

## **DECISION OF THE INDEPENDENT PANEL - Exemption Application No. 01-1304**

**Exemption Application:** Application No. 01-1304 made by Gerdau Ameristeel Corporation for Whitby Steel Mill ("Gerdau")

**Panel Hearing the Application:** Carol Perry and John Grant

**Date Application Heard:** December 16, 2004

**Market Rules from which Exemption is Requested:** Chapter 7, sections 7.5.1 and 7.5.2 of the Market Rules

**Decision:** Gerdau is granted an exemption from Chapter 7, sections 7.5.1 and 7.5.2 of the Market Rules on the terms and conditions specified herein.

**Effective Date of the Exemption:** December 16, 2004

**Conditions of the Exemption:** The exemption is granted on the following conditions:

1. Gerdau's electric arc furnace ("EAF") operates within its normal consumption pattern as defined below. When outside this pattern, Gerdau is required to notify the IMO.

For the purposes of this recommendation, Gerdau's EAF is considered to operate within its normal consumption pattern if, during a production cycle (estimated at approximately one hour), Gerdau is unable to comply with energy dispatch instructions for no longer than 15 minutes that may span over 3 to 4 five-minute intervals. This pattern has been established on the basis of historical consumption data provided by Gerdau.

2. Gerdau will make its energy bids based on the hourly average consumption of the process while running, neglecting the periods of minimum load consumption. The associated energy ramp rate [MW/min] shall allow Gerdau to go from minimum load to the value of the energy bid lamination within a five-minute dispatch interval.

3. To operate in the energy market, Gerdau must comply with the following operating strategy :

- If operating within its normal consumption pattern and dispatched to a level other than full or minimum consumption, there are two possibilities:
  - a) If the energy dispatch instruction is to 50% of its bid or more, Gerdau will accept the energy dispatch instruction and will dispatch to or remain at full consumption.
  - b) If the energy dispatch instruction is to less than 50% of its bid, Gerdau will accept the energy dispatch instruction and will dispatch to or remain at minimum consumption.

- If operating outside its normal consumption pattern, Gerdau will reject the energy dispatch instructions it cannot meet and notify the IMO accordingly. It is acceptable that such notification be an automated message.

**Monitoring Information Required:** In order for Gerdau to maintain its status as a dispatchable load, several factors contributing to the facility's qualifications as a dispatchable load will be reviewed semi-annually, including:

- compliance with the eligibility criteria for dispatchable loads as described in the facility registration process; and
- compliance with the bidding and operating strategy described in this recommendation.

**Term of the Exemption:** The exemption will be effective for as long as Gerdau seeks to operate its EAF as a dispatchable load or until the IMO-administered markets change to accommodate the characteristics of batch load operation.

**Reconsideration of the Exemption:** Reconsideration may occur if:

- The IMO determines at any time that allowing the market participant to continue to operate as described in this recommendation will have a detrimental impact on the IMO's ability to maintain the reliability of the IMO-controlled grid;
- The IMO determines at any time that Gerdau cannot comply with the criteria for dispatchable loads as described in the facility registration process and with the bidding and operating strategy described in this recommendation; or
- The IMO develops tools similar to those available for generators that will allow loads to de-rate or effectively change status from non-dispatchable to dispatchable on a five-minute basis.

**Transfer:** Approval to transfer this exemption may occur once the following criteria have been met:

- the transfer meets applicable terms and conditions set forth in the exemption itself and whether the transfer would affect the ability of the proposed transferee to comply with all of the terms and conditions of the exemption;
- the proposed transferee is a market participant or undertakes in writing to the IMO to apply for authorization as a market participant.

**Reasons of the Panel:** In rendering our decision, we have considered Gerdau's Exemption Application, the IMO Staff Recommendation, Gerdau's comments on the IMO Staff Recommendation, the applicable sections of the Market Rules and the *Exemption Application and Assessment Procedure*.

Gerdau seeks an exemption from Chapter 7, sections 7.5.1 and 7.5.2 of the Market Rules which require market participants to comply with IMO dispatch instructions.

#### Applicant's Position

Gerdau operates an EAF and would now like to operate it as a dispatchable load.

Generally, an EAF has a process cycle of around 60 minutes that includes several operations:

- charging, when scrap is loaded into the melter;
- melting, when electrical energy is supplied via electrodes to melt the load;
- refining, when chemical components are removed to improve the quality of steel;
- de-slagging, when impurities resulted from previous operations are removed from the furnace; and
- tapping, when steel is poured out.

Tapping and charging are periods of zero electrical consumption that in total last for approximately 5 to 20 minutes. Melting is the core operation of an EAF's process cycle and usually occurs simultaneously with refining and de-slagging.

