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## IESO Staff Recommendation to Panel on Exemption Application (General)

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All information submitted in this process will be used by the *IESO* solely in support of its obligations under the "Electricity Act, 1998", the "Ontario Energy Board Act, 1998", the *market rules* and associated policies, standards and procedures and its licence. All submitted information will be assigned the appropriate confidentiality level upon receipt.

Terms and acronyms used in this Form that are italicized have the meanings ascribed thereto in Chapter 11 of the *market rules*.

### PART 1 – GENERAL INFORMATION

<i>Market Participant Name:</i> <b>Hydro One Networks Inc.</b>	
<i>Location/Site:</i> <b>Windsor Area</b>	
<i>Exemption Application ID:</i> <b>1363</b>	<i>Market Participant ID:</i> <b>102007</b>
<i>Description of Exemption Requested:</i> <b>Hydro One Inc. (“Hydro One”) requests exemption from sections 7.1 and 7.2 in Ontario Resource and Transmission Assessment Criteria (ORTAC) for the 150 MW load connecting to Windsor NextStar (WNS) Transformer Station (TS).</b>	
<i>Date Exemption Application Received:</i> <b>May 17<sup>th</sup>, 2023</b>	
<i>Date all relevant application information supplied by exemption applicant:</i> <b>May 17<sup>th</sup>, 2023</b>	
<i>Management Approvals Obtained:</i> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<i>Are there any outstanding disputes, compliance actions, or pending market rule amendments involving the subject matter of this exemption application?</i> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
<i>Are there any outstanding disputes, compliance actions, or pending market rule amendments involving the exemption applicant?</i> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
<i>Section of the Exemption Application and Assessment Procedure under which the exemption application is made:</i> <ul style="list-style-type: none"><li>• <b>Section 1.4 “Application for Exemption – General”</b></li></ul>	
<i>Market Rule(s) or related Market Manual(s) from which exemption is requested:</i> <b>Sections 7.1 and 7.2 in ORTAC</b>	
<i>Third Party Submissions Received:</i> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
<i>Supplemental Assessment Information Attached:</i> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<i>Related Historical Exemption Application(s) or Related Exemption Application(s) in Process:</i> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

**Note:** If YES, list history of *exemption applications*:

#1359 and #1361 are related exemption applications

Role of *exemption applicant* in the market as it relates to this *exemption application*: **Connection Applicant and Transmitter**

## PART 2 – RECOMMENDATION

**Recommendation:** The *IESO* recommends that the *exemption* be granted given: (a) the practical need to balance *IESO* operability/reliability in the short-term, against enabling this new load to connect in the interim period before the system is upgraded; and (b) the limited expected impact on these loads (e.g., increased load interruption rate), local generators (e.g., more restrictive planned outage opportunity windows), Hydro One as the transmitter (e.g., more restrictive planned outage opportunity windows) and customers (e.g., customer interruptions).

The *IESO* supports the *exemptions* on the following bases:

1. The *exemption* from the load security criteria (section 7.1 in ORTAC) and the load restoration criteria (section 7.2 in ORTAC) allows up to 150 MW of load awaiting grid supply to be connected to WNS TS before the required system upgrades in (2) below come into service.
2. The *exemption* is granted until system upgrades in the form of the two 230 kV transmission circuits from Chatham Switching Station (SS) to Lakeshore TS, and two 230 kV transmission circuits from Lambton TS to Chatham SS come into service. These new facilities are scheduled to be in-service by Q4, 2025 and Q4, 2028, respectively. Until this time, Hydro One has ensured that its affected customers understand they will be connected at a lower level of reliability than normally prescribed by ORTAC as a result of this *exemption*.

Note that future ORTAC *exemption* requests in this region prior to sufficient transmission reinforcements and new supply resources planned in West of Chatham area come into service are unlikely to be supported by the *IESO* given the shrinking availability of allowable *planned outages* to support maintenance activities of generators and transmitters, and the increasing complexity in operating the system given the increased amount of manual actions required by operators in real-time.

### Criteria Used in Assessment of General Exemption Applications (Section 1.4.2 of Exemption Application and Assessment Procedure):

(If X appears in a box, the criterion is applicable to this *exemption application* and is evaluated in Part 3 - Details of Assessment; if X does not appear in a box, the criterion is not applicable to this *exemption application*.)

