



Decision of the Independent Panel – Exemption Application 1365

Part 1 – Panel Members

Panel Members hearing the application: Tom Mitchell, Fiona Oliver-Glasford and Robert Wong

Part 2 – General Information

1. <i>Exemption Application</i> ID: 1365
2. <i>Market Participant</i> Name: Algoma Steel Inc. (“Algoma” or the “Applicant”)
3. Location/Site: Sault Ste. Marie, LAKE SUPERIOR POWER Cogeneration Station (CGS) / Electric Arc Furnace (EAF) Customer Transmission Station (CTS)
4. Role of Applicant in the market as it pertains to this <i>exemption application</i> : <i>Market Participant – self-scheduling generation facility and non-dispatchable load facility</i>
5. Date <i>Exemption Application</i> Heard: November 27, 2024
6. Did <i>Exemption Applicant</i> agree to Terms and Conditions of the <i>IESO</i> Staff Recommendation: Yes
7. <i>Market Rule(s)</i> or related <i>market manual(s)</i> from which the <i>exemption</i> is requested: <i>Market rules</i> Chapter 9 s.2.4A.2
8. Material Reviewed: a) <i>IESO</i> Staff Presentation b) Algoma <i>Exemption Application</i> c) Algoma Confidential Submission d) <i>IESO</i> Staff Recommendation

9. Applicant's Position: Algoma Steel Inc. ("Algoma") requests an *exemption* from *market rules* Chapter 9, s.2.4A.2, whereby its new electric arc furnace *non-dispatchable load facilities* (collectively, Electric Arc Furnace ("EAF")) may be settled in a manner whereby the generation from the Lake Superior Power *self-scheduling generation facilities* (collectively, "LSP") is used to offset the EAF loads, such that the *facilities* are settled collectively on a 'net' basis.

10. IESO Staff Recommendation: IESO Staff recommend that the *exemption* be granted, with limited exceptions, given that it would result in the most appropriate settlement treatment in these circumstances, in compliance with the Criteria for Exemption set out in s.1.4.2 of *market manual 2.2*, and would avoid a scenario whereby the *exemption applicant* is required to pay significant amounts to use its own electricity and equipment, to the benefit of other *market participants* and consumers.

Part 3 – Decision

Decision:

Exemption 1365 is granted to Algoma subject to the terms and conditions set forth below.

Part 4 – Reasons

Reasons of the Panel:

Compliance with the *market rules* for all *market participants*, including *non-dispatchable loads*, is mandatory. However, it is possible for the IESO to grant an *exemption* from the *market rules* on a discretionary and case-by-case basis.

In rendering the decision, the Panel considered the IESO Staff Recommendation, the materials submitted by the IESO and Algoma, as well as the applicable *market rules*. The Panel considered the specific characteristics and configuration of Algoma's facilities, the applicable system conditions and the resulting specific requirements of the System Impact Assessment ("SIA") that IESO issued for EAF.

The SIA concluded that the proposed connection of EAF is expected to have no material adverse impact on the *reliability* of the *integrated power system*, provided that all requirements in the SIA are implemented. The granting of Algoma's *exemption application* would not deviate from those SIA requirements in any material respect.

IESO Staff have not identified any material impact on the efficiency, competitiveness or *reliability* of the *IESO-administered markets* or increased costs to *market participants* (or consumers) were the *exemption* to be granted.

The settlement treatment contemplated by the *exemption* would not significantly increase the IESO's costs. While the *exemption* would impose some small amount of administrative burden on IESO Staff, there is no need to update IESO's tools or systems to accommodate the *exemption*.