EAFs can reduce or increase their consumption within five minutes, which makes them good candidates for participation as dispatchable loads in the energy market. However, because EAFs' consumption fluctuates, their ability to comply with all energy dispatch instructions is limited and intimately related to the specific stages of their process cycles. For example, when at zero consumption during a tapping and re-charging period, the EAF may not be able to comply with an energy dispatch instruction that sends it to full consumption based on its bid price.

Due to the nature of the EAF load, Gerdau would be unable to comply with all energy dispatch instructions and therefore seeks an exemption from the Market Rules.

#### IMO Staff Recommendation

##### *Reliability of the IMO-controlled Grid*

To maintain the reliability of the IMO-controlled grid, the IMO seeks to preserve the balance between electricity supply and demand by matching the right amount of generation to the expected electricity consumption across the province. Operating as a

dispatchable load would require Gerdau to respond to dispatch instructions and thus provide the IMO with more information about expected consumption and more flexibility in balancing load and generation.

However, when Gerdau cannot comply with energy dispatch instructions, the balance between electricity supply and demand may be adversely affected and the IMO may need to dispatch other resources to compensate for the difference to maintain system reliability. To minimize this impact and reduce the number of intervals of non-compliance, IMO Staff recommends that Gerdau adopt the bidding and operating strategies described in this recommendation.

#### *Operation of the IMO-administered Markets*

In operating the IMO-administered markets, the IMO seeks to ensure an efficient, competitive and reliable market for the wholesale sale and purchase of electricity. When Gerdau does not comply with a dispatch instruction, other resources may need to be dispatched up or down to compensate for the difference. This action may distort the initial economic order in that dispatch interval (e.g. resources that have initially been considered economical may now become uneconomical and dispatched out of the market). To minimise this impact, IMO Staff recommends that Gerdau adopt the bidding and operating strategies described below, which are intended to reduce the frequency and consequence of non-compliance events.

#### *Undue Preference in the IMO-administered Markets*

By granting this exemption, the IMO recognises the limitations that prevent Gerdau from complying with all energy dispatch instructions and essentially extends the treatment given to similar loads.

However, without the implementation of new features in the IMO tools and considering the cumulative effect that dispatchable loads could have on reliability, the IMO will likely limit the cumulative total of dispatchable load resources to 500 MW for reasons of reliability. The 500 MW maximum relates to limitations on the IESO-controlled grid's ability to absorb mismatches that arise between dispatch and actual performance of dispatchable resources as a result of deviation from dispatch instructions. Gerdau's EAF has a peak demand of approximately 80 MW over its full production cycle.

#### *Cost to Comply*

The cost necessary to change the production process of the EAF to be able to maintain a constant consumption level would be exorbitant.

#### *In service date with respect to the date on which the obligation or standard to which the exemption application relates came into force*

Gerdau operated its EAF in a manner akin to a dispatchable load prior to the establishment of the current electricity market.

*Recommendation*

IMO Staff recommends that the exemption be granted with conditions on the following basis:

- granting the exemption will have minimal impact on the reliability of the IMO-controlled grid provided certain conditions are placed on the exemption; and
- Gerdau will be unable to participate as a dispatchable load if the exemption is not granted.

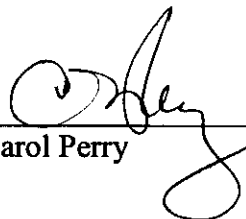
Conclusion

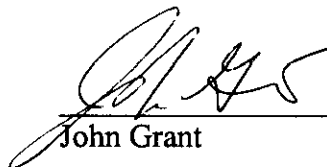
We agree with the IMO Staff Recommendation and have decided to grant the exemption requested by Gerdau on the conditions and for the term described herein. In granting the exemption, we took into account the expected benefits to the IMO-administered markets of encouraging demand side bidding and load dispatchability.

The major risk in granting this exemption is to the ability of the IMO to direct and maintain the reliability of the IMO-controlled grid and operate the IMO-administered markets in a reliable, competitive and efficient manner. This risk should be adequately managed through the operating strategy and other conditions outlined above.

We believe that given the minimal risk to the IMO-controlled grid and the IMO-administered markets, it is appropriate to grant this exemption for the life of the equipment.

We are of the opinion that the risk of any impact on the IMO-controlled grid and the IMO-administered markets is sufficiently low as to merit granting this exemption for the term and on the conditions recommended by IMO Staff.

  
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Carol Perry                      Feb 4/05  
Date

  
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John Grant                      February 4, 2005  
Date