Whether the *exemption* that is the subject-matter of the *exemption application* would, if granted, materially:

- impact the ability of the *IESO* to direct the operations and maintain the *reliability* of the *IESO-controlled grid*;

See below

- impact the ability of the *IESO* to ensure non-discriminatory access to the *IESO-controlled grid*;

See below

**PART 2 – RECOMMENDATION**

- affect the ability of the *IESO* to operate the *IESO-administered markets* in an efficient, competitive, and reliable manner;

See below

- increase costs of *market participants*; or

See below

- increase costs of the *IESO*;

See below

Whether the *exemption* that is the subject-matter of the *exemption application* would, if granted, give the *exemption applicant* an undue preference in the *IESO-administered markets*;

See below

Whether the cost or delay to the *exemption applicant* of complying with the obligation or standard to which the *exemption application* relates is reasonable, having regard to the nature of the obligation or standard, the nature of the *exemption application* and the anticipated impact of non-compliance by the *exemption applicant* in terms of the elements referred to above;

See below

The adequacy of the *exemption plan* submitted by the *exemption applicant*;

See below

Where the *exemption applicant* is the *IESO*, the identification of the benefit to *market participants* of compliance with the obligation or standard relative to the financial and other resources required to achieve compliance within such deadlines as may be applicable;

Where the *exemption applicant* is the *IESO*, the manner in which it proposes to operate in the *IESO-administered markets* or direct the operations and maintain the *reliability* of the *IESO-controlled grid* during the period in which the *exemption* would be in effect;

Whether the *facility* or equipment that is the subject-matter of the *exemption application*:

- was in service or was returned to service on the date on which the obligation or standard to which the *exemption application* relates came into force;

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- was ordered by the *exemption applicant* on or prior to the date on which the obligation or standard to which the *exemption application* relates came into force; or
  
- was in the process of construction on or prior to the date on which the obligation or standard to which the *exemption application* relates came into force; and

The capability of the owner of the *facility* to operate the *facility* consistent with the terms of the proposed *exemption*.

See below

**PART 3 – DETAILS OF ASSESSMENT**

**SUMMARY**

Sections 7.1 and 7.2 of the ORTAC specify the following criteria for load security and restoration, respectively:

Section 7.1:

- With one element out of service, not more than 150 MW of load may be interrupted by configuration and by planned load curtailment or load rejection, excluding voluntary demand management. Planned load curtailment or load rejection, excluding voluntary demand management, is permissible only to account for local generation outages
- With two elements out of service, planned load curtailment or load rejection exceeding 150 MW is permissible only to account for local generation outages. Not more than 600 MW of load may be interrupted by configuration and by planned load curtailment or load rejection, excluding voluntary demand management.

Section 7.2:

- All loads must be restored within approximately a target of 8 hours. When the amount of load interrupted is greater than 150 MW, the amount of load in excess of 150 MW must be restored within approximately a target of 4 hours. When the amount of load interrupted is greater than 250 MW, the amount of load in excess of 250 MW must be restored within a target of 30 minutes.

The System Impact Assessment (SIA) report CAA 2022-726 assessing the connection applications for the WNS load identified that the amount of load that would need to be interrupted and the amount of load that cannot be restored within allowable times exceed the ORTAC criteria. There are two requirements from the SIA that require *exemptions*, as follows:

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**Requirement # 2 in the SIA** required Hydro One to obtain an *exemption* from satisfying section 7.1 load security criteria (e.g., load loss greater than 150 MW) for transmission outages in ORTAC for the new loads supplied by WNS TS because, under the following system conditions:

- With Brighton Beach Customer Generation Station (CGS) on outage and of any of the 230 kV circuits L28C, L29C, W44LC, W45LS, S47C or J5D out of service, up to 562 MW of load is needed to be interrupted;
- With Brighton Beach CGS on outage and any of the 230 kV circuits C42H, C43H, C64H or C65H out of service before the 230 kV transmission circuits from Chatham SS to Lakeshore TS come into service, up to 265 MW of load is needed to be interrupted if the largest local generation unit, Brighton Beach G1 is on outage (G1 outage results in the entire Brighton Beach plant out-of-service);
- During either L28C or L29C outages, 275 MW of load is needed to be interrupted, with all local generation in-service;
- With Brighton Beach CGS on outage, which can be the result of a fault within the Brighton Beach facility, or of the action of a Remedial Action Scheme (RAS) following single loss of J3E, single loss of J4E, single loss of Z1E, single loss of Z7E, or the simultaneous loss of H25J and H26J contingencies, up to 562 MW of load would be required to be interrupted.

