

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

Order Directing the Submission of) Docket No. RC09-3-000
Data)

**JOINT COMMENTS OF THE INDEPENDENT ELECTRICITY SYSTEM
OPERATOR, NEW BRUNSWICK SYSTEM OPERATOR, AND NOVA SCOTIA
POWER.**

I. INTRODUCTION

The Independent Electricity System Operator (“IESO”), the New Brunswick System Operator (“NBSO”), and Nova Scotia Power Inc. (“NSPI”)¹, respectfully submit these joint comments in response to the Commission’s Order issued on December 18, 2008, in which the Commission directs the North American Electric Reliability Corporation (“NERC”) and Northeast Power Coordinating Council, Inc. (“NPCC”) to submit to the Commission, a comprehensive list of bulk electric system facilities within the United States portion of the NPCC region. In the Order, the Commission also sought further information on how the definition of bulk electric system is being applied in NPCC.

II. BACKGROUND

In its December 18, 2008, Order, the Commission reiterated its concern about the need to address the potential gaps in coverage of facilities subject to the NERC reliability standards and directed both NERC and NPCC to provide specific information for the

¹ The IESO, NBSO, and NSPI are Canadian members of NPCC and subject to the jurisdiction of the respective provincial regulators and not the Commission. Hydro-Québec TransÉnergie (“HQT”), a Canadian member of NPCC, is not a party to this filing.

Commission to understand the scope and comprehensiveness of the definition of bulk electric system used in the NPCC region, as well as the internal consistency across the U.S. portion of the NPCC region.

In response to this Order, NERC and NPCC, on February 20, 2009, submitted a comprehensive list of bulk electric system facilities within the U.S. portion of NPCC that included the existing NPCC-approved list currently being used for the application of NERC standards, as well as a listing of all transmission elements operated at voltages 100 kV and above, and generators 20 MVA or greater that are connected to buses operated at 100 kV and above within the U.S. portion of NPCC.

In addition, NPCC committed to undertake an in-depth evaluation of the possible incremental reliability benefits and potential negative impacts of the utilization, in the U.S., of a 100 kV “bright-line” definition to identify the bulk electric system elements to which NERC standards would apply. NPCC proposed to provide their findings to the Commission by September 20, 2009.

III. SUMMARY

We believe that enforcing mandatory reliability standards is essential for designing, maintaining and operating a reliable and secure interconnected electricity grid. However, the application of NERC reliability standards should be limited to wide area reliability without expanding its scope to cover local-area reliability. NPCC’s proposed bright-line approach² would result in NERC reliability standards being applied to the majority of facilities,

² NPCC’s proposed bright-line approach is only for applicability of NERC reliability standards. NPCC’s more stringent regional criteria will continue to apply only to those facilities which are wide area impactful as per its existing impact based methodology.

100 kV and above, certain ones of which are only local-area impactful. Such facilities do not have a wide area impact and would not result in cascading outages. In all Canadian provinces within the NPCC footprint, there are adequate local-area reliability standards and criteria in place, all of which are under the purview of the provincial regulators.

We are committed to designing, building and operating our electric power systems so that our respective operations do not adversely impact our inter-connections within Canada or with the U.S. At the same time, we are committed, through our provincial license requirements, to ensure that our customers are provided with safe, secure, reliable power in a cost effective manner, as mandated by our provincial regulators. We strongly feel that the balance between these interests is best achieved through the impact-based approach currently used by NPCC to determine the applicability of NERC standards. This impact based approach has been in existence for many years now and has not resulted in technical seams issues with neighbouring regional entities.

We strongly believe that adopting the bright-line definition across the members of NPCC would impose significant additional costs on consumers with no measurable benefits to wide-area reliability (including systems with which we are interconnected). More importantly, regardless of the financial impact, this exercise would result in diverting funds and key expert resources from other higher value reliability projects and activities. We also expect that Canadian provincial regulators will not support expenditures when we are unable to demonstrate a commensurate benefit to reliability.

We will be strongly urging NPCC to retain its impact based methodology for determining facilities which are critical to the bulk electric system and, through this submission, request that the Commission direct NPCC to do so.

