Gerdau Long Steel North America

Delivered by Email

February 13th, 2023

IESO Stakeholder Relations

Andrew Duncan, Senior Advisor, Business Advisor - Industrial

Independent Electricity System Operator

Re: Gerdau's comments regarding the Independent Electricity System Operator (IESO) staff's proposal to clarify and reconsider Gerdau's "Exemption" (Exemption Reconsideration)

Dear Andrew,

Gerdau appreciates the opportunity to provide comments, history, and context with respect to the Exemption process for the benefit of the IESO and the IESO board of directors. Gerdau would like to raise an issue with respect to the Exemption Reconsideration process, that has suffered from some stops/starts and misunderstandings respect with to IESO' s timelines. After the IESO put the process on hold in August 2022 to accommodate the MSP comments, Gerdau focused on its response to the MSP. In November 2022, although Gerdau was preparing to file comments on IESO's proposed exemption, Gerdau was advised by IESO that its process was again delayed and that the IESO would provide a new timeline. Gerdau did not hear from the IESO that the new exemption proposals were being presented at the March IESO board meeting until the first week of February 2023. Accordingly, Gerdau now finds itself now scrambling to ensure IESO receives our comments, duly noted "on the record" to ensure that IESO gives due consideration to Gerdau's concerns. Gerdau believes the content of this submission is very important to ensure IESO's proposed exemption is feasible.

Change of Circumstance regarding Gerdau's proposed exemption

Gerdau is pleased to share with the IESO that it is investing in its Whitby facility to renew its Electric Arc Furnace (EAF). This project has been confirmed for 2023 and the replacement will

begin in May with an estimated completion date by the end of June, 2023 with commissioning taking place a few months thereafter. The new EAF is expected to operate with a similar operating pattern to the existing furnace. The project is well aligned with that of the provision of OR in that its focus is to maximize power on time, decrease power off time and improve reliability.

Gerdau received a request from the IESO to provide a normal consumption profile (NCP) in support of the IESO Staff Recommendation to the Panel on Exemption Reconsideration. At this time, Gerdau respectively requests that the IESO proceed with the exemption application using Gerdau's engineering estimates for the NCP and that the Panel on Exemption Reconsideration approve the exemption. Gerdau would be agreeable to a condition of approval that stipulates our obligation to demonstrate to the satisfaction of the IESO, that the actual consumption is consistent with the estimated profile. If not, Gerdau understands and is motivated to ensure the appropriate NCP is utilized in a subsequent process.

This new EAF provides the perfect opportunity for Gerdau to continue in its practice of inviting key stakeholders to the mill to see the EAF in operation. Gerdau would like to extend the offer to IESO, MACD and the MSP to invite Senior leaders and staff to visit the mill, understand the process, receive an overview of Gerdau's internal software, training and compliance efforts with respect to the provision of OR.

Background & Context

In the early days of electricity market development in Ontario, the IESO's predecessor, the Independent Market Operator (IMO), was extremely supportive in the development of demand side participation in the Operating Reserve (OR) market. In fact, senior leadership at the IESO were deeply involved in the technical details as well as the business case to ensure the market rules and/or market rule exemptions (the Exemption) and the dispatchable load working group guidelines taken together, facilitated load and specifically batch load participation in a way that improved the reliability of the grid. Participation as a dispatchable load is and was also very important to Gerdau from a competitive perspective because we were trying to retain the value of the interruptible nature of our load recognized in the tariffs in place before the market opened in 2002.

The IMO staff actively recruited load participation citing benefits such as: increased available resources; improved competition (lower prices in the OR markets); improved visibility and understanding of behaviour with respect to batch load operational status. Importantly, the IMO recognized that batch loads will impact the supply/demand balance whether they are registered as dispatchable or not. But only if a batch load is registered as dispatchable, does the IESO then have knowledge and <u>control</u> over how the load is operating and can make better reliability decisions.

Gerdau appreciates the IESO and the Market Surveillance Panel (MSP) concerns with respect to OR "availability" and "compensation". However, Gerdau continues to question if the IESO shared sufficient information and analyses to demonstrate that these issues were considered and addressed in the 2005 Exemption. The approach in the original Exemption was made necessary

mainly because the IESO tools were not and are still not designed to facilitate a de-rate in availability for loads as they are for generators which IESO itself acknowledged in its recent Response to Market Surveillance Panel Exemption Reconsideration Feedback dated November 3, 2022 (IESO's MSP Response).[1]

Reliability

Unlike a generator and due to an IESO tool deficiency existing since market opening, a load cannot declare itself unavailable (de-rate) when it cannot operate normally due to a mechanical issue. The IESO led a process with participation by batch loads and MACD, to develop a work-around solution that included an Exemption, facility registration, and operating guidelines to emulate, to the best of its ability, a load's ability to de-rate. Although not a perfect solution, it was intended to be a temporary fix allowing the IESO to attract new OR resources to the Ontario market while not compromising reliability. This work-around solution has been working for nearly 20 years although it was intended to be a temporary solution while a de-rate tool for loads was developed.

