

Response to Feedback Re: IMDC-31 v0.2 Curtail Wheel-through Transactions

The IESO received feedback from stakeholders on the May 12th posting of IMDC-31_v0.2. The IESO's response to the specific concerns expressed is discussed further below.

Market Design and Market Rule (in)consistency, and Reliability Concerns

The IESO outlined the reliability rationale for this change in the April 21st IESO Bulletin posting, in the stakeholder webinar that took place April 28th as well as in the IMDC itself.

The Market Rules generally, and Market Manual 7.2 Section 1.3.4 in particular, reflect the importance the IESO assigns to respecting the limitations of the nuclear fleet hence the series of control actions already contained within the manual.

The IESO also provided additional detail and reasons articulating the significant reliability concerns associated with a nuclear shutdown in the IMDC Q&A document published on May 12.¹

1. Disruption and added complexity to real-time operations due to short notice shutdown
2. Removal of large assets from service without proper operational assessments
3. Potential for delays in the return to service of nuclear units once shutdown

In addition to the reasons already discussed:

- When a nuclear shutdown is scheduled, other actions to mitigate the SBG event have already been taken. These actions include dispatch of variable generation, dispatch of nuclear units for their full amount of manoeuvrable capability and curtailment of imports. At this point, all available flexible responses from baseload generation have been implemented.
- The only other option and the last resort before shutting down the nuclear unit is to curtail the linked wheels. Even then, linked wheels will only be curtailed if there are exports that can be scheduled to alleviate the situation.

¹ See Appendix.

Neighbouring Markets:

Regarding concerns of damage to confidence of neighbouring markets - as explained during the webinar, no curtailment will be undertaken for economic reasons. The approach is equivalent to the curtailment of imports and exports for reliability, consistent with today's actions. It is also consistent with actions in neighbouring jurisdictions where the IESO would support the curtailment of wheel-through transactions that are cleared for delivery into Ontario, if the neighbouring market has the reliability concern. In this scenario, the IESO would constrain-on and pay for a previously uneconomic offer to make up for the unexpected drop in supply.

Prediction of Nuclear Shutdowns:

As noted in the revised IMDC, the SBG report is a tool that market participants may use to gauge possible nuclear shutdowns within a future two week period. As with any forecast it becomes less certain in its predictions further out into the future. A longer term forecast of expected frequency of wheel through curtailments would be of limited value given that weather and system conditions are uncertain and/or unknown and change as we get closer to real time.

During the IESO's Spring Awareness Session in April it was noted that SBG will likely occur in over 60% of all hours in future years. In 2015 SBG occurred in 65% of hours, and during 2015 there were 2 nuclear unit shutdowns for SBG (<http://www.ieso.ca/Pages/Power-Data/2015-Electricity-Production-Consumption-Price-and-Dispatch-Data.aspx>). Although this in itself is not a guarantee that shutdowns will occur at the same infrequency, it does illustrate that nuclear shutdowns have been a relatively infrequent - and in fact a last resort - action to manage surplus conditions. SBG will continue to be managed effectively through existing market mechanisms, which include inter-tie scheduling, the dispatch of grid-connected renewable resources, and nuclear manoeuvring. A nuclear unit will only be shut down when all of these actions have been exhausted. Only at this point will the IESO curtail linked wheels if this action is expected to prevent the shutdown.

Transparency: SBG Report, and Issuance of SSRs

Based on the information contained in the SBG report, participants with scheduled linked wheel transactions may choose to keep their transaction scheduled or may opt to withdraw their bid or offer leading up to the forecast nuclear shutdown hour.

As stated in the Q&A, the IESO does not issue SSRs for transaction curtailments. However, in response to the comments received on the IMDC and in an effort to provide further transparency of these actions, the IESO will publish an SSR when we see a nuclear shutdown scheduled several hours out and determine that curtailing linked wheel-through transactions is expected to prevent this shutdown. The SSR will state that transactions may be curtailed for reliability. Such curtailments will be implemented no later than the last run of pre-dispatch for the hour in which a shut-down is forecast.

Alternatives, Compensation, and Transaction Coding

As stated in the IMDC Q&A, the proposed use of the TLRe transaction coding for the curtailment of linked wheel-through transactions for reliability purposes is consistent with existing principles and the appropriate settlement outcome.

If a nuclear shutdown is scheduled, linked wheels have been curtailed to prevent that shutdown, and the tielines are not export congested, a Market Participant can submit export bids that may be scheduled to help alleviate the SBG conditions in Ontario.

The term “transaction failures” that was used in the response in the Q&A document reflects the IESO coding process which assigns this term for **all** curtailed of transactions even when they are being curtailed for reliability and have not failed. All curtailments are assigned a code and we attempted to clarify this treatment in the Q&A.

The Stakeholder Process

Given the narrow scope for input for what has been identified as a time-sensitive need - to provide greater transparency to market participants regarding the circumstances in which the IESO may act to maintain reliability - the use of the IMDC process was necessary. As a result of comments received through this process, the IESO responded to initial stakeholder feedback and reposted the IMDC for further comment.

Based on the feedback received the IESO will review the current IMDC process to see if there are areas for improvement.

APPENDIX:

Excerpt from IMDC-31 – Q&A Published May 12, 2016:

The reason we will curtail linked wheel-through transactions will be solely to maintain reliability.

1. *Disruption and added complexity to real-time operations due to short notice shutdown* - Shutting down a nuclear unit on short notice requires the switching of equipment under high voltage conditions which increases the risk of insulation failure and breakdown. It can also require the removal of high voltage transmission elements from service, to manage voltages under light load conditions when high voltage equipment is already out of service, as well as the re-dispatching of generation to rebalance the system. When these actions are taken in real-time, there is an added risk to reliability due to the potential for equipment failure, and the increased focus on the actions associated with the shutdown.
2. *Removal of large assets from service without proper operational assessments* - The removal from service of such large assets as nuclear units introduces the need to perform operational assessments as mandated by reliability standards, in order to avoid placing the power system in an unknown operating state. Those assessments are complex and time consuming. Executing them on short notice introduces further risk of error, and increases the likelihood of unknown/unstudied operating scenarios unfolding in real-time.
3. *Potential for delays in the return to service of nuclear units once shutdown* - Once shut down, a nuclear generator will be out of service for approximately 72 hours. There is potential that equipment failures may result in a prolonged return to service. While our existing supply mix is adequate, operational experience demonstrates that conditions can quickly change (variability of demand and supply from variable generation, transmission and generation equipment forced outages, etc.). This leads to an increased risk of violating reliability standards and criteria related to supply adequacy during the period when the nuclear unit is out of service.