IV. SPECIFIC COMMENTS

We strongly believe that NPCC should adhere to its existing impact based methodology to determine the applicability of NERC reliability standards. **Appendix A** provides a brief description of the reliability framework governing the implementation of NERC and NPCC standards and criteria in Ontario, and the Maritime provinces – and within which the existing impact based methodology continues to be successfully applied.

A. NERC reliability standards should apply only to facilities which have a wide-area impact.

NERC reliability standards should apply only to those facilities having the potential for wide-area impact on the reliability of the interconnected grid through cascading outages in the event of a contingency. NERC reliability standards should not apply to facilities which are only local-area impactive. There are numerous facilities within our footprint which are 100 kV and above but which are not wide-area impactive. These facilities do not cause cascading outages and applying NERC standards to these facilities only serves to divert resources, both manpower and money, from facilities critical to the reliability of the interconnected grid. This problem is further exacerbated by the difficulty in obtaining experienced technical personnel required to take on additional workload should NPCC adopt its proposed bright-line methodology. Moreover, there exist local-area reliability standards which are generally under the purview of the provincial regulator. These standards focus not only on the operational performance of local areas ensuring that customers will

not be exposed to frequent or lengthy interruptions in supply but also ensure that the supply is within acceptable power quality standards. Hence, applying NERC reliability standards on a bright-line definition basis would not only result in an overlap of standards which serve different purposes but also to divert key resources from those areas where these are required the most.

For bulk power system and interconnected operation, we have historically relied on NERC and NPCC to develop uniform standards and criteria that focus on bulk power system³ (“BPS”) elements of the interconnected power system whose failure may adversely affect the reliable operation of other areas and have significant regional or international implications. To identify these BPS elements to which the NERC standards and NPCC criteria would apply, NPCC members use an impact-based methodology that involves a series of transient stability and steady-state tests applied to all power system elements within the NPCC footprint, regardless of voltage. We strongly believe that this methodology is superior to a voltage threshold (bright-line) approach mainly because it does not automatically include or exclude power system elements based on voltage, but rather it seeks to identify **all** elements which would have an adverse reliability impact outside local areas. The impact based methodology ensures that facilities which are below 100 kV but critical to wide-area reliability, including certain 69 kV facilities in the NPCC footprint, have been captured under the definition for the applicability of reliability standards and criteria. The process also ensures that compliance and enforcement efforts are not diluted and remain solely focussed on those facilities that materially affect the reliable operation of

³ The use of the term BPS throughout the document will have the meaning defined in the 2005 Federal Policy Act, Title XII, Section 1211.

facilities critical to wide-area reliability. Additionally, all inter-ties within NPCC or between NPCC and neighbouring entities, independent of the voltage level, are subject to NERC reliability standards and these include all the appropriate standards which cover available transfer capability (“ATC”) on the inter-ties, scheduling, and sharing of operational and planning data.

In the U.S., under the Energy Policy Act of 2005, the Commission has the mandate to promote, approve and enforce compliance with NERC reliability standards for the bulk power system. Similarly, in Canada, provincial regulators are entrusted with a similar mandate. However, in applying their respective mandates, regulators must ensure that the application of reliability standards is justified, cost effective, and commensurate with benefits to reliability.

B. Adopting a voltage threshold approach for the application of NERC reliability standards provides no material wide-area reliability benefits and no measurable value to ratepayers.

Although a bright-line approach would provide some material benefits to local-area impactive facilities, we believe that the financial impact of moving to a bright-line approach, for NPCC entities, is quite substantial without any additional benefit to wide-area reliability. In the short term, application of NERC reliability standard requirements to additional facilities would significantly increase documentation, compliance monitoring, reporting, and incident follow-ups. Procedures currently used in wide-area impactive facilities only, would have to be introduced and implemented in an increased number of facilities. Given the existing NERC reliability standards and those currently in NERC’s

standards development “pipe-line”, substantial investments would also be required for network upgrades in the long term. All these have substantial cost implications without offering any measurable benefit to wide-area reliability.