Under the *market rules* without an *exemption*, Algoma would be required to pay uplift and Global Adjustment ("GA") charges (the "Charges") on the electricity it consumes from the *IESO-controlled grid*, including electricity conveyed directly from LSP to EAF via solely

Algoma Steel Inc.'s ("Algoma") own equipment (which equipment is defined under the *market rules* as being part of the *IESO-controlled grid* notwithstanding that Algoma owns the equipment, maintains the equipment and directs its day-to-day operations) in satisfaction of the System Impact Assessment ("SIA") (as shown in Appendix A-1). With respect to the Charges, the cost differential if the *exemption* is not granted is comprised of Global Adjustment ("GA") and uplifts, with the vast majority attributable to GA. The following considerations are relevant:

- Generally, GA is derived from the difference between the total payments made to certain contracted or regulated *generators*, conservation programs, and any offsetting market revenues (the "Total Cost Base"); and paid as a component of the total commodity cost for electricity by all *market participants* and consumers in Ontario (the "Total Cost Base Distribution").
- Neither the participation of the Electric Arc Furnace ("EAF") in the *IESO-administered markets*, nor the granting of the *exemption*, would increase the Total Cost Base.
- With respect to the Total Cost Base Distribution, operation of the EAF with the *exemption* in-place would result in a neutral (zero) impact on the costs that are currently paid by *market participants* and consumers to the extent that the EAF receives its supply of electricity from Lake Superior Power *self-scheduling generation facilities* ("LSP") via solely its own equipment. To the extent that the EAF takes its supply otherwise from the *IESO-controlled grid*, it will have to pay Charges on that supply in the ordinary course, which would decrease the Total Cost Base Distribution payable by other *market participants* and consumers.
- A similar dynamic exists with respect to uplifts, whereby having the exemption in-place would result in neutral (zero) impact on the Total Cost Base Distribution for uplifts that would be paid by *market participants* and consumers as it relates to electricity supplied by LSP to the EAF via solely its own equipment.

Algoma has also identified certain contingency modes of operation that may arise rarely in time-limited operational circumstances (equipment failure, equipment maintenance), as further described in Appendix "A" to this Decision. IESO Staff have considered these contingency modes and made certain recommendations in the IESO Staff Recommendation accordingly, which this Panel has accepted (as reflected in Part 5 of this Decision below). IESO Staff advise that the operation of the contingency modes is not likely to create a significant administrative burden for IESO Staff.

The granting of this *exemption* will not give Algoma undue preference in the *IESO-administered markets*, but rather, represents the most appropriate *settlement* treatment in these specific circumstances.

It is expected that the basis for the *exemption* will expire when the project known as the Northeast Bulk System Reinforcement comes in-service, as this would obviate the above-noted requirement of the SIA that Algoma convey electricity directly from LSP to EAF via solely Algoma's own equipment.

Part 5 – Terms and Conditions

<p>Effective Date of <i>Exemption</i> (or event causing exemption to become effective)</p>	<p>In-service date of the Electric Arc Furnace, or as soon thereafter as possible.</p>
<p>Date of Expiration of <i>Exemption</i></p> <ul style="list-style-type: none"> • If greater than 5 years, the Panel must be satisfied that the circumstances justify a later date • Circumstances which will cause the exemption to immediately expire 	<p>The <i>exemption</i> will remain in effect concurrently until the in-service date of the project known as the Northeast Bulk System Reinforcement, as declared by <i>IESO</i>.</p>
<p><i>Market rule(s) or related market manual(s) from which the exemption is granted</i></p>	<p><i>Market rule</i> Chapter 9, s.2.4A.2</p> <p>If the above <i>market rule</i> is amended as part of the Market Renewal Program (MRP), the <i>exemption</i> shall apply to the <i>market rule(s)</i> which provide the same obligations.</p>

