



BY ELECTRONIC MAIL

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Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
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Dear Ms. Walli:

Re: IESO 2011 Reliability Standards Compliance Reporting

Please find attached the Independent Electricity System Operator (IESO) 2011 Reliability Standards Compliance Report, filed pursuant to section 6.2(f) of the IESO license.

Please let me know if you have any questions regarding this report.

Thank you.

/s/ Biju Gopi

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2011 RELIABILITY STANDARDS COMPLIANCE REPORT

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I. Introduction

This report summarizes the significant actions the IESO undertook in 2011 with respect to its activities in regard to the development of reliability standards and criteria. This report is prepared and filed pursuant to section 6.2(f) of the IESO license pursuant to subsections 5(1)(f) or 5(1)(g) of the Electricity Act.

The IESO fulfills its roles and responsibilities with respect to ensuring reliability in a number of ways, including:

- Administering Ontario's electricity markets and enforcing the reliability compliance program in Ontario, pursuant to the *Electricity Act, 1998* and the Ontario Market Rules;
- Operating as the Reliability Coordinator (RC), Transmission Operator (TOP), Transmission Planner (TP), Interchange Authority (IA), and Balancing Authority (BA) for Ontario, and as a member of the Northeast Power Coordinating Council (NPCC) and the North American Electric Reliability Corporation (NERC).
- The IESO has adopted the NERC and NPCC reliability standards, regional reliability standards and criteria. Additionally, under the market rules, the IESO has the authority to set additional standards and criteria in Ontario when necessary. These activities are supported by the IESO's Memorandum of Understanding (MOU) with NERC and NPCC which sets out the obligations of the signatories, and complements the MOU between the Ontario Energy Board (OEB) and NERC; and
- Participating in various industry forums, councils, and committees for the development and administration of a number of activities related to administering electricity markets, coordinating with neighbouring regional entities on market and reliability matters, developing reliability standards that deal with both operational and planning activities, and incorporating emerging technologies including renewable resources, storage technology, smart grid applications and demand response resources.
- Positioning the company to deliver on its core responsibilities in a changing electricity sector including responding to the challenges associated with the implementation of the government's renewable energy policies.

II. North American Electric Reliability Corporation (NERC) and Northeast Power Coordinating Council (NPCC)

Through regular interactions and submission of comments, the IESO continues to maintain and advance positive relations with NERC and NPCC while shaping the development and implementation of reliability standards in North America.

In 2011, the IESO reviewed and responded to 44 NERC postings with regards to reliability standard development. Each NERC posting may contain one or multiple draft reliability standards required for industry comments and ballots. Comments may be submitted along with the ballots, or be submitted separately through electronic comment forms if applicable.

Below are some examples of the IESO's ballots and the associated comments with its ballots in response to NERC postings in 2011:

(1) Project 2010-13: Relay Loadability Order

The IESO voted in the affirmative but noted a few inconsistencies and suggested using a defined term "Near-Term Transmission Planning Horizon" that was developed as part of the recently balloted Project 2010-10: FAC Order 729 as opposed to using generic language such as the phrase "one-to-five-year planning horizon" to ensure consistent application of the associated requirements.

(2) Project 2006-06: Reliability Coordination

The IESO voted in the negative because:

- (1) The phrase "within the same Interconnection" in COM-001-2 R1, limits the coordination activities to RCs, TOPs and BAs that can be detrimental to reliability.
- (2) The Interchange Coordinator and Purchasing-Selling Entity also need to have adequate communication capabilities with other entities but they are not included in the applicability section of COM-001-2.
- (3) The proposed definition of Reliability Directive addresses Emergency condition only. There are situations where a Reliability Directive is issued such that the directed action must be taken by the receiving entity to address a reliability constraint, which by itself does not constitute an Emergency.
- (4) As written the requirement (R9) seems open ended once action to repair of a failed Alternative Interpersonal Communication is initiated within 2 hours but not completed within that time. It is not clear whether there is an expectation on the

responsible entity to designate a replacement Alternative Interpersonal Communication if repairs cannot be completed within that period.

