



Market Rule Amendment Proposal

PART 1 – MARKET RULE INFORMATION

Identification No.: MR-00235-R00	
Subject: Systems Operations and Physical Markets	
Title: Market Pricing Issues Initiatives - Spare Generation On-Line and Including Control Action Sources of Operating Reserve in the Market	
Nature of proposal (please indicate with X): <u> </u> Alteration <u> </u> Deletion <u> X </u> Addition	
Chapter: 7	Appendix:
Sections: 2.2B (new)	
Sub-sections proposed for amending:	

PART 2 – PROPOSAL HISTORY

Version	Reason for Issuing	Version Date
1.0	Submitted for Technical Review	June 11, 2003
2.0	Submitted for Technical Panel Review and Vote	June 20, 2003
3.0	Incorporate Technical Panel comments	June 24, 2003
4.0	Recommended by Technical Panel and submitted for IMO Board Approval	June 27, 2003
5.0	Approved by IMO Board	July 3, 2003
Approved Amendment <i>Publication</i> Date: July 4, 2003		
Approved Amendment <i>Effective</i> Date: August 6, 2003		

PART 3 – EXPLANATION FOR PROPOSED AMENDMENT

Provide a brief description of the following:

- The reason for the proposed amendment and the impact on the *IMO-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 *IMO-administered markets*.

Summary

These proposed rule amendments will implement the following two initiatives which are part of the IMO's integrated approach to address market pricing issues:

- Spare generation on-line in shoulder periods (refer to R00-R04) and
- Putting control action sources of operating reserve into the market (refer to R05).

The first initiative, spare generation on-line, offers a guarantee of start-up and minimum generation costs to generators. The expected consequence is that generators that might not otherwise commit their units due to uncertainty in being dispatched sufficiently to recover such costs will do so. This spare is expected to reduce the need for the IMO to take out-of-market control actions in response to real-time changes in market and system conditions. The impact of the IMO taking out-of-market control actions is one of the significant contributing factors to the market pricing issues.

The second initiative is to change the way in which control action sources of operating reserve, one of those control actions, are scheduled in the IMO-administered markets. It is proposed that rather than manually scheduling those control action sources on the basis of forecasted need, standing offers for those sources would be introduced in the market at prices to be determined by the IMO Board. These standing offers would then be available for selection by the dispatch scheduling algorithm on the basis of need and the relative prices of all offers of operating reserve. This initiative is expected to result in more transparent, rationale and understandable market pricing signals and outcomes.

Both of these initiatives are expected to assist in the maintenance of the reliable operation of the IMO-controlled grid, through the additional resources being available to address reliability concerns as well through improved and rational pricing signals and outcomes at times of market need.

Background¹

The three major pricing issues that have been identified by market participants are: the differences between pre-dispatch and real-time prices; counter-intuitive prices in times of shortage; and the size, content, and variability of uplift. The factors that have led to these issues also contribute to reduced market efficiency and impacts on the reliability of the IMO-controlled grid. The IMO is pursuing an integrated approach to these market pricing issues. The objective of this approach is to provide rational and understandable prices, improve efficient operation of IMO-administered markets and improve the reliable operation of the IMO-controlled grid.

The strategy to address the pricing, market efficiency and reliability issues is to reduce the frequency of

¹ For a detailed description and analysis of the market pricing issues, strategy and initiatives, refer to the IMO Discussion Paper:

“http://www.theimo.com/imoweb/pubs/consult/mktOps/mo_paper_PricingIssues_20030528.pdf”

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need for out-of-market control actions and then to alter the manner in which control action sources of operating reserves are placed into the market. The means to affect the necessary changes is through an integrated package of initiatives, including the two initiatives proposed in these rule amendments.

Spare Generation On-Line Description

The spare generation on line initiative (please refer to MR-00235-R00-04) is intended to provide a market incentive and mechanism for available spare generation to be on-line in shoulder periods². There would be a guarantee of recovery of start-up and minimum generation costs for domestic generation facilities participating in this voluntary program. This program is comparable and consistent with similar programs provided in neighbouring markets and jurisdictions. This guarantee of generator costs is also consistent with features of the day-ahead market currently under development by the IMO.

It is expected this initiative will reduce the frequency of the need for the IMO to use out of market control actions in response to market and system changes in real-time.

