reliability Standard as including a nuclear plant’s suppliers of off-site power and related transmission and distribution services. To account for the variations in nuclear plant design and grid interconnection characteristics, the

⁷ North American Electric Reliability Corp., 116 FERC ¶ 61,062, order on reh’g & compliance, 117 FERC ¶ 61,126 (2006).

Reliability Standard defines transmission entities as “all entities that are responsible for providing services related to Nuclear Plant Interface Requirements (NPIRs),” and lists eleven types of functional entities that could provide services related to NPIRs.⁸

6. According to NERC, nuclear plant generator operators and transmission entities operate according to separate, established reliability and safety procedures. NERC states that the proposed Reliability Standard requires a nuclear plant generator operator to coordinate operations and planning with its transmission entities by developing procedures that reflect nuclear plant licensing requirements and SOLs,⁹ including interconnection reliability operating limits (IROLs), affecting nuclear plant operations.¹⁰ The proposed Nuclear Reliability Standard requires nuclear plant generator operators and transmission entities, including off-site power suppliers, to develop expectations and procedures for coordinating operations to meet the nuclear plant licensing requirements,

⁸ The list of functional entities consists of transmission operators, transmission owners, transmission planners, transmission service providers, balancing authorities, reliability coordinators, planning authorities, distribution providers, load-serving entities, generator owners and generator operators. Additional applicability issues are discussed in a separate section below.

⁹ The NERC glossary defines system operating limit or SOL as “the value . . . that satisfies the most limiting of the prescribed operating criteria for a specified system configuration to ensure operation within acceptable reliability criteria. . . .” 18 CFR Part 40, Facilities Design, Connections and Maintenance Mandatory Reliability Standards, Notice of Proposed Rulemaking, 72 FR 46413 (Aug. 20, 2007), FERC Stats. and Regs. ¶ 32,622, at P 19 (2007) (Aug. 13, 2007).

¹⁰ The NERC glossary defines IROL as a “system operating limit that, if violated, could lead to instability, uncontrolled separation, or Cascading Outages that adversely impact the reliability of the bulk electric system.” 18 CFR Part 40, Facilities Design, Connections and Maintenance Mandatory Reliability Standards, Order No. 705, 73 FR 1770 (Jan. 9, 2008), 121 FERC ¶ 61,296, at P 118 (2007) (Dec. 27, 2007).

SOLs and IROLs and to execute agreements, called interface agreements, reflecting those expectations and procedures. The resulting operations and planning requirements developed in the agreements to address the nuclear plant licensing requirements, SOLs and IROLs are called NPIRs.¹¹ NERC states that Requirements R3 through R8, which state that the interface agreement parties will address the NPIRs in planning, operations and facility upgrade and outage coordination, provide additional specificity on these expectations.

7. NERC's November 19, 2007 Petition notes that nuclear plant generator operators must already fulfill nuclear licensing requirements for off-site power.¹² NERC states

¹¹ See NUC-001-1, Requirement R2 and the proposed NERC Glossary term, Nuclear Plant Interface Requirements.

¹² See also the U.S.-Canada Power System Outage Task Force, Final Report on the August 14, 2003 Blackout in the United States and Canada: Causes and Recommendations, at 112 (April 2004) (Blackout Report), for a description of Nuclear Regulatory Commission (NRC) oversight; available at <http://www.ferc.gov/industries/electric/indus-act/blackout.asp> :

The NRC, which regulates U.S. commercial nuclear power plants, has regulatory requirements for offsite power systems. These requirements address the number of offsite power sources and the ability to withstand certain transients. Offsite power is the normal source of alternating current (AC) power to the safety systems in the plants when the plant main generator is not in operation. The requirements also are designed to protect safety systems from potentially damaging variations (in voltage and frequency) in the supplied power. For loss of offsite power events, the NRC requires emergency generation (typically emergency diesel generators) to provide AC power to safety systems. In addition, the NRC provides oversight of the safety aspects of offsite power issues through its inspection program, by monitoring operating experience, and by performing technical studies.

that, while various forms of agreements exist to meet the nuclear power plant general design criterion for off-site power, NUC-001-1 places a new, mandatory and enforceable obligation under section 215 of the FPA on both nuclear plant generator operators and transmission entities. NUC-001-1 requires these entities to inform one another of limits and requirements on their systems and to enter into agreements to coordinate and operate their systems to address nuclear plant licensing requirements and related system limits.

8. The nuclear plant licensing requirements addressed in the proposed Reliability Standard include requirements for off-site power to enable safe operation and shutdown during an electric system or plant event, and requirements for avoiding nuclear safety issues as a result of changes in electric system conditions during a disturbance, transient or normal conditions. NERC cites general design criterion 17 for nuclear power plants, which requires nuclear plant generator operators to obtain off-site electric power that will provide sufficient capacity to permit safety systems to function, assure that reactor coolant design limits are not exceeded, prevent core cooling, and maintain containment integrity and other vital functions.¹³

9. NERC states that NUC-001-1, in combination with the nuclear license general design criteria requirements, achieves the vital public interest of assuring safe nuclear power generation. According to NERC, the Reliability Standard is beneficial to nuclear plant generator operators because it will assist them in meeting nuclear plant licensing requirements to safely produce nuclear power. It is also beneficial to Bulk-Power System

¹³ NERC November 19, 2007 Petition at 22-23, citing the NRC regulations, 10 CFR Part 50, Appendix A — General Design Criteria for Nuclear Power Plants.

users, due to the significant support that nuclear plants provide to the Reliable Operation of the Bulk-Power System. This Reliability Standard was assigned to a new rulemaking proceeding, Docket No. RM08-3-000, and is the subject of the current Notice of Proposed Rulemaking (NOPR).¹⁴

2. Proposed NERC Glossary Definitions

10. NERC proposes in its December 11, 2007 Supplement to add the following four terms to the NERC Glossary:¹⁵

Nuclear Plant Generator Operator: Any Generator Operator or Generator Owner that is a [n]uclear [p]lant [l]icensee responsible for operation of a nuclear facility licensed to produce commercial power.

Nuclear Plant Off-site Power Supply or Off-site Power: The electric power supply provided from the electric system to the nuclear power plant distribution system as required per the nuclear power plant license.

Nuclear Plant Licensing Requirements (NPLRs): Requirements included in the design basis of the nuclear plant and statutorily mandated for the operation of the plant, including nuclear power plant licensing requirements for: 1) Off-site power supply to enable safe shutdown of the plant during an electric system or plant event; and 2) Avoiding preventable challenges to nuclear safety as a result of an electric system disturbance, transient, or condition.¹⁶

¹⁴ The Nuclear Reliability Standard is attached in Appendix A to this NOPR and is available on the Commission's eLibrary document retrieval system in Docket No. RM08-3-000 and also on NERC's website, <http://www.nerc.com>.

¹⁵ The Commission reviews and approves revisions to the NERC Glossary, directing modifications where necessary. See, e.g., Order No. 693 at P 1893-98.

¹⁶ The proposed Reliability Standard incorporates a regional difference that provides an alternative definition of nuclear plant licensing requirements that applies to units located in Canada.

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 [t]ransmission [e]ntities.

3. Nuclear Reliability Standard Requirements

11. NERC's November 19, 2007 Petition summarizes the Nuclear Reliability Standard's nine compliance Requirements. Requirement R1 states that a nuclear plant generator operator shall provide proposed NPIRs to its transmission entities. Requirement R2 states that a nuclear plant generator operator and its transmission entities shall execute one or more agreements "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 as further described in Requirement R9.
12. Requirements R3 through R8 dictate various operating and planning obligations that the nuclear plant generator operator and transmission entities shall meet per the interface agreements. Requirement R3 states that the transmission entities shall incorporate NPIR information into planning analyses and communicate the study results to the nuclear plant generator operator. Requirement R4 directs transmission entities to incorporate the NPIRs into operating analyses and meet the resulting operating targets or inform the nuclear plant generator operator when the transmission entity loses the ability to assess its performance. Requirement R5 places an obligation on the nuclear plant generator operator to operate its facilities in accordance with the interface agreements. Requirement R6 provides that a nuclear plant generator operator and its transmission entities shall coordinate outages and maintenance activities that affect the NPIRs

(additional details concerning operations and maintenance coordination are set forth in Requirement R9.3). Requirements R7 and R8 oblige a nuclear plant generator operator and its transmission entities, respectively, to inform each other under their interface agreement of actual or proposed facility changes affecting the NPIRs.