As part of this process, the IESO investigated if deviations caused by the normal process variations of batch loads would cause reliability concerns. The following excerpt from the Appendix B, "Minutes - Dispatchable Load Participation in the Reserve Market - 6-16-2004" demonstrates that IESO understood batch loads would cause deviations but yet concludes that there should be no concern about **reliability,** even if deviations were double (180 MW), leading the IESO to increase in the load participation limit.

> *"A review of dispatchable loads participating in 10-minute reserve showed that, with the current level of 245 MW participating, the dispatch deviation can be as great a 90 MW. The IMO has determined that it is acceptable to allow a deviation of twice this magnitude while still remaining within the available AGC margin."*

Sharing this information with the MSP in response to the concerns raised in its May 2017 report would undoubtedly provide necessary context to understand that batch load deviations were expected, would have been larger if the load was **not dispatchable** (not controlled when not operating) and the IESO's own analysis demonstrated reliability was, in fact, **not compromised**.

Compensation

The revised Exemption represents a material amendment of a core component of the 2005 Exemption which results in a significant deterioration of the business case for Gerdau's participation as an exempt dispatchable load and despite no significant changes in Gerdau's batch load operation or bidding and offer practices over this 19-year period.

[1] "The consumption pattern of the Exempt Loads is not modelled in the IESO's software – they are not able to reflect this behaviour through real-time information submissions (de-rates to the IESO. In the long term, the best "feasible alternative" would be for the IESO to update its tools, which would allow the Exempt Loads to participate in the same manner as more traditional generation facilities. IESO Response to Market Surveillance Panel Exemption Reconsideration Feedback, November 3, 2022

IESO's Proposed Material Amendment to a Core Exemption Feature

The amended Exemption changes the method to calculate Gerdau's OR offer, reducing Gerdau's revenue by at least 25% from the previously approved calculation. The amended exemption method does **not** recognize the value of controlling a load when operating during the zero MW intervals in a batch load production cycle, despite previously understood rationale that:

1) In 9 out of 12 intervals the batch load may be at or above the scheduled offer and therefore deliver more MWs than offered.

2) If the batch load is at the zero MW point of its normal cycle when OR is activated, but for being dispatchable, it would return to full load, aggravating the grid contingency.

3) Remaining down has the same economic impacts to Gerdau as shutting down, regardless of what point in the process the IESO dispatch constrains the normal production cycle.

4) As long as Gerdau is unable to de-rate, whether the batch load is at full MW or the minimum load of its cycle, the IESO has control of the load and the load should be compensated for this.

5) Importantly, if the IESO had provided the ability to derate, Gerdau's load would not be in the OR schedule, and Gerdau would be free to operate. If de-rating was possible, during those periods Gerdau would be unaware of a grid emergency and would therefore restart during an ORA. These same arguments were discussed in 2004 and were the rationale used to determine this de-rate work-around was reasonable. This is evidenced by the determination made by the IESO's facility registration where an excerpt from the email, Appendix B, entitled "MP# 102003 - Gerdau Whitby - Verification of Entry Criteria for Dispatchable Load Mon 6/14/2004" which states:

- "*Darren, After our review of the load profile data you have submitted for Gerdau Whitby, I am pleased to* ***confirm that this facility meets the entry criteria for participation in both the 10 and 30 minute non-spin operating reserve*** *markets. I can also* ***confirm that 75 MW of load at your delivery point (DP# 108776 GERDAUWBY-LT.T3_LF) is considered within the interim 10 minute non-spin Operating Reserve participation cap.*** *Gerdau Whitby is* ***therefore approved to participate in the 10NS Operating Reserve market*** *as soon as conversion of the delivery point is complete in accordance with all outstanding facility registration requirements and final approval has been granted. Sincerely, Jan Wynn IMO Models & Data*

The IESO directed Gerdau to register to provide OR and the facility registration staff, after reviewing Gerdau's load, and considering the eligibility criteria, approved Gerdau to offer 75 MW of load into either the 10 or 30 minute non-spinning reserve. Importantly, 75 MW is an offer than ***can only be achieved if the IESO staff excluded the periods of zero consumption in Gerdau's normal production cycle (excludes periods of forced and unforced outages)***.

This demonstrates that the IESO agreed with Gerdau that there was value in controlling Gerdau's load at any point in its normal consumption profile and that it was appropriate to compensate Gerdau for the average MW when the load was operating. Again, providing this information to the MSP at the time of the 2017 report would have undoubtedly supported the rationale for including batch load intervals in Gerdau's OR offers. Gerdau believes this rationale continues to be valid today. The proposed solution in the draft exemption does not de-rate Gerdau's load, the load remains in the OR schedule and remains under the control of IESO dispatch. Gerdau will be prevented from restarting its operation and incur the associated cost.

