Feedback Form

Regional Electricity Planning in North & East of Sudbury – July 19, 2021

Feedback Provided by:

Name: Peter Drury

Title: Click or tap here to enter text.

Organization: Click or tap here to enter text.

Email: [redacted]

Date: 30th July 2021

Submitting Feedback

Following the North & East of Sudbury regional electricity planning webinar held on July 19, 2021, the Independent Electricity System Operator (IESO) is seeking feedback on the draft Scoping Assessment Outcome Report posted on the IESO's website. The draft report and webinar presentation, which provides an overview of these feedback requests, can be accessed from the engagement webpage.

Please submit feedback to engagement@ieso.ca by August 3, 2021.

Topic	Feedback
What additional information should be considered as part of the Scoping Assessment?	

Topic	Feedback
What other considerations should be made regarding the areas identified as requiring further study through a regional planning approach based on local developments?	
What other areas or specific considerations should be examined through regional planning?	

General Comments/Feedback

500/115kV auto-transformers at Porcupine TS

Table 4-4 from the North & East of Sudbury Scoping Assessment Outcome Report makes ref-

Table 4-4 | End of Life Station Equipment

Station/ Circuit	Timing	Details
Porcupine TS	2025	The one 500/230 kV and two 500/115 kV autotransformers are reaching EOL.

erence to the two 500/115kV auto-transformers at Porcupine reaching end-of-life in 2025. Because of the wide fluctuations in the 500kV voltage at Porcupine (reflecting the significant daily variations in the flow on the 500kV system between Pinard TS & Hanmer TS) it would require an excessive number of tap-changer operations to achieve a relatively stable voltage on the 115kV busbar.

With the 230kV-connected SVC at Porcupine TS maintaining the busbar voltage to around 243kV, the installation of two new ***230/115kV*** auto-transformers at Porcupine TS, to replace

the existing *500/115kV* units, would then permit much greater control of the voltage on the 115kV busbar.

Furthermore, with the 500kV system no longer directly influencing the 115kV busbar voltage at Porcupine TS, the 500kV system voltage could then be allowed to 'float', requiring tap-changer action only when it threatens to exceed, either pre- or post-contingency, the ORTAC specified limits of 500kV or 550kV.

Since the two, existing 500/115kV auto-transformers at Porcupine are the only units on the Hydro One-owned system of this particular ratio, there is no system spare available. Installing more conventional 230/115kV auto-transformers, for which system spares are usually available, would allow a much more rapid replacement to be undertaken should either auto-transformer fail.

230/115kV transformation at Pinard TS

A minimum of one Abitibi Canyon (or an Otter Rapids) unit is normally required to be in-service to maintain acceptable voltages on the 115kV system supplying Moosonee and the Five Nations Communities. Installing 230/115kV transformation at Pinard TS would not only eliminate this need but it would provide a superior synchronous connection to the 230kV-connected generating units than the existing one via Kapuskasing TS.

The disadvantage of this reinforcement would be an increase in transfers from the 230kV system to the 115kV system, aggravating the flows on the 115kV circuits between Hunta SS and Timmins TS.

End-of-Life Refurbishment of 115kV circuits D2H & D3H

Maximising the thermal capacity of these circuits is to be encouraged, particularly if new 230/115kV transformation were to be installed at Pinard TS as this would, subject to addressing the bottleneck between Hunta SS and Timmins TS, allow more of the capacity of the Abitibi River & Mattagami River generating units to be accessed in the event of an extended outage of 500kV circuit D501P.

Difficulties in Maintaining Thermal Limits During Outages of 500kV circuit D501P

Reinforcing the existing system north of Timmins with a new 230kV line between Porcupine TS and Hunta SS (along with new 230/115kV transformation at Hunta SS) would significantly enhance the performance of the 115kV system while addressing the thermal bottleneck presented by circuits H6T & H7T between Timmins TS and Hunta SS.

It would also further enhanced the synchronous connection between the 230kV busbars at Pinard TS and Porcupine TS, providing a strong alternative path during outages to the 500kV circuit D501P.

Reinforcement of the Kapuskasing area

Installing a new 230kV line between Porcupine TS and Hunta, together with new 230/115kV transformation at Hunta, would directly benefit the Kapuskasing/Hearst area, particularly under outage conditions involving the 230kV circuit L21S between Little Long & Spruce Falls TS.

It could also provide the basis for longer-term 230kV transmission reinforcement into the Kapuskasing area should new loads materialise in the future.

500/230kV auto-transformers at Porcupine TS

Table 4-4 from the North & East of Sudbury Scoping Assessment Outcome Report also makes reference to one of the 500/230kV auto-transformers at Porcupine reaching end-of-life in 2025.

If the two 500/115kV auto-transformers at Porcupine TS were to be replaced with 230/115kV units, then, depending on the load-generation balance on the 115kV system, there could be an increase in the transfers through the 500/230kV auto-transformers. With the potential for additional 230kV-connected load in the Timmins area, it would therefore appear prudent when replacing the end-of-life unit, to install one with a rating that is higher than the 250MVA of the current unit.