The construct of the spare generation on-line initiative is as follows:

- Participation in the program is strictly voluntary on the part of the generator, both in terms of the generator wishing to have a facility eligible for the program generally and with respect to a specific start-up of an eligible facility.
- A domestic, dispatchable generation facility can become eligible for this voluntary program by providing the IMO with its start-up and minimum generation costs, a minimum run-time, and its minimum loading point. (refer to R00)
- In the event that a generator actually receives a guarantee payment, the IMO would retain the right to audit the costs submitted to it to ensure the market was not overpaying for the guaranteed costs. This auditing is judged to be necessary since these guaranteed costs would not be subject to market forces and discipline which is the case for energy and operating reserve offers made by the same generators. The risk of being subject to an audit is also judged to be a preventative measure against possible gaming opportunities e.g. a market participant submitting offers with low prices in order to be ensured that they are scheduled and eligible for the guarantee, but then submitting inappropriately high fuel costs to be recovered through the guarantee payment. (refer to R00)
- The market participant can revise minimum run-time and minimum loading point information at any time.
- The market participant would submit dispatch data for an eligible generation facility using existing tools, processes and procedures. Revisions to dispatch data corresponding to the facility's minimum loading point would be subject to some restrictions in order to prevent some identified gaming opportunities. (refer to R01)
- If the generation facility is scheduled in any pre-dispatch schedule determined within 3 hours of a given dispatch hour, the market participant would, in order for their facility to be eligible for the guarantee, notify the IMO of its intent to synchronize for that dispatch hour, and the facility would

² Shoulder periods are defined as those periods when market demands are such that not all domestic generation is required to be synchronized to meet the demand. Such periods are typically in the spring and autumn seasons and in off-peak periods in the summer and winter seasons.

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need to actually do so. (refer to R01)

- The IMO shall, subject to reliability considerations, in order to respect the minimum run-time requirement, constrain on the facility at its minimum loading point for the facility's submitted minimum run-time. (refer to R02)
- The market participant, subject to the provisions of section 3.3.8 of Chapter 7, shall not revise its submitted price/quantity pairs reflective of the generation facility's minimum loading point if their eligible facility is scheduled for the dispatch hour in the pre-dispatch schedule determined 3 hours ahead of the dispatch hour. This restriction. necessary to prevent a potential gaming opportunity in which the market participant could through the revision of its dispatch data in the time period between notifying the IMO of its intent to synchronize and the closing of the bid window increase its congestion management settlement credit payments. (refer to R00)
- The generation facility shall follow its IMO dispatch instructions as per the existing market rules.
- Every month for each eligible generation facility on a per-start basis, the IMO would sum the following market revenues for the eligible facility (refer to R03)
 - energy and congestion management settlement credit payments earned by the generation facility during the period from the time from synchronization to the IMO-controlled grid to achieving minimum loading point;
 - all energy and congestion management settlement credit payments received for generating at the minimum loading point;
 - all operating reserve payments received from the time from synchronization to the IMO-controlled grid to the end of the minimum run-time.

The energy revenues shall be determined by multiplying the applicable energy market price times the metered quantity injected by the facility.

Market energy and CMSC revenues received for being dispatched and generating above their minimum loading are not included. These revenues are excluded so as to not create a financial disincentive for eligible generators to generate above their minimum loading point. If those revenues were included, the generator could actually end up not recovering all of its costs for doing so.

Operating reserve revenues, regardless of the output of the facility, are proposed to be included as it is judged that the facility is earning these revenues as a result of being on-line and being eligible for the guarantee. These revenues are earned at little to no cost to the generator and would normally be used to offset the generator's costs of operation.

- The IMO would compare this sum of revenues to the market participants's submitted combined guaranteed costs. If the sum of market revenues is greater than or equal to the sum of the submitted combined guaranteed costs, no additional payments would be made. If the sum of market revenues is less than the submitted combined guaranteed costs the IMO will pay the market participant the difference thus guaranteeing the recovery of those costs for the generation facility. (refer to R03)
- The guarantee would be paid out to generators as a monthly payment. The costs for the guarantee payments would be collected from other market participants as monthly uplift. Collection would

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be on the basis of monthly allocated quantity of energy withdrawn (AQEW) for each market participant. (refer to R03)

- To facilitate this initiative it is necessary to introduce several new definitions into Chapter 11 of the market rules. (refer to R04).

