UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Mandatory Reliability Standard for	**)**	
Nuclear Plant Interface Coordination	**)**	**Docket No. RM08-3-000**

COMMENTS OF HYDRO ONE NETWORKS INC. AND THE INDEPENDENT ELECTRICITY SYSTEM OPERATOR

I. INTRODUCTION

The Independent Electricity System Operator of Ontario ("IESO") [1] and Hydro One Networks Inc. ("Hydro One")[2] respectfully submit these comments on the Commission's Notice of Proposed Rulemaking on *Nuclear Plant Interface Coordination Reliability Standard* (the "NOPR").[3]

The IESO and Hydro One represent the Reliability Coordinator, Balancing Authority, Transmission Operator, Transmission Owner, Transmission Planner and Planning Coordinator among other functional responsibilities in the province of Ontario. Hydro One and the IESO will be the only organizations in Ontario identified as

[1] The IESO is a not-for-profit corporation without share capital having statutory responsibility for developing and administering the wholesale electricity markets and directing the operation and maintaining the reliability of the integrated power system within the province of Ontario. The IESO was established on April 1, 1999 as the Independent Electricity Market Operator under the Electricity Act, 1998 (Ontario) and was continued under its current name on January 1, 2005. The IESO is subject to oversight by the Ontario Energy Board, and specifically not by the Commission.

[2] Hydro One is the largest Transmission and Distribution company in the Province of Ontario. It provides electric service to nearly 1,300,000 customers and owns more than 17,000 miles of transmission lines. Hydro One's transmission system is interconnected with adjecent states of New York, Michigan and Minnesota and the provinces of Quebec and Manitoba. In addition, Hydro One has connnections with all nuclear power plants in Ontario. Hydro One is a market participant in Ontario's wholesale electricity market administered by the IESO. Hydro One Networks Inc. (a subsidiary of Hydro One Inc.) was established on April 1, 1999 as Ontario Hydro Networks Inc. (a subsidiary of the Ontario Hydro Services Company Inc.) under the Electricity Act, 1998 (Ontario) and was continued under the current name on May 1, 2000. Hydro One is subject to oversight by the Ontario Energy Board, and specifically not by the Commission.

[3] *Mandatory Reliability Standard for Nuclear Plant Interface Coordination*, 122 FERC ¶ 61,254 (March 20, 2008).

"Transmission Entities" as defined by the NUC-001-1 Reliability Standard.

Within Ontario, there are five nuclear power plants, totalling 16 units, with an installed capacity of over 11,000 MW representing over 40% of the total installed capacity in Ontario. Hydro One and the IESO have a long history of working with our nuclear generator operators to reliably operate the power system in Ontario. On the infrequent occurrence of a situation requiring the shutdown of a nuclear generation unit, the IESO, Hydro One and the applicable nuclear generator operators have successfully balanced supply and demand while taking the necessary control actions to facilitate the safe shutdown of the nuclear generators. In the following, we provide comments based on our years of experience and perspective as the entities responsible for the reliable operation of the power system in Ontario including our interconnections with neighbouring areas.

II. BACKGROUND

On November 19, 2007, the North American Electric Reliability Corporation ("NERC") submitted a new Nuclear Plant Interface Coordination Reliability Standard, designated NUC-001-1, to the Commission for approval. Subsequently, on December 11, 2007, NERC supplemented the November filing with a submission seeking approval of four new terms to be included with the NERC Glossary of Terms for Reliability, namely definitions for "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 Commission is now proposing to approve the new NUC-001-1 Reliability

Standard developed by NERC[4] and accept the four related NERC Glossary of Terms definition. The Commission is also proposing to direct changes to NUC-001-1 Reliability Standard's Violation Risk Factors ("VRF") and is seeking comment from NERC and the industry in a number of areas. Appropriately, the Commission will not consider the regional difference within the NUC-001-1 Reliability Standard which deals with applicable nuclear generation facilities in Canada.

III. COMMENTS

The following comments deal with the approval of the NUC-001-1 Reliability Standards ("NUC Standard") which the Commission proposes to approve as a mandatory and enforceable Reliability Standard within the United States. Hydro One and the IESO concur with much of the Commission's proposal, as we believe the standard meets the Commission's requirements[5] for such approval. In this regard, we believe that the NUC Standard improves the reliability of the Bulk-Power System by requiring coordination between Nuclear Plant Generation Operators and "Transmission Entities' as defined by A4 in the NUC Standard.

