NPCC, Inc.

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NPCC Directories# 9 and #10

TFCO Open Process Posting

Recommendation to Retire Directories #9 and #10

NPCC as the regional entity respectfully submits the following comments on the TFCO recommendation to retire Directories #9 and #10 and the criteria therein:

Directory#9 &#10 ---*Verification of Generator Gross and Net Real and Reactive Power Capability:*

NPCC Comment#1:

TFCO notes that certain existing criteria in Directory#9 and #10 are contained in the requirements of MOD-25-2 or other NERC standards and therefore can be retired without creating a reliability gap.

For example, Directory#9 and #10 Criteria Requirement R1 in each Directory requires seasonal real and reactive power capability testing for the summer and winter capability seasons and MOD 25-2 does not require seasonal testing.

TFCO maintains that TOP-002-2.1b *Normal Operations Planning* Requirement R13 obligates a GO to perform real and reactive power testing at any time at the request of the TOP/BA and thereby adequately replaces the seasonal testing requirement in the criteria.

TOP-002-2.1b *Normal Operations Planning*:

R13. At the request of the Balancing Authority or Transmission Operator, a Generator Operator shall perform generating real and reactive capability verification that shall include, among other variables, weather, ambient air and water conditions, and fuel quality and quantity, and provide the results to the Balancing Authority or Transmission Operator operating personnel as requested.

However, NPCC notes that TOP-002-2.1b will be retired and according to the ERO Standard Drafting Team for Project 2014-03 Requirement R13 has been mapped to the requirements of two other standards (TOP-001-3 and TOP-003-3) which are subject to future enforcement (April 1, 2017).

TOP-001-3 *Transmission Operations*: (enforcement date April 1, 2017)

Requirement R2 where a Balancing Authority can issue Operating instructions to the Generator Operator, which could include verification:

R2 Each Balancing Authority shall act to maintain the reliability of its Balancing Authority Area via its own actions or by issuing Operating Instructions.

TOP-003-3 *Operational Reliability Data*: (enforcement date April 1, 2017)

Requirement R2 and R5 where the data coming back from the verification effort would be included in the Balancing Authority data specification as shown in TOP-003-3, Requirements R2 and R5.

R2 Each Balancing Authority shall maintain a documented specification for the data necessary for it to perform its analysis functions and Real-time monitoring. The data specification shall include, but not be limited to:

2.1. A list of data and information needed by the Balancing Authority to support its analysis functions and Real-time monitoring.

2.2. Provisions for notification of current Protection System and Special Protection System status or degradation that impacts System reliability.

2.3. A periodicity for providing data.

2.4. The deadline by which the respondent is to provide the indicated data.

R5 Each Transmission Operator, Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R3 or R4 shall satisfy the obligations of the documented specifications using

5.1. A mutually agreeable format

5.2. A mutually agreeable process for resolving data conflicts

5.3. A mutually agreeable security protocol

NPCC notes that the language in the requirements of TOP-001-3 and TOP-003-3 is less specific and may not adequately replace the TOP's ability to request real and reactive capability verification at any time as described in TOP-002-2.1b.

Accordingly, TOP-001-3 and TOP-003-3 may not sufficiently replace the criteria.

TFCO Response: *CO7 notes that the language in TOP-001-3 and TOP-003-3 clearly gives the BA and/or TOP the authority to request real and reactive capability verification at any time. While the language is less specific than in TOP-002-2.1b, this lack of specificity does nothing to*

degrade the capability of a BA and/or TOP to request such information from a generator. Additionally, TOP-003-3 Operational Reliability Data: (enforcement date April 1, 2017), R1, which is applicable to the TOP and R2, which is applicable to the BA specify that the applicable entity "shall maintain a documented specification for the data necessary…" Such "specification" can identify seasonal verification of gross and net real and reactive power capabilities

Furthermore, each NPCC TOP subject to compliance with the criteria in Directory #9 and #10 has incorporated real and reactive testing requirements for generating units into their respective tariff and/or market manuals.

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Directory#9 ---*Verification of Generator Gross and Net Real Power Capability:*

NPCC Comment#2:

TFCO notes that certain existing criteria in Directory#9 are contained in the requirements of MOD-25-2 or other NERC standards and therefore can be retired without creating a reliability gap.