“Control action Sources” of Operating Reserve Into the Market Description

Also proposed is the inclusion of control action sources of operating reserve in the IMO-administered markets (refer to R05). By introducing the operating reserve at a price the marketplace will clear at price that reflects the value of the resources meeting that demand. This initiative will significantly improve the efficiency of the market by ensuring that accurate signals are sent to the market when there is a shortfall. It is expected that the other pricing initiatives will reduce the frequency with which the IMO uses ‘control action’ sources of operating reserve and will reduce price and dispatch volatility. Making this change in isolation is expected to increase the average market price, through the elimination of the counter-intuitive pricing that has resulted when the control action sources of operating reserve being manually scheduled. Therefore, the impact of bringing these sources of operating reserve into the market needs to be tempered by other initiatives that reduce the frequency of their use. The staging of these initiatives including removal of the 4 to 2 hour restrictions (MR00232), improved market information (MR00230), and hour ahead dispatchable load (MR00220) addresses this balance. The implementation of all the other market pricing initiatives is expected to establish conditions and market operation such that the operating reserve initiative can be implemented without unacceptable impact.

MR-00235-R00 - It is proposed to insert a new section 2.2B in Chapter 7. The purpose of this proposed section is described below:

Section 2.2B.1 – Articulates the conditions under which a generation facility can be eligible for the generation cost guarantee.

Section 2.2B.2 - Enables the IMO to audit the data submitted to ensure any generation cost guarantee payments made to eligible generation facilities are appropriate.

PART 4 – PROPOSED AMENDMENT**2.2B Generation Facility Eligibility for the Generation Cost Guarantee**

2.2B.1 A generation facility shall be eligible for the guarantee of certain elements of its costs, calculated in accordance with section 4.7B of Chapter 9, provided the following criteria are met:

2.2B.1.1 the facility is not a quick-start facility;

2.2B.1.2 the facility is a dispatchable generation facility;

2.2B.1.3 the facility is located within Ontario;

2.2B.1.4 the applying *market participant* has, according to the timelines and in the form specified in the applicable *market manual*, submitted to the *IMO* the following data for the *generation facility*: *combined guaranteed costs*; *minimum run-time*; and the *minimum loading point* and that the *IMO* accepts the data as reasonable.

2.2B.2 The *IMO* shall retain the right, at any time, to audit the data submitted in accordance with section 2.2B.1.4 if the *market participant* receives a *generation cost guarantee payment* pursuant to section 4.7B.3 of Chapter 9 on the basis of that data. If the data is determined to be inaccurate the *IMO* shall recover any *over-payments* made to the *market participant* based on those submitted costs.

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Identification No.: MR-00235-R01	
Subject: Systems Operation and Physical Market	
Title: Market Pricing Issues - Spare Generation On-Line and Including Control Action Sources of Operating Reserve in the Market	
Nature of proposal (please indicate with X): ___Alteration___ Deletion ___x___ Addition	
Chapter: 7	Appendix:
Sections: 5.7 (new)	
Sub-sections proposed for amending: 5.7.1 (new)	

PART 2 – PROPOSAL HISTORY – PLEASE REFER TO MR-00235-R00

Version	Reason for Issuing	Version Date
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PART 3 – EXPLANATION FOR PROPOSED AMENDMENT

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Refer to MR-00235-R00.

It is proposed to specify in the market rules how a generation facility becomes eligible for the generation cost guarantee for a given synchronization in a given dispatch hour. It is therefore proposed that a new section 5.7 be inserted into Chapter 7 to detail this eligibility.

The following provisions and limitations are proposed regarding the offer prices corresponding to the minimum loading point:

- The offer price for the first hour of the minimum run-time must be greater than or equal to the offer prices for subsequent hours of the minimum run-time. This provision is necessary to address a gaming opportunity whereby a generator submits a low offer price for its minimum load lamination for the first hour of its minimum run-time that it expects it would be scheduled and much higher prices for the same lamination in subsequent hours. The low offer price associated with that first hour results in the generator being scheduled for that first dispatch hour in one of the necessary pre-dispatch schedules. Once so scheduled, the generator is assured of operation at its minimum loading point for the minimum run-time, and therefore could receive very high CMSC payments for those hours after the first dispatch hour as a result of the higher offer prices for the same lamination.
- The market participant would only be allowed to reduce its offer prices for the lamination corresponding to its minimum loading point for the minimum run time after the publication of the pre-dispatch schedule three-hours ahead of the dispatch hour that would be the first hour of that minimum run-time. This provision is necessary to prevent a gaming opportunity whereby a market participant is scheduled for the dispatch hour, but prior to notifying the IMO of its intention to synchronize and qualify for the guarantee, the participant increases those offer prices and then receives very high CMSC payments for its minimum run-time operation. The ability to reduce its offer prices is necessary to allow a market participant to try and get scheduled in subsequent pre-dispatch schedules for that dispatch hour.

