

Date: August 22, 2007

IESO response to Hydro One Networks Inc.'s review of reporting Form 1522 v. 4.0 (PRC-004, Analysis and Mitigation of Transmission and Generation Protection System Misoperations)

The IESO thanks Hydro One for its review and comments regarding Form 1522 (PRC-004, Analysis and Mitigation of Transmission and Generation Protection System Misoperations).

Our responses are embedded in the body of your initial response.

1. Requirement R3.2

The proposed form (v.4.0 REV 06 07) refers to market rules Ch. 5, S15.15. As noted in our previous comments, the reference should be to Ch. 5, S15.1.5.

[IESO]

Thanks for pointing this out again. The mention is with regard to Ch 5, S.14.1.5 and we have corrected this accordingly in the revised form..

2. Purpose of the NERC Standard PRC-004-1

The stated Purpose in PRC-004-1 indicates that it is to “Ensure that all transmission and generation Protection System Misoperations affecting the reliability of the Bulk Electric System (BES) are analyzed and mitigated.”

As indicated above, the standard applies to the BES facilities. By extending the requirement to the IESO Controlled Grid (ICG), the IESO is applying the same standard beyond the NERC requirements.

[IESO]

While Hydro One is correct in that the NERC reliability standard PRC-004 specifically applies to the BES facilities, the IESO reminds Hydro One that a market participant that own transmission and/or generation facilities connected to the ICG is also obligated, under the Transmission

*System Code¹ and the market rules, in assisting the IESO in discharging its obligation for maintaining the reliability and integrity of the ICG. As you are aware, Pursuant to section 5 of the Electricity Act, 1998, one of the objects of the IESO is to maintain the reliability of the IESO-controlled grid. The IESO, as a reliability organization², must be aware of all changes occurring in the system that **could** have a material impact on the reliability of the grid. Misoperation of protection systems **can** seriously affect the reliable state and capability of the system and the IESO must be aware of all such misoperations or changes to the state of the interconnected system, regardless of the voltage level of the facility on which the misoperation occurs is.*

Chapter 5, Section 3.4, of the market rules states that a market participant must: promptly informing the IESO of any change or anticipated change in the capability of its transmission facilities or the status of its equipment or facilities forming part of the IESO-controlled grid, and of any other change or anticipated change in its transmission facilities that could have a material effect on the reliability of the IESO controlled grid or the operation of the IESO-administered markets;

*We further wish to make it clear that we are **not requiring** a detailed analysis of all misoperations but rather **a summary report** of those that occur.. Detailed analysis of specific misoperations, which have a significant impact on the grid, are to be undertaken on request by the IESO, NPCC or as required, by the transmitter itself and for those that affect the BES. Moreover, only those that impact the BES will be considered for NPCC compliance reporting purposes, should a violation of PRC-004 occur for such facilities.*

3. Responsible Entities for PRC-004-1 Compliance

The Applicability section and the requirements in PRC-004-1 assign responsibilities to the following entities:

- (a) Transmission Owner.
- (b) Distribution Provider that owns a transmission Protection System.
- (c) Generator Owner

¹ Section 5.1.2 of the TSC: *A transmitter shall operate and maintain its transmission facilities in compliance with this Code, its licence, its operating agreement with the IESO, the Market Rules, all connection agreements, good utility practice, the standards of all applicable reliability organizations and any applicable law.*

² Definition from the TSC: *"reliability organization" means NERC, NERC's reliability councils and the IESO;*

These three entities, all defined in the NERC Functional Model, are the ones that need to meet the requirements in the Standard. Please see our comment in item 6 below with respect to the use of the Area responsibility in B-21.

[IESO]

As you are aware, and as communicated in our previous response, the reliability framework in Ontario is different compared to that of our US neighbours, and is based on the MOU between the OEB and NERC and the MOU between the IESO, NERC and NPCC. As such, it is not only the NERC functional model that comes into play but also the Transmission System Code and the market rules. More specifically, market rule amendment MR-00330-R00, which requires entity designations per the market rules.