<p>Restrictions on the manner of operation and/or additional obligations to be met during the term of the <i>exemption</i>, if any</p>	<p>Algoma Steel Inc. ("Algoma") operates a group of closely located <i>registered facilities</i> in the <i>IESO-administered market</i> (collectively, the "Steel Mill"), which after the construction of the Electric Arc Furnace ("EAF") will include:</p> <p>PATRICK ST Transmission Station ("TS")</p> <ul style="list-style-type: none"> • PATRICKSTEEL-LT.T6_LF (non-dispatchable LOAD) ("Patrick St. TS") <p>ASI TUBE TS</p> <ul style="list-style-type: none"> • ASITUBE-LT.T1_LF (non-dispatchable LOAD) ("ASI Tube TS") <p>LAKE SUPERIOR POWER Cogeneration Station (CGS) / EAF Customer Transmission Station (CTS)</p> <ul style="list-style-type: none"> • LAKESUPERIOR-LT.GTG2 (self-scheduling GEN, up to 42.5 MW) ("LSP GTG2") • LAKESUPERIOR-LT.GTG1 (self-scheduling GEN, up to 42.5 MW) ("LSP GTG1") • LAKESUPERIOR-LT.STG1 (self-scheduling GEN, up to 25 MW) ("LSP STG") • EAF-LT.LOAD1 (non-dispatchable LOAD, up to 140MW) (EAF, as defined above) <p>Under the exemption, Algoma can potentially operate the Steel Mill in four potential modes of operation (as described in Appendix A).</p> <p>Mode 1 – Normal-EAF Operation</p> <p><i>Exemption</i> relief: applies</p> <p>Mode 2 – Normal-Backfeed</p> <p><i>Exemption</i> relief: does not apply</p> <p>Contingency Mode 3 – Maintenance-Breaker (breaker 1505 open)</p> <p><i>Exemption</i> relief: applies, except to the <i>energy</i> supplied or taken from LSP GTG2</p> <p>Contingency Mode 4 – Maintenance-Cogen (switch 1502 or 1509 open)</p> <p><i>Exemption</i> relief: applies</p>
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<p>Monitoring Information Required</p> <p>Information required to be provided by the <i>exemption applicant</i> for monitoring by the <i>IESO</i></p>	<p>For Contingency Mode 3, Algoma Steel Inc. ("Algoma") is obligated to update and maintain their <i>meter</i> registration status accordingly. This will enable the appropriate <i>settlement</i> treatment during this mode of operation which does not include the application of the <i>exemption to energy</i> supplied or taken from LAKESUPERIOR-LT.GTG2 (self-scheduling GEN, up to 42.5 MW) ("LSP GTG2").</p>
<p>Payment of Costs</p> <ul style="list-style-type: none"> • Processing costs (when introduced) • Incremental <i>exemption</i> costs • Settlement amounts to be withheld or repaid 	<p>N/A</p>
<p>Reconsideration/Removal</p> <ul style="list-style-type: none"> • Date on which the <i>exemption</i> will be reconsidered (if applicable) • Circumstances under which the <i>exemption</i> will be reconsidered (if applicable) other than unforeseen future change in circumstances 	<p>Any new System Impact Assessment related to Lake Superior Power <i>self-scheduling generation facilities</i> ("LSP") or the Electric Arc Furnace, (if any) would trigger the reconsideration of the <i>exemption</i>.</p>
<p>Transferability</p> <ul style="list-style-type: none"> - 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 - Transferability in respect of a corporation, refers to a change of control of the corporation within the meaning of the Business Corporations Act (Ontario) 	<p>The transferability of this <i>exemption</i> will require Exemption Panel approval.</p>
<p>Other:</p>	<p>N/A</p>

Appendix A - Modes of Operation

Under this *exemption*, Algoma Steel Inc. (“Algoma”) can operate the Steel Mill *facilities* in two distinct modes (referred to herein as “Normal” modes, as distinct from the “Contingency” modes discussed below), which are described herein as “Mode 1” and “Mode 2” and summarized in the following table.