Cost benefit analysis undertaken by Canadian entities in the NPCC footprint clearly indicate that there is no material benefit to wide-area reliability by adopting NPCC’s proposed bright-line definition. As a representative example of the analysis performed by Canadian entities, we would like to discuss Hydro One’s cost benefit analysis for Ontario to move to a bright-line approach. Hydro One⁴, the major transmitter in Ontario, conducted a detailed technical analysis to consider reliability and cost implications of moving away from NPCC’s existing performance based method of determining BES facilities to a method which determines critical facilities on a voltage basis of 100 kV or greater. Hydro One’s analysis clearly showed that it would have to invest anywhere between \$50 million dollars in the short term to about \$300 million dollars in the long term⁵, for just the province of Ontario to transition to a bright-line approach without benefit to wide-area reliability. Additionally, Hydro One also conducted a numeric analysis of the reliability impact of broadening the applicability of NERC standards and reported no material gains in reliability

⁴ 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 the adjacent states of New York, Michigan and Minnesota and the provinces of Quebec and Manitoba. In addition, Hydro One has connections 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.

⁵ Hydro One’s analysis included a review of NERC reliability standards which are currently under development.

performance⁶. Hydro One’s analysis also indicates that local-area reliability standards, which are under the purview of the provincial regulator, are effective and ensure reliable performance of facilities which are only local-area impactive.

Incurring significant transition costs, over and above costs already incurred by asset owners to ensure reliability, without any material benefits to either the interconnected system or the ratepayer does not support the need for change. We are also concerned that regardless of the financial impact, this exercise will divert funds and key expert resources from other higher value reliability projects which include renewable power integration, transmission system expansion, and congestion management.

V. OTHER COMMENTS

A. NERC reliability standards which adopt a bright-line approach have a higher voltage threshold for applicability.

Bright-line approaches may be required for certain standards based on the recommendations of the U.S.-Canada Power System Outage Task Force final report on the August 14, 2003, blackout in the United States and Canada. NERC reliability standards related to vegetation management (“FAC-003-1, Transmission Vegetation Management”) and protection and control (“PRC-023-1, Transmission Relay Loadability”) do enforce applicability based on a bright-line approach. The FAC-003-1 reliability standard applies to

⁶ Reliability analysis was undertaken in Ontario, by Hydro One Networks Incorporated (“HONI”), to compare performance of facilities which are currently defined as bulk electric system facilities in Ontario per NPCC’s impact based methodology with those facilities which would be included under the NPCC’s proposed voltage threshold approach. The following reliability measures were calculated: **Annual Average Outage Frequency** [Total number of outages for a TS / Number of years of outage data], and **Annual Average Outage Duration in minutes** [Average outage duration in minutes per outage* Average outage frequency]. It was observed, for HONI, that there were no marked differences, in terms of reliability performance (“reliability indices”), between the two categories of facilities.

all transmission lines operated at 200 kV and above and to any lower voltage lines designated by the Regional Reliability Organization (“RRO”) as critical to the reliability of the electric system in the region. Similar applicability exists for the PRC-023-1 standard. However, it must be noted that the voltage threshold for the blanket applicability of these standards is 200 kV and not 100 kV. This is because most of the facilities between 100 kV and 200 kV do not impact wide-area reliability. These “bright-line” standards apply only to those facilities between 100 kV and 200 kV considered wide-area impactful. This approach, in fact, mirrors NPCC’s current impact based methodology which ensures that NERC reliability standards apply to **all** facilities which affect wide-area reliability. Applying a blanket bright-line methodology to all NERC reliability standards does not serve to increase wide-area reliability.

B. There are no technical seams issues due to NPCC’s existing impact based methodology.

Seams issues exist between regions only due to operational issues such as parallel flows, market and pricing structures in the various organized markets, system modeling, and interconnection operational issues. Applicability of NERC reliability standards or regional standards to entities within each of the regions, based on how each region defines its bulk electric system facilities, has never created any such seams issues between NPCC and its adjoining regional entities, despite having a different, and what we believe to be, a better approach towards defining bulk electric system facilities.

VI. CONCLUSION

We believe that adopting a voltage threshold methodology to identify the power system elements subject to NERC standards would not provide any wide-area reliability improvements over NPCC's current impact-based methodology, and would unnecessarily raise Canadian consumer costs. We respectfully request the Commission to endorse NPCC's existing impact-based methodology for determining the applicability of NERC reliability standards.

