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## Market Rule Amendment Proposal

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### PART 1 – MARKET RULE INFORMATION

Identification No.:	MR-00298-R00		
Subject:	Market Pricing		
Title:	Emergency Control Actions and Counter-Intuitive Prices – Administrative Pricing		
Nature of Proposal:	<input checked="" type="checkbox"/> Alteration	<input type="checkbox"/> Deletion	<input type="checkbox"/> Addition
Chapter:	7	Appendix:	
Sections:	8.4A		
Sub-sections proposed for amending:	Various 8.4A.2.4 (new), 8.4A.4, 8.4A.5, 8.4A.6, 8.4A.17.5 (new)		

### PART 2 – PROPOSAL HISTORY – PLEASE REFER TO MR-00296-R00.

**MR-00298-R00 was formerly MR-00296-R01**

Version	Reason for Issuing	Version Date
1.0	Approved by IESO Board	16 June 2005
Approved Amendment Publication Date:	17 June 2005	
Approved Amendment Effective Date:	12 August 2005	

### PART 3 – EXPLANATION FOR PROPOSED AMENDMENT

Provide a brief description of the following:

- The reason for the proposed amendment and the impact on the *IESO-administered markets* if the amendment is not made.
- Alternative solutions considered.
- The proposed amendment, how the amendment addresses the above reason and impact of the proposed amendment on the *IESO-administered markets*.

#### Summary

It is proposed to amend the market rules to address counter-intuitive market pricing that can occur when the IESO implements emergency control actions to maintain reliability of the IESO-controlled grid. These emergency control actions include voltage reductions, emergency energy purchases, and non-dispatchable load cuts. The counter-intuitive pricing occurs when the emergency control action affects demand in the market pricing sequences, resulting in pricing outcomes and signals that do not reflect actual market conditions.

The specific proposed amendment is:

- Permit the IESO to administer prices after-the-fact when emergency control actions result in counter-intuitive pricing.

This amendment represents an initial but flexible step in addressing counter-intuitive pricing situations in the IESO-administered markets. This proposed solution does not address the stated need by market participants for real-time price signals that are more representative of market and system conditions when the IESO undertakes emergency control actions. However, it is a solution that can be implemented quickly and would mitigate, to some extent, counter-intuitive pricing outcomes that can occur.

#### Background

On April 7, 2005, conditions arose that necessitated the IESO to implement, as per approved procedures, a number of emergency control actions to maintain the reliable operation of the IESO-controlled grid. These emergency control actions included both voltage reductions and the purchase of emergency energy from neighbouring jurisdictions. As a consequence of these actions and their representation in the uniform market clearing price calculations, the wholesale market clearing price fell. The resulting prices were counter-intuitive to the stressed conditions being experienced on the system.

Since market commencement, excluding the August 2003 blackout and corresponding recovery:

- the IESO has purchased emergency energy on 22 occasions including April 7, 2005; and
- the IESO has initiated voltage reductions twice including April 7, 2005.

Under the current market rules and treatment, voltage reductions and emergency energy purchases result in a reduction in demand in the IESO-administered markets. A voltage reduction, by its very nature, reduces demand. Emergency energy purchases are input by the IESO as a reduction in demand in the constrained sequences so that the dispatch scheduling algorithm can dispatch other supply resources to meet the balance of the demand. The demand reduction in the constrained sequence is carried through to the unconstrained market pricing sequences. These demand reductions, whether

### PART 3 – EXPLANATION FOR PROPOSED AMENDMENT

resulting from a voltage reduction or an emergency energy purchase, have the effect of also lowering market prices.

The IESO initiates emergency control actions at times of system stress, which are typically times of tight supply-demand balance and high market prices. Intuitively, one would expect such circumstances to result in high market prices. Such prices send an appropriate and necessary signal to the market for suppliers to come to market and for load to reduce demand and as such these appropriate price responses would assist the IESO in maintaining the reliable operation of the IESO-controlled grid. The reductions in the uniform market clearing price resulting from an emergency energy purchase or voltage reduction sends a counter-intuitive price signal to the market at these times of system stress. This counter-intuitive price signal has the ultimate effect of undermining both the efficiency of the market and the confidence that market participants have in the market.