Normal Modes

Mode of Operation	Name	Description	Exemption Application Reference	Appendix A Illustration Reference
Mode 1	Normal – Electric Arc Furnace (“EAF”) Operation	Lake Superior <i>self-scheduling generation facilities</i> (“LSP”) and EAF <i>settled</i> together on ‘net’ basis	Paragraph 14	A-2
Mode 2	Normal – Backfeed	LSP backfeeds Patrick St. Transmission Station	Paragraph 15	A-3

In Normal Mode 1, the *exemption* applies to the *settlement* treatment of LSP and EAF (i.e., the *registered facilities* contained therein would be *settled* on a ‘net’ basis as set out above).

In Normal Mode 2, EAF and LSP are disconnected from the *IESO-controlled grid* and therefore, the *exemption* does not apply.

These modes are now described in further detail.

Mode 1 – Normal-EAF Operation

Exemption relief: applies

Refer to Appendix A-2 for illustration.

- EAF and LSP connected to *IESO-controlled grid* via Cogen 1 and Cogen 2 lines (switches 1502 and 1509 at Cogen 1 and Cogen 2 are closed).
- The generation from LSP will be conveyed to EAF, via solely its own equipment as shown in Appendix A-2, to offset the EAF loads, and receive the ‘net’ *settlement* treatment contemplated by the *exemption*, based on the measurements at the respective *delivery points*.
- Any incremental withdrawals or injections of electricity into the *IESO-controlled grid* (excluding electricity conveyed from LSP to EAF via solely its own equipment) will be *settled* in the ordinary course of *settlement* (withdrawals will be subject to Charges, injections will be *settled* at the applicable *market price*). For certainty, the *exemption* would only be applicable to the flow of electricity from LSP to EAF via solely its own equipment.

- Note: as the *exemption* contemplates that the Electric Arc Furnace and Lake Superior Power *self-scheduling generation facilities* be *settled* on a 'net' basis, Algoma will not receive 'gross' *settlement* treatment (or similar treatment in other *IESO* programs¹) for any particular *registered facility(s)* during periods where Mode 1 applies.

¹ See footnote 3, *infra*.

Mode 2 – Normal-Backfeed

Exemption relief: does not apply (or exemption not granted)

Refer to Appendix A-3 for illustration.

- In accordance with the System Impact Assessment (“SIA”)², the Electric Arc Furnace (“EAF”) and Lake Superior Power *self-scheduling generation facilities* (“LSP”) disconnected from *IESO-controlled grid* (switches 1502 and 1509 at Cogen 1 and Cogen 2 are open).
- Once the LSP/Patrick St. Transformer Station (“TS”) breaker is closed, the generation from LSP may be utilized to offset the Steel Mill load supplied from Patrick St. TS via the low voltage circuit (34.5 kV). At this point LSP is effectively ‘behind the meter’ of the Steel Mill load supplied from Patrick St. TS.
- Similar to Mode 1, to the extent that the Steel Mill load supplied from Patrick St. TS is being offset by generation from LSP, Algoma should not expect ‘gross’ *settlement* treatment (or similar treatment in other *IESO* programs³) of the Steel Mill load to the extent of such offset.

² SIA – Project Description.

³ *IESO* Staff have noted this for Algoma Steel Inc. (“Algoma”) staff, in particular, as it relates to the *Capacity Auction* context, as acknowledged in Paragraph 21 of Algoma’s *exemption application*. For further clarity: if the EAF is registered as a physical (Hourly Demand Response) resource, consumption of the EAF that is supplied from LSP will not be considered as part of the calculation of its baseline consumption determined for the purposes of participating in the capacity market.

Contingency Modes

In its *exemption* application, the *exemption applicant* identified certain contingency modes of operation that may arise rarely in time-limited operational circumstances (equipment failure, equipment maintenance); these contingency modes are assessed below, as further described in the *IESO* Staff Recommendation. To the extent other contingency scenarios may arise, the *IESO* Staff Recommendation and this Decision would need to be reviewed and adjusted accordingly.

The Contingency Modes are variants of Mode 1 and *IESO* Staff recommendations for Mode 1 apply unless otherwise indicated (in particular, for Contingency Mode 3).