High level principals/feedback on the draft Exemption

The amended Exemption compliance obligations must be clear:

Gerdau has always recognized the critical role that OR plays in the reliability of the IESO administered markets, and therefore Gerdau's responsibility to participate as a reliable OR resource. Gerdau appreciates the steps the IESO has taken to develop a revised set of rules that can be more clearly understood by stakeholders and incorporated into Gerdau's operational routine while minimizing the exposure to changes in opinion or interpretation in the future.

IESO should continue its Annual Review Obligations

- Gerdau continues to believe that the IESO should maintain its current obligation, which were included as conditions of Gerdau's 2005 Exemption, to review an exempted loads adherence to its Exemption conditions. An annual review process that confirms the IESO's and/or MACD's satisfaction or dissatisfaction with the exempted facility's compliance is necessary to provide reasonable regulatory certainty. As this represents a continuation of IESO's current obligation under Gerdau's existing Exemption, Gerdau strongly recommends that this obligation continue as part of the revised exemption. The 6-month window used to set the baseline in the calculation of the maximum OR offer would help align the compliance check with the exempted load's own requirement to analyse its performance.

The Clawback is a duplicative penalty

- The application of this clawback charge is in effect a penalty because it is a charge on top of the adjustment in the HEC that lowers what Gerdau can bid for OR. This is unfair treatment for the exempted loads compared to other loads/generators that <u>do not</u> have what is effectively a double clawback. Gerdau recommends if the clawback is applied that the same intervals should be removed from the HEC. The IESO staff response to Gerdau on this matter is that the charge is an incentive to remove bids/offers, however Gerdau believes the incentive already clearly exists in the HEC mechanism itself (if Gerdau doesn't remove its offers, the HEC will reduce the OR revenue available in the next 6-month period)

and that compliance with the exemption already requires Gerdau to notify when not operating normally. IESO should remove this element of its proposed exemption.

Notification of forced outages must be automated

The draft exemption requires Gerdau to notify the control room when its not operating "normally" as defined in the draft. Automation was included in the **2005 exemption** because if Gerdau experiences a process interruption, Gerdau's operators will be very busy attempting to resolve the cause of the delay. They will be focused on safely restarting the process. The current practice of an automated call/email that informs the IESO operators there has been a production delay and then requires Gerdau's operator to contact the IESO control room when the problem has been resolved and the facility is ready to reload. A manual call at this time would not be practical and the operator would not be able to provide any details of the length of the delay until they have completed their analysis. **Gerdau has raised this multiple times with IESO staff and continues to strongly recommends that the automated notification be provided for in the exemption**.

HEC must exclude batch load intervals

Gerdau agrees that the HEC longer term average approach to forecast expected performance is appropriate due the highly variable nature of an EAF load. The HEC method recognizes the arc furnace is not predictable in any given interval but will reflect that actual value on average, that the furnace can reduce, or prevent from starting during an event. It is important for compliance that the IESO and its regulator, the Ontario Energy Board, understand that compliance on a 5-minute basis is not appropriate, or implied and that performance in any given interval, below or above the offered MW are utilized to determine the appropriate OR offer. Finally, as thoroughly discussed above, Gerdau continues to strongly believe the "normal" batch load intervals should be excluded from the calculation of availability and therefore OR offers.

Gerdau appreciates the IESO's efforts to include batch load resources in the market and the effort to ensure its amended exemption language is unambiguous to eliminate the chance for competing interpretations of the purpose and application of the Exemption in the future. Please find our more specific comments related to the specific language in the revised exemption detailed in Appendix A.

Gerdau would be pleased to discuss any matter raised herein at your convenience.

Best Regards,

David Lyons
Director of Energy

Gerdau

Attachment A

Gerdau's specific comments on the revised exemption.

Attachment B (attached to the email)

DOC00161675 - MP# 102003 - Gerdau Whitby - Verification of Entry Criteria for Dispatchable Load Mon 6/14/2004 5:34:14 PM – email from Jan Wynn

Attachment C (attached to the email)

DOC00007024 Minutes - Dispatchable Load Participation in the Reserve Market - 6-16-2004-DTM.doc Author – Pat Doran

Appendix A

Gerdau's Comments on IESO's Draft Exemption

Part 1- General Information

Gerdau Comments:

- The IESO has not included the requirement from the 2011 Dispatchable Load operating guideline that a dispatchable load offers the lowest MW expected in any given interval for the dispatch hour. By the nature of its industrial operations, a batch load could never offer OR unless it is exempt from this requirement. Gerdau interprets the revised exemption consistent with this 2011 Guideline, however the revised exemption must be explicit about this to avoid uncertainty and disputes about contrary future interpretations on this issue.
- An exemption from Section 1.2.2 is also required. That rule requires ramp rate compliance and Gerdau may not be able to ramp when requested.
- The exemption from Market Rule 7.5.1 must recognize that although offering the HEC as required by the exemption, that at any time, in any interval, the batch load could be off dispatch by significantly more than the compliance dead band and that unless a process delay meets the definition as described in section (6b), Gerdau must be deemed to be operating in compliance with its exemption.