(3) Project 2007-03: Real-time Transmission Operations

The IESO voted in the negative because:

1. TOP-001-2 Requirement R2: This requires each listed entity to “inform its Transmission Operator upon recognition of its inability to perform an identified Reliability Directive issued by that Transmission Operator. The IESO considers “upon recognition” to be unclear since there is no indication whether the expectation is for entities to inform the TOP immediately or within some defined time.
2. TOP-001-2 Requirement R9 and R11: These set time limits within which exceedances of IROLs and SOLs identified pursuant to Requirement R8 must be mitigated, Tv in the case of IROLs, and 30 minutes in the case of SOLs. The IESO believes that prescribing 30 minutes is not appropriate for SOLs identified in R8.
3. TOP-003-2 Requirement 1, Part 1.1: This provides for exchange of data required to perform Operational Planning Analyses and real-time monitoring. These data include “Operating parameters for BES Facilities and Facilities at voltage levels lower than the BES [emphasis added].” The IESO believes the latter clause is unenforceable under the NERC standards and should therefore be removed.

(4) Project 2006-02: Assess Future and Transmission Needs

The IESO voted in the affirmative reiterating the view that the IESO did not have any issues with the standard per se and that the current draft is a significant improvement over the currently approved TPL-001 through TPL-004 standards.

(5) Project 2007-17: Protection System Maintenance

The IESO voted in the negative because the IESO disagrees with the concept that auditors use the standards as minimum requirements and evaluate compliance based on a registered entity’s own governance. The IESO believes that the entity could be found non-compliant with R3 if they fail to follow the internal maintenance intervals established in their PSMP, even though actual maintenance intervals are no less frequent than the prescribed maximum intervals established in the draft standard. The potential for such a finding will discourage conscientious entities from setting higher internal targets for their planned maintenance and promote compliance with only the minimum requirements of the standard.

(6) Project 2007-17: Protection System Maintenance (Non-binding Poll for the associated VRFs and VSLs)

The IESO voted in the negative because the IESO continues to disagree with the High VRF for R3 which asks for implementing the maintenance plan (and initiate corrective measures) whose development and content requirements (R1 and R2) themselves have a Medium VRF. Failure to develop a maintenance program with the attributes specified in R1, and stipulation of the maintenance intervals or performance criteria as required in R2, will render R3 not executable.

(7) Project 2010-17: BES Definition

The IESO voted in the negative because:

(1) The IESO disagreed with the inclusion of Blackstart Resources because their inclusion is superfluous given there is already a designation specific for system restoration covered by an existing standard, to recognize their reliability impacts and to ensure their expected performance. NERC Standards EOP-005-2 stipulates the requirements for testing blackstart resource and cranking paths. This testing requirement suffices to ensure that the facilities critical to system restoration are functional when needed, which meets the intent of identifying their criticality to reliability.

(2) The IESO supports the provisions of E1 in principle but require clarification of some issues and suggest alternative wording in some cases. It is unclear if the connection voltage of generation referred to in E1.b affects whether a radial system could be excluded under E1 although from the context it appears that it would. Additionally, despite the fact the revisions to Inclusion I3 (Blackstart Resources) removed any reference to Cranking Paths, Exclusion 1 (b) and (c) both indicate that the exclusion of a radial system would not be allowed if generation identified in I3 were connected to it. This implies that the Cranking Path for this Blackstart Resource would have to be BES. This appears to be an inconsistency.

(3) The function served by a radial that is of importance in the current context is that of delivering surplus power to the rest of the bulk power system and so, the impact on the BES of loss of the radial system or its connected generation needs to be considered. In the IESO's view, the "BES-status" of the radial itself is immaterial and so too is the aggregate capacity of generation resources connected to it. Detailed arguments regarding impact on the BES can be made in support of an application for an exclusion under the Exception Process, but it would be beneficial to avoid unnecessarily including a radial merely because it has more than 75 MVA of

qualifying generation connected to it, without equal consideration of the connected load.

(4) Consistent with our previous comments, the IESO proposes removing E3 (a) since, as explicitly described in E3 (b), one of the characteristic of the LN is that power flows only into the LN. The level of generation contained within the LN is therefore immaterial, particularly where the most onerous contingency or system operating condition occurring within the LN, results in acceptable BES performance as defined by the applicable criteria of the NERC transmission planning standards. The generation connected within the LN that meets the registry criteria would already be captured within the definition of the BES as provided for in Inclusion I2.