**Requirement # 3 in the SIA** required Hydro One to obtain an *exemption* from satisfying section 7.2 load restoration criteria in ORTAC for the new loads supplied by WNS TS because, under the following system conditions, load interrupted in excess of 250 MW cannot be restored within a target of 30 minutes:

- Following the loss of Brighton Beach CGS, which can be the result of a fault within the Brighton Beach facility, or of the action of a RAS following single loss of J3E, single loss of J4E, single loss of Z1E, single loss of Z7E, or the simultaneous loss of H25J and H26J contingencies;
- Following the single loss of L28C, single loss of L29C, single loss of W44LC, single loss of W45LS, single loss of S47C, single loss of J5D, single loss of C42H, single loss of C43H, single loss of C64H, single loss of C65H, simultaneous loss of L29C and L24L, simultaneous loss of W44LC and S47C, simultaneous loss of W44LC and W45LS, simultaneous loss of C42H and C64H, or simultaneous loss of C43H and C65H contingencies.

**Details pertaining to section 7.1 load security criteria in ORTAC:**

To quantify the potential impact of this *exemption* on customers and provide an indication of future interruptions given the conditions and outages noted above, the following historical analysis has been completed.

Over the last 5 years, forced outages to L28C, L29C, W44LC, W45LS or S47C have occurred with a combined rate of 2.8 times per year, as indicated by Hydro One. As the forced outages must coincide with peak load conditions and Brighton Beach CGS out-of-service to cause load interruption, these load security criteria violations are expected to result in customer interruptions occurring significantly less than 2.8 times per year.

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Over the last 5 years, forced outages to J5D have occurred with a rate of 2 times per year, as indicated by Hydro One. As the forced outages must coincide with peak load conditions, Brighton Beach CGS out-of-service and maximum import level from Michigan (i.e. 1550 MW) to cause load interruption, these load security criteria violations are expected to result in customer interruptions occurring significantly less than 2 times per year.

Over the last 5 years, forced outages to C42H, C43H, C64H or C65H have occurred with a combined rate of 1 time per year, as indicated by Hydro One. As the forced outages must coincide with peak load conditions and Brighton Beach CGS out-of-service to cause load interruptions, these load security criteria violations are expected to result in customer interruptions occurring significantly less than 1 time per year until the 230 kV transmission circuits from Chatham SS to Lakeshore TS come in-service.

While the historical percentages of equipment failures noted above suggest that the chances of load interruption will be minimal under expected operation conditions, there might be an increased risk of load interruption during outages to facilitate the needed transmission expansion in the area. As such, *planned outages* to all above listed critical transmission elements and Brighton Beach CGS will be coordinated by the IESO under peak load conditions to mitigate the likelihood for load curtailment or rejection – to the degree possible, balancing the need to enable the construction of new transmission, allowing regular equipment maintenance, and to supply all area load.

#### **Details pertaining to section 7.2 load restoration criteria in ORTAC:**

Related to the need to restore load in timely manner, Hydro One's supporting document for the *exemption* indicates that it cannot restore load interrupted in excess of 250 MW at WNS TS and other stations in the area in 30 minutes in all situations.

Historically, forced outages that are longer than one minute and that require a manual restoration effort have a combined occurrence rate of 1 time per year for L28C, L29C, W44LC, W45LS or S47C as indicated by Hydro One. As the forced outages must coincide with peak load conditions to cause the customer interruption, these load restoration criteria violations are expected to occur with a rate significantly less than 1 time per year.

The forced outages that are longer than one minute and that require a manual restoration effort have a combined rate of 1.8 times per year for J5D, as indicated by Hydro One. As the forced outages must coincide with peak load conditions, Brighton Beach CGS out-of-service and maximum import level from Michigan, (i.e. 1550 MW) to cause the customer interruption, these load restoration criteria violations because of these outages are expected to occur with a rate significantly less than 1.8 times per year.

*Planned outages* for all above listed critical transmission elements will be coordinated by the IESO under peak load conditions to reduce the risk of load curtailment and rejection.

**PART 3 – DETAILS OF ASSESSMENT****Additional Details on Customer Impacts:**

Hydro One's supporting document for the *exemption* indicates that they will allow for the use of higher equipment ratings than the current ones for L28C and L29C, and coordinate or avoid *planned outages* impacting the supply of WNS TS load. Allowance of these measures will decrease the impact that WNS TS load will have on operating flexibility and the *IESO* has taking this into account in our analysis of load interruption amounts above.

The *IESO* will leverage existing operating policy actions to limit impact on customers. Operating policy actions include requiring supply from local generation (e.g., out of economic merit scheduling of supply) and managing otherwise economic intertie flows to avoid pre-contingency customer outages or restore load post-contingency where possible. Load restoration may require returning transmission equipment on a planned outage to service or starting local generation with both solutions potentially taking hours to allow load restoration.