Part 2 – Recommendation

IESO's statement under Bullet 1, Gerdau Long Steel will be required to operate its dispatchable load facility "*within pre-defined operating parameters that prescribe IESO expectations for the facility"*. These operating parameters are specified in Appendix A of the IESO staff recommendation and will help to ensure reliability of the IESO-controlled grid.

Gerdau Comments:

- The flexibility required by the variable nature of the arc-furnace is not implied here at all. In fact, the IESO has set parameters to which Gerdau must adhere, as described in Appendix A which defines a single number (maximum dispatchable consumption) for the bulk of each moment of each batch cycle, which as discussed is not practical. The maximum dispatchable consumption in Gerdau's "Typical Profile" in Appendix A is a longer-term average and there can be significant deviations, above and below that average in any given interval. The concern is that a future reader of this text could misinterpret Gerdau's inherent EAF variability as non-compliance. We recommend adding a footnote to Gerdau's Typical Profile (which Gerdau will include with its data) to ensure this correct understanding.

The IESO Statement under "increase costs of market participants" - affects the ability of the *IESO* to operate the *IESO-administered markets* in an efficient, competitive, and reliable manner; affect the ability of the *IESO* to operate the *IESO-administered markets* in an "**efficient**, **competitive**, and reliable manner.

Gerdau Comments:

- In the IESO response to the MSP exemption comments dated November 3, 2022, the IESO stated that there are benefits to market participants because the exempted load reduces OR market prices through participation in OR. "Costs to ratepayers would increase, all else being equal, due to the immediate reduction in OR offered and replacement with higher cost resources" This conclusion is consistent with the IESO's thoughts when encouraging batch loads to become dispatchable in the early days of the market. Gerdau requests this benefit be included in this section.

The IESO statement under "increase costs of market participants. –"*While the reconsidered exemption will limit the amount of inaccessible operating reserve scheduled from the facility compared to what was highlighted in the relevant Market Surveillance Panel report*"

Gerdau Comments:

The appearance of inaccessible OR represents an issue where IESO has undergone a change of position vs its interpretation at the time of Gerdau's exemption was approved in 2005. This change of position concerns the value to the IESO of controlling the load, (by dispatching the load to zero MW when it was already down during a grid emergency). In this scenario, the OR value is realized because BUT FOR the dispatch instruction, the load would have started up again during a grid emergency. Whether shutting down or not restarting, the load is providing the identical value to the stability of the grid in real time and the cost for the provision of the OR benefit is the same. For Gerdau, the implications are lost production, lost efficiency and a potentially significant loss if our industrial process loses sequence as a result of the delay.

The IESO statement under "increase costs of market participants" – "The cost to Gerdau Whitby's dispatchable load of complying with the terms and conditions in their current *exemptions* as well as of complying with the inaccessible *operating reserve* settlement charge is reasonable. As the settlement charge will become fully automated, "***there is no additional cost"*** to Gerdau Whitby's dispatchable load to comply".

Gerdau Comments:

- This statement is not correct. In fact, there is a cost to Gerdau: the lost revenue associated with the IESO's change of opinion on the value of controlling a facility when its down and which prevents Gerdau's EAF from restarting. The IESO must recognize there is a cost to Gerdau by failing to restart its dispatchable load and a benefit to the system which needs to be compensable. In addition, there is a new cost, the IESO proposed penalty on top of the reduction in revenue already introduced by the HEC's

impact on the maximum OR offer calculation, which does not exempt the batch load intervals in the HEC. Further discussion on Gerdau's definition of this penalty is included below.

The IESO statement under Part 3- Details of the Assessment, 1. Addressing Market Surveillance Panel (MSP) recommendations - The concerns raised by the MSP relate to both compensation and reliability. Participants should not be compensated for OR that cannot be accessed by the IESO when requested. Additionally, inaccessible OR impedes the IESO's ability to rebalance the system quickly following a contingency event. This may lead to the "***IESO being forced to activate more OR than would otherwise be necessary, which comes at an additional expense to ratepayers***." In order to effectively address the MSP's recommendations in a manner which aligns with the unique operating characteristics of an electric arc furnace, it is necessary to reconsider the existing exemption.

Gerdau Comments:

- This statement is also not correct. If a load was not dispatchable, which is the MSP's base case as pointed out in its comments on the amended exemption, the batch load would unknowingly start up during a grid emergency and the IESO would need to find the same incremental OR resources. If the load is dispatchable, the load stays down and there is no need to find additional OR.

Appendix A -Operating Parameters

Section1d)iii) continuous *dispatchable* consumption within <insert value> of maximum *dispatchable* consumption of <insert value> for a period of <insert value> minutes; and

Gerdau Comments:

- The word "continuous" gives the reader an expectation that there is no variability in the profile. The flexibility required by the variable nature of the EAF is not implied here at all. In fact this implies the IESO has set parameters to which Gerdau must adhere. This is described in Appendix A which defines a single continuous number, referred to as the "maximum dispatchable consumption", for the bulk of each batch cycle.