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5.7 Pre-Dispatch Scheduling of Generation Facilities Eligible for the Generation Cost Guarantee

5.7.1 A generation facility shall be eligible on a voluntary basis for the generation cost guarantee on a per-start basis for a given dispatch hour, provided that:

5.7.1.1 the criteria specified in section 2.2B have been met:

5.7.1.2 the offer price in the submitted price-quantity pair corresponding to the minimum loading point for that generation facility for the first hour of the minimum run-time for that generation facility is greater than or equal to the offer prices in the submitted price-quantity pairs corresponding to the minimum loading point for that generation facility for subsequent hours of the minimum run-time;

5.7.1.3 the generation facility is scheduled for the dispatch hour in any pre-dispatch schedule determined within 3 hours ahead of the dispatch hour;

5.7.1.4 the registered market participant for the generation facility does not increase the offer prices in its submitted price-quantity pairs corresponding to the generation facility's minimum loading point for the minimum run time after the time of the publication of the pre-dispatch schedule determined three hours prior to the dispatch hour;

5.7.1.5 the generation facility is not already synchronised at the time of the publication of the applicable pre-dispatch schedule referred to in section 5.7.1.3;

5.7.1.6 the registered market participant for the generation facility notifies the IMO of its intention to synchronise and then run for at least the minimum run-time in accordance with applicable market manual; and

5.7.1.7 at the time of notification of intention to synchronise made in accordance with section 5.7.1.4, the registered market participant for the generation facility also notifies the IMO of its intention to qualify for the generation cost guarantee.

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Market Rule Amendment Proposal

PART 1 – MARKET RULE INFORMATION

Identification No.: MR-00235-R02	
Subject: Systems Operation and Physical Market	
Title: Market Pricing Issues - Spare Generation On-Line and Including Control action Sources of Operating Reserve in the Market	
Nature of proposal (please indicate with X): <u> </u> Alteration <u> </u> Deletion <u> x </u> Addition	
Chapter: 7	Appendix:
Sections: 6.3A (new)	
Sub-sections proposed for amending: 6.3A.1, 6.3A.2 (new)	

PART 2 – PROPOSAL HISTORY – PLEASE REFER TO MR-00235-R00

Version	Reason for Issuing	Version Date
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Refer to MR-00235-R00.

Consequential to MR-00235-R00 there is a need to specify in the market rules with respect to the real-time scheduling of generation facilities eligible for the generation cost guarantee that the facility must be synchronized before the end of the given dispatch hour and operate for its minimum run-time.

The IMO shall, subject to reliability considerations, constrain on the facility at its minimum loading point if necessary to respect the submitted minimum run-time for the facility. If the IMO has to constrain-off a facility eligible for the guarantee such that the generator has to shut down before the end of its minimum run-time, it is proposed that the facility remains eligible for the guarantee and that the guarantee would be determined on the basis of the actual operation. This provision is judged appropriate as the shutdown of the facility was at the initiation of the IMO. It should be noted that implicit in the requirement for the facility to operate for the minimum run-time unless dispatched off by the IMO, is that if the facility shuts down before the end of its minimum run-time for a reason other than IMO dispatch, the facility is no longer eligible for the guarantee for that start.

It is therefore proposed to insert a new section 6.3A to facilitate these actions.

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6.3A Real-Time Scheduling of Generation Facilities Eligible for the Generation Cost Guarantee

6.3A.1 After the registered market participant for a generation facility eligible for the generation cost guarantee notifies the IMO of its intent to synchronise pursuant to section 5.7 of Chapter 7, that generation facility shall synchronise, unless otherwise agreed to by the IMO, before the end of the specified dispatch hour and, subject to section 6.3A.3, run for the minimum run-time.

6.3A.2 The IMO shall, unless there is an adverse impact on the reliable operation of the IMO-controlled grid, if necessary to respect the minimum run-time submitted by the market participant for the generation facility, constrain on the facility at its minimum loading point for the specified minimum run-time.