Given the framework of existing agreements between Hydro One and nuclear generator operators, and the IESO administered market rule requirements, our comments will deal solely with the Commission's proposed changes to the VRFs.

[4] On February 3, 2007, the Commission issued Order No. 672 in which NERC was certified as the Electric Reliability Organization ("ERO"). *North American Electric Reliability Corp.*, 116 FERC ¶ 61,602 (ERO Certification Order), *order on reh'g & compliance*, 117 FERC ¶ 61,126 (2006), *order on compliance*, 118 FERC ¶ 61,030 (January 2007).
[5] Order 672 at P262 and P321-337

A. The Proposed Changes to the Violation Risk Factors are generally unwarranted and the Commission should accept the determination concluded through the NERC Standards Development Process:

Hydro One and the IESO believe that the Commission should reconsider its proposal to increase the level of a majority of the VRFs. The Commission duly references the definitions of high, medium and lower risk factors[6] and references the previous Violation Risk Factor Order that presented additional guidelines to be used in evaluating the validity of the VRFs.[7]

In P51, the NOPR suggests that any Reliability Standard ensuring the safe and reliable nuclear power plant operation and shutdown as meriting VRFs medium or high, rather than lower, due to the reliability benefits of nuclear power and the impact of separating a plant from the grid. While we concur that the loss of a nuclear generating unit may affect the reliability of the Bulk-Power System, the loss of any single or multiple units, independent of fuel type, would be a recognized contingency by responsible entities[8] and acted upon accordingly. As such, the IESO and Hydro One believe that failure to follow a NUC-001-1 requirement in real-time or in the planning horizon, would not cause or contribute to the Bulk-Power System ("BPS") instability, separation, or a cascading sequence of failures, or place the BPS in an unacceptable risk.

In the same section, the Commission goes on to state that the Requirements co-mingle the administrative tasks with the more critical reliability objective of ensuring safe

[6] NOPR at P48.
[7] NOPR at P50 and North American Electric Reliability Corp., 119 FERC ¶ 61,145, at P 9 (2007) (Violation Risk Factor Order).
[8] NERC Reliability Standard BAL-002-0, R3 required Balancing Authorities to activate sufficient Contingency reserves to balance supply and demand for a the loss of generation. At a minimum, the Balancing Authority is required to carry at least enough Contingency reserve to cover the most severe single contingency. Further, the TPL-002, TPL-003, FAC-010 and FAC-011 standards stipulate various generation contingencies that must be considered in the development of system plans, System Operating Limits and Interconnection Reliability Operating Limits.

nuclear power plant operation and shutdown. The IESO and Hydro One suggest that this is not the intent of the NUC Standard. In our opinion, the NUC-001-1 Reliability Standard was developed to ensure that transmission facilities are planned and operated in such a way as to ensure backup power supply is provided to the nuclear power plant for safe operation and shutdown in order to meet its Nuclear Plant Licensing Requirements ("NPLR"). If not for the NPLR, "Transmission Entities" would not have to put in place an interface agreement to meet the Nuclear Plant Interface Requirements ("NPIR"), thus negating the need for the NUC Standard. Furthermore, by "backup power" we assume that the nuclear power plant has already been disconnected from the power grid, or else such alternative power would not be required.

If this standard was also intended to ensure nuclear power plants stay connected to the grid, then the purpose and requirements of the Standard appear insufficient. The vast majority of the requirements are written to meet the NPIRs and NPLRs, but they do not stipulate the need for facilities or operational procedures to ensure nuclear plants stay connected to the grid. The IESO and Hydro One believe that if this need existed, the appropriate nuclear regulatory authorities (i.e., Nuclear Regulatory Commission ("NRC") in the United States or the Canadian Nuclear Safety Commission ("CNSC") in Canada) would stipulate such requirements.

B. Individual Comments on Proposed Violation Risk Factors Changes:

1. <u>VRF for Requirement R2</u>:

At P52, the NOPR proposes raising the VRF from lower to medium because a violation of Requirement R2 of the NUC Standard "could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly affect the electrical state

or capability of the Bulk-Power System." Therefore, the Commission proposes that a medium VRF is appropriate for R2.