(8) Project 2010-17: Detailed Information to Support BES Exceptions Request

The IESO voted in the negative because the IESO believes that though the proposed approach for exception criteria is reasonable recognizing that one method or criteria cannot be applicable to everyone and every situation within the ERO foot print, there is huge gap and lack of any transparency on how the exception application will be evaluated and processed. The IESO suggests that the standard drafting team (SDT) develop a reference or a guidance document as part of the RoP that should provide some guidance to Registered Entities, Regional Entities and the ERO on how an exception application should be processed. The absence of such guidance will pose a challenge for each entity including the ERO, and may result in discrepancies amongst Regional Entities. The process may be perceived by registered entities as being non-transparency.

(9) Project 2007-12: Frequency Response

The IESO voted in the negative because:

(1) The definition for Frequency Response Measure (FRM): The proposed FRM definition: “The median of all the Frequency Response observations reported annually on FRS Form 1” is problematic. It references an FRS Form 1 which is not included in the definition itself but is in fact an attachment to the standard. In the current NERC Glossary of Terms, there is no such precedence that a definition must rely on the requirements or details in a standard for completeness. Also, it is very cumbersome that when changes are made to FRS Form 1, the definition must be posted for industry comment and balloting, and vice versa. When other standards begin using the term, there will be cross references between standards. This further complicates the update/maintenance problem without any appreciable value.

(2) Attachment A: Attachment A should include only the event selection process and calculations associated with the requirements, including an explanation of what is necessary if variable Frequency Bias Settings are implemented.

(3) The expanded FRS Form 1 and the addition of a Form 2 ask for data entry that is excessive and whose value has not been demonstrated.

Additionally, the IESO actively participated in both NERC and NPCC 2012 business planning activities through discussions with executive staff, formal submissions and participation in conference calls. The IESO was successful in representing Ontario's concerns on the proposed significant budget increases which contributed to the initial proposed increases being reduced substantially. The IESO was again successful in obtaining special funding allocations (fee reductions) for Ontario from both NERC and NPCC in recognition of Ontario's compliance framework.

III. Federal Energy Regulatory Commission (FERC)

The IESO remains actively involved with the proceedings of FERC. The IESO actively intervened and commented on various FERC proposed rulemakings (NOPRs) and Technical Conferences in 2011.

The IESO provided comments to FERC, as a member of the ISO/RTO Council on the NOPR in which FERC proposes to approve three Reliability Standards, EOP-001-1 (Emergency Operations Planning), EOP-005-2 (System Restoration from Blackstart Resources), and EOP-006-2 (System Restoration Coordination).

The IESO also worked in close coordination with the ISO/RTO Council (IRC) and Ontario stakeholders on offering joint comments on various FERC NOPRs (NOPRs on smart grid and frequency regulation compensation) and Technical Conferences (FERC Technical Conference on BES reliability)

The IESO's regulatory submissions to FERC are available on the IESO website at <http://www.ieso.ca/imoweb/corp/regulatory.asp>

APPENDIX I

List of Staff Activities on NERC, NPCC, and NAESB Reliability Standards and Criteria, in 2011

- Drafted IESO comments on 2 NERC standards and developed proposed voting position on 1 NERC standard;
- Coordinated comments and voting position on 1 NPCC standard;
- Provided IESO inputs to SRC comments on 2 NAESB standards;
- Coordinated comments on projects prioritization tool (the Filter) to help manage standard development projects, developed NERC Standards Committee documents on processing interpretation requests and on quality review of standards to be posted
- Drafted IESO comments on 2 NERC SARs/standards, and proposed voting positions on 2 NERC standards;
- Provided IESO inputs to SRC comments on 2 NERC standards; 2 FERC NOPRs, 2 CANs and 2 NAESB standards;
- Revised the criteria and associated project management document for use in prioritizing and managing standards development projects;
- Drafted IESO comments on several NERC standards (on Reliability Coordination) and a set of VSLs revised to meet FERC guideline, and proposed the IESO voting position on 1 NERC standard;
- Finalized the criteria and associated document on standard projects prioritizing for posting for industry comments;
- Drafted IESO comments on 2 NERC standards;
- Finalized SRC policy inputs for use by Paul Murphy and PJM CEO (both NERC MRC members of the IRC);
- Provided inputs to SRC/RLC filing with FERC on NOPR;
- Reviewed RSAWs on 2 NERC standards;
- Proposed IESO voting position s on 2 NERC standards;
- Provided inputs to SRC comments on 2 NERC standards and 1 CAN;
- Reviewed and commented on RSAWs for 8 CIP standards and 4 non-CIP standards;
- Drafted comments on 3 sets of NERC standards;
- Provided IESO inputs to SRC comments on 3 NERC standards;