6.3A.3 If the IMO, for reasons of reliability, constrains off the generation facility such that the generation facility has to de-synchronise before the end of its minimum

run-time, the generation facility shall remain eligible for the generation cost guarantee.

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Market Rule Amendment Proposal

PART 1 – MARKET RULE INFORMATION

Identification No.: MR-00235-R03	
Subject: Systems Operation and Physical Market	
Title: Market Pricing Issues - Spare Generation On-Line and Including Control action Sources of Operating Reserve in the Market	
Nature of proposal (please indicate with X): ___Alteration___ Deletion ___x___ Addition	
Chapter: 9	Appendix:
Sections: 4.7B (new)	
Sub-sections proposed for amending: 4.7B.1, 4.7B.2, 4.7B.3 (new)	

PART 2 – PROPOSAL HISTORY – PLEASE REFER TO MR-00235-R00

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Consequential to MR-00235-R00 there is a need to clarify how the generation cost guarantee is calculated and the conditions by which such payments shall be made to the eligible generation facility. Guarantee payments will be determined monthly for all starts for each eligible facility. Any guarantee payments will be made to generators on a monthly basis. Costs for the guarantee payments shall be recovered from load market participants as part of monthly uplift charges. Monthly payments and collections are proposed due to the manual processes required to be used to implement this initiative.

PART 4 – PROPOSED AMENDMENT**4.7B Generation Cost Guarantee Payments**

4.7B.1 The *IMO* shall determine on a *per-start* basis, for each *generation facility* that has met the eligibility criteria for the generation cost guarantee specified in sections 2.2, 5.7 and 6.3A of Chapter 7, the following:

4.7B.1.1 the sum of the following revenues earned in each *dispatch interval* during the period from synchronisation to the end of the *minimum run-time*:

(i) *energy market* prices times the sum of the applicable AQEI and any applicable *physical allocation data*, for *energy injected* up to and including the *minimum loading point*; and

(ii) *hourly settlement amounts* for *operating reserve*; and

(iii) any congestion management *settlement credit* payments resulting from the *facility* being constrained on in order to meet its *minimum loading point*; and

4.7B.1.2 the applicable *combined guaranteed costs* submitted by the *market participant* for the specified *generation facility* for the start to which the revenues determined in accordance with 4.7B.1.1 apply.

4.7.B.2 If for each eligible *generation facility* the sum of the revenues calculated pursuant to section 4.7B.1.1 is greater than or equal to the *combined guaranteed costs*

referred to in section 4.7B.1.2, then no additional payments are made in respect of the eligible generation facility by the IMO.

4.7.B.3 If for each eligible generation facility the sum of the revenues calculated pursuant to section 4.7.1.1 is less than the combined guaranteed costs referred to in section 4.7B.1.2, then the IMO shall calculate that difference and shall include that amount in the form of additional payments made in respect of the eligible generation facility.

4.8 Additional Non-Hourly Settlement Amounts

4.8.1 The IMO shall, at the end of each energy market billing period, recover from market participants, on a pro-rata basis across all allocated quantities of energy withdrawn at all RWMs and intertie metering points during all metering intervals and settlement hours within that energy market billing period, the following amounts:

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4.8.1.7 any funds borrowed by the IMO and any associated interest costs incurred by the IMO in the preceding energy market billing period pursuant to section 6.14.5.2; ~~and~~

4.8.1.8 any compensation paid in that energy market billing period by the IMO pursuant to section 4.7A.; and

4.8.1.9 any compensation paid in that energy market billing period by the IMO pursuant to section 4.7.B.3.

PART 5 – IMO BOARD COMMENTS



Market Rule Amendment Proposal

PART 1 – MARKET RULE INFORMATION

Identification No.: MR-00235-R04	
Subject: Systems Operations and Physical Markets - Market Pricing Issues	
Title: Market Incentives to Increase Spare Generation On-Line/Including Control action Sources of Operating Reserve in the Market	
Nature of proposal (please indicate with X): ___Alteration___ Deletion ___Addition	
Chapter: 11	Appendix:
Sections:	
Sub-sections proposed for amending:	

PART 2 – PROPOSAL HISTORY – PLEASE REFER TO MR-00235-R00

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Consequential to MR-00235-R00 there is need to add a number of new definitions to Chapter 11 of the market rules to facilitate the generation cost guarantee.