Changes in the IESO administered markets have been made by the IESO since market opening to reduce the frequency of such conditions. These changes include the introduction of control action operating reserve in the market and the creation of the spare generation on-line program. In addition supply within Ontario has increased. These measures serve to reduce the chance that emergency control actions will be required to maintain the reliable operation of the IESO-controlled grid. However, these measures do not eliminate the underlying aspects of market price determination that lead to counter-intuitive price outcomes. Emergency control actions may be needed at anytime and thus there is a priority need to address the counter-intuitive pricing that can be created by the use of these actions.

It should be noted, however, that actual demand response to high prices can occur at times of system stress and that this response will naturally result in reduced demand and lower prices. In these instances it is market forces that are causing reduced demand and lower prices, not IESO actions.

#### **Discussion**

When the IESO undertakes certain emergency control actions that affect demand in the market schedule this can result in market prices which may not reflect the conditions on the IESO-controlled grid. These emergency control actions include voltage reductions, emergency energy purchases, and non-dispatchable load shedding. Only emergency energy purchases are represented as an IESO input to the dispatch algorithm.

It is proposed that the IESO administer market prices after-the-fact where the IESO has implemented an emergency control action and counter-intuitive prices result.

The mechanism that is recommended by this market rule amendment proposal is the existing administrative pricing process. Using this existing process will allow for more timely implementation of this proposed solution than would be the case if a different price administration process was introduced. Upon the determination by the IESO that counter-intuitive prices have occurred, the IESO would use the existing price administration process to establish prices, after the fact, to a level experienced before or after the implementation of the emergency control action.

A sunset is proposed for this application of this provision in light of the stakeholder concerns raised regarding after-the-fact administration of prices. The sunset is October 1, 2005 or some other date determined by resolution of the IESO Board.

## PART 4 – PROPOSED AMENDMENT

**8.4A Administrative Pricing and Corresponding Schedules – Revised**

- 8.4A.1 This section 8.4A applies only in respect of the establishment of *administrative prices* for the *real-time energy market* and the *operating reserve market*.
- 8.4A.2 The *IMO* shall establish *administrative prices* and, where applicable, corresponding *market schedules* when:
- 8.4A.2.1 the *energy market* or the *operating reserve market* has been suspended in accordance with section 13;
- 8.4A.2.2 the *IMO* is unable to *publish* an *energy market price* or *operating reserve market price* in accordance with section 8.1.2 due to a failure in or *planned outage* of the software, hardware or communications systems that supports the operation of the *dispatch algorithm*; ~~or~~
- 8.4A.2.3 the *IMO* determines, pursuant to guidelines approved by the *IMO Board* relating to price error materiality and acceptable causal events, that a *published energy market price* or *operating reserve market price* is incorrect due to incorrect inputs which affected the outcome of the *dispatch algorithm*; or
- 8.4A.2.4 the *IESO* has implemented one or more *emergency control actions* as described in the applicable *market manual*, and the *IESO* determines that *operating reserve market prices* or *energy market prices* have changed as a result and in a manner that is not consistent with prevailing market conditions. The operation of this section 8.4A.2.4 shall expire on October 1, 2005 or such other date as determined by resolution of the *IESO Board*;
- and all such *administrative prices* shall be the *energy market price* and the *operating reserve market price* for the applicable *dispatch interval* for all purposes under these *market rules*.
- 8.4A.3 Where the *IMO* establishes *administrative prices* pursuant to section 8.4A.2 it shall do so within two *business days* of the event causing *market prices* to be administered. The *IMO* shall inform *market participants* as soon as practicable whenever a *published market price* is an *administrative price*.
- 8.4A.4 In circumstances where *administrative prices* are required under sections 8.4A.2.2, ~~or~~ 8.4A.2.3, or 8.4A.2.4 the *IMO* shall establish *administrative prices* and corresponding *market schedules* that would, to the extent practical, reflect the *market prices* and corresponding *market schedules* that would have otherwise

been produced by the *real-time markets*, but for the event causing *market prices* to be administered.