13. Requirement R9, including sub-Requirements R9.1.1 through R9.4.4, outline certain administrative, technical, operations and maintenance, and communications and training provisions that must be included in an interface agreement. Provisions concerning technical requirements and analysis direct the interface agreement parties to (1) identify limits, configurations and operating scenarios included in the NPIRs (Requirement R9.2.1); (2) identify essential facilities, components and configuration restrictions (Requirement R9.2.2); and (3) describe planning and operational analyses, including scope and timing, to support the NPIRs (Requirement R9.2.3).

14. The operations and maintenance coordination provisions mandate that the interface agreements provide for coordination of operations and maintenance of electrical facilities at the interface between the electrical system and the nuclear plant and power supply systems, including off-site power (Requirements R9.3.1 - .3). Further, an interface agreement must coordinate responses to unusual conditions on the grid such as loss of ability to monitor grid performance, loss of off-site power, use of special protection systems, and underfrequency and undervoltage load shedding programs (Requirements R9.3.4, R9.3.5, and R9.3.7). Requirement R9.3.6 requires coordination of physical and cyber security systems. The interface agreements also must adopt terms and protocols for communications between the nuclear plant generator operator and

transmission entities, coordination and communication during atypical operating conditions or emergency events, investigation and resolution of the causes of unplanned events, compliance with regulatory information requirements, and personnel training relating to NPIRs (Requirements R9.4.1-.5) and dispute resolution procedures (Requirement R9.1.3).

4. Nuclear Reliability Standard Development

15. NERC reports that in October 2004 it received a Standard Authorization Request (SAR) for NUC-001-1 from the Nuclear Energy Institute Grid Reliability Task Force. The NERC Standards Committee approved the SAR in May 2005 and authorized development of the Reliability Standard. After more than 50 stakeholders, including Nuclear Regulatory Commission (NRC) staff, provided comments on the draft, the NERC Nuclear Reliability Standard drafting team finalized the proposed Reliability Standard and set it for vote. NERC reports that, while the first ballot in March 2007 indicated approval by 77 percent of the weighted segment votes, negative ballots with comments triggered a recirculation ballot. NERC describes the negative comments as being largely concerned with two issues: (1) whether the term “transmission entities” is too ambiguous to be enforceable; and (2) whether the proposed Reliability Standard makes SOL determinations and Bulk-Power System integrity procedures subservient to nuclear plant licensing requirements. NERC reports the drafting team’s responses to these comments on “transmission entities” and SOL coordination. The drafting team supported its proposal for identifying transmission entities by stating that the proposed generic treatment was appropriate because it reflected the variety of potential interactions

between a given nuclear plant generator operator and grid operators with nuclear plant interconnections. According to NERC, the drafting team indicated that the specific entities covered by the proposed Reliability Standard would be determined through the NUC-001-1 implementation plan. NERC states that the drafting team responded to criticisms that SOL coordination was not adequately supported by pointing out that the nuclear plant generator operators and transmission entities will develop NPIRs under NUC-001-1 through a collaborative process that permits both groups to identify and address both nuclear requirements and Bulk-Power System limits in the resulting agreements.

16. With these responses, the proposed Reliability Standard passed in a recirculation ballot with an 80 percent weighted segment approval and a 96 percent quorum. The NERC Board of Trustees adopted the proposed Reliability Standard on May 2, 2007. To provide time for nuclear plant generator operators and transmission entities to identify NPIRs and negotiate and execute interface agreements, NERC proposes that NUC-001-1 become effective in the United States on the first day of the calendar quarter falling 15 months after Commission approval.

II. Discussion

17. The Commission proposes to approve the Reliability Standard, NUC-001-1, effective as proposed by NERC, but seeks comment on several specific issues concerning the applicability of the Reliability Standard, coordination among transmission entities, and the scope of nuclear plant interface agreements. The Commission is not taking any action on the regional difference, because it applies outside of the United States and is not

applicable to any facilities within the Commission's jurisdiction.¹⁷ Further, the Commission proposes to order several modifications to the violation risk factors for the Reliability Standard and approve the proposed violation severity levels until they are superseded in an upcoming proceeding, as discussed below. The Commission also proposes to approve the proposed Glossary terms.

A. Applicability

18. Reliability Standard NUC-001-1 applies to nuclear plant generator operators and transmission entities, including off-site power suppliers and entities that provide distribution and transmission services that affect plant operations. NERC states that the Reliability Standard meets the criteria that it apply to users, owners and operators of the Bulk-Power System because NUC-001-1 will apply to transmission entities that are responsible for providing services relating to NPIRs. According to NERC, these transmission entities can affect the safety and reliability of the nuclear plant and Bulk-Power System, for instance in the case of a distribution service provider that supplies off-site power from a low-voltage, local distribution system. Therefore, these entities are subject to the Reliability Standard Requirements and may be registered under the NERC compliance registry process.

19. While the Commission does not at this time propose to modify the Reliability Standard, this NOPR seeks comment on several issues concerning: (1) a nuclear plant

¹⁷ NERC proposes to adopt as a regional difference for Canada a separate definition of Nuclear Plant Licensing Requirements that does not reference regulatory requirements for off-site power supply for safe plant shutdown because Canada does not have regulatory standards for off-site power comparable to those established by the NRC.

generator operator's role in notifying applicable transmission entities that they may be responsible for NPIRs, (2) when NUC-001-1 becomes applicable to transmission entities; and (3) the applicability of NERC's compliance procedures when potential parties to interface agreements fail to reach agreement. The Commission presents its understanding of these applicability issues and seeks comment as discussed below.

1. Notification of Parties to Interface Agreements

20. Requirement R1 provides: "The Nuclear Plant Generator Operator shall provide the proposed NPIRs in writing to the applicable transmission entities and shall verify receipt." Thus, it is the responsibility of a nuclear plant generator operator to notify its appropriate transmission entities that they are responsible for meeting the provisions of NUC-001-1. In response, a nuclear plant generator operator and its transmission entities are expected to negotiate and execute interface agreements "that include mutually agreed to NPIRs."

Commission Proposal

21. The Commission understands Requirement R1 to provide that, if a nuclear plant generator operator fails to provide all appropriate NPIRs to an applicable transmission entity, the nuclear plant generator operator will not be in compliance with the Reliability Standard. However, the Commission also understands that the impact of such an implication is limited, because a nuclear plant generator operator will know, as a result of the NRC licensing approval and review processes, which applicable entities to contact and what services are needed to meet NRC licensing requirements. Thus, it is unlikely that a nuclear plant generator operator would fail to obtain appropriate services and

contact the necessary off-site power suppliers and transmission entities. With this understanding, the Commission preliminarily finds that the Requirement R1 obligation on a nuclear plant generator operator to contact transmission entities that will be subject to NUC-001-1 is appropriate.

2. Transmission Entities

22. The proposed Reliability Standard includes the term “transmission entities,” defined in the Applicability section of NUC-001-1 as “all entities that are responsible for providing services related to Nuclear Plant Interface Requirements (NPIRs).” NERC explains that each of the functional entities listed as transmission entities is defined as a user, owner, or operator of the Bulk-Power System. NERC notes that entities defined as transmission entities, such as distribution providers, are transmission entities by virtue of their involvement with a nuclear plant, by agreeing to meet an NPIR.¹⁸ NERC states that a distribution provider that supplies backup power to a nuclear plant from a local, lower voltage distribution system to meet the plant’s licensing requirements for offsite power will be considered a transmission entity, because the distribution provider can impact the safety and reliability of the nuclear plant and the Bulk-Power System.¹⁹ In particular, the November 19, 2007 Petition states:

Because the relationship of each nuclear plant generator operator with its provider of transmission-related services is unique, it will be important and necessary for the registration process to identify on a plant-by-plant basis the specific

¹⁸ See NERC November 19, 2007 Petition at 12.