4. Type of NPCC Document B-21

As its type indicates, B-21 is a Guideline document. This means it is to be used as a suggestion on how the responsible entities are to implement the Protection System Misoperations analyses and report them to NPCC. As such, Hydro One has brought to the NPCC Task Force on System Protection (TFSP) all the events that were judged to be significant and offer lessons to be learned by the NPCC members. The actual number has been less than 10% of the total.

[IESO]

We remind Hydro One that the NPCC TFSP does not dictate or influence compliance requirements in Ontario. It is the IESO's obligations and responsibilities, as laid down by the market rules, and the objects of the Electricity Act, which dictate and influence compliance and reporting requirements in the province.

The legal statutes are further complemented by the joint MOU between the Ontario Energy Board (OEB) and NERC and by the joint MOU between the IESO, NERC, and NPCC. The latter MOU was struck with the IESO because of its functionality, position, and delegated authority in the province as a "standards authority" as specified by an object of the Electricity Act and as a "reliability organization" as specified by the Transmission System Code.

5. Applicability of NPCC documents

Most NPCC Criteria and Guideline documents apply to the Bulk Power System (BPS). Document B-21 is no exception.

[IESO]

Please refer to answer provided to Response # 2

6. Use of Area as the Responsible Entity in B-21

We do not agree with the statement in the IESO's response that the use of the term Area in B-21 places the obligation on the IESO to maintain such information.

The definition of AREA in the NPCC Glossary of Terms (Document A-07) is as follows:

Area — An **Area** (when capitalized) refers to one of the following: New England, New York, Ontario, Quebec or the Maritimes (New Brunswick, Nova Scotia and Prince Edward Island); or, as the situation requires, area (lower case) may mean a part of a system or more than a single system. Within NPCC, Areas (capitalized) operate as **control areas** as defined by the North American Electric Reliability Council (NERC) (the definition can be found on page 6 of this glossary).

According to the definition, when NPCC documents refer to Area, it means the geographical footprint that operates as a control area, in our case Ontario. Thus the concept is not intended to apply to specific entities in the Province of Ontario.

The Guideline document B-21 like most of the NPCC Criteria, Guidelines and Procedures documents still use the Area as a generic term. This is a historical legacy. Most of these documents were written and adopted at a time that preceded the NERC Functional Model when many utilities in the NPCC footprint were vertically integrated and thus the applicable meaning of Area was the Control Area. NPCC will, at some time in the future, revise its documents to make the references to entities consistent with the NERC Functional Model.

[IESO]

*While we agree with Hydro One's point of view that the **control area** definition is outdated as compared to the entity functionalities as laid out by the latest version of the NERC Functional Model and that the term Area, based on the definition seems to imply a geographic footprint only. We must nonetheless respectfully disagree with Hydro One's view regarding the term **Area**. This term was introduced to complement and simplify the transformation of the NERC functional model entity designation into NPCC documentation and was intended to represent the*

functional entity with responsibility to meet NPCC criteria – ISO-NE, NYISO, IESO, HQTE and NBSO.

*This is further supported in other NPCC documentation such as; NPCC documentation B22 footnote 1, which states: **Within NPCC, Areas (capitalized) operate as Balancing Authority as defined by the North American Electric Reliability Council (NERC)**", and NPCC document A8, which uses the term Area to place the obligations on ISO-NE, NYISO, IESO, HQTE and NBSO.*

This was subsequently clarified during a recent NPCC Compliance Monitoring & Assessment Subcommittee (CMAS) meeting where it was clearly stated the term Area, with respect to the entity responsible to meet the criteria, means, ISO-NE, NYISO, IESO, HQTE and NBSO.

Also, please refer to answer provided to Response # 2

7. Requirements beyond NERC/NPCC Standards

As proposed, the reporting form contains references to protection systems in the IESO-Controlled Grid (Requirement R1 and Measurement M1). Clarification should be provided that the NERC Standard PRC-004-1 and the NPCC Guideline B-21 are applicable only to BES and BPS respectively and the form is consistent with the scope of these documents. If the intent of the IESO is to establish reporting requirements that are beyond the requirements in the NERC standard and the NPCC guideline this would constitute an extension that is beyond the scope and applicability of these documents.