Note: these comments relate only to the operational (*settlement*) context provisioned by the proposed *exemption*, and not in a *reliability* context (or other context) as may be addressed in the System Impact Assessment ("SIA") and *market rules*, among other things.

Contingency Mode 3⁴ – Maintenance-Breaker (breaker 1505 open)

Exemption relief: does not apply to the energy supplied or taken from LAKESUPERIOR-LT.GTG2 (self-scheduling GEN, up to 42.5 MW) ("LSP GTG2")

Refer to Appendix A-4 for illustration.

- Electric Arc Furnace ("EAF") and Lake Superior Power *self-scheduling generation facilities* ("LSP") connected to *IESO-controlled grid* via Cogen 1 and Cogen 2 lines (switches 1502 and 1509 at Cogen 1 and Cogen 2 are closed).
- As a result of equipment failure or equipment maintenance, breaker 1505 would be opened.
- LSP GTG2 would not convey electricity to the EAF, via solely its own equipment during Contingency Mode 3, and for this reason the *exemption* does not apply to the *energy* supplied or taken from LSP GTG2 in this mode.
- The *exemption* would still apply to EAF, LAKESUPERIOR-LT.GTG1 (self-scheduling GEN, up to 42.5 MW) ("LSP GTG1") and LAKESUPERIOR-LT.STG1 (self-scheduling GEN, up to 25 MW) ("LSP STG") in this mode.
- Algoma Steel Inc. does not propose to implement this mode of operation unless it receives prior approval from the *IESO* and the Hydro One Inc. transmitter⁵.
- Upon approval of the *exemption*, to operate in Contingency Mode 3, Algoma is obligated to update and maintain their *meter* registration status accordingly. This will enable the appropriate *settlement* treatment during this mode of operation which does not include the application of the *exemption* to *energy* supplied or taken from LSP GTG2.

⁴ *Exemption Application*, Paragraph 16(c).

⁵ *Exemption Application*, Paragraph 16(c).

Contingency Mode 4⁶ – Maintenance-Cogen (switch 1502 or 1509 open)

Exemption relief: exemption applies

In the event of an outage to either Cogen 1 or Cogen 2:

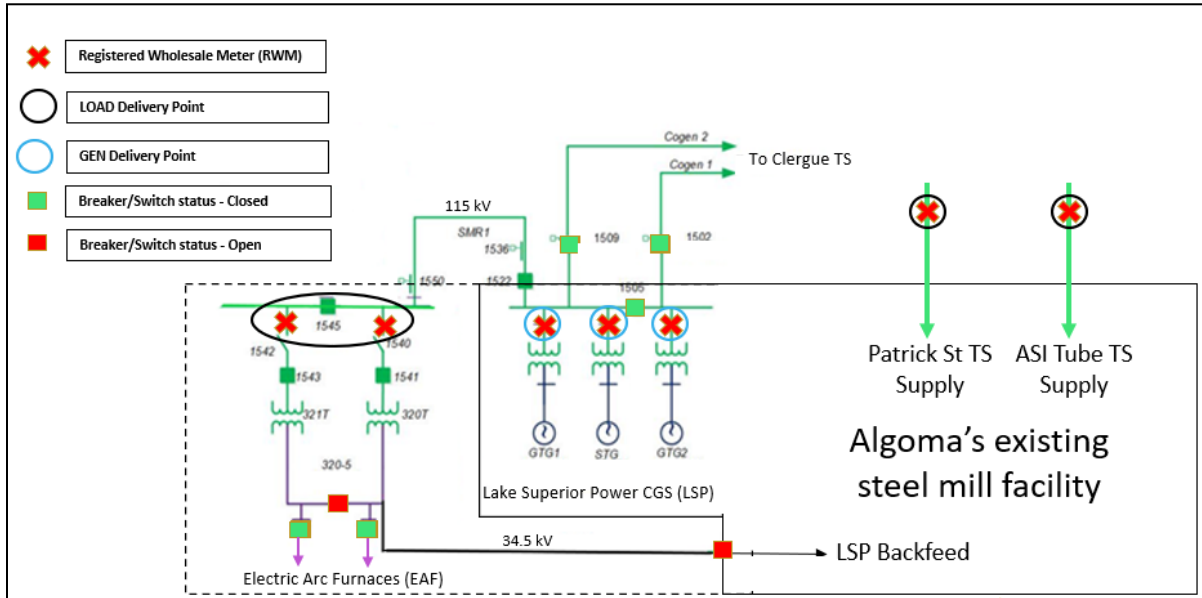
- Electric Arc Furnace ("EAF") and Lake Superior Power *self-scheduling generation facilities* ("LSP") connected to *IESO-controlled grid* via Cogen 1 line (switch 1502 is closed) and Cogen 2 is taken out of service (switch 1509 is opened); or
- EAF and LSP connected to *IESO-controlled grid* via Cogen 2 line (switch 1509 is closed) and Cogen 1 is taken out of service (switch 1502 is opened).