- Participated in a conference call with FERC staff to review prioritized standard project list;
- Reviewed and commented on RSAWs for 16 non-CIP standards and revised RSAWs for 2 CIP standards;
- Drafted comments on 2 NERC standards, 2 white papers and revisions to 2 appendices to Rules of Procedure;
- Provided IESO inputs to SRC comments on 2 NERC standards and on revisions to Rules of Procedure Appendices 3B, 3D;
- Finalized IESO comments on NERC standard and revisions to Rules of Procedure appendices;
- Attended the NERC Standards Committee and its Subcommittee meetings;
- Developed draft paper on adequate level of reliability in support of the NERC MRC Task Force's review of definition of ALR and BES facilities;
- Drafted IESO comments on several NERC standards including TPL-001, FAC-008, PRC-005, GADS data collection process, etc;
- Participated in 1 Standards Committee Executive conference call;
- Attended an SRC meeting;
- Drafted and coordinated IESO comments and developed voting positions on several NERC standards including BES definitions, TPL-001 to TOP-003, etc.;
- Drafted IESO comments on NPCC regional standard PRC-006-NPCC-1 and Directories D9 and D10;
- Provided IESO inputs to SRC comments on several NERC CANs and two FERC NOPRs/Orders;
- Drafted IESO comments on NERC draft posting of BES exception technical principles and request for exception process (Rules of Procedures);
- Coordinated IESO inputs on NPCC regional standard PRC-006-NPCC-1, and Directories D9 and D10;
- Participated in a conference call to review IESO comments and inputs to Hydro One and CEA comments on NERC's proposed technical principles and exception process for BED definitions;
- Developed agenda and participated in a NERC Standards Committee conference call;
- Participated in a NERC Standards Executive Committee conference call;
- Attended a NERC Operating Committee meeting as the Standards Committee's liaison on the development of Adequate Level of Reliability;

- Provided IESO inputs to SRC's comments on 4 Compliance Application Notices (CANs) and comments on a NAESB standard;
- Drafted IESO comments on 3 NERC standards;
- Provided IESO inputs to SRC's comments on 2 NAESB standards and 2 Compliance Application Notices (CANs);
- Developed IESO comments on 5 NERC standards and proposed voting positions on 2 NERC standards;
- Participated in 2 NERC Standards Committee Executive Committee conference calls;
- Participated in an ALRTF conference call and drafted initial matrix and questionnaire to facilitate discussion at an upcoming meeting;
- Provided IESO inputs on SRC's comments on 5 NERC standards, 2 CANs and 1 NAESB standard;
- Finalized IESO comments on 6 NERC standards and developed voting positions on 3 standards;
- Drafted comments and developed voting position on 1 NPCC procedure document;
- Provided IESO inputs to SRC comments on several NERC standards and 2 NAESB standards;
- Participated in a NERC Standards Committee Executive Committee conference call;
- Drafted the initial reliability objectives for discussion at an upcoming ALR Task Force meeting;
- Developed, obtained approval and submitted IESO voting positions on 2 NERC standards;
- Developed IESO voting position on 1 NPCC document;
- Prepared draft paper and attended a NERC ALRTF meeting;
- Attended a NERC MRC meeting and the BoT meeting;
- Provided IESO inputs to SRC comments on 2 NERC standards and 1 NAESB standard;
- Drafted and comments on NERC proposed changes to Rules of Procedure 4b and 4c;
- Provided comments on NPCC proposed changes to Glossary of Terms;