This was discussed with IESO staff and is not a workable option. The "maximum dispatchable consumption" in Gerdau's "Typical Profile" in Appendix A is a longer term average that excludes forced and unforced outages and there can be significant deviations, above and below that average in any given interval. Gerdau is very concerned that a future reader of this text could misinterpret its EAF variability as an indication of non-compliance

with the exemption. Gerdau recommends that a footnote be added to its Typical Profile (which we will include with our data) to ensure this understanding.

Section 5)a) Gerdau Whitby's dispatchable load is a *registered facility* for the provision of the physical services(s) to which "***the dispatch data relate"***;

Gerdau Comments:

- Gerdau raised the concern that the registration information contains a single, static number, that does not reflect and will not be consistent with the HEC calculation. IESO staff, when questioned about this explained that only if the HEC is greater than the registration number should the registration information be updated. Gerdau recommends this requirement be expressly stated clearly in the revised exemption.

Section 7) IESO – statement - ***"Non-compliance with dispatch instructions"***, other than as specified in this Exemption and for the reasons referred to in section 7.5.3 of Chapter 7, shall be a breach of the *market rules* and may be sanctioned in accordance with section 6.2 of Chapter 3 and Section 7.5 of Chapter 7.

Gerdau Comments:

- As referenced in our comments on section 1)iii)d of the exemption, there will be periods where Gerdau will be off dispatch, greater than that allowed by the compliance dead band, and that must be deemed compliant, so long as Gerdau follows the notification requirements of the exemption in 6b). One could interpret "non-compliance with dispatch" as being off by more than 15MW in any interval. As an example, one could say in any hour, Gerdau operated more than 15 MW below or 15MW above dispatch, did not notify the IESO, and was paid for OR it did not and/or could not provide. Yet, the availability is covered by the notification provisions and the compensation is adjusted pursuant to the HEC. The proposed exemption specifically states that Gerdau does not have to comply with dispatch instructions as required by 7.5.1 and modifies the notification in 7.5.2. Importantly, Gerdau notes that this exemption applies to "dispatch instructions" which by definition includes both energy dispatch instructions and OR dispatch instructions (an energy dispatch with an ORA tag).

Section 8) IESO Statement - If Gerdau expects Gerdau Whitby's dispatchable load to operate, for any reason, in a manner described in section 6(b), it shall notify the *IESO* as soon as possible by "***calling the IESO control room".***

Gerdau Comments:

- Gerdau recommends that this language be clarified to read, "If Gerdau reasonably expects" and also "to call the control room as soon as possible but no later than the timing

described in 6b". It is critically important that this call be permitted to be an automated call. Automation was included in the **existing exemption** because if Gerdau is experiencing a process interruption, Gerdau's operators will be very busy attempting to resolve the cause of the delay. They will be focused on safely restarting the process. The current practice of an automated call informs the IESO operators there has been a production delay and then requires Gerdau's operator to contact the IESO control room when the problem has been resolved and the facility is ready to reload. A manual call at this time would not be practical and the operator would not be able to provide any details of the length of the delay until they have completed their analysis. **Gerdau has raised this multiple times with IESO staff and continues to strongly recommends that the automated notification be provided for in the exemption**.

Section 18c) if Gerdau Whitby's dispatchable load consumes less than 1MW for 25 or more consecutive *dispatch intervals*, the *IESO* may apply the Charge to all *dispatch intervals* beginning with the 25th *dispatch interval* in which it was consuming less than 1MW and ending with the *dispatch interval* in which it consumes greater than 1MW; and

Gerdau Comments:

- The application of this clawback charge is in effect a penalty, because it is a charge on top of the adjustment in the HEC that lowers what Gerdau can bid for OR. This is unfair treatment for the exempted loads compared to other loads/generators that do not have what is effectively a double clawback. Gerdau recommends if the clawback is applied that the same intervals should be removed from the HEC. The IESO staff response to Gerdau on this matter is that the charge is an incentive to remove bids/offers, Gerdau believes the incentive already clearly exists in the HEC mechanism itself (if Gerdau doesn't remove its offers, the HEC will reduce the OR revenue available in the next 6-month period) and that compliance with the exemption already requires Gerdau to notify when not operating normally.

Version 4

In preparation for the upcoming Dispatchable Load Workshop, attached is an updated version of the Dispatchable Load Working Group (DLWG) operating guideline.

It includes all the suggested changes from our last meeting, and reflects the current IESO expectation of dispatchable loads. The IESO has essentially been operating in this mode since the last meeting of the group. I removed the situational examples, as they no longer provide much additional information. They will be retained as examples when we update manuals or training material.

<<V4 DLWG Operating guideline.doc>>

I also want to update you on the status of IESO system changes to accommodate the needs of the dispatchable loads.

We have two main changes underway that we expect can be in service by mid year. These address two shortcomings that we identified with respect to loads ability to indicate a change to self-dispatching status:

1. We are working on a correction to the IESO systems to recognize any sub-blocks of multi-part bids that are bid at $2000 and ensure that reserve is not scheduled out of these bid blocks.