¹⁹ Id.

transmission entities required to identify NPIRs and develop the requisite agreement. Once the agreement becomes final, all applicable nuclear plant generator operator and transmission entities for each agreement will be identified by name and specific function. The respective Regional Entity will then be responsible for ensuring that each nuclear plant generator operator and transmission entities identified in the agreement(s) is registered on the NERC Compliance Registry for the applicable function(s). NERC will work with the Regional Entities to ensure that all nuclear plant generator operators and transmission entities included in the agreements that result from the NPIRs are listed in the Compliance Registry for this specific reliability standard.^[20]

23. NERC explains that the term “transmission entities” is used to refer to all the entities that may provide services to meet NPIRs for the 104 various nuclear plants subject to NUC-001-1 Requirements. NERC adopted this approach to applicability because, due to the unique characteristics of the interconnection of each nuclear facility with its transmission grid, it is not possible to specify in advance and on a generic basis which functional entities operating near a given nuclear plant would be responsible for meeting the Requirements of NUC-001-1.

24. NERC indicates that the particular transmission entities subject to the Reliability Standard will be determined as they are identified by the nuclear plant generator operator as providing services related to NPIRs, pursuant to Requirement R1. According to NERC, once a nuclear plant generator operator and its applicable transmission entities execute one or more interface agreements, a Regional Entity shall ensure that the transmission entities that are parties to the interface agreement are listed in the

²⁰ NERC November 19, 2007 Petition at 12-13.

compliance registry and add to it any interface agreement parties that are subject to NUC-001-1 but that were not previously identified in the NERC compliance registry process.²¹

Commission Proposal

25. The Commission proposes to accept the identification and registration process set forth in the November 19, 2007 Petition to determine applicability for NUC-001-1. This proposed acceptance comes with the Commission's understanding that NERC will use its authority under the compliance registry process to register all users, owners and operators of the Bulk-Power System that provide transmission or generating services relating to off-site power supply or delivery.²²

26. Certain auxiliary power suppliers and transmission service providers may serve nuclear power plants through facilities that fall outside of the current Regional Entity definitions of bulk electric system that NERC uses to establish the applicability of the Reliability Standards. For instance, some nuclear power plants may obtain auxiliary power through lower voltage facilities that are not included in the Regional Entity's definition of bulk electric system. Other nuclear power plants may retain alternate sources of auxiliary power provided through lower voltage facilities operated by a small

²¹ See Order No. 693 at P 92-96 (approving NERC compliance registry process) and NERC, "Statement of Compliance Registry Criteria (Revision 3)," filed with its Supplemental Information Filing, Docket No. RM06-16-000 (Feb. 6, 2007) (describing NERC procedures to identify and register owners, operators and users of the Bulk-Power System, including organizations performing functions listed in the definition of transmission entities, generators that are material to the Reliable Operation of the Bulk-Power System, and organizations that "should be subject to the Reliability Standards").

²² See NERC November 19, 2007 Petition at 12.

utility or cooperative that is not included in a Regional Entity's definition of bulk electric system. The Commission understands that NERC and the Regional Entities will register these and other service providers that provide interconnection and/or auxiliary power facilities vital to nuclear plant operation through NERC's authority to register an owner or operator of an otherwise exempt facility that is needed for Bulk-Power System reliability, on a facility-by-facility basis.²³ Once registered, the transmission entity providing such services to a nuclear generating plant may be subject to other Reliability Standards applicable to the functional class within the NERC functional model for which the transmission entity has been registered, as deemed appropriate through the registration process. With this understanding, the Commission proposes to accept the scope of the definition of transmission entities as appropriate.

27. In addition, the Commission seeks clarification from the ERO, and public comment, on several concerns regarding the implementation of the Reliability Standard and the registration of transmission entities.

28. First, the Commission asks NERC to clarify its statement in the November 19, 2007 Petition that the registry process will identify on a plant-by-plant basis the specific transmission entities that provide services relating to NPIRs. Specifically, does NERC intend, for entities that are not otherwise registered, to limit registration to those facilities that provide such services? How does this relate to the definition of bulk electric system? For example, when identifying "on a plant-by-plant basis the specific transmission

²³ See Order No. 693 at P 101; NERC Statement of Compliance Registry, Revision 3.1 at 8.

entities required to identify NPIRs and develop the requisite agreement,”²⁴ would the “plant” be identified as a critical facility that is included in the bulk electric system?²⁵

29. Second, the Commission understands the Nuclear Reliability Standard is not enforceable against an entity, other than a nuclear plant generator operator, until it executes an interface agreement. Upon execution, such an entity becomes a “transmission entity” subject to the Nuclear Reliability Standard and other Reliability Standards as noted above. The Commission requests comment on this understanding.

30. Third, the Commission has concerns regarding the implementation of NUC-001-1 in the context of a single entity that both operates a nuclear plant and is responsible to provide services related to NPIRs, as may be the case with an integrated utility. In that situation, a single entity would be both the nuclear plant generator operator and the transmission entity. The Commission seeks clarification from the ERO, and public comment, on whether an agreement or arrangement would be required in a situation where one entity both operates the nuclear plant and provide services related to NPIRs. If an agreement or arrangement is required, who would execute it, e.g., different functional units or divisions within the same entity? Would such an agreement or arrangement be accessible during a compliance audit? If an agreement is not required in this situation,

²⁴ November 19, 2007 Petition at 12.

²⁵ See Order No. 693 at P 101 (holding generally, in the context of a specific Reliability Standard that identifies a threshold, that “despite the existence of a voltage or demand threshold for a particular Reliability Standard, the ERO or Regional Entity should be permitted to include an otherwise exempt facility on a facility-by-facility basis if it determines that the facility is needed for Bulk-Power System reliability”).

will there be reasonable assurance of adequate coordination between the nuclear plant operator and other units within the entity that are responsible to provide services related NPIRs?

3. Agreement on NPIRs

31. Other than Requirement R1, NUC-001-1 utilizes a consensus approach, in that the NPIRs contained in an interface agreement must be “mutually agreed to.” The proposed NERC Glossary term NPIR is defined, “The requirements, based on NPLRs [nuclear plant licensing requirements] and Bulk-Electric System requirements, that have been mutually agreed to by the nuclear plant generator operator and the applicable Transmission Entities” [emphasis added]. This emphasis on agreement is reflected in Requirement R2, which states that the interface agreements shall include “mutually agreed to NPIRs.” Requirement R2 also provides that the interface agreements shall document how the interface agreement parties will address and implement the NPIRs, and states that the resulting interface agreement “may include mutually agreed upon procedures or protocols.”

32. According to NERC, the proposed Reliability Standard was initially drafted such that the nuclear power generator operators might unilaterally identify or change the NPIRs as then defined without mutual collaboration and agreement with the transmission entity. NERC states that this approach could have created limitations on the Bulk-Power System solely as a result of the NPIR declaration and resultant obligation of the transmission entity to operate the Bulk-Power System in accordance with these modified NPIRs. The standard drafting team responded to these initial comments and created the

term “Nuclear Plant Licensing Requirements” for subsequent drafts. The term NPIR was also modified to reflect the requirements based on Nuclear Plant Licensing Requirements and Bulk-Power System requirements that have been mutually agreed to by the nuclear plant generator operator and the applicable transmission entity. According to NERC, these changes ensured that the transmission entities actively participated in the establishment of NPIRs and mitigated the potential for transmission limitations caused by unilateral decisions by the nuclear plant generator operators.²⁶ Additionally, in defining NPIRs and documenting them in the required agreements per Requirement R2, the transmission entities can safeguard against the acceptance of NPIRs not expressly tied to licensing requirements that could impose a constraint to grid operation and limit available transmission capability.