***IESO's* assessment on impact on the ability of the *IESO* to direct the operations and maintain the reliability of the *IESO*-controlled grid:**

The connection of the proposed new load and the expansion of the Lakeshore RAS increase the complexity of operations planning (e.g., outage assessments) and real-time operations at the *IESO*. However, *IESO* staff assessed the impact on the ability of the *IESO* to direct operations and maintain the reliability of the broader Ontario power system as being acceptable for this load connection. As noted above, future ORTAC *exemption* requests may not be supported by the *IESO* due to 1) impacts on loads, and 2) the operating complexity and workload may exceed our ability to properly direct real-time operations and maintain the reliability of the *IESO* controlled grid.

**Impact the ability of the *IESO* to ensure non-discriminatory access to the *IESO*-controlled grid:**

The *exemption* may impact the ability of the *IESO* to ensure non-discriminatory access to the *IESO* controlled grid in situations where the *IESO* must cut loads via manual rotational load shedding schemes. Under section 2.7.8. of Market Manual 7.4, the *IESO* is obligated to, among other things, shed loads equitably across the *IESO*-controlled grid in certain emergency circumstances. This *exemption*, if granted, would provide the *IESO* with discretion to shed load supplied by WNS TS in preference to other loads, without regard to all of the equitable considerations set out section 2.7.8. of Market Manual 7.4, as WNS TS load is allowed to connect before the load security criteria in ORTAC are met.

**Affect the ability of the *IESO* to operate the *IESO*-administered markets in an efficient, competitive, and reliable manner; increase costs of market participants; or increase costs of the *IESO*:**

The measures proposed by Hydro One will limit the impact on the ability of the *IESO* to operate the *IESO*-administered markets in an efficient, competitive, and reliable manner and minimize increasing costs of market participants; or increasing costs of the *IESO*. While the connection of the new load and the expansion of the Lakeshore RAS increase the complexity of operating the grid, *IESO* staff assessed the impact on the ability of the *IESO* to operate the *IESO*-administered markets

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in an efficient, competitive, and reliable manner; increase costs of *market participants*; or increase costs of the *IESO* as not material for this *exemption*. Future *exemption* requests of this type may exceed our ability to operate the *IESO-administered markets* in an efficient, competitive, and reliable manner; increase costs of *market participants*; or increase costs of the *IESO* – and may not be supported by *IESO* staff.

**Whether the *exemption* that is the subject-matter of the *exemption application* would, if granted, give the *exemption applicant* an undue preference in the *IESO-administered markets*:**

Hydro One indicated that WNS TS load will not submit bids in *IESO-administered energy markets* during the term of the *exemption* (e.g., remain non-dispatchable loads) or otherwise participate in any *IESO-administered markets*. Thus, granting this *exemption* will not give Hydro One and its customers undue preference in the *IESO-administered markets*.

**Whether the cost or delay to the *exemption applicant* of complying with the obligation or standard to which the *exemption application* relates is reasonable, having regard to the nature of the obligation or standard, the nature of the *exemption application* and the anticipated impact of non-compliance by the *exemption applicant* in terms of the elements referred to above:**

Granting Hydro One this *exemption* avoids a delay of about 5 years to connect up to 150 MW of manufacturing load waiting to be connected to WNS TS. Therefore, pursuance of this *exemption*, in accordance with the *exemption applicant's* plan, is reasonable given the impact of non-compliance does not adversely impact the ability of the *IESO* to direct operations and maintain the *reliability* of the *IESO-controlled grid*. Furthermore, Hydro One has ensured its customers understand they will be connected at a lower level of load security and restoration than normally prescribed by ORTAC as a result of this *exemption*.

**The adequacy of the *exemption plan* submitted by the *exemption applicant*:**

The *IESO* has determined the *exemption applicant's exemption plan* is adequate. Hydro One plans to require the *exemption* until system upgrades in the form of the two 230 kV transmission circuits from Chatham SS to Lakeshore SS and the two 230 kV transmission circuits from Lambton TS to Chatham SS come in-service by Q4, 2025 and Q4, 2028, respectively. The Lieutenant Governor in Council approved directives requiring the Ontario Energy Board to amend Hydro One's electricity transmission licence to require Hydro One to develop and seek approvals for the two 230 kV transmission circuits from Chatham SS to Lakeshore SS and the two transmission circuits from Lambton TS to Chatham SS (see Orders in Council 1499/2020 and 875/2022). Further, Hydro One indicated that the leave to construct application for the two 230 kV transmission circuits from Chatham SS to Lakeshore SS was submitted to Ontario Energy Board in Q1, 2022, and the Environmental Assessment for the two 230 kV transmission circuits from Lambton TS to Chatham SS



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was started in Q1, 2022. Furthermore, the *IESO* have acquired new supply resources in West of Chatham area, through the expedited long-term procurement process, for in-service date in Q3, 2025.