8.4A.5 Where the *IMO* establishes *administrative prices* pursuant to sections 8.4A.2.2, ~~or~~ 8.4A.2.3, or 8.4A.2.4 in respect of one or more *dispatch intervals*, it shall use the best available *dispatch data* for *energy* or *operating reserve*, as the case may be, pertaining to the *dispatch interval* to which the *administrative price* is to be applied and the *market prices* and corresponding *market schedule* for that *dispatch interval* shall be as the *IMO* determines appropriate consistent with the principle stated in section 8.4A.4, and shall be the *market price* and corresponding *market schedule* from:

- 8.4A.5.1 the closest preceding *dispatch interval* that has not been administered, up to a maximum of 24 *dispatch intervals*;
- 8.4A.5.2 the closest subsequent *dispatch interval* that has not been administered, up to a maximum of 24 *dispatch intervals*; or
- 8.4A.5.3 a combination of the closest preceding and closest subsequent *dispatch intervals* that have not been administered, provided that neither the preceding nor subsequent *dispatch intervals* are selected for more than 24 *dispatch intervals* and are applied in a continuous manner such that the *administrative price* chosen from the preceding *dispatch interval* shall apply until changed to the *administrative price* selected from the subsequent *dispatch interval*.

8.4A.6 Where the *IMO* establishes an *administrative price* pursuant to sections 8.4A.2.2, ~~or~~ 8.4A.2.3, or 8.4A.2.4 the *IMO* shall, if the need for *administrative prices* extends beyond 48 *dispatch intervals*, establish *administrative prices* for the remaining *dispatch intervals* of the event causing *market prices* to be administered within the *IMO control area* and the *intertie zones*, using an average *HOEP* for the *energy market* and the hourly average of the *operating reserve prices* for the applicable *dispatch intervals* for the *operating reserve markets*, determined from the corresponding hour or hours from each of the 4 most recent *business days* or *non-business days*, as the case may be, excluding those hours from any day in which *administrative pricing* has been established under this section. Prices for the excluded hours shall be replaced by prices that have not been administered under this section from the corresponding hours of the most recent earlier *business days* or *non-business days*, as the case may be.

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8.4A.17 The *IMO* shall cease to apply *administrative prices*:

- 8.4A.17.1 where section 8.4A.2.1 applies, from the commencement of the first *dispatch interval* in the *dispatch hour* referred to in section 13.7.1.2;

8.4A.17.2 where section 8.4A.2.2 applies due to a failure in software, hardware or communications systems, from the commencement of the first *dispatch interval* after the failure referred to in that section has been rectified;

8.4A.17.3 where section 8.4A.2.2 applies due to a *planned outage* of software, hardware or communications systems, from the commencement of the first *dispatch interval* after the *planned outage* referred to in that section has been completed; ~~and~~

8.4A.17.4 where section 8.4A.2.3 applies, from the commencement of the first *dispatch interval* after the incorrect inputs referred to in that section have been corrected; and

8.4A.17.5 where section 8.4A.2.4 applies, from the commencement of the first *dispatch interval* after the *operating reserve prices* or *energy market prices* -referred to in that section are no longer inconsistent with prevailing market conditions.

## PART 5 – IESO BOARD DECISION RATIONALE

The IESO Board unanimously approved MR-00298-R00 (formerly referenced as MR-00296-R01) subject to a number of conditions. The IESO Board is imposing these conditions in light of the stakeholder concerns regarding the after-the-fact price administration that would occur under MR-00298-R00. The IESO Board recognizes that after-the-fact administration of market prices is an imperfect means of addressing counter-intuitive pricing. On the one hand, participants who take real-time action, whether to adjust energy consumption or injection, on the basis of the real-time counter-intuitive price may be disadvantaged as a result of after-the-fact price administration. The Board recognizes that more effective IESO communication to the market at the time of these counter-intuitive pricing events would mitigate this circumstance to some extent. On the other hand, allowing known counter-intuitive prices to remain uncorrected adversely impacts market integrity and confidence. In recognition of these concerns, the IESO Board placed the following conditions on the approval of MR-00298-R00:

- A sunset is to be included in the market rules on the application of the MR-00298-R00. That sunset is to be October 1, 2005 or as amended by resolution of the IESO Board.
- IESO management shall place high priority on identifying, developing and implementing solutions enabled under MR-00296-R00 as well as alternative enduring solutions to the counter-intuitive pricing resulting from emergency control actions. The intent in both cases is to reduce and potentially eliminate the need for the after-the-fact price administration measures proposed under MR-00298-R00. IESO management shall report on these activities at the IESO Board meeting on September 23, 2005.
- The IESO Board will review the use of administered pricing under MR-00298-R00 and the ongoing need (or sunset) for this rule at its meeting on September 23, 2005.