33. Also, NERC reports that the drafting team replied to comments that the proposed Reliability Standard subordinates SOLs and Bulk-Power System integrity to nuclear licensing requirements by noting that the NPIRs are to be developed through mutual collaboration. Therefore, the consensus approach provides parties to an interface agreement with the obligation and expectation to identify NPIRs and develop responses.

Commission Proposal

34. The Commission proposes to find this consensus approach an acceptable and appropriate means to resolve concerns with the differing operational requirements faced by nuclear plant generator operators and transmission entities, as well as the variety of

²⁶ November 19, 2007 Petition at 27.

issues that could arise among them. However, the Commission seeks clarification of what compliance options are available under the Reliability Standard when nuclear plant generator operators and transmission entities fail to reach agreement.

35. The Commission notes that NPIRs are comprised of two distinct types of operational limits: (1) nuclear plant licensing requirements representing nuclear plant system limits, and (2) SOLs and IROLs representing transmission system limits. Each of these types of operational limits is determined through processes outside of NUC-001-1. Nuclear plant licensing requirements are developed through the NRC licensing procedures, and SOLs and IROLs are determined in accordance with methodologies required by the Facilities Design, Connection and Maintenance Reliability Standards.²⁷

36. The Commission is concerned with the possibility that nuclear plant generator operators and transmission entities may fail to come to agreement while attempting to draft an interface agreement. The Commission therefore asks NERC to clarify what compliance options are available when a nuclear plant generator operator and a designated transmission entity fail to come to agreement over a proposed NPIR or a suitable approach to resolve any failure to agree.²⁸

²⁷ Consequently, although the NPIRs are “mutually agreed to,” the Commission understands that the parties to the interface agreement may not alter by agreement the specific determinations of the limits contained in the nuclear plant licensing requirements, SOLs and IROLs that are established elsewhere.

²⁸ Requirement R9.1.4 states that an interface agreement must include a dispute resolution mechanism, which would apply to disagreements after the agreement is signed.

37. It appears that, prior to executing an interface agreement, no compliance registry process would be triggered and no agreed-to NPIRs would exist to support the remaining Requirements of the Reliability Standard. The Commission seeks clarification from NERC, and public comment, on a circumstance involving an off-site power supplier or other potential transmission entity that disagrees with the nuclear plant generator operator that it should execute an interface agreement. In such circumstance, how would NERC resolve the impasse? Also, would NERC proceed to register such an entity (if not previously registered) without an executed interface agreement?

B. Scope of Agreements

38. Although the Requirements of NUC-001-1 dictate that interface agreements contain various contractual terms and provide for various studies and procedures, the Reliability Standard does not describe specific substantive terms to be included in the agreements. NERC states that the Nuclear Reliability Standard drafting team adopted this consensus approach to coordinating nuclear plant and transmission grid operations to provide a platform for coordination at the interface that allows both nuclear plant generator operators and transmission entities to respect their main system drivers. NERC explains that the time and effort needed to coordinate nuclear and transmission system requirements in advance and on a generic basis was deemed to be prohibitive and the results of such an exercise deemed questionable. Therefore, according to NERC, the Nuclear Reliability Standard drafting team decided to focus on the interface agreement as the historical model for coordination. The interface agreement model, by its nature,

places the obligation on nuclear plant generator operators and transmission entities to coordinate differing operational requirements by consensus.

1. Generally

39. Based on the existence of workable interface agreements that are already in place to meet existing nuclear licensing requirements, the Commission understands that the studies, analysis and plant requirements are developed in the licensing process, prior to the NRC's grant of a license or authority for continued operations. Thus, the required studies and licensing requirements to be addressed are typically established prior to the development of the interface agreements. In light of this process, the Commission proposes to find that the level of detail provided in the proposed Reliability Standard Requirements to define substantive provisions of the interface agreements is appropriate. However, the Commission has concerns about the interpretation of particular Requirements of NUC-001-1 on the development of the interface agreements, as described below.

2. Revisions to Interface Agreements to Reflect Interim Changes

40. Several of the Requirements direct the parties to interface agreements to include provisions to address changes to the nuclear plant or transmission grid characteristics. For example, Requirements R8 and R9 require nuclear plant generator operators and transmission entities to incorporate provisions in the interface agreements to inform one another of actual and proposed changes to their facilities that may impact their ability to meet the NPIRs. Furthermore, the Reliability Standard obligates the parties to interface agreements to incorporate provisions to review and update the agreement "at least every

three years” under Requirement R9.1.3 and to address mitigation actions needed to avoid violating NPIRs under Requirement R9.3.4.

Commission Proposal

41. The Commission is concerned that an interface agreement may not be updated for significant system changes outside of the three-year review process. However, the Commission does not at this time expect revisions to the Reliability Standard to be necessary to address its concern. The Commission, therefore, proposes to find acceptable the provisions for revision to interface agreements, but seeks comment on whether NUC-001-1 adequately provides for revisions to reflect interim changes.

42. The Commission notes that the Requirements of NUC-001-1 describe a minimum set of elements that must be included in an interface agreement. The Commission understands that the NRC requires a nuclear plant generator operator to have operationally feasible solutions in place prior to authorizing plant start up or continued operation following licensing review procedures. As operating solutions are worked out in advance, the Commission would prefer that the updated operational procedures be reflected in the interface agreements prior to being implemented upon plant start up or reauthorization, or shortly thereafter. The Commission therefore seeks comment whether it is feasible for the nuclear plant interface agreements to provide for negotiation and amendments to address emerging transmission and generating system limits and revised nuclear plant licensing requirements prior to, or contemporaneously with, implementing operations solutions. At this time, the Commission anticipates that such an approach would not require revision to the Reliability Standard itself, and that such provision could

be made to implement the standard contractual practice requiring negotiation and revision whenever external circumstances represent a material change to the original assumptions that forms the basis of the agreement. The Commission views such a provision as being consistent with Requirement R9.1.3, providing for review and update of an agreement “at least every three years,” and Requirement R9.3.4, providing for review and updates to address mitigation actions needed to avoid violating NPIRs.

C. Coordination

43. Requirements R7 and R8 require communication between nuclear plant generator operators and transmission entities regarding significant changes in design, configuration, operation or limits of their facilities:

Requirement 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.

Requirement 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.

44. Furthermore, Requirement R6 obligates interface agreement parties to coordinate outages and maintenance activities; Requirement R9.3.6 requires coordination of physical and cyber-security protections; and Requirement R9.3.7 requires coordination of special protection systems and load shedding. Thus, these Requirements provide for communication between a nuclear plant generator operator and its individual transmission entities, as well as the reverse for communication from the transmission

entities to the nuclear plant generator operator. However, these Requirements do not explicitly provide for communication and coordination among the various transmission entities that is necessary to facilitate the provision of generation and transmission services to support the nuclear power plant operations.

Commission Proposal

45. The NUC-001-1 Requirements cited above explicitly provide for bilateral coordination between the nuclear plant generator operator and each individual transmission entity. However, the Reliability Standard does not explicitly require communication and coordination among the transmission entities necessary to meet the NPIRs. The Commission understands that the historical practice is for the interface agreement to provide for all necessary coordination, typically by obligating control area operators to communicate with neighboring entities, including Regional Transmission Organization-type grid operators and other interconnected utilities and load serving entities, when necessary. The Commission anticipates that, pursuant to the Requirements of the proposed Reliability Standard, the parties to nuclear plant interface agreements will continue to provide for coordination among transmission entities, in order to comply with NUC-001-1 Requirement R9.3.1 obligations to provide for coordination of interface facilities. Interface agreement parties may continue to designate former integrated control area operators when appropriate or may revise their approach, reflecting changes under restructuring to grid operations when necessary, consistent with coordination responsibilities provided for in existing Reliability Standards. Consistent with this

understanding, the Commission proposes to accept the coordination provisions as requiring all appropriate coordination among transmission entities.

