

Memorandum

To: Technical Panel
From: Adam Cumming
Date: September 11, 2023
Re: MR-00478-R00 – Corrections to Intertie Flow Limits Amendment

There was an inadvertent error made in approving the recent 2022 amendment to Ch. 7, s. 4.4.4.2. By mistake, an earlier draft of the proposed market rule amendment was approved and included in the current market rules baseline. The market rules group is taking steps to rectify this error by requesting the Technical Panel and the IESO Board approve the final draft of the proposed market rule amendment that was intended to have been approved.

Background

Limits on intertie flows between the integrated power system and neighbouring transmission systems restrict the volume of energy that can be imported to or exported from Ontario. In setting these limits, the IESO provides a best estimate of the maximum flow on the single transmission line to each intertie zone. In 2022, the IESO brought forward amendments to certain market rule provisions relating to intertie flow limits, namely MR-00468-R00.

On July 5, 2022 the Technical Panel voted to recommend market rule amendment MR-00468-R00 for IESO Board approval. The IESO Board subsequently approved the amendment which took effect on September 19, 2022. The market rule amendment was as follows (“version 1”):

Chapter 7

4.4.4 Limits on *intertie* flows between the *integrated power system* and neighbouring *transmission systems* shall be based on:

- 4.4.4.1 a simple model that assumes that each *inertie meter* is *connected* to an isolated *inertie zone* by a single transmission line;
- 4.4.4.2 the *IESO's* best estimate of the maximum flow on the single transmission line to each *inertie zone*, given the status of the neighbouring *transmission systems* and expected or actual unscheduled flows (including as unscheduled flows any flows planned by the *IESO* to balance interchange accounts with other *control area operators*). Where the *IESO* has determined that transmission constraints on the *IESO-controlled grid* or on the single transmission line connected to an *inertie zone* limit the flows of *energy* from the *IESO-controlled grid* to or from an *inertie zone*, the *IESO's* best estimate of the maximum flow may include consideration of the amount of *energy* that can be moved or transferred reliably between that *inertie zone* and the *IESO-controlled grid*; and
- 4.4.4.3 a net *interchange schedule* limit to represent the *integrated power system's* ability to respond to hourly *interchange schedule* deviations and maintain the *reliability* of the *IESO-controlled grid*.

.....

- 4.5.1 The *dispatch algorithm* shall be used to determine both operating schedules that reflect the realities of the *integrated power system* and uniform prices within the *IESO control area* that ignore *transmission system* constraints. Thus, the *dispatch algorithm* shall be capable of using the following two different models for the *integrated power system*:
 - 4.5.1.1 an *unconstrained IESO-controlled grid model*, which, other than as set out in Section 4.4.4 of Chapter 7 and Section 7.5.1 of Appendix 7.5, ignores transmission and other *security* constraints on the *IESO-controlled grid* and assumes, in effect, that all *physical services* are provided and consumed at a single, undesignated location *connected* to several isolated *inertie zones* by single transmission lines; and
 - 4.5.1.2 a *constrained IESO-controlled grid model*, which includes a full (but necessarily approximate) mathematical representation of the *integrated power system*, with *interconnections* modelled as single transmission lines to isolated *inertie zones* or as proportionately allocated to *inertie zones*.

The IESO has now discovered that this version 1 language, which was an earlier draft of the proposed market rule amendment, was inadvertently brought before and recommended by the Technical Panel on July 5, 2022. This version 1 was not the version that had been recommended by the Technical Panel for posting at its February 15, 2022 meeting and that was subsequently posted for comment by stakeholders ("version 2"). The IESO is accordingly

proposing to amend the market rules to replace version 1 with version 2, which is in the draft of MR-00468-R00 that was intended to be approved by the Technical Panel and IESO Board. The market rule amendment that was intended to have been approved is as follows:

Chapter 7

- 4.4.4 Limits on *intertie* flows between the *integrated power system* and neighbouring *transmission systems* shall be based on:
- 4.4.4.1 a simple model that assumes that each *intertie meter* is *connected* to an isolated *intertie zone* by a single transmission line;
 - 4.4.4.2 the *IESO's* best estimate of the maximum flow on the single transmission line to each *intertie zone*, given the status of the neighbouring *transmission systems* and expected or actual unscheduled flows (including as unscheduled flows any flows planned by the *IESO* to balance interchange accounts with other *control area operators*). The *IESO's* best estimate of the maximum flow on the single transmission line to an *intertie zone* may reflect the *integrated power system's* limited capability to supply and export *energy* to an *intertie zone* and applicable neighbouring *transmission system* without scheduling imported *energy* to supply the exported *energy*; and
 - 4.4.4.3 a net *interchange schedule* limit to represent the *integrated power system's* ability to respond to hourly *interchange schedule* deviations and maintain the *reliability* of the *IESO-controlled grid*.
-
- 4.5.1 The *dispatch algorithm* shall be used to determine both operating schedules that reflect the realities of the *integrated power system* and uniform prices within the *IESO control area* that ignore *transmission system* constraints. Thus, the *dispatch algorithm* shall be capable of using the following two different models for the *integrated power system*:
- 4.5.1.1 an *unconstrained IESO-controlled grid model*, which, other than as set out in Section 4.4.4 of Chapter 7 and Section 7.5.1 of Appendix 7.5, ignores transmission and other *security* constraints on the *IESO-controlled grid* including *interties* and assumes, in effect, that all *physical services* are provided and consumed at a single, undesignated location *connected* to several isolated *intertie zones* by single transmission lines; and
 - 4.5.1.2 a *constrained IESO-controlled grid model*, which includes a full (but necessarily approximate) mathematical representation of the *integrated power system*, with *interconnections* modelled

as single transmission lines to isolated *intertie zones* or as proportionately allocated to *intertie zones*.

Stakeholder Feedback

The IESO conducted an engagement [webinar](#) on November 22, 2021 presenting version 2 of the proposed market rule language. Thereafter, the Technical Panel voted to post version 2 of the proposed market rule amendment ([MR-00468-R00 V2.0](#)) for broader stakeholder review and comment at its February 15, 2022 meeting. No comments were received. This version of the amendment is now being brought before the TP for a vote to recommend to the IESO Board for approval.

Panel Action and Next Steps

The IESO recommends that the Technical Panel vote to recommend the proposed market rule amendment which is the corrected version of MR-00468-R00, to the IESO Board for approval. The IESO conducted a root cause analyses and identified deficiencies in how the rule amendment documents were developed, reviewed and stored. Steps have been taken to ensure these deficiencies do not materialize again.

Accompanying Materials

- Market Rule Amendment Proposal Form - MR-00478-R00