Only fuel costs are proposed to eligible for the guarantee for the following reasons, even though there may be other incremental costs associated with the start-up and operation of a generation facility at its minimum load point.

- Facilities eligible for this program will, by the nature of the guarantee of cost recovery, have an advantage over non-eligible facilities that can be available in real-time i.e. this program, to some extent, reduces the market value of quick-start facilities. Restricting the cost guarantee to fuel costs limits this advantage.
- Fuel costs are readily verifiable on the basis of public information e.g. natural gas, oil, coal prices and historical cost submissions. This facility of verification is expected to reduce the market participant effort required to determine the applicable costs and the need for IMO auditing of submitted costs, both of which should improve the administrative efficiency of the program.

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quick start facility means a generation facility whose electrical energy output can be provided to the IMO-controlled grid within 5 minutes of the IMO's request and is provided by equipment not synchronized to the IMO-controlled grid when the request to start providing energy is made;

minimum run-time means the time period specified by the market participant, for which a generation facility having reached its minimum loading point must run in accordance with the technical requirements of the facility;

combined guaranteed costs means all fuel costs, as defined in the applicable market manual, incurred by a generation facility to achieve synchronization and once synchronized with the IMO-controlled grid to move to the generation facility's minimum loading point and once at its minimum loading point to stay at that point for the generation

facility's specified minimum run-time;

minimum loading point means the minimum output of energy specified by the market participant that can be produced by a generation facility under stable conditions without ignition support.

per-start means the act of achieving synchronization to the IMO-controlled grid, ramping to the minimum loading point and operating at the minimum loading point for the minimum run-time.

PART 5 – IMO BOARD COMMENTS



Market Rule Amendment Proposal

PART 1 – MARKET RULE INFORMATION

Identification No.: MR-00235-R05	
Subject: Systems Operations and Physical Markets - Market Pricing Issues	
Title: Market Incentives to Increase Spare Generation On-Line/Including ‘Control action’ Sources of Operating Reserve in the Market	
Nature of proposal (please indicate with X): ___Alteration___ Deletion ___x___ Addition	
Chapter: 5	Appendix:
Sections: 4.5.6A (revised)	
Sub-sections proposed for amending: 4.5.6A.1, 4.5.6A.2, 4.5.6A.3 (new)	

PART 2 – PROPOSAL HISTORY – PLEASE REFER TO MR-00235-R00

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Refer to MR-00235-R00.

In order to facilitate the inclusion of ‘control action’ sources of operating reserve in the IMO-administered markets (please refer to MR-00235-R00) it is necessary to revise section 4.5.6A of Chapter 5 to place an obligation on the IMO to put these offers into the market. However, in some circumstances it may be necessary for reliability reasons for the IMO to remove these offers, however, when the IMO takes such action there is an additional obligation on the IMO in subsection 4.5.6.A.1 to promptly notify market participants and the IMO Board of such actions and the reasons therefor. Subsection 4.5.6.A.2 articulates the offer prices and quantities for this ‘control action’ operating reserve shall be set by the IMO Board and subsection 4.5.6.A.3 obligates the IMO to publish when these offers are scheduled.

PART 4 – PROPOSED AMENDMENT**4.5 Operating Reserve**

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- 4.5.6A The IMO may include voltage reductions, and reductions in the thirty-minute operating reserve requirements within allowable reliability standards as standing offers in the operating reserve markets subject to the following conditions:
- 4.5.6A.1 the IMO shall introduce such standing offers in increasing quantities;
- 4.5.6A.2 the quantities referred to in section 4.5.6A.1 and the prices therefor shall be determined by the IMO Board and such quantities and prices shall be published by the IMO;
- 4.5.6A.3 the IMO Board may specify the circumstances under which any one or more of the quantities may either be withdrawn or not introduced and the manner in which any such withdrawal will be effected and the publishing thereof;
- 4.5.6A.4 the IMO shall publish the times and quantities of the voltage reductions and reduction in thirty-minute operating reserve when these

sources of *operating reserve* have been scheduled to provide *operating reserve*; and

4.5.6A.5 the prices and quantities of the standing *offers* set by the *IMO Board* in accordance with section 4.5.6A.2 shall be monitored by the *IMO* to assess their impacts and that any changes to the prices and quantities would be recommended to the *IMO Board* as necessary.

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