D. Proposed Terms for Addition to the NERC Glossary

46. In its November 19, 2007 Petition, NERC submitted and requested approval of additional terms that relate to the Nuclear Reliability Standard to be added to the NERC Glossary. The NERC Glossary initially became effective on April 1, 2005 and is updated whenever a new or revised Reliability Standard is approved that includes a new term or definition.

Commission Proposal

47. Earlier in this NOPR,²⁹ the Commission sought comment on implications of the phrase “mutually agreed to” in the NPIR definition. The Commission does not propose any revisions to the Glossary terms at this time, however, it is possible that comments received in response to this NOPR may raise unforeseen issues. With this understanding, the Commission proposes to approve the additional terms for the NERC Glossary.

E. Violation Risk Factors

48. As part of its compliance and enforcement program, NERC plans to assign a lower, medium or high violation risk factor to each Requirement of each mandatory Reliability Standard to associate a violation of the Requirement with its potential impact on the reliability of the Bulk-Power System. Violation risk factors are defined as follows:

²⁹ See section II(A)(3), above, discussing “Agreement on NPIRs.”

High Risk Requirement: (a) is a requirement that, if violated, could directly cause or contribute to Bulk-Power System instability, separation, or a cascading sequence of failures, or could place the Bulk-Power System at an unacceptable risk of instability, separation, or cascading failures; or (b) is a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to Bulk-Power System instability, separation, or a cascading sequence of failures, or could place the Bulk-Power System at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.

Medium Risk Requirement: (a) is a requirement that, if violated, could directly affect the electrical state or the capability of the Bulk-Power System, or the ability to effectively monitor and control the Bulk-Power System, but is unlikely to lead to Bulk-Power System instability, separation, or cascading failures; or (b) is a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly affect the electrical state or capability of the Bulk-Power System, or the ability to effectively monitor, control, or restore the Bulk-Power System, but is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to Bulk-Power System instability, separation, or cascading failures, nor to hinder restoration to a normal condition.

Lower Risk Requirement: is administrative in nature and (a) is a requirement that, if violated, would not be expected to affect the electrical state or capability of the Bulk-Power System, or the ability to effectively monitor and control the Bulk-Power System; or (b) is a requirement in a planning time frame that, if violated, would not, under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to affect the electrical state or capability of the Bulk-Power System, or the ability to effectively monitor, control, or restore the Bulk-Power System.^[30]

49. In its November 19, 2007 Petition, NERC identifies violation risk factors for each Requirement of proposed Reliability Standard NUC-001-1. NERC proposes either a

³⁰ North American Electric Reliability Corp., 119 FERC ¶ 61,145, at P 9 (2007) (Violation Risk Factor Order).

lower or medium violation risk factor for each Requirement of NUC-001-1.³¹ NERC requests that the Commission approve the violation risk factors when it takes action on the Nuclear Reliability Standard.

50. In the Violation Risk Factor Order, the Commission addressed violation risk factors filed by NERC for Version 0 and Version 1 Reliability Standards. In that order, the Commission used five guidelines for evaluating the validity of each violation risk factor assignment: (1) consistency with the conclusions of the Blackout Report, (2) consistency within a Reliability Standard, (3) consistency among Reliability Standards with similar Requirements, (4) consistency with NERC's proposed definition of the violation risk factor level, and (5) assignment of violation risk factor levels to those Requirements in certain Reliability Standards that co-mingle a higher risk reliability objective and a lower risk reliability objective.³²

Commission Proposal

51. The Commission proposes to direct NERC to raise violation risk factors for several Requirements, as discussed below. The Commission generally views a Reliability Standard that ensures safe and reliable nuclear power plant operation and shutdown as meriting violation risk factors of medium or high, rather than lower, due to the reliability benefits of nuclear power and the impact of separating a plant from the

³¹ NERC proposes a lower violation risk factor for Requirements R1, R2, and R9 and a medium violation risk factor for Requirements R3 through R8.

³² For a complete discussion of each factor, see the Violation Risk Factor Order at P 19-36.

grid. While it is true that many of the Requirements are administrative in nature, these same Requirements provide for the development of procedures to ensure the safe and reliable operation of the grid, and responses to potential emergency conditions. If the Requirements are not met, the procedures will not be in place to address changing or emergency conditions or provide for safe operation and shutdown of a nuclear power plant. In short, the Requirements co-mingle the administrative tasks with the more critical reliability objective of ensuring safe nuclear power plant operation and shutdown. The Commission understands that NERC will apply the violation risk factor for the main Requirement to any violation of a sub-Requirement, unless separate violation risk factors are assigned to the Requirement and the sub-Requirement. The Commission discusses individual Requirements of NUC-001-1 and proposes changes, below.

a. Requirement R2

52. The Commission proposes to direct NERC to raise the violation risk factor for Requirement R2 from lower to medium and seeks comment on this proposal.

Requirement R2 places an obligation on a nuclear plant generator operator and transmission entities that agree to provide services relating to NPIRs to have an interface agreement in place to document how nuclear licensing requirements and transmission system limits will be addressed. Thus, the Requirement co-mingles the administrative element of having an executed agreement in place with the operational element of determining how the parties to the interface agreement will address nuclear plant licensing requirements and SOLs in order to provide for safe nuclear plant operation and shutdown. The operational requirements established in the interface agreements include

requirements for off-site power to enable safe operation and shutdown during an electric system or plant event and requirements for avoiding nuclear safety issues as a result of changes in electric system conditions during a disturbance, transient or normal conditions. Therefore, because a violation of Requirement R2 “could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly affect the electrical state or capability of the Bulk-Power System,” a medium violation risk factor is appropriate for this Requirement.

b. Requirement R4

53. The Commission proposes to direct NERC to raise the violation risk factors for sub-Requirements R4.2 and R4.3 to high, and seeks comment on its proposal. NERC proposes a medium violation risk factor for sub-Requirement R4.1, R4.2, and R4.3, which state that transmission entities shall incorporate the NPIRs into operating analyses, operate to meet the NPIRs and inform the nuclear plant generator operator when it loses the ability to assess its performance to meet the NPIRs.

54. Requirement R4.2 states that transmission entities shall operate their electric systems to meet the NPIRs established in the interface agreements. According to NERC, the NPIRs form the basis under which nuclear plant generator operators and transmission entities will “coordinate planning, assessment, analysis, and operation of the bulk power system to ensure safe nuclear plant operations and shutdowns.” Therefore, under emergency, abnormal, or restorative conditions a violation of Requirement R4.2 could directly cause or contribute to Bulk-Power System instability, separation, or a cascading sequence of failures, or could place the Bulk-Power System at an unacceptable risk of

instability, separation, or cascading failures.³³ For these reasons, the Commission believes that a high violation risk factor is appropriate for Requirement R4.2.