The issue of more stringent requirements and more onerous reporting obligations has been discussed at a number of the IESO Technical Panel meetings. At the May 22nd meeting (see TP-201 minutes), the IESO reminded the Panel that the IESO has committed that any new IESO imposed reliability standards will be incorporated into the market rules.

According to this commitment, if the IESO wishes to impose a reporting requirement that is stricter than the reliability standard authority's, there must be a market rule amendment proposed and approved following the established process.

Until such time, when a market rule amendment is in place, Hydro One will meet its NERC and NPCC obligations for compliance and reporting but not beyond them.

[IESO]

While we agree with Hydro One's view that the NERC reliability standard PRC-004 specifically applies to the BES facilities, the IESO reminds Hydro One that a market participant that own transmission and/or generation facilities connected to the ICG is also obligated, under the Transmission System Code³ and the market rules, in assisting the IESO in discharging its obligation for maintaining the reliability and integrity of the ICG.

Moreover, that the Security Limits developed by the IESO pursuant to Ch.5, S. 5 and based on defined relay information and expected relay operations provided by market participants pursuant to Ch.4, Appendix 4.5A, can be adversely affected by such relay misoperations and as such, need to be communicated to the IESO and appropriately mitigated to ensure the reliability of the ICG.

Chapter 5, Section 3.4, of the market rules states that market participants are to: promptly informing the IESO of any change or anticipated change in the capability of its transmission facilities or the status of its equipment or facilities forming part of the IESO-controlled grid, and of any other change or anticipated change in its transmission facilities that could have a material effect on the reliability of the IESO controlled grid or the operation of the IESO-administered markets;

As such, it is the IESO's view, a market rule amendment is not required as there is sufficient language in the current market rules to provide for IESO's authority in requesting information from market participants deemed necessary by the IESO for maintaining the reliability of the IESO-controlled Grid.

*We further wish to make it clear that we are **not requiring** a detailed analysis of all misoperations but rather **a summary report** of those that occur.. Detailed analysis of specific misoperations, which have a significant impact on the grid, are to be undertaken on request by the IESO, NPCC or as required, by the transmitter itself and for those that affect the BES. Moreover, only those that impact the BES will be considered for NPCC compliance reporting purposes, should a violation of PRC-004 occur for such facilities.*

8. Posting of the Form

³ Section 5.1.2 of the TSC: *A transmitter shall operate and maintain its transmission facilities in compliance with this Code, its licence, its operating agreement with the IESO, the Market Rules, all connection agreements, good utility practice, the standards of all applicable reliability organizations and any applicable law.*

We were surprised to see that the IESO has already posted draft version 3.0 of the form in its web page “2007 IESO Reliability Compliance Program Schedule” with a due date of December 1, 2007 without waiting for the market participants’ concurrence and completion of the process.

[IESO]

The final updated form has yet to be posted on the IRCP schedule page – the previous version of the form is what is posted and this will be updated as a reasonable consensus is reached on the final wording of the revised version.

9. Reporting Schedule

The NPCC CBRE Compliance Reporting Schedule – 2007 shows a due date January 15th, 2008 to confirm the number and report misoperations for the calendar year 2007. The IESO Reliability Compliance Program Schedule in the IESO web site shows a Submission Target Date December 1st, 2007. The IESO should have reporting periods that are consistent with those of NPCC CBRE.

[IESO]

*Unfortunately this is not entirely feasible due to circumstances that are beyond IESO control – ensuring that all market participants submit by the due date without having to send submission reminders. However, in order to accommodate your request, the IESO can extend the due date to **January 2nd**. We hope that this will help alleviate some of your concerns.*

The IESO requires sufficient time for completing its internal review and assessment of all received compliance information, conduct appropriate follow-up with market participant and compile the required information before issuing its final submissions, on behalf of the province, to all regulatory authorities concerned. This is typically 30 days, which then provides sufficient flexibility, to meet NPCC’s schedule, while affording the IESO some flexibility that is in turn provided to market participants.

While, we are pleased with Hydro One’s punctuality in providing us compliance information but this, alas, has not been the case with some of the other market participants that have needed additional time for their submissions.

*Additionally, **the appendix (reporting form) has been modified** to indicate the type of facility involved in the incident – BPS or Non-BPS. The market participant can also indicate “Not Sure” if the type of facility is unknown.*