For example, Directory#9 Criteria Requirement R5 requires the GO to document a time frame for correcting equipment limitations impacting capability and MOD-25-2 does not have a similar requirement.

However, TFCO notes that although TOP-002-2.1b does not explicitly obligate the GO to provide such a time frame it does obligate the GO to provide the TOP with a 7-day forecast of real power output. (Requirement R15) thereby adequately replacing the criteria.

TOP-002-2.1b *Normal Operations Planning*:

R15 Generation Operators shall at the request of the Balancing Authority or Transmission Operator, provide a forecast of expected real power output to assist in operations planning (e.g., a seven-day forecast of real output).

However, NPCC notes that TOP-002-2.1b will be retired and according to the ERO Standard Drafting Team for Project 2014-03 Requirement R15 has been mapped to TOP-003-3 Requirement R5 which is subject to future enforcement (April 1, 2017) .

TOP-003-3 *Operational Reliability Data*: (enforcement date April 1, 2017)

R5 Each Transmission Operator, Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R3 or R4 shall satisfy the obligations of the documented specifications using

5.1. A mutually agreeable format

5.2. A mutually agreeable process for resolving data conflicts

5.3. A mutually agreeable security protocol

NPCC notes that the language in the requirements of TOP-003-3 is less specific and may not adequately replace the GO's obligation to provide such a time frame as described in TOP-002-2.1b.

Accordingly, TOP-003-3 may not sufficiently replace the criteria.

TFCO Response: *CO7 notes that the language in TOP-003-3 clearly gives the BA and/or TOP the authority to request real and reactive capability verification at any time. While the language is less specific than in TOP-002-2.1b, this lack of specificity does nothing to degrade the capability of a BA and/or TOP to request such information from a generator. Additionally, TOP-003-3 Operational Reliability Data: (enforcement date April 1, 2017), R1, which is applicable to the TOP and R2, which is applicable to the BA specify that the applicable entity "shall maintain a documented specification for the data necessary…" Such "specification" can identify a requirement to "establish and document a time frame…"*

Furthermore, each NPCC TOP subject to compliance with the criteria in Directory # 9 and #10 has in place the programs and/or Tariff language to meet these obligations.

Directory#10---*Verification of Generator Gross and Net Reactive Power Capability:*

NPCC Comment#3:

TFCO notes that certain existing criteria in Directory#10 are contained in the requirements of MOD-25-2 or other NERC standards and therefore can be retired without creating a reliability gap.

For example, Directory#10 Criteria Requirement R4 sets forth requirements for the GO to notify the TOP when its generator cannot achieve its reactive capability.

TFCO maintains that TOP-002-2.1b requirement R14 obligates the GO to notify the TOP of changes in its capabilities and characteristics (although not explicitly for reactive capability) thereby adequately replacing the criteria.

TOP-002-2.1b *Normal Operations Planning*:

R14. Generator Operators shall without any intentional time delay, notify their Balancing Authority and Transmission Operator of changes in capabilities and characteristics including but not limited to:

R14.1. Changes in real output capabilities.

However, NPCC notes that TOP-002-2.1b will be retired and according to the ERO Standard Drafting Team for Project 2014-03 Requirement R14 has been mapped to TOP-003-3 Requirement R5 which is subject to future enforcement (April 1, 2017) .

TOP-003-3 *Operational Reliability Data*: (enforcement date April 1, 2017)

R5 Each Transmission Operator, Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R3 or R4 shall satisfy the obligations of the documented specifications using

5.1. A mutually agreeable format

5.2. A mutually agreeable process for resolving data conflicts

5.3. A mutually agreeable security protocol

NPCC notes that the language of Requirement R5 in TOP-003-3 is less specific and may not adequately replace the obligation for a GO to notify the BA and TOP of changes in its capabilities as described in TOP-002-2.1b.

Accordingly, TOP-003-3 may not sufficiently replace the criteria.