55. Under Requirement R4.3, when the transmission entities have lost the ability to monitor the system to ensure that NPIRs are met, they must inform the nuclear plant generator operators. The Commission believes that, if a nuclear plant generator operator is unaware of the fact that a transmission entity can no longer guarantee that NPIRs are met, the nuclear plant generator operator's ability to respond to, or anticipate, emergencies and changing system conditions will be impaired. Such an event could increase the likelihood that the plant is separated from the transmission system, causing significant degradation in Bulk-Power System reliability, characterized by instability, uncontrolled islanding and cascading. Therefore, the Commission proposes to direct NERC to raise the violation risk factor for Requirements R4.2 and R4.3 from medium to high, and requests comment on this proposal.

c. Requirement R5

56. The Commission proposes to direct NERC to raise the violation risk factor for Requirement R5 from medium to high, and seeks comment on its proposal. Requirement R5 states that a nuclear plant generator operator shall operate its system consistent with the interface agreement developed under NUC-001-1. Due to the size of nuclear power

³³ See also the NERC November 19, 2007 Petition at 20: "The proposed reliability standard also acknowledges that the obligation to public safety relative to nuclear plant operation establishes a unique set of requirements that other generating facilities are not subjected to. In order to protect the common good, the applicable transmission entities must respect these unique requirements that maintain and/or restore offsite power adequate to supply minimum nuclear safety requirements."

plants, the separation of a nuclear power plant from the grid may significantly affect grid operations. Not all nuclear power plant service interruptions are initiated by incidents occurring off the nuclear power plant system. For instance, if a nuclear power plant breaker opens, separating a turbine from the grid, the resulting lack of power could cause degraded voltage near the plant. As a result, the transmission system may be unable to deliver off-site power to the plant, causing the entire plant to separate from the grid.³⁴ Due to the possibility for a violation of Requirement R5 to directly affect the reliability of the system, the Commission proposes to direct NERC to raise the violation risk factor for this Requirement from medium to high.

d. Requirements R7 and R8

57. The Commission proposes to direct NERC to raise the violation risk factors for Requirements R7 and R8 from medium to high, and seeks comment on its proposal. Requirements R7 and R8 state that a nuclear plant generator operator and its transmission entities must inform each other of actual or proposed changes to their facilities that affect their ability to meet NPIRs. The information to be exchanged, such as “limits” and “protection systems,” is relevant for a transmission entity to determine its system capability and configuration, which affect the ability of a plant to remain connected to the Bulk-Power System. Due to the safety implications of nuclear generation, a transmission entity must plan and operate to meet a nuclear power plant’s operating requirements,

³⁴ Nuclear power plants are large, typically consisting of two large turbines on the order of 1,000 MW or more, so disruptions within the nuclear plant system can have significant reciprocal impacts on the interconnected system.

which are more stringent than for other generators. To permit the necessary planning and system operations, a nuclear plant generator operator and its applicable transmission entities must exchange information relating to proposed and actual system changes. If transmission entities and nuclear plant generator operators do not provide information concerning system changes to each other, their planning and operating analyses may not be based on accurate data. As a result, unanticipated events could result in the nuclear plant disconnecting from the Bulk-Power System, placing the Bulk-Power System at risk for cascading outages.

58. The Blackout Report highlighted the importance of coordinated planning and operations between the Bulk-Power System and nuclear power plants, stating “[a]s the design and operation of the electricity grid is taken into account when evaluating the safety analysis of nuclear power plants, changes to the electricity grid must be evaluated for the impact on plant safety.”³⁵ To account for the potential impact on safety and the integrity of the transmission system, the Commission proposes to direct NERC to raise the violation risk factors for Requirements R7 and R8 from medium to high.

e. Requirement R9

59. The Commission proposes to direct NERC to raise the violation risk factor for Requirement R9 from lower to medium, and seeks comment on its proposal. According to NERC, Requirement R9 sets forth the specific administrative, technical, operations, maintenance, coordination, communications, and training elements that a nuclear plant

³⁵ Blackout Report at 129.

generator operator and its transmission entities must include in their interface agreement. Thus, similar to Requirement R2, Requirement R9 co-mingles the administrative element of incorporating the various elements into the interface agreement with the operational element of determining how the parties to the interface agreement will address the administrative, technical, operations, maintenance, coordination, communications, and training issues in order to provide for safe nuclear plant operation and shutdown. A violation of Requirement R9 may mean that the necessary operational or emergency planning elements are not in place, resulting in an inability to resolve system conditions in an emergency. Therefore, a violation of Requirement R9 “could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly affect the electrical state or capability of the Bulk-Power System.” Consequently, the Commission proposes to find that a medium violation risk factor is appropriate for Requirement R9. Should NERC wish to assign a lower violation risk factor to any of the purely administrative sub-Requirements of Requirement R9, it may propose appropriate differentiation in its comments.

F. Violation Severity Levels

60. For each Requirement of a Reliability Standard, NERC states that it will also define up to four violation severity levels – lower, moderate, high and severe – as measurements of the degree to which the Requirement was violated. For a specific violation of a particular Requirement, NERC or the Regional Entity will establish the initial value range for the base penalty amount by finding the intersection of the

applicable violation risk factor and violation severity level in the Base Penalty Amount Table in Appendix A of the Sanction Guidelines.³⁶

61. In its November 19, 2007 Petition, NERC proposes violation severity levels that apply generally to all violations of the Requirements of NUC-001-1, rather than to specific Requirements and sub-Requirements. However, NERC submitted proposed violation severity levels for each Requirement and sub-Requirement of NUC-001-1 that supersede those from the November 19, 2007 Petition pursuant to its March 3, 2008 compliance filing in Docket No. RR08-4-000.³⁷

Commission Proposal

62. Because NERC has recently filed new Requirement and sub-Requirement-specific violation severity levels in Docket No. RR08-4-000, the Commission intends to address all issues relating to NUC-001-1 violation severity levels in that proceeding. In the interim, should the review process in Docket No. RR08-4-000 not approve revised violation risk factors before the NUC-001-1 effective date, the Commission proposes to approve the interim violation severity levels proposed in this proceeding, until acceptance of the superseding violation severity levels. The Commission notes that the proposed violation severity levels for NUC-001-1 resemble the levels of non-compliance that will

³⁶ See North American Electric Reliability Corp., 119 FERC ¶ 61,248, at P 74 (2007) (directing NERC to develop up to four violation severity levels (lower, moderate, high, and severe) as measurements of the degree of a violation for each requirement and sub-requirement of a Reliability Standard and submit a compliance filing by March 1, 2008).

³⁷ The updated NUC-001-1 violation severity levels are provided in NERC's March 4, 2008 filing of revised Exhibit A in Docket No. RR08-4-000.

also be replaced by NERC's compliance filing in Docket No. RR08-4-000 because they describe violation severity levels for groups of Requirements in the Reliability Standard rather than on a per-Requirement and sub-Requirement basis. Because NERC's proposed violation severity levels do not specifically refer to each Requirement and sub-Requirement in NUC-001-1, the Commission is concerned that, if the new violation risk factors are not approved by the time NUC-001-1 takes effect, Regional Entities may have difficulty using NERC's Base Penalty Amount Table to compute penalties for violations of all Requirements and sub-Requirements.³⁸ While the Commission believes that the proposed effective date for NUC-001-1 provides ample time to address the violation severity levels filed in Docket No. RR08-4-000, the Commission proposes to treat the proposed, undifferentiated violation severity levels for NUC-001-1 consistent with the treatment adopted for levels of non-compliance, until Requirement and sub-Requirement-specific violation severity levels are in place.³⁹

III. Information Collection Statement

63. The Office of Management and Budget (OMB) regulations require approval of certain information collection requirements imposed by agency rules.⁴⁰ Upon approval of a collection(s) of information, OMB will assign an OMB control number and an expiration date. Respondents subject to the filing requirements of this rule will not be penalized for failing to respond to these collections of information unless the collections

³⁸ See North American Electric Reliability Corp., 119 FERC ¶ 61,248 at P 78-80.

³⁹ See id. P 79.