Hydro One and the IESO disagree with the proposed change. As stated generally above, the NUC Standard is intended to ensure the provision of backup power to the nuclear power plant to meet the NPIR. It is envisaged that the agreement struck to meet the NPIR will, out of necessity, contain requirements to ensure backup power is provided, that limitations imposed by either party must be observed by its counterpart, and that there is coordination on facility outages and information exchange to ensure their potential impacts on each party's operation is not adversely affected. Failure to meet R2, i.e., not having an interface agreement in place, does not have a direct impact on the electrical state or capability of the BPS since in the absence of an agreement, both parties would continue to operate its own system/facilities in accordance with all applicable NERC Reliability Standards, nuclear regulatory requirements, and state and provincial laws including any applicable market rules. The IESO and Hydro One remind the Commission that the appropriate responsible entities, including large nuclear and non-nuclear Generator Operators reliably operate the BPS by respecting NERC Reliability Standards in addition to any non-NERC required interconnection agreements.

2. VRF for Requirement R4:

Similar to R2, the NOPR proposes that a violation of Requirement R4.2 could directly cause or contribute to BPS instability, separation, or a cascading sequence of

failures, or could place the BPS at an unacceptable risk of instability, separation, or cascading failures.[9]

In examining R4.3, the Commission suggests 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 BPS reliability, characterized by instability, uncontrolled islanding and cascading.[10]

The IESO and Hydro One suggest that the VRFs for both requirements remain at medium. Our expectation is that the failure to meet this requirement may affect the Generator Operator's licence requirements and/or compromise the generator's capability to provide power to the grid due to the resulting need to shut down the plant. While the impact to the Generator Operator is significant, this action would not cause significant degradation in BPS reliability characterized by instability, uncontrolled islanding and cascading since the shut down of a power plant is a controlled process, not a contingency. Given the intent of this standard and the actual risk to BPS, according to the definition at P48, the requirements should remain as a medium and not be elevated to a high.

3. VRF for Requirement R5:

In proposing to raise the VRF for R5 from medium to high, the Commission bases this decision on the size of nuclear power plant, the separation of a nuclear power plant

[9] NOPR at P54
[10] NOPR at P55

from the grid and how such an action may adversely affect grid operations. In this instance, the Commission is concerned that the transmission system may be unable to deliver off-site power to the plant, causing the entire plant to be separated from the grid.[11]

We agree that failure to meet this requirement may significantly affect grid control and operation, but not the reliability of the power grid characterized by instability, uncontrolled islanding and cascading. R5 implies that failure to operate the plant in accordance with the agreement originates from the power plant. As such, any separation of the plant from the power grid will be coordinated and implemented in a controlled manner for safety reasons and in accordance with developed operating procedures. We do not envisage any such separation to be an abrupt disconnection of the plant, which would cause significant degradation in BPS reliability, characterized by instability, uncontrolled islanding and cascading. The potential risk to BPS control should therefore be, according to the definition, assigned a medium and not a high.

4. VRF for Requirement R7 and R8:

At P57, the NOPR portrays a concern where a Transmission Entity and nuclear plant Generator Operators do not provide information concerning system changes to each other that could result in the planning and operating analyses not being based on accurate data. As a result, unanticipated events could result in the nuclear plant disconnecting from the BPS, placing the BPS at risk for cascading outages.

Similar to our comments on R5 above, we believe that should such a situation arise, a nuclear plant will be shut down in a controlled manner and will not cause significant degradation in BPS reliability, characterized by instability, uncontrolled

[11] NOPR at P56

islanding and cascading. We would expect that a violation of this requirement could result in the Transmission Entities not having the information on actual or proposed changes to nuclear plant design, configuration, operations, limits, protection systems, or capabilities. We understand that this lack of information may impact BPS control and operation and the ability of the electric system to meet the NPIRs, but we would not expect it to cause a degradation to the power grid that would put the Bulk-Power System at risk for cascading outages. As such, the IESO and Hydro One propose the Commisison maintain the VRF at medium.

IV. CONCLUSION

For the reasons set forth above, we respectfully request that the Commission adopt our recommendations and expeditiously issue a final rule in this proceeding.

Respectfully submitted,

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