November 21, 2018

To: Alberta Utilities Commission ("AUC" or "Commission")

Re: Forwarding Notice – Recommendation to Reject for Adoption North American Electric Reliability Corporation ("NERC") Reliability Standard, MOD-027-1, *Verification of Models and Data for Turbine/Governor and Load Control or Active Power/Frequency Control Functions* ("NERC MOD-027-1")

The Alberta Electric System Operator ("AESO") recommends that the Commission approve the rejection of the North American Electric Reliability Corporation ("NERC") reliability standard MOD-027-1, *Verification of Models and Data for Turbine/Governor and Load Control or Active Power/Frequency Control Functions* ("NERC MOD-027-1"), pursuant to Section 19 of the *Transmission Regulation*.

Background

The purpose of NERC MOD-027-1 is to verify that the turbine/governor and load control or active power/frequency control model and the model parameters, used in dynamic simulations that assess bulk electric system reliability, accurately represent generator unit real power response to system frequency variations.

The AESO has determined that, while different methodologies are detailed in NERC MOD-027-1, the following ISO rules collectively fulfil the purpose of NERC MOD-027-1:

- Section 502.1 of the ISO rules, *Aggregated Generating Facilities Technical Requirements* ("Section 502.1");
- Section 502.5 of the ISO rules, *Generating Unit Technical Requirements* ("Section 502.5");
- Section 502.6 of the ISO rules, *Generating Unit Operating Requirements* ("Section 502.6");
- Section 502.16 of the ISO rules, *Aggregated Generating Facilities Operating Requirements* ("Section 502.16");
- ID #2017-013R, Model Validation and Reactive Power Reporting; and
- ID #2010-001R, Facility Modelling Data

The significant differences between the ISO rules and NERC MOD-027-1 are as follows:

- the ISO rules have a broader applicability than that of NERC MOD-027-1. For instance, the validation and revalidation testing requirements in the ISO rules, specifically, subsection 9, of Section 502.6 and subsection 9 of Section 502.16, apply to or aggregated generating facilities greater than 9 MW and/or an aggregated plant greater than 18 MW that are directly connected to the transmission system. In contrast, NERC MOD-027-1 has a much higher threshold of 75 MVA.

- the ISO rules, specifically, subsection 11 of Section 502.6 and subsection 12 of Section 502.16, have a much more stringent testing frequency, which requires revalidation testing every 5 years, which is shorter than the 10 years stipulated in NERC MOD-027-1.

- Section 502.6, requires validation testing of each and every generating unit where equivalent units exist at the same physical location. NERC MOD-027-1, permits model verification testing on only one representative unit.

There are two minor discrepancies between NERC MOD-027-1 and the ISO rules where requirements are specified in NERC MOD-027-1 but are not explicitly included in the ISO rules:

- NERC MOD-027-1 R1 would require the AESO to provide the legal owner of a generating unit or aggregated generating facility instructions on how to obtain the list of turbine/governor and load control or active power/frequency control system models, and the dynamic turbine/governor and load control or active power/frequency control function model library block diagrams and/or data sheets within 90 calendar days of receiving a written request. The ISO rules do not require the AESO to provide instructions on how obtain the relevant list because the Western Electric Coordinating Council publishes a guide for the generating unit model validation testing procedure and, on an annual basis, updates the list of approved generating units control systems models for software developers.

- The AESO does not currently provide separate load control models because the information that would be provided in those models is provided in the generator models. Therefore a requirement to have separate load models is not required in Alberta

Therefore, the AESO is recommending that NERC MOD-027-1 be assessed as not applicable in Alberta and be rejected pursuant to Section 19 of the *Transmission Regulation.*

AESO Consultation

Given that the relevant requirements are already included in the ISO rules, it is the AESO's view that market participants are not likely to be directly affected by the proposed rejection of NERC MOD-027-1. Accordingly, no formal consultation with market participants was undertaken[1].

On November 6, 2018, the AESO posted a notification in the AESO Stakeholder Newsletter informing market participants and other interested parties that it would not be consulting on the proposed rejection of NERC MOD-027-1, and would forward NERC MOD-027-1 to the Commission with its recommendation that the Commission approve the rejection of this reliability standard pursuant to Section 19 of the *Transmission Regulation*.

The AESO submits that its recommendation that the Commission reject NERC MOD-027-1 for adoption in Alberta complies with the requirements of the *Transmission Regulation*, is not technically deficient, and is in the public interest.

Attachments to Forwarding Notice

The following documents are attached to this Forwarding Notice:

1. Copy of NERC MOD-027-1; and

2. November 6, 2018 AESO Stakeholder Newsletter.

If you have any questions, please contact the undersigned.

Sincerely,

[1] Section 19(4) of the *Transmission Regulation* states that, before adopting or making reliability standard, "the ISO must consult with those Market Participants that it considers are likely to be directly affected".

"Melissa Mitchell-Moisson"

Melissa Mitchell-Moisson
Regulatory Coordinator
Phone: 403-539-2948
Email: melissa.mitchell-moisson@aeso.ca

Attachments