⁴⁰ 5 CFR 1320.11.

of information display a valid OMB control number. The Paperwork Reduction Act (PRA)⁴¹ requires each federal agency to seek and obtain OMB approval before undertaking a collection of information directed to ten or more persons, or continuing a collection for which OMB approval and validity of the control number are about to expire.⁴² The PRA defines the phrase “collection of information” to be the “obtaining, causing to be obtained, soliciting, or requiring the disclosure to third parties or the public, of facts or opinions by or for an agency, regardless of form or format, calling for either—

(i) answers to identical questions posed to, or identical reporting or recordkeeping requirements imposed on ten or more persons, other than agencies, instrumentalities, or employees of the United States; or (ii) answers to questions posed to agencies, instrumentalities, or employees of the United States which are to be used for general statistical purposes.”⁴³

64. This NOPR proposes to approve the new Reliability Standard developed by NERC as the ERO. Section 215 of the FPA authorizes the ERO to develop and enforce Reliability Standards that provide for an adequate level of reliability of the Bulk-Power System. Pursuant to the statute, the ERO must submit each Reliability Standard that it proposes to be made effective to the Commission for approval.⁴⁴

65. Proposed Reliability Standard NUC-001-1 does not require responsible entities to file information with the Commission. Nor, with the exception of a three year self-

⁴¹ 44 U.S.C. 3501-20.

⁴² 44 U.S.C. 3502(3)(A)(i), 44 U.S.C. 3507(a)(3).

⁴³ 44 U.S.C. 3502(3)(A).

⁴⁴ See 16 U.S.C. 824o(d).

certification of compliance, does the Reliability Standard require responsible entities to file information with the ERO or Regional Entities. However, the Reliability Standard does require responsible entities to develop and maintain certain information for a specified period of time, subject to inspection by the ERO or Regional Entities.

66. Reliability Standard NUC-001-1 requires nuclear plant generator operators and entities that provide generation, transmission and distribution services relating to off-site power (these entities are defined as “transmission entities”) to enter into interface agreements with nuclear plant generator operators that will govern certain communication, training, operational and planning elements for use in addressing generation and transmission system limits and nuclear licensing requirements. The Commission understands that most entities subject to this Reliability Standard already have such agreements in place. The responsible entities are also required to retain evidence that they executed such an agreement and incorporated its terms into systems planning and operations. Further, each nuclear plant generator operator and transmission entity must self-certify its compliance to the compliance monitor once every three years.

67. The Commission is submitting these reporting and recordkeeping requirements to OMB for its review and approval under section 3507(d) of the PRA. Comments are solicited on the Commission’s need for this information, whether the information will have practical utility, the accuracy of provided burden estimates, ways to enhance the quality, utility, and clarity of the information to be collected, and any suggested methods for minimizing the respondent’s burden, including the use of automated information techniques.

68. Our estimate below regarding the number of respondents is based on the NERC compliance registry as of April 2007 and NERC's November 19, 2007 Petition that is the subject of this proceeding. In its Petition, NERC states that 104 nuclear power plants are subject to the proposed Reliability Standard. These plants are run by approximately 30 different utilities and are located on 65 different sites. Each plant must contract with transmission entities to obtain off-site power, and coordinate distribution and transmission services for such power.

69. The proposed Reliability Standard identifies eleven categories of functional entities that could be a transmission entity when providing covered services, including transmission operators, transmission owners, transmission planners, transmission service providers, balancing authorities, reliability coordinators, planning authorities, distribution providers, load-serving entities, generator owners and generator operators. NERC's compliance registry indicates that there is a significant amount of overlap among the entities that perform these functions. Therefore, in some instances, a single entity may be registered under several of these functions. The November 19, 2007 Petition includes NERC drafting team comments which report, "In many cases, agreements are not two-party [agreements] – they are often multi-party agreements involving RTO/ISO Protocols, transmission and generation owners and others."⁴⁵ Therefore, this analysis attempts to account for the overlap of services to be provided by entities responsible for

⁴⁵ NERC Nuclear Reliability Standard drafting team, "Consideration of Comments, Draft 2 – SAR on Nuclear Plant Offsite Power Reliability," p. 2 of 25 (May 23, 2005), filed in November 19, 2007 Petition, Exhibit B, Record of Development of Proposed Reliability Standard.

the various roles identified in the Reliability Standard, as well as the fact that certain plants may need to coordinate with multiple entities.

70. Under NUC-001-1, the 104 nuclear power plants must coordinate with off-site power suppliers and related transmission and/or distribution service providers. The Nuclear Reliability Standard drafting team reports in its responses to SAR comments, “Nuclear plant generators and most nuclear offsite power supplies interconnect with the bulk electric system at transmission system voltage levels. While backup station service for some plants may be provided via distribution lines, these cases are the exception, not the rule.”⁴⁶ Assuming conservatively, that not more than half of the nuclear power plants call for multi-party coordination and those that do involve all the types of parties listed by the drafting team, the Commission estimates that 52 nuclear plants will execute bi-lateral interface agreements and 52 nuclear plants will execute multi-lateral interface agreements with approximately four other parties. Thus, the Commission estimates that the 104 nuclear plants will enter into agreements with an additional 260 parties to bilateral and multi-party agreements, providing 364 as the total number of entities required to comply with the information “reporting” or development requirements of the proposed Reliability Standard.⁴⁷

⁴⁶ NERC Nuclear Reliability Standard drafting team, “Consideration of Comments on 2nd Draft of Nuclear Off-site Power Supply Standard,” p. 54 of 60 (Feb. 7, 2007), filed in November 19, 2007 Petition, Exhibit B, Record of Development of Proposed Reliability Standard.

⁴⁷ Because it is assumed that each plant operator must ensure that appropriate agreements are in place for each plant, this analysis assesses the workload by measuring the work for 104 plants, rather than for the 30 nuclear plant operators.

71. Burden Estimate: The Public Reporting burden for the requirements contained in the NOPR is as follows:

Data Collection	No. of Respondents	No. of Responses	Hours Per Respondent	Total Annual Hours
FERC-725F				
Nuclear Plant Owners or Operators	104	1	Reporting: 80	Reporting: 8,320
			Recordkeeping: 40	Recordkeeping: 4,160
Investor-Owned Utilities	130	1	Reporting: 80	Reporting: 10,400
			Recordkeeping: 40	Recordkeeping: 5,200
Large Municipals, Cooperatives and other agencies	130	1	Reporting: 80	Reporting: 10,400
			Recordkeeping: 40	Recordkeeping: 5,200
Total	364			43,680

Total Hours: (Reporting 29,120 hours + Recordkeeping 14,560 hours) = 43,680 hours.

(FTE=Full Time Equivalent or 2,080 hours)

Total Annual hours for Collection: Reporting + Recordkeeping = 43,680 hours.

Information Collection Costs: The Commission seeks comments on the costs to comply with these requirements. It has projected the average annualized cost to be the total annual hours (Reporting) 29,120 times \$120 = \$3,494,400.

Recordkeeping = @ \$40/hour = \$ 582,400, with labor calculated as file/record clerk @ \$17 an hour + supervisory @ \$23 an hour.

Total costs = \$4,076,800.

The Commission believes that this estimate may be conservative because most if not all of the applicable entities currently have agreements in place to provide for coordination between a nuclear plant generator operator and its local transmission, distribution and off-site power suppliers. Furthermore, multiple plants are located on certain sites, and one entity may operate multiple plants, providing for potential economies in updating, drafting and executing the interface agreements.

Title: FERC-725F, Mandatory Reliability Standard for Nuclear Plant Interface Coordination

Action: Proposed Collection of Information

OMB Control No: [**To be determined.**]

Respondents: Business or other for profit, and/or not for profit institutions.

Frequency of Responses: One time to initially comply with the rule, and then on occasion as needed to revise or modify. In addition, annual and three-year self-certification requirements will apply.

Necessity of the Information: The Nuclear Reliability Standard, if adopted, would implement the Congressional mandate of the Energy Policy Act of 2005 to develop

mandatory and enforceable Reliability Standards to better ensure the reliability of the nation's Bulk-Power System. Specifically, the proposed Reliability Standard would ensure that system operating limits or SOLs used in the reliability planning and operation of the Bulk-Power System are coordinated with nuclear licensing requirements in order to ensure the safe operation and shut down of nuclear power plants.

Internal review: The Commission has reviewed the requirements pertaining to the proposed Reliability Standard for the Bulk-Power System and determined that the proposed requirements are necessary to meet the statutory provisions of the Energy Policy Act of 2005. These requirements conform to the Commission's plan for efficient information collection, communication and management within the energy industry. The Commission has assured itself, by means of internal review, that there is specific, objective support for the burden estimates associated with the information requirements.