The ORTAC load security and restoration criteria for the new load are expected to be met after these system upgrades and acquired supply resources are in-service.

**The capability of the owner of the *facility* to operate the *facility* consistent with the terms of the proposed *exemption*.**

In consultation between the *IESO* and Hydro One, Hydro One has demonstrated full intention and the capability to operate WNS TS consistent with the terms of this *exemption*.

**PART 4 – TERMS AND CONDITIONS**

<p><b>Effective Date of Exemption</b></p> <p>(or event causing <i>exemption</i> to become effective)</p>	<p>January 1<sup>st</sup>, 2024</p>
<p><b>Date of Expiration of <i>Exemption</i></b></p> <ul style="list-style-type: none"> <li>• If greater than 5 years, the Panel must be satisfied that the circumstances justify a later date.</li> <li>• Circumstances which will cause the <i>exemption</i> to immediately expire.</li> </ul>	<p>December 31<sup>st</sup>, 2028</p> <p>System upgrades in the form of the two 230 kV transmission circuits from Chatham SS to Lakeshore SS, and the two 230 kV transmission circuits from Lambton TS to Chatham SS come in-service by Q4, 2025 and Q4, 2028, respectively</p>
<p><b>Market Rule(s) or related Market Manual(s) from which the <i>Exemption</i> is granted.</b></p>	<p>Sections 7.1 and 7.2 in ORTAC</p>
<p><b>Restrictions on the manner of operation and/or additional obligations to be met during the term of the <i>Exemption</i>, if any.</b></p>	<ul style="list-style-type: none"> <li>• <i>Planned outages</i> to transmission elements connected to Chatham SS, Lakeshore TS, Keith TS and Lauzon TS will be coordinated or avoided to mitigate the need for load curtailment and rejection at WNS TS.</li> <li>• Transmission elements connected to Chatham SS, Lakeshore TS, Keith TS and Lauzon TS will be restored within the timeframe requested by the <i>IESO</i>, to mitigate the need for load curtailment and rejection at WNS TS.</li> </ul>

**PART 4 – TERMS AND CONDITIONS**

	<ul style="list-style-type: none"> <li>• Thermal ratings higher than the existing ones will be used for L28C and L29C to mitigate the need for load curtailment and rejection at WNS TS</li> <li>• Pre-contingency load curtailment during C42H, C43H, C64H, C65H, L28C, L29C, W44LC, W45LS, S47C, J5D or Brighton Beach CGS outages, and post-contingency load rejection for all WNS TS load must be allowed to maintain system reliability.</li> <li>• WNS TS load will not be allowed to submit bids to the energy markets.</li> </ul>
<p><b>Monitoring Information Required</b></p> <p>Information required to be provided by the <i>exemption applicant</i> for monitoring by the <i>IESO</i>.</p>	<p>Provide confidential project status update every six months to the <i>IESO</i> starting from the effective date of the <i>exemption</i> for the two 230 kV transmission circuits from Chatham SS to Lakeshore SS, and the two 230 kV transmission circuits from Lambton TS to Chatham SS projects.</p>
<p><b>Payment of Costs</b></p> <ul style="list-style-type: none"> <li>• Processing costs (when introduced)</li> <li>• Incremental <i>exemption</i> costs</li> <li>• <i>Settlement amounts</i> to be withheld or repaid.</li> </ul>	<p>N/A</p>
<p><b>Reconsideration/Removal</b></p> <ul style="list-style-type: none"> <li>• Date on which the <i>exemption</i> will be reconsidered (if applicable).</li> <li>• Circumstances under which the <i>exemption</i> will be reconsidered (if applicable) other than unforeseen future change in circumstances.</li> </ul>	<p>December 31<sup>st</sup>, 2028</p>

**PART 4 – TERMS AND CONDITIONS**

<b>Transferability</b> <ul style="list-style-type: none"><li>List the terms and conditions that need to be met to allow for a transfer of this <i>exemption</i> to be approved by <i>IESO</i> staff.</li></ul>	This <i>exemption</i> is not transferrable
<b>Other:</b>	N/A