2. We have design changes underway that will recognize when a load is bidding its entire quantity at $2000, and treat it as a non-dispatchable load in the dispatch algorithm. When this condition is detected, the load will not receive any dispatch instructions, any reserve offered will be ignored, and for dispatch instructions the dispatch algorithm will use the load's actual consumption rather than the bid quantity.

The consequence of these changes to loads is as follows:

1. Loads will be able to indicate a change to self-dispatching as late as 10 minutes before the hour, via its bid price.. (Should not require a phone call)

2. The revised systems will ensure that reserve is never scheduled out of any quantity bid at $2000.
3. When in a self dispatching state:
a. reserve offers need not be removed as they will automatically be ignored,
b. the IESO will not send dispatch instructions nor operating reserve activations,
c. actual deviations from bid quantity will not be an issue or a concern for the IESO dispatch. We will still expect a good estimate of the bid quantity for future hours as this is the only estimate of consumption we have to use in the future hour pre-dispatch.

4. With these changes the IESO can correctly avoid scheduling any reserve out of $2000 bid blocks. As a result, the risk of operating reserve shortfalls is greatly reduced and limited only to instances where loads suffer changes in consumption capability, or inability to follow dispatch instructions, that occur in the middle of an hour when dispatch data can't be updated. This provides an opportunity for the IESO to review its cap on the amount of dispatchable loads that can participate in the 10-minute reserve market. We hope to have a preliminary analysis completed in time to discuss this at the workshop.

My apologies for such a long time between correspondence. Looking forward to seeing you at the workshop

Version 4

This message is Confidential

Dispatchable Load Market Operating Guidelines

This document describes operating guidelines and practices established by the IESO Dispatchable Load Working Group. The intent of this document is to clarify applicable market rules and manuals, and to help understand and match IESO and dispatchable load expectations with respect to market operations, bidding and offering practices, notification, and compliance assessment.

Fundamental Requirements (Guiding Principles):

Dispatchable loads are directed to keep their dispatch data up to date, to the best of their ability and knowledge of the state of their processes. Dispatchable load participants are expected to inform the IESO in advance of planned outages or changes to consumption capability, and to notify the IESO immediately following forced outages or material changes to their consumption capability. The IESO shall approve the change, unless, in the case of a planned change, there is a reliability reason preventing it.

Summary of IESO requirements

To the best of its ability, a dispatchable load is expected to:

- Update its dispatch data to reasonably reflect its expected consumption over the hour. If the change is within the two-hour restricted bidding window, but before 10 minutes to the hour, the IESO shall approve the change to dispatch data, unless there is a reliability reason to deny it. *(mff note: This is a change to the manuals)*. These dispatch data changes within the restricted bidding window may apply to quantity, e.g. a change in consumption capability, or to energy price, a price change shall indicate a change to the load's status—to or from self-dispatching status. This change is effected by changing the price point of the largest bid quantity to MMCP (from its original bid price), or vice versa. Restoration of reserve offers must normally take place outside the restricted bidding window. The IESO will approve the restoration of reserve offers within the restricted bidding window if the outage or non-dispatchable state was due to a forced event.
- Update dispatch data for future hours, before 10 minutes to the hour, to reflect its best estimate of consumption capability. If a load expects to be consuming for any part of an hour then dispatch data should be submitted for that hour, e.g. the energy bid quantity should reflect its average value when up, and its reserve offer should reflect its minimum dispatchable consumption during the hour, or zero if bidding its entire energy quantity at $2000.
- Request planned changes to consumption via phone (delayed shutdown, or early re-start of consumption following a shutdown) when these changes are within the hour, or after 10 minutes to the hour, and are not reflected in the dispatch data. IESO shall approve these changes unless there is a reliability reason preventing it. *(note: This is a change to the manuals)*.
- Accept dispatch instructions when it is in its normal consumption pattern. For varying loads, such as arc furnaces, this includes the brief periods when it may not be following dispatch instructions, if permitted in an applicable exemption.
- Notify the IESO when it is not able to follow dispatch instructions (energy or operating reserve) and is not in its normal consumption pattern. During these events, a rejection of dispatch instructions is not required. (It is understood that automated dispatch instructions may not be available to be rejected due to the action of the Resource Dispatch Filter.) Loads using a tool to automatically accept dispatch instructions may continue to utilize this tool in these events as long as this acceptance is accompanied by notification. When offering 10-minute non-synchronized reserve, notification is required when deviations from dispatch are expected to be longer than 10 minutes. When offering 30-minute reserve only, notification is required for deviations expected to be longer than 30 minutes.