TFCO Response: *Although the language in TOP-003-3 does not obligate the GO to inform the BA/TOP of changes in its output capabilities, CO7 notes that the language in TOP-003-3 clearly gives the TOP and/or BA the ability to receive such notifications via the requirements of documented specifications. , Specifically, TOP-003-3 Operational Reliability Data: (enforcement date April 1, 2017), R1, which is applicable to a TOP and R2, which is applicable to a BA specify that the applicable entity "shall maintain a documented specification for the data necessary…" Such "specification" can identify a requirement to "make notification to a BA/TOP…"*

Furthermore, with respect to reactive capability, the requirement to notify the TOP of changes in its VAR capability is clearly contained in the VAR-002-4 - Generator Operation for Maintaining Network Voltage Schedules

R4. Each Generator Operator shall notify its associated Transmission Operator within 30 minutes of becoming aware of a change in reactive capability due to factors other than a status change described in Requirement R3. If the capability has been restored within 30 minutes of the Generator Operator becoming aware of such change, then the Generator Operator is not required to notify the Transmission Operator of the change in reactive capability. [Violation Risk Factor: Medium] [Time Horizon: Real-time Operations]

- *Reporting of status or capability changes as stated in Requirement R4 is not applicable to the individual generating units of dispersed power producing resources identified through Inclusion I4 of the Bulk Electric System definition.*

Additionally, recently retired NERC standard TOP-006-2 – Monitoring System Conditions, requirement R1 stated:

R1. Each Transmission Operator and Balancing Authority shall know the status of all generation and transmission resources available for use.

R1.1. Each Generator Operator shall inform its Host Balancing Authority and the Transmission Operator of all generation resources available for use.

R1.2. Each Transmission Operator and Balancing Authority shall inform the Reliability Coordinator and other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use.

The requirements of TOP-006-2 have been mapped into the now effective NERC standards as follows:

TOP-006-2	*Mapped to:*
R1. Each Transmission Operator and Balancing Authority shall know the status of all generation and transmission resources available for use.	***TOP-001-3*** *R10. Each Transmission Operator shall perform the following as necessary for determining System Operating Limit (SOL) exceedances within its Transmission Operator Area:* *10.1. Within its Transmission Operator Area, monitor Facilities and the status of Special Protection Systems, and* *10.2. Outside its Transmission Operator Area, obtain and utilize status, voltages, and flow data for Facilities and the status of Special Protection Systems.* *R11. Each Balancing Authority shall monitor its Balancing Authority Area, including the status of Special Protection Systems that*

	impact generation or Load, in order to maintain generation-Load-interchange balance within its Balancing Authority Area and support Interconnection frequency. [Violation Risk Factor: High] [Time Horizon: Real-Time Operations]
R1.1. Each Generator Operator shall inform its Host Balancing Authority and the Transmission Operator of all generation resources available for use.	***TOP-003-3*** *R5. Each Transmission Operator, Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R3 or R4 shall satisfy the obligations of the documented specifications using:*
R1.2. Each Transmission Operator and Balancing Authority shall inform the Reliability Coordinator and other affected Balancing Authorities and Transmission Operators of all generation and transmission resources available for use.	***IRO-010-2*** *R3. Each Reliability Coordinator, Balancing Authority, Generator Owner, Generator Operator, Load-Serving Entity, Transmission Operator, Transmission Owner, and Distribution Provider receiving a data specification in Requirement R2 shall satisfy the obligations of the documented specifications using:*

Finally, each NPCC TOP, subject to the compliance with the criteria in Directory # 9 and #10 has in place the programs and/or Tariff language establishing these notification requirements.

NPCC Comment#4:

NPCC notes that although MOD-25-2 is initially enforceable on July 1st, 2016 the proposed retirement dates for Directories #9 and #10 is July 1st, 2019 which coincides with the completion of the MOD-25-2 staged implementation.

NPCC notes that the Compliance Committee should consider the implications of maintaining the existing TOP real and reactive capability program (D#9 and D#10) during the implementation period for MOD-25-2.

TFCO Response:

The NPCC Compliance Committee was briefed on the proposed retirement of Directories #9 and#10 on September 20, 2016. The CC considered potential coordination issues between the existing TOP verification program as contained in Directories #9 and #10 and MOD-25-2. The CC confirmed that there would be no issue and entities should follow the standard.

NPCC Comment#5:

NPCC suggests an Implementation Plan may be necessary to consider the applicable governmental and regulatory approval timelines for MOD-25-2 that may extend beyond the proposed retirement date.