72. Interested persons may obtain information on the reporting requirements by contacting: Federal Energy Regulatory Commission, 888 First Street, NE, Washington, DC 20426 [Attention: Michael Miller, Office of the Executive Director, Phone: (202) 502-8415, fax: (202) 273-0873, e-mail: michael.miller@ferc.gov]. Comments on the requirements of the proposed rule may also be sent to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, D.C. 20503 [Attention: Desk Officer for the Federal Energy Regulatory Commission], e-mail: oira_submission@omb.eop.gov.

IV. Environmental Analysis

73. The Commission is required to prepare an Environmental Assessment or an Environmental Impact Statement for any action that may have a significant adverse effect on the human environment.⁴⁸ The Commission has categorically excluded certain actions from this requirement as not having a significant effect on the human environment. The actions proposed here fall within the categorical exclusion in the Commission's regulations for rules that are clarifying, corrective or procedural, for information gathering, analysis, and dissemination.⁴⁹ Accordingly, neither an environmental impact statement nor environmental assessment is required.

V. Regulatory Flexibility Act Analysis

74. The Regulatory Flexibility Act of 1980 (RFA)⁵⁰ generally requires a description and analysis of final rules that will have significant economic impact on a substantial number of small entities. Most of the entities, i.e., planning authorities, reliability coordinators, transmission planners and transmission operators, to which the requirements of this rule would apply do not fall within the definition of small entities.⁵¹

⁴⁸ Order No. 486, Regulations Implementing the National Environmental Policy Act, 52 FR 47897 (Dec. 17, 1987), FERC Stats. & Regs. ¶ 30,783 (1987).

⁴⁹ 18 CFR 380.4(a)(5).

⁵⁰ 5 U.S.C. 601-12.

⁵¹ The RFA definition of “small entity” refers to the definition provided in the Small Business Act, which defines a “small business concern” as a business that is independently owned and operated and that is not dominant in its field of operation. See 15 U.S.C. 632 (2000). According to the SBA, a small electric utility is defined as one that has a total electric output of less than four million MWh in the preceding year.

75. As indicated above, based on available information regarding NERC's compliance registry, approximately 364 entities, including owners and operators of 104 nuclear power plants, will be responsible for compliance with the new Reliability Standard. It is estimated that one-third of the responsible entities, about 130 entities, would be municipal and cooperative organizations. In addition to generator owners and operators and distribution service providers, the proposed Reliability Standard would apply to planning authorities, transmission planners, transmission operators and reliability coordinators, which tend to be larger entities. Thus, the Commission believes that only a portion, approximately 30 to 40 of the municipal and cooperative organizations to which the proposed Reliability Standard would apply, qualify as small entities.⁵² The Commission does not consider this a substantial number of all municipal and cooperative organizations. Moreover, as discussed above, the proposed Reliability Standard will not be a burden on the industry since most if not all of the applicable entities currently coordinate operations and planning with nuclear plant generator operators and the proposed Reliability Standard will simply provide a common framework for agreements

⁵² According to the DOE's Energy Information Administration (EIA), there were 3,284 electric utility companies in the United States in 2005, and 3,029 of these electric utilities qualify as small entities under the SBA definition. Among these 3,284 electric utility companies are: (1) 883 cooperatives of which 852 are small entity cooperatives; (2) 1,862 municipal utilities, of which 1842 are small entity municipal utilities; (3) 127 political subdivisions, of which 114 are small entity political subdivisions; and (4) 219 privately owned utilities, of which 104 could be considered small entity private utilities. See Energy Information Administration Database, Form EIA-861, Dept. of Energy (2005), available at <http://www.eia.doe.gov/cneaf/electricity/page/eia861.html>.

governing such coordination and many of the entities already have agreements in place to meet prior NRC requirements. Accordingly, the Commission certifies that the proposed Reliability Standard will not have a significant adverse impact on a substantial number of small entities.

76. Based on this understanding, the Commission certifies that this rule will not have a significant economic impact on a substantial number of small entities. Accordingly, no regulatory flexibility analysis is required.

VI. Comment Procedures

77. The Commission invites interested persons to submit comments on the matters and issues proposed in this notice to be adopted, including any related matters or alternative proposals that commenters may wish to discuss. Comments are due [Insert 30 days from publication in the **FEDERAL REGISTER**]. Comments must refer to Docket No. RM08-3-000, and must include the commenter's name, the organization they represent, if applicable, and their address in their comments.

78. The Commission encourages comments to be filed electronically via the eFiling link on the Commission's web site at <http://www.ferc.gov>. The Commission accepts most standard word processing formats. Documents created electronically using word processing software should be filed in native applications or print-to-PDF format and not in a scanned format. Commenters filing electronically do not need to make a paper filing.

79. Commenters that are not able to file comments electronically must send an original and 14 copies of their comments to: Federal Energy Regulatory Commission, Secretary of the Commission, 888 First Street NE, Washington, DC 20426.

80. All comments will be placed in the Commission's public files and may be viewed, printed, or downloaded remotely as described in the Document Availability section below. Commenters on this proposal are not required to serve copies of their comments on other commenters.

VII. Document Availability

81. In addition to publishing the full text of this document in the Federal Register, the Commission provides all interested persons an opportunity to view and/or print the contents of this document via the Internet through FERC's Home Page (<http://www.ferc.gov>) and in FERC's Public Reference Room during normal business hours (8:30 a.m. to 5:00 p.m. Eastern time) at 888 First Street, NE, Room 2A, Washington, DC 20426.

82. From FERC's Home Page on the Internet, this information is available on eLibrary. The full text of this document is available on eLibrary in PDF and Microsoft Word format for viewing, printing, and/or downloading. To access this document in eLibrary, type the docket number excluding the last three digits of this document in the docket number field.

83. User assistance is available for eLibrary and the FERC's website during normal business hours from FERC Online Support at (202) 502-6652 (toll free at (866) 208-

3676) or email at ferconlinesupport@ferc.gov, or the Public Reference Room at (202) 502-8371, TTY (202) 502-8659. E-mail the Public Reference Room at public.referenceroom@ferc.gov.

List of subjects in 18 CFR Part 40

Electric power; Reporting and recordkeeping requirements

By direction of the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.

Standard NUC-001-1 — Nuclear Plant Interface Coordination

A. Introduction

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

B. Requirements

- R1. The Nuclear Plant Generator Operator shall provide the proposed NPIRs in writing to the applicable Transmission Entities and shall verify receipt [*Risk Factor: Lower*]
- R2. The Nuclear Plant Generator Operator and the applicable Transmission Entities shall have in effect one or more Agreements¹ that include mutually agreed to NPIRs and document how the Nuclear Plant Generator Operator and the applicable Transmission Entities shall address and implement these NPIRs. [*Risk Factor: Lower*]
- R3. Per the Agreements developed in accordance with this standard, the applicable Transmission Entities shall incorporate the NPIRs into their planning analyses of the

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

Standard NUC-001-1 — Nuclear Plant Interface Coordination

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

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

Standard NUC-001-1 — Nuclear Plant Interface Coordination

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

Standard NUC-001-1 — Nuclear Plant Interface Coordination

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

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

Standard NUC-001-1 — Nuclear Plant Interface Coordination

D. Compliance**1. Compliance Monitoring Process****1.1. Compliance Monitoring Responsibility**

Regional Reliability Organization.

1.2. Compliance Monitoring Period and Reset Time Frame

One calendar year.

1.3. Data Retention

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

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

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

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

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

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

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

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

1.4. Additional Compliance Information

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

2. Violation Severity Levels

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

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

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

Standard NUC-001-1 — Nuclear Plant Interface Coordination

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

E. Regional Differences

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

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

F. Associated Documents

Version History

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