Version 4

- When a load bids a quantity at $2000, and it is sent an energy dispatch instruction (excluding an operating reserve activation) below this quantity, the load will not be required to reject the dispatch instruction, nor to notify the IESO. *This is a relaxed requirement until IESO systems can provide a feature to fully account for periods when dispatchable loads want to be treated as self-dispatchable (called non-dispatchable in the rules).* Operating reserve must not be offered from quantities bid at $2000.
- When a load receives an operating-reserve activation (ORA), it is expected to reduce its consumption to provide **at least** the amount of reserve activated. For a load whose consumption is in blocks of MW, this can mean a reduction that is greater than the amount of ORA requested. If the ORA occurs during a normal down period permitted by an exemption (such as for arc furnaces), the load is expected to accept the dispatch instruction. This indicates that the load will remain down and not resume consumption until it receives a new dispatch instruction. Any quantity of OR activation requires full load reduction

For the following sections, the term "outage" will be used to include a planned or forced outage to transmission or power system auxiliary equipment that forms part of, or is connected to, the IESO-controlled grid, and for process changes or shutdowns leading to a material change in the consumption pattern outside of the normal daily load pattern (ref Market Manual 7.3, Appendix B). Market participants are informed of specific equipment designated for outage reporting at the time of facility registration.

- Outage slips (for information) are required for all planned outages or material changes to consumption.
- Following a forced equipment outage (excluding equipment that IESO has designated for outage reporting) or a material change to its consumption (outside its normal consumption pattern), outage slips (for information) are required for outages expected to last longer than 8 hours. IESO will propose that this relaxed requirement be in effect until IESO tools are enhanced to permit market participants to submit their own de-rating or restriction information into the IESO dispatch tools, and provided that IESO staff can manage the associated on-shift workload without having an adverse consequence on reliability.
- For a planned outage, or following a forced outage, the dispatch data must be revised to be consistent with the outage plan or the expected consumption during the forced outage.
- If a material consumption change occurs within an hour, planned or forced, the participant must notify the IESO of the change. If the change is planned, in most cases the change will be approved. In some cases a short time delay (typically less than 5 minutes) may be required, to assess operating limits or re-dispatch capability, and to prepare the IESO-controlled grid. In rare instances the request may be denied for reliability reasons (ref Market Manual Part 4.2, s1.3.3).

During an "outage", loads are expected to consume according to their bid quantity. If the "outage" plan includes testing, or varied consumption, this should be indicated on the outage plan. If the needs of the plan change, loads are expected to update bid and offer data and notify the IESO as described above. Why do we need to submit outage slips if our bid reflects our delay. If we are disconnecting equipment, ok, otherwise why do we need to submit the slip if our bids reflect the planned consumption

Notification, and Accept or Rejection of Dispatch

Notification to the IESO that does not required IESO approval, for example, a notification that the load is unable to follow dispatch instructions following a process upset, may be made via an automated message. The content and format used must be assessed, tested, and approved at facility registration time by the IESO.

When loads accept or reject their dispatch instructions, the automated response is indicated on the IESO control room displays, to assist the IESO staff to manage dispatch, and to provide a compliance record (for the benefit of the load) as to when it was unable to follow instructions. An accept or reject action does not affect settlements, as settlements is based on schedules and meter readings.

Version 4

Applicable Procedures

Bidding at $2000 and notification	Market Rules Ch 7, s3.3.18, Market Manual Part 4.2, s1.3.4
Timing of Dispatch Data Submissions	Market Manual Part 4.2, s1.3.3
Compliance to dispatch not required due to…	Market Rules Ch7, s7.5.3
Outage Reporting Requirements	Market Manual 7.3, Appendix B

The final version of this document may become a more formal document, e.g., IMDC, or interpretation bulletin.

Minutes of Meeting
Dispatchable Load Participation in the Reserve Markets

Friday, June 11, 2004
11:00 – 1:00 pm
Clarkson System Control Centre
Viewing Gallery
2635 Lakeshore Road West
Mississauga, Ontario

Attendees:		
	Peter Decyk	Dofasco
	Darren Macdonald	Gerdau Ameristeel
	John Harris	Abitibi Consolidated
	Nicolas Dalmau	Air Liquide
	Safouh Soufi	SMS Energy (St Mary's Paper)
	Francois Abdelnour	Ivaco
	Dan Dumais	Falconbridge
	Brian Mckay	Spruce Falls Inc.
	Norm Bailey	Comsatec
	Mark Passi	Falconbridge
	Marc Mantha	Abitibi Consolidated.
	Tom Hilbig	Abitibi Consolidated
	Alain Quenneville	Abitibi Consolidated
	Cara Degelman	Abitibi Consolidated
	Mike Kuriychuk	Bowater
	Dave Forsyth	Bowater
	Paul Drindak	ERCO Worldwide
	Derek Cowbourne	IMO
	Paul Murphy	IMO
	Pat Doran	IMO
	Darren Finkbeiner	IMO
	Rhonda Wright	IMO
	Rod Pettenuzzo	IMO
	Jan Wynn	IMO
	Mike Isber	IMO
	Karen Backman	IMO
	Elizabeth Morris	IMO

Pat Doran began by identifying the following three objectives for the meeting:

1. Review the dispatchable load eligibility criteria and participation cap.

2. Discuss how the participation cap will be managed in facility registration.

3. Address operational questions regarding dispatchable load participation in the energy and operating reserve markets.

Dispatchable Load Eligibility Criteria and Temporary Participation Cap

This material was presented at the MOSC meeting on June 2, 2004 however, because it was a late agenda item, warranted review by the dispatchable loads at a separate meeting.