- Drafted a letter for the Standards Committee in response to the Board of Trustee's charge to propose best way forward with BES definition development;
- Developed framework and detailed discussion on defining Adequate Level of Reliability, and chaired 2 conference calls to review the draft documents;
- Provided IESO inputs to SRC comments on 2 NERC CANs and the proposed Event Analysis procedure, and commented on SRC's filing for appeal on COM-002 R2 interpretation;
- Drafted IESO comments and proposed voting position on a NERC and on a Compliance, and Certification Committee (CCC) survey related to the CANs issues;
- Reviewed Standards Committee prioritization tool and companion document for use in developing priority for standard projects;
- Developed initial ranking of the various standard projects using the prioritizing tool;
- Revised framework and technical discussion materials on defining Adequate Level of Reliability and chaired an ALRTF meeting in the chair's absence;
- Provided IESO inputs to SRC comments on 3 NERC Cans and the revised CAN development process;
- Drafted certain parts of IESO comments on NERC BES definition;
- Developed technical groundings for NERC ALR Task Force's proposal to identify reliability objectives as a means to defining Adequate Level of Reliability;
- Drafted comments and provided IESO inputs to SRC comments on several NERC CANs and two NAESB standards;
- Drafted IESO comments on NPCC Directory #6;
- Drafted SRC comments on BES definition and exception criteria and coordinated these comments with the IESO set;
- Developed agenda and materials for NERC ALR Task Force meeting;
- Drafted comments and provided IESO inputs to SRC comments on several NERC CANs;
- Drafted IESO comments on NPCC Directory #9 and #10;
- Attended NERC Adequate Level of Reliability Task Force (ALRTF) meeting;
- Attended a NERC Standards Committee meeting and chaired its Process Subcommittee meeting;

- Drafted SRC comments on two CANs;
- Provided IESO inputs to SRC comments on the draft BES definition and several NERC CAN's;
- Drafted IESO comments and proposed voting positions on an interpretation and 2 standards;
- Drafted IESO comments on NPCC regional standards on UFLS and consolidated IESO comments on Directories 9 and 10;
- Participated in a NERC Standards Committee Executive Committee conference call to address requests for posting draft standards;
- Attended an ISO/RTO Council's SRC meeting;
- Drafted and reviewed IRC comments on a number of CANs.

APPENDIX II

Participation and Memberships in NERC, NPCC and ECAR Committees, Task Forces, Subcommittees and Working Groups

NERC
Members Representative Committee (MRC)
Planning Committee
Critical Infrastructure Protection Committee
Finance and Audit Committee
Standards Committee
Compliance Certification Committee (CCC)
Standards Interface Subcommittee
Interchange Subcommittee
Operating Reliability Subcommittee
Personnel Subcommittee
Distribution Factor Working Group
Functional Model Working Group
Interchange Distribution Calculator Working Group
Reliability Coordinator Working Group
Operating Limit Definition Task Force
NPCC
Board of Directors
Full Member Representatives
Reliability Coordinating Committee
Public Information Committee
Regulatory and Government Affairs Working Group
Compliance Committee
Reliability Standards Committee
TFSS (Task Force on System Studies)
TFCP (Task Force on Coordination of Planning)
TFCO (Task Force on Coordination of Operations)
CO-1 (Working Group on Control Performance)
CO-2 (Working Group on Dispatcher Training)
CO-7 (Operational Review Team)

CO-8 (System Operating Managers Working Group)
CO-10 (System Operational Tools Working Group)
CO-11 (Restoration Working Group)
CO-12 (Operations Planning Working Group)
CO-13 (Available Transfer Capability Working Group)
CP-8 (Working Group on Review of Resource and Transmission Adequacy)
CP-10 (Collaborative Planning Initiative)
SS-37 (Working Group on Base Case Development)
SS-38 (Working Group on Inter-Area Dynamic Analysis)
RFC-NPCC Steering Committee
RFC-NPCC Working Group
IST-2 (Telecommunications Working Group)
IST-3 (EMS-SCADA Working Group)
ISO/RTO Council
Communications
Info Tech
Smart Grid Working Group
Markets Committee
Planning
Regulatory
Standards Review Committee (SRC)
NAESB
Board
CEA
Transmission Council (T Council)
Regulatory and Development Task Group (RDTG)
Security and Infrastructure Protection Committee (SIPC)
DOE
Energy Sector Cyber Security Working group (ESCSWG)
Over The Horizon Working Group (OTH)
DHS
Partnership for Critical Infrastructure Security (PCIS)
Cross-Sector Cyber Security WG (CSCSWG) - under PCIS