The *exemption* is not affected (applies to EAF, LAKESUPERIOR-LT.GTG1 (self-scheduling GEN, up to 42.5 MW), LAKESUPERIOR-LT.GTG2 (self-scheduling GEN, up to 42.5 MW) and LAKESUPERIOR-LT.STG1 (self-scheduling GEN, up to 25 MW) in this mode.

⁶ *Exemption Application*, Paragraph 16(a) and 16(b).

Appendix A-1: Normal Operating Conditions without Exemption

The following is an illustration of the Steel Mill under normal operating conditions, without an *exemption*, which is in accordance with *market rule* Chapter 9 s.2.4A.2.



The *settlement* equations for Lake Superior Power *self-scheduling generation facilities* and Electric Arc Furnace are as follows:

$$DP_{GEN_GTG1} = (Meter_{GTG1})$$

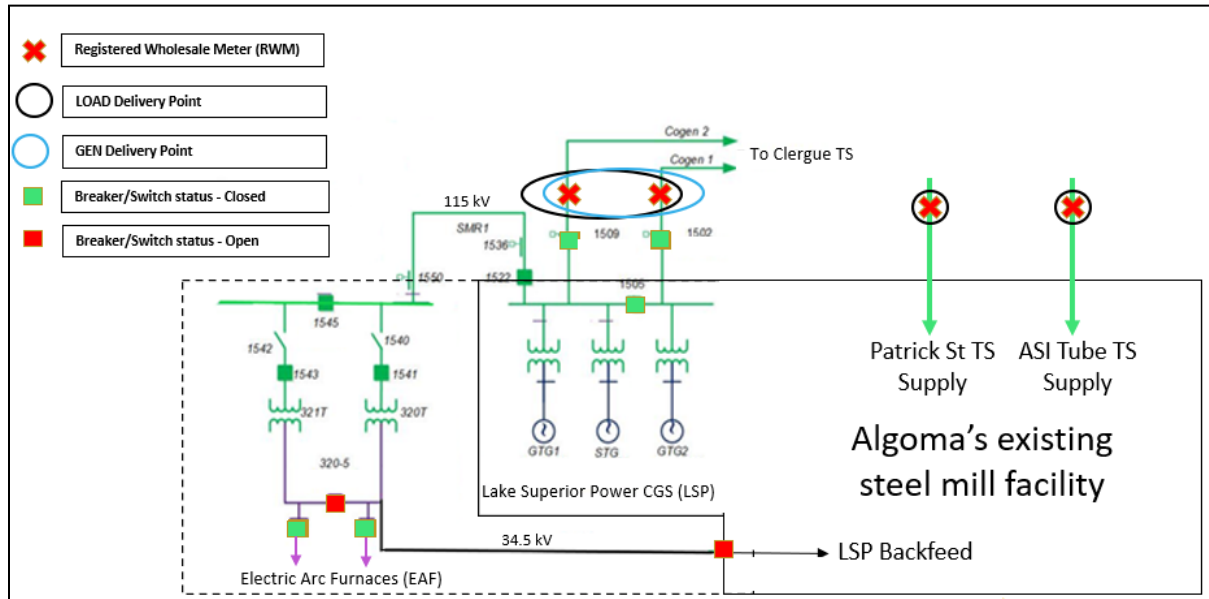
$$DP_{GEN_STG} = (Meter_{STG})$$

$$DP_{GEN_GTG2} = (Meter_{GTG2})$$

$$DP_{LOAD_EAF} = (Meter_{EAF_T1} + Meter_{EAF_T2})$$

