Ontario Energy Board Staff Supplemental Interrogatories
for the Independent Electricity System Operator

PROJECT NEED

References: (1) CNP Responses to Board Staff Interrogatories, Page 6
(2) CNP Responses to Board Staff Interrogatories, Page7
(3) CNP Responses to Board Staff Interrogatories, Page9
(4) CNP Responses to Board Staff Interrogatories, Page12

Preamble

In Ref (1), the IESO submitted that:

> While the CNP transmission system is not currently classified as Bulk Electricity System from a NERC viewpoint, the IESO agrees with CNP's submission that the CNP transmission system should be able to withstand the N-1 contingency criterion, as a fundamental principle of good utility practice, and also agrees with CNP's response to 1.0(i).

In Ref (2), the CNP submitted that:

> CNP's belief is that, for a system of the size and nature of CNP's transmission system, serving end-users with the diversity and economic significance of those served by CNP's system, good utility practice demands that such system have the ability to withstand the loss of one element such that a readily available secondary supply is available to provide uninterrupted service in the event of the unplanned loss of the system's primary supply.

In Ref (3), the IESO submitted that:

> The IESO agrees with CNP's response to 1.0(iv)"
> Note that the response to 1.0(iv) includes the above statement from CNP.

In Ref (4), the CNP submitted that:

> The IESO is not in a position to comment on the criteria used by CNP to establish the need for reliability improvement, or on the application of those criteria in determining the adequacy of CNP's transmission system. However, in the IESO's opinion, CNP's responses to 1.0(viii) and 1.0(ix) appear reasonable.

Interrogatory SI-11:

Please confirm that, since the CNP transmission system is not considered part of the "bulk" transmission network, NERC Standard TOP-002-2 does not apply to it and that meeting of the N-1 contingency criterion is not a NERC requirement for the CNP transmission system.

IESO Response:

The IESO confirms that CNP's transmission system, although a component of the IESO-controlled grid, is not considered part of the Ontario bulk power system; accordingly, NERC Standard TOP-002-2 does not apply to it in this regard, and the IESO further confirms that the N-1 contingency criterion is not a NERC requirement that CNP is obligated to meet.

Interrogatory SI-12:

Is the IESO aware of any other standard, code or market rule that would require the CNP transmission system to meet the N-1 contingency criterion? Please explain.

IESO Response:

The IESO is not aware of any other standard, code or market rule that would require the CNP transmission system to meet the N-1 contingency criterion. The N-1 contingency planning criterion applies to transmission facilities comprising the bulk power system. As discussed in the IESO's response to SI-11, CNP's transmission system is not part of the bulk power system and therefore is not required meet N-1 contingency planning criteria.

Interrogatory SI-13:

Please explain the IESO's statement that "IESO agrees with CNP's submission that the CNP transmission system should be able to withstand the N-1 contingency criterion, as a fundamental principle of good utility practice".

IESO Response:

The statement was to acknowledge that, in the IESO's view, should CNP choose to meet the N-1 planning criteria, it will enable itself to maintain a higher degree of load security, especially given the noted diversity and economic significance of its customer base.

Interrogatory SI-14:

Further to SI-13, please provide any evidence or supporting documentation that providing for the N-1 contingency criterion for transmission systems supplying load levels similar to CNP's is accepted "by a significant portion of the electrical utility industry in North America" (from the definition of "good utility practice").

IESO Response:

The IESO does not have any further evidence or supporting documentation other than its response to SI-13 above.

Interrogatory S1-15:

In making the statement in SI-13, did the IESO consider the performance of the CNP transmission system, specifically:

- two forced outages in the period, 2005-2008, (one due to a severe snow storm)
- no outages in 2007 and 2008
- no outages in the period Jan - Oct 2009, i.e. almost 3 years without a single outage.

Please explain.

IESO Response:

Please refer to the IESO response to SI-16 below.

Interrogatory SI-16:

Does the IESO have any of its own or other standards or guidelines that relate to reliability/availability/deliverability that would be applicable to a transmission system such as CNP's? Please explain the applicability to the CNP transmission system and provide an analysis based on that system.

IESO Response:

The IESO's reliability criteria pertaining to load security and load restoration are set out in the Ontario Resource and Transmission Assessment Criteria. For transmission systems, such as that which is owned and operated by CNP, the IESO's assessment of load security and load restoration is based on what is designated as "local area" performance. Local areas refer to areas of the IESO-controlled grid wherein the consequences of contingency events are localized and do not have a significant adverse impact on the reliability of the bulk power system. As noted earlier, CNP's transmission system is not considered part of the bulk power system. It is considered on a local area basis with respect to transmission planning and reliability assessment.