TFCO Response:

TFCO notes that MOD-25-2 has received regulatory approval and is mandatory and enforceable in the United States, Ontario and the Maritimes (Nova Scotia and New Brunswick). Similarly, other standards referenced in the responses above and in the Directory #9 and Directory #10 TFCO Technical Comparison Review whitepaper (identified below) have received regulatory approval and are mandatory and enforceable in the United States, Ontario and the Maritimes (Nova Scotia and New Brunswick).

- *TOP-001-3 - Transmission Operations*
  - *NB – 10/1/2017*
  - *NS – 10/1/2017*
- *TOP_003-3 - Operational Reliability Data*
  - *NB – 7/1/2017*
  - *NS – 10/1/2017*
- *FAC-008-3 - Facility Ratings*
- *VAR-002-4 - Generator Operation for Maintaining Network Voltage Schedules*
- *IRO-010-2 - Reliability Coordinator Data Specification and Collection*
  - *NB – 7/1/2017*
  - *NS – 4/1/2017 and 10/1/2017 for R3, R5.*

In Quebec, the status of the referenced standards is as follows:

Standard	*Status*	*Date*	
MOD-025-2 - Verification and Data Reporting of	*Filed with Régie de*		*HQ has filed with a request with the Régie de*

Generator Real and Reactive Power Capability and Synchronous Condenser Reactive Power Capability	*l'énergie (Régie), pending a decision*		*l'énergie (Régie) to adopt 33 reliability standards for the North American Electric Reliability Corporation (NERC) and their respective appendices, including MOD-025-2. HQT expects the MOD-25-2 standard to be approved by the Régie before the end of the year 2017*
TOP-001-3 - Transmission Operations	*Not Effective*		*TOP-001-1a (January 1, 2016) is still effective, but as long as TOP-002-2.1b remains effective in Quebec it provides coverage of associated Directory 9 and 10 criteria, as specified above and in the comparison whitepaper.*
TOP-002-2.1b - Normal Operations Planning	*Effective*	*July 1, 2016*	
TOP_003-3 - Operational Reliability Data	*Not Effective*		*TOP-003-1 (January 1, 2016) is still effective, but as long as TOP-002-2.1b remains effective in Quebec it provides coverage of associated Directory 9 and 10 criteria, as specified above and in the comparison whitepaper.*
TOP-006-2 - Monitoring System Conditions	*Effective*	*July 1, 2016*	
FAC-008-3 - Facility Ratings	*Effective*	*July 1, 2017*	*The effective date would be prior to the retirement of Directory 9 and 10 (2019)*

VAR-002-4 - Generator Operation for Maintaining Network Voltage Schedules	*Not Effective*		*VAR-002-3 (January 1, 2017) is still effective, but as long as TOP-002-2.1b remains effective in Quebec it provides coverage of associated Directory 9 and 10 criteria, as specified above and in the comparison whitepaper. Additionally, R4 of the currently effective VAR-002-3 is the same as in VAR-002-4.*
IRO-010-2- Reliability Coordinator Data Specification and Collection	*Not Effective*		*IRO-010-1a (January 1, 2017) is still effective, but as long as TOP-002-2.1b and TOP-006-2 remain effective in Quebec they provide coverage of associated Directory 9 and 10 criteria, as specified above and in the comparison whitepaper.*

Accordingly, entities in the province of Quebec are subject to the requirements of:

- *TOP-002-2.1b - Normal Operations Planning*
- *TOP-006-2 - Monitoring System Conditions*
- *FAC-008-3 - Facility Ratings (effective July 1, 2017)*
- *Plus, earlier versions of NERC approved standards:*
    - *TOP-001-1a - Transmission Operations*
    - *VAR-002-3 - Generator Operation for Maintaining Network Voltage Schedules*
    - *IRO-010-1a - Reliability Coordinator Data Specification and Collection*

Additionally, it is anticipated that MOD-25-2 will be effective in Quebec before the end of the year 2017

TFCO notes that although MOD-25-2 has not received regulatory approval in Quebec, HQT has been voluntarily complying with its requirements. HQT has confirmed that it will continue to voluntary comply with NERC adopted standards that may not have been adopted by the Regie.

The standards identified above which are effective and enforceable in Quebec, in addition to voluntary compliance with MOD-025-2, during pendency of its filing and adoption by Regie, will allow for the retirement of Directories #9 and #10 without creating a reliability gap.