Appendix A-2: Mode 1 – Normal-EAF Operation

The following is an illustration of the Steel Mill under normal Electric Arc Furnace ("EAF") operation and *exemption* relief applies from *market rule* Chapter 9 s.2.4A.2.



The *settlement* equations for Lake Superior Power *self-scheduling generation facilities* and EAF are as follows:

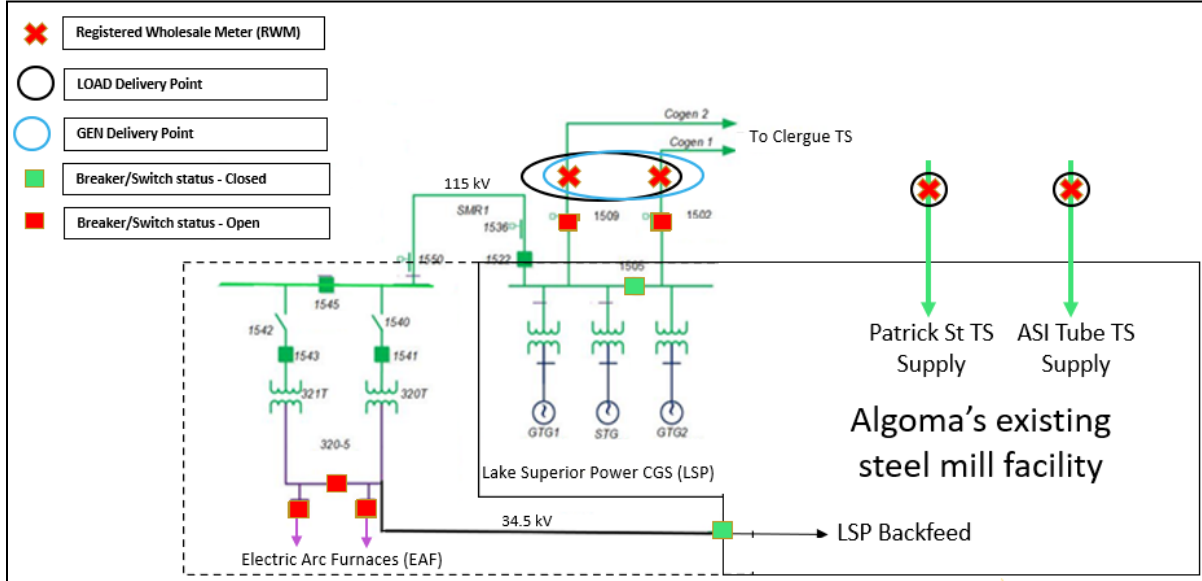
$$DP_{GEN} = (Meter_{COGEN1} + Meter_{COGEN2}) \text{ [Net Injection at the } \textit{metering interval}]$$

$$DP_{LOAD} = (Meter_{COGEN1} + Meter_{COGEN2}) \text{ [Net Withdrawal at the } \textit{metering interval}]$$

Appendix A-3: Mode 2 - Normal-Backfeed Operation

The following is an illustration of the Steel Mill when the generation from Lake Superior Power *self-scheduling generation facilities* ("LSP") will be utilized to offset the Steel Mill load supplied from Patrick St. Transformer Station.