One measure that is used to assess the reliability performance of a local area transmission system is the load restoration period. Transmission systems such as CNP's must be planned such that, following design criteria contingencies on the transmission system, all loads must be restored within approximately 8 hours. CNP has consistently met this requirement following transmission system outages.

An additional measure that the IESO uses to assess the reliability performance of a local area transmission system is called the Unsupplied Energy (UE) in each year. UE measures the amount of energy (in MW/minutes) that is not delivered to customers due to planned or unplanned outages of elements that comprise the transmitter's transmission network.

The IESO collects and compares the UE performance of each of the local areas, against an established baseline, on an annual basis. This baseline is periodically (i.e., usually every 5 years) reviewed and recalibrated. Whenever the UE exceeds the baseline this is usually an indication that the transmitter needs to take action to address the root cause of the underlying the outage event. Subsequently, the applicable transmitter is required to explain the root cause(s)

of the system event(s) that resulted in the UE, as well as present to the IESO an appropriate mitigation plan that will minimize the risk of recurrence for its review and approval.

CNP's annual UE violated the established baseline on three occasions over the past 5 years. The UE baseline against which CNP's performance is currently tested was recently assessed and recalibrated based on a review of its last 10 years aggregate performance statistics. The review and assessment of CNP's current UE performance, against the recalibrated baseline, indicates that CNP is currently meeting its reliability requirements.

Interrogatory SI-17:

Does the CNP transmission system meet the reliability/availability/deliverability standards or guidelines in SI-15, if any? Please explain.

IESO Response:

Please refer to the IESO's response to SI-16.

Interrogatory SI-18:

Please explain the IESO's statement that it is not in a position to comment on the criteria used by CNP to establish the need for reliability improvement, or on the application of those criteria in determining the adequacy of CNP's transmission system.

IESO Response:

The IESO's view is that CNP's transmission system is not considered part of the Ontario bulk power system; accordingly, it is not subject to the N-1 mandatory load security requirements. Further, the IESO is not aware of any alternative reliability standards or rules which specifically obligate CNP to meet load security requirements equivalent to the N-1 criteria.

Interrogatory SI-19:

Given that the CNP transmission system is part of the IESO-controlled grid, please comment on the IESO's responsibility pertaining to the reliability of CNP's transmission system as it relates to Section 5 of the Electricity Act 1998, parts (c) and (d).

IESO Response:

The IESO is responsible for directing the operation of the CNP's transmission system in accordance with the IESO-CNPI Operating Agreement and the Market Rules and Market Manuals. In addition, the IESO administers the reliability standards established by the Northeast Power Coordinating Council (NPCC) and the North American Electric Reliability Corporation (NERC), including developing reliability provisions and criteria that are applicable to non-bulk power systems. The IESO also monitors adherence to the reliability standards, and the rules and requirements that are in effect in Ontario.

Interrogatory SI-20:

In the IESO's opinion, based on the evidence on record:

(a) Does the CNP transmission system need to be reinforced so that it meets the N-1 contingency criterion in order to meet existing reliability standards, guidelines or rules including "good utility practice"?

IESO Response:

It is not an IESO requirement that CNP's transmission system be reinforced so that it meets the N-1 contingency criterion, given that it is not considered part of the bulk power system. Also, the IESO is not aware of any other reliability requirements for CNP to reinforce its transmission system in accordance with N-1 criteria; however, the IESO believes that reinforcing its transmission system to meet N-1 criteria will enable CNP to increase load security.

(b) Does the existing CNP transmission system meet existing reliability standards, guidelines or rules including "good utility practice"? If not, please explain.

(c) If it does not, are there any measures that can be undertaken to improve the reliability of the existing CNP transmission system so that it meets existing reliability standards, guidelines or rules without meeting the N-1 contingency criterion? Please explain.

IESO Response:

Please see IESO response to SI-16.

(d) Does the four hour time needed to restore supply to the Fort Erie load from the US National Grid system upon the loss of the primary supply from the Hydro One system seem realistic/reasonable? Are there likely measures that can reduce the time? Please explain.

IESO Response:

The IESO doesn't have a particular view on this issue. The IESO's role in the restoration of supply to the Fort Erie load from the US National Grid system in this regard is limited to coordinating the activities with the rest of the integrated power system operation in Ontario, including approving the transmission equipment outages in Ontario related to the physical switching activities. Similarly, the New York System Operator would be coordinating and approving the transmission equipment outages in the US. The amount of time that is needed to restore supply to Fort Erie from the National Grid system is established by Hydro One and the applicable authorities in New York in conjunction with CNP, and depends on the procedures and protocols instituted by them. The IESO does not perform the physical switching activities, and therefore it is not in a position to assess whether the four hour time period is realistic/reasonable. Furthermore, the IESO is not in a position to recommend additional measures that may be undertaken to reduce this time.