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## Market Rule Amendment Proposal

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### PART 1 – MARKET RULE INFORMATION

Identification No.:	<b>MR-00329-R00</b>		
Subject:	<b>Ancillary Services</b>		
Title:	<b>Eliminate Requirement for Minimum Amount of Regulation/Automatic Generation Control Service</b>		
Nature of Proposal:	<input checked="" type="checkbox"/> Alteration	<input checked="" type="checkbox"/> Deletion	<input type="checkbox"/> Addition
Chapter:	5	Appendix:	
Sections:	4.4		
Sub-sections proposed for amending:	4.4.2		

### PART 2 – PROPOSAL HISTORY

Version	Reason for Issuing	Version Date
1.0	Draft for Technical Panel Review	November 30, 2006
Approved Amendment Publication Date:		
Approved Amendment Effective Date:		

### 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

This amendment proposes to remove from the market rules the minimum MW and rate requirements for regulation/automatic generation control (AGC). AGC is a contracted ancillary service necessary for meeting industry reliability control performance standards. The reliability standard is to meet control performance standards, not to have a minimum amount of AGC. The IESO has consistently exceeded the industry control performance standard.

Where possible, market rules should be objective rather than prescriptive, allowing the IESO or market participants to determine the best means to achieve the objective. Removing the prescriptive minimum MW and rate requirements on AGC from the market rules, while maintaining the obligation on the IESO to meet the reliability standard, would be consistent with this philosophy. The proposed change will also provide greater flexibility for meeting the industry control performance standard without impacting reliability.

Removal of the minimum MW and rate requirements is also expected to:

- Reduce market costs since less AGC could be procured during hours in which the current minimum requirement ( $\pm 100$  MW) is not needed to maintain acceptable reliability performance; and
- Provide greater flexibility for contracting with current and potential AGC suppliers, thereby increasing competition for the provision of AGC.

#### Background

Regulation/automatic generation control (AGC) is a contracted ancillary service in the IESO-administered markets. The reliability standards pertaining to AGC are indirect rather than direct, and involve time averages of data pertaining to Area Control Error<sup>1</sup>. Control Performance Standard 1 (CPS 1) is a statistical measure of ACE variability and its relationship to frequency error over a 12 month period. Control Performance Standard 2 (CPS 2) is a statistical measure designed to limit unacceptably large net unscheduled power flows by measuring a 10-minute period average of ACE. Details regarding CPS 1 and CPS 2 are contained in the Performance Standards Reference Document available from: [www.nerc.com](http://www.nerc.com).

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<sup>1</sup> Area control error or ACE means the instantaneous difference between actual and scheduled interchange, taking into account the effects of frequency bias (Source: Market Rules, Chapter 11).

**PART 3 – EXPLANATION FOR PROPOSED AMENDMENT**

The IESO has consistently exceeded the industry reliability standards for CPS 1 And CPS 2 as shown in the table below.

Performance Measure	Performance Standard	IESO Performance					
		2002	2003	2004	2005	Jan to April 2006	May to Aug 2006
CPS 1	≥100%	171.65%	170.4%	163.6%	161.0%	160.72%	160.39
CPS 2	≥90%	96.98%	98.38%	97.8%	96.4%	96.89%	94.55

The IESO performance has also been better than the median of other large balancing authorities in the eastern connection.

As the Electric Reliability Organization (ERO), the North American Electric Reliability Council (NERC) is responsible for developing and enforcing mandatory electric reliability standards under the oversight of the Federal Energy Regulatory Commission (FERC). On October 20, 2006, FERC issued a notice of proposed rulemaking (NOPR), “Mandatory Standards for the Bulk-Power System.” Regarding the automatic generation control standard (BAL-005-0), FERC proposes to direct NERC to submit a modification that includes requirements that identify a minimum amount of AGC. Removing the prescriptive minimum MW and rate requirements on AGC from the current market rules, while maintaining the obligation on the IESO to meet the reliability standard, would provide the necessary flexibility for alignment with any minimum AGC requirement that may be specified by NERC.

**Discussion**Current AGC Requirement in Ontario

The existing market rules (section 4.4.1 of chapter 5) require the IESO to maintain sufficient AGC to meet all applicable reliability standards. Section 4.4.2 further specifies that the AGC requirement must be at least  $\pm 100$  MW with a ramp rate of 50 MW/min. This specification is unnecessarily restrictive given that the reliability standard is to meet control performance standards, not to have a defined level or type of AGC.

The IESO believes that the minimum requirement is:

- Likely resulting in additional market costs for AGC procured for hours in which  $\pm 100$  MW is not required to maintain acceptable reliability performance; and
- Restricting contracting with existing AGC providers.