The *exemption* does not apply (or *exemption* not granted, consisted with current practice).



The *settlement* equations for LSP and Electric Arc Furnace are as follows:

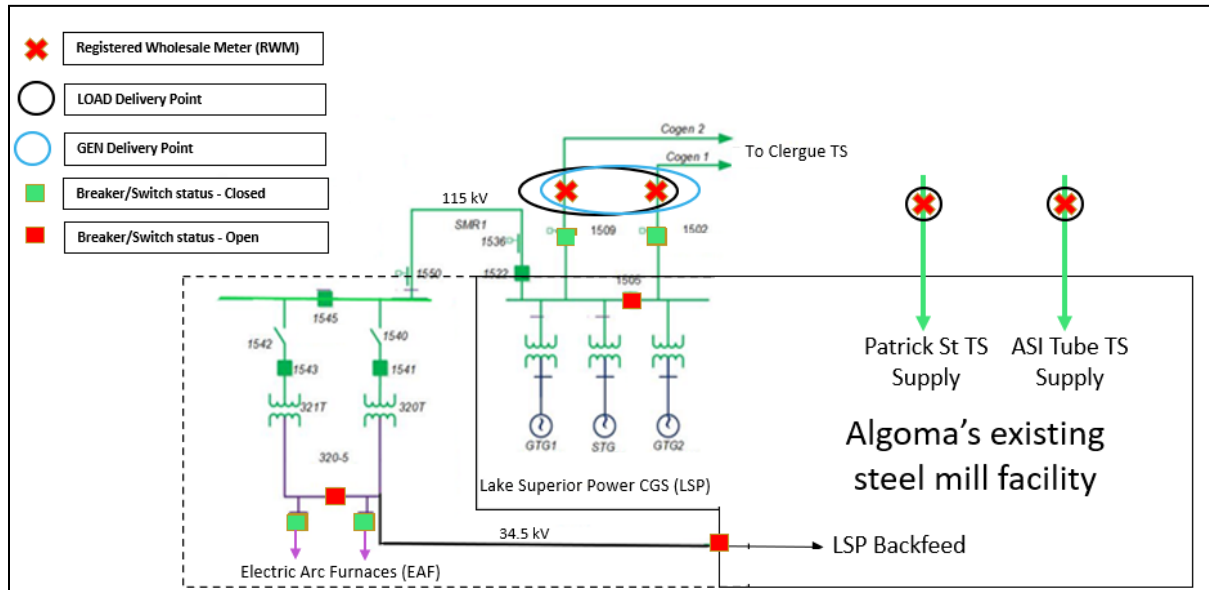
$$DP_{GEN} = (Meter_{COGEN1} + Meter_{COGEN2}) \text{ [Net Injection at the } \textit{metering interval}]$$

$$DP_{LOAD} = (Meter_{COGEN1} + Meter_{COGEN2}) \text{ [Net Withdrawal at the } \textit{metering interval}]$$

Appendix A-4: Contingency Mode 3 - Maintenance-Breaker (breaker 1505 open)

The following is an illustration of the Steel Mill when there is an equipment failure or equipment maintenance that requires breaker 1505 to be opened.

The *exemption* does not apply to the *energy* supplied or taken from LAKESUPERIOR-LT.GTG2 (self-scheduling GEN, up to 42.5 MW).



The *settlement* equations for Lake Superior Power *self-scheduling generation facilities* and Electric Arc Furnace are as follows:

$$DP_{\text{GEN}} = (\text{Meter}_{\text{COGEN2}}) [\text{Net Injection at the } \textit{metering interval}]$$

$$DP_{\text{LOAD}} = (\text{Meter}_{\text{COGEN2}}) [\text{Net Withdrawal at the } \textit{metering interval}]$$

$$DP_{\text{GEN_GTG2}} = (\text{Meter}_{\text{COGEN1}})$$