Pat Doran presented the proposed eligibility criteria for dispatchable load participation in the 10-minute non-synchronized reserve and 30-minute reserve markets. This criterion applies to the dispatchable portion of dispatchable loads and will be used during the facility registration process to determine eligibility in each of the reserve markets. A number of questions were raised as to how the load factor criteria will be applied. The load factor is based on normal operation for the bidding period and will not include planned and forced reductions in consumption.

An Interim Market Document Change (IMDC) will be issued to include these criteria in Market Manual 2.1 – Facility Registration and Maintenance.

The temporary participation cap for 10-minute non-synchronized reserve was discussed. The cap of 500 MW is based on analysis of the deviations from 10-minute non-synchronized reserve schedules associated with the existing dispatchable loads.

The IMO secures regulating reserve or automatic generation control (AGC) under contract with generators. The current AGC contract allows the IMO to purchase up to 200 MW of AGC. This AGC margin is available to accommodate some discrepancies resulting from derated dispatchable load. A review of dispatchable loads participating in 10-minute reserve showed that, with the current level of 245 MW participating, the dispatch deviation can be as great a 90 MW. The IMO has determined that it is acceptable to allow a deviation of twice this magnitude while still remaining within the available AGC margin. Assuming that the level of dispatch deviation is consistent, twice the deviation relates to a participation limit of 500 MW.

Based on the above analysis, the IMO will limit dispatchable load participation as 10-minute non-synchronized reserve to 500 MW. This limitation will be reviewed based on actual schedule deviations when additional dispatchable load enters the 10-minute non-synchronized reserve market and may be adjusted up or down as required.

This is a temporary limitation until the IMO tools can be modified to accommodate both deratings to dispatchable loads and minimum loading points in dispatch data submissions.

Modifications to the participation cap will be considered based on a periodic review of schedule deviations of the dispatchable loads participating in the 10-minute non-synchronized reserve market. The cap could be increased based on this review however would not be decreased below the participation level registered.

Managing the Participation Cap in Facility Registration

The IMO will consider facilities for participation in 10-minute non-synchronized reserve on a first come, first served basis after the participant has:

- Committed to convert from non-dispatchable to dispatchable load status.
- Installed or has committed to installing the appropriate equipment for the provision of real-time telemetry.
- Committed to conversion within 6 to 9 months.

Operational Considerations for Dispatchable Loads

Pat Doran presented a document addressing some of the operational questions posed by potential dispatchable loads. This document outlined the current obligations of dispatchable loads relating to the submission of dispatch data, communicating deviations from dispatch, outages and $2000 offers. The document addressed these questions through the discussion of a number of scenarios. The document attempts to consolidate the information contained in the Market Rules and supporting Market Manuals related to dispatchable loads participation in the real-time energy and operating reserve markets.

In general, the following requirements for dispatchable loads exist in the market rules and market manuals:

1. Dispatchable loads must update dispatch data as per the Market Manual 4.2, Section 1.3.3 which states:

   Finally, a *market participan*t must submit revised *dispatch data* to the *IMO* as soon as practical for any of its *registered facilities* if, for any *dispatch hour* in the current *pre-dispatch schedule*, the quantity of any *physical service* scheduled for that *registered facility* differs from the quantity the *market participant* expects to be delivered or withdrawn by more than the greater of 2% of the *dispatch* instruction or 10 MW (Ch.7, S. 3.3.8 of the *market rules*). *Dispatch data* revisions are not required for:

   - the current hour;
   - the next hour when it is less than 10 minutes to the top of the hour; and
   - an hour when it is reasonably expected that the *dispatch data* deviation will be eliminated mid-hour because the unit limitation will end.

2. If the dispatchable load facility is unable to follow its dispatch instructions for energy and operating reserve they must reject the dispatch instruction and contact the IMO by telephone. (References - Market Rules Chapter 7, Section 7.5, Market Manual 4.3: real-time Scheduling of the Physical Markets - Section 1.8.

3. Bidding MMCP ($2000) does not permit the dispatchable load facility to consume whatever MW level it needs to facilitate its process or batch type load scheduling.

Participants requested an electronic copy of the presentation.

Action: Pat Doran

Participants had a number of questions relating to how they would operate under the existing rules and how it would impact their business. A concern was expressed that what was presented differs from what the dispatchable loads have been told in the past. The IMO pointed out that that compliance with existing rules and procedures becomes more important as participation by dispatchable load increases.

In an effort to reach acceptable solutions for both the IMO and participants, the IMO offered to form a working group to further discuss these issues. The working group will address rules and procedures that the dispatchable loads see as barriers to their operation. The IMO will initiate the development of the dispatchable load-working group the week of June 18, 2004. Dispatchable loads were requested to continue with existing practices/procedures pending any changes from this working group.

Action: Derek Cowbourne