The ramp rate requirement may also be restricting the potential diversification of supply of AGC.

AGC Requirements in Neighbouring Jurisdictions

In neighbouring jurisdictions with competitive markets, the ISO has the authority to establish AGC requirements to meet applicable reliability standards. Only in the PJM market and certain areas of Midwest ISO are the AGC MW requirements specified (as a percentage of forecast demand) in market documentation. However, PJM has the authority to adjust the requirement if “the adjustment is consistent with the maintenance of NERC control standards”. Please refer to Attachment A for a summary of the AGC requirements in neighbouring markets.

**PART 3 – EXPLANATION FOR PROPOSED AMENDMENT**Proposed Changes

It is proposed to delete the second sentence from section 4.4.2 of chapter 5 to remove the minimum MW and rate requirements for AGC in order to:

- Remove these unnecessarily restrictive requirements, and
- Align the AGC requirements with those of neighbouring markets.

The IESO would retain the obligation to meet all applicable reliability standards as specified in section 4.4.1 of chapter 5.

It is also proposed, in section 4.4.2, to introduce an obligation on the IESO to publish the actual daily, hourly requirements. While these requirements are already being published in the system status reports (SSR) and security and adequacy assessments (SAA), introducing this as an obligation enhances transparency.

The IESO would publish in a market manual the typical requirements for AGC quantity and ramp rate.

**PART 4 – PROPOSED AMENDMENT****4.4 Regulation/Automatic Generation Control Service**

4.4.1 The *IESO* shall maintain sufficient *generation* responsive to *automatic generation control (AGC)* to allow the *IESO* to meet all applicable *reliability standards*.

4.4.2 The *IESO* shall determine and publish the quantity of *regulation* capacity needed for each hour of the following day. As a minimum, the requirement shall be +/- 100 MW, with a ramp rate of 50 MW/min.

**PART 5 – IESO BOARD DECISION RATIONALE**

## Attachment A: AGC Requirements in Neighbouring Markets

### New England

- Market Operations Manual M-11: “The Regulation Requirement is determined based on historical control performance and is posted on the ISO’s website based on month, day-type and hour. The requirement is selected by the ISO to meet ISO, NERC and NPCC control standards. The requirements may be adjusted by the ISO as needed to assure continued compliance with these standards.”
- AGC requirements:  $\pm 80$  MW to  $\pm 200$  MW

### New York

- NYISO Ancillary Services Manual: “The NYISO establishes the regulation and frequency response requirements consistent with criteria established by North American Electric Reliability Council (NERC), which may vary by hour and by season.”
- AGC requirements:  $\pm 150$  MW to  $\pm 275$  MW

### PJM

- Total Mid-Atlantic Regulation Zone Requirement is determined in whole MW for the off-peak (0000 – 0459) and on-peak (0500 – 2359) periods.
  - (a) The Mid-Atlantic Regulation Zone Requirement is 1.1% of the day-ahead peak load forecast for the on-peak period and valley load forecast for the off-peak period. The requirement percentage may be adjusted by PJM if the adjustment is consistent with the maintenance of NERC control standards.
  - (b) The Western Regulation Zone Requirement is determined in whole MW, and for each hour of the operating day is equal to 1% of the forecast peak load for the Western Regulation Zone for that day.

### Midwest ISO (MISO)

- There are 36 Balancing Authorities<sup>2</sup> in MISO located within three NERC Regional Reliability Councils: Midwest Reliability Organization (MRO), Southeastern Electric Reliability Council (SERC), and ReliabilityFirst Corporation. Each Balancing Authority is responsible for establishing regulation requirements to meet NERC control performance standards. Only in ReliabilityFirst are the AGC MW requirements specified as a percentage of forecast demand: the AGC requirement is not less than 1% of its forecasted peak demand.
- Midwest ISO is in the design phase of the Ancillary Services Market Project to complement the current Midwest ISO Energy Markets. It is proposed that Midwest ISO will migrate to a system-wide Area Control Error (ACE). “The Midwest ISO will establish the Regulation Response requirements consistent with criteria established by NERC or other reliability entities. The amount of Regulation Response requirements (MW) and response rate (MW/Minute) that is required for the Midwest ISO Region may vary on an hourly and seasonal basis.”<sup>3</sup>

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<sup>2</sup> The entity that maintains load, generation, and net interchange balance within a Balancing Authority Area and supports interconnection frequency in Real-Time. It replaces the Control Area definition.

<sup>3</sup> Ancillary Service Market White Paper, Final Version, June 28, 2006.