Respectfully submitted,

/s/ Nicholas Ingman

Nicholas Ingman
Manager, Government & Regulatory Affairs
Ontario's Independent Electricity System
Operator
655 Bay Street, Suite 410
Toronto, Ontario
M5G 2K4

/s/ Alden Briggs

Alden Briggs
Director, Power System Engineering
New Brunswick System Operator
77 Canada Street
Fredericton, New Brunswick
E3A 3Z3

/s/Timothy Leopold

Timothy Leopold
Director,
Transmission Project Implementation
Nova Scotia Power Inc.
PO Box 910, Halifax, NS
B3J 2W5

Date: September 22, 2009

APPENDIX A

Canadian Reliability Framework

With the establishment of NERC as the Electric Reliability Organization (“ERO”) and implementation of mandatory compliance with NERC standards in 2007, Canadian members of NPCC have adopted the NERC standards and continue their long-standing adherence to NPCC criteria. However, each filing party’s implementation within their own provincial reliability framework may differ, as described below:

A. Ontario

Ontario’s adoption of mandatory reliability standards predates the establishment of NERC as the North American Electric Reliability Organization (“ERO”) and the implementation of mandatory reliability standards in the US. In fact, when the Ontario electricity market was launched in May 2002, Ontario was the first and, until 2007, the only control area to implement mandatory and enforceable NERC reliability standards, as part of the Ontario Market Rules. At the same time, Ontario implemented a reliability compliance program, which was and continues to be used to monitor and enforce compliance with NERC and NPCC standards. Besides NERC and NPCC standards, Ontario market participants are required to comply with additional reliability standards that are included in the Market Rules or associated criteria. These additional standards are generally more stringent than NERC and NPCC standards and they reflect the specific design and operational characteristics of the power system in Ontario. Ontario is continuing its leadership role in enforcing compliance with reliability standards in North America with the Ontario Energy Board (“OEB”) being the first provincial regulator to sign a Memorandum

of Understanding (“MOU”) with NERC. In addition, the IESO, NERC and NPCC have signed a joint memorandum of understanding that reflects Ontario’s existing reliability and compliance framework.

B. Maritimes

New Brunswick’s structure is much like Ontario’s due to the similarity of the authorizing legislation and Market Rules. New Brunswick (“NB”) established a mandatory framework for bulk power system reliability in 2004 with the coming into effect of the *Electricity Act*. Under the Act, the NBSO has the authority to adopt and enforce reliability standards through the NB Market Rules. The NB Energy and Utilities Board serves as the appeal authority for NBSO orders and decisions relating to compliance and for the adoption of standards. The NBSO and the NB Department of Energy signed an MOU with NERC in 2008 under which NB recognizes NERC as the ERO for North America and agrees to adopt and enforce NERC standards. NB has implemented a compliance monitoring and enforcement program addressing the adoption of NERC standards, registration of entities and compliance monitoring and enforcement processes based on NERC requirements. NB entities report compliance directly to the NBSO while the NBSO reports compliance to the ERO for reliability standards that are applicable to the NBSO. The NBSO has also signed an MOU with NPCC and NERC recognizing the reliability compliance arrangement for NB and the role of NPCC as the delegated authority to carry out ERO activities in the NPCC region.

The Nova Scotia Utility and Review Board (“UARB”) exercises general supervision over all electric utilities operating as public utilities within the Province, pursuant to the

Nova Scotia Public Utilities Act. In terms of reliability, electric utilities are required to provide service that is safe and adequate and in compliance with UARB approved rates and regulations. The UARB and NERC have entered into an MOU. Pursuant to the MOU, NERC commits to filing proposed reliability standards with the UARB and will immediately notify the UARB if any other jurisdiction remands a proposed reliability standard. The MOU provides that the UARB may adopt a proposed reliability standard or may remand a proposed standard. The MOU further provides that, once a standard is approved by the UARB, compliance will be mandatory in Nova Scotia. The MOU recognizes that NERC will conduct compliance activities related to standards and will provide compliance information and advice to the UARB, which is responsible for determining if any violation has occurred and what if any remedial measures or penalties should be imposed. To date a process for adopting NERC standards has not been implemented in Nova Scotia. In addition, NSPI is a member of NPCC. Pursuant to the Bylaws of NPCC Inc., NPSI is bound by NERC's reliability standards.