



Market Rule Amendment Submission

This form is used to request an amendment to, or clarification of, the *Market Rules*. Please complete the first four parts of this form and submit the completed form by email or fax to the following:

Email Address: Rule.Amendments@theIMO.com
 Fax No.: (416) 506-2847 Attention: Market Rules Group
Subject: *Market Rule Amendment Submission*

All information submitted in this process will be used by the *IMO* solely in support of its obligations under the *Electricity Act, 1998*, the *Ontario Energy Board Act, 1998*, the *Market Rules* and associated policies, standards and procedures and its licence. All submitted information will be assigned the *confidentiality classification* of “public” upon receipt. You should be aware that the *IMO* will *publish* this *amendment submission* if the *Technical Panel* determines it warrants consideration and may invite public comment.

Terms and acronyms used in this Form that are italicized have the meanings ascribed thereto in Chapter 11 of the *Market Rules*.

PART 1 – SUBMITTER’S INFORMATION

Please enter contact information in full

Name: Rob Cary	
(if applicable) <i>Market Participant / Metering Service Provider No.</i> ¹ :	<i>Market Participant Class: Generator</i>
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PART 2 – MARKET RULE AMENDMENT SUBMISSION INFORMATION

Subject: Generator excitation requirements		
Title: Generator excitation system performance requirements for units under 100 MW		
Nature of request (please indicate with X): <u>X</u> Alteration__Deletion__Addition		
Clarification		
Chapter:	Appendix: 4.2	Sections: 12
Sub-sections proposed for amending/clarifying :		

¹ This number is a maximum of 12 characters and does not include any spaces or underscore.

PART 3 – DESCRIPTION OF THE ISSUE

Provide a brief description of the issue and reason for the proposed amendment. If possible, provide a qualitative and quantitative assessment of the impacts of the issue on you and the *IMO-administered markets*. Include the Chapter and Section number of the relevant market rules.

The generator excitation system performance requirement presently set out in section 12 of appendix 4.2 limits all new units over 10 MVA to the use of static excitation. This requirement may also apply to smaller units in a single facility with aggregate net output over 50 MVA.

Facilities existing prior to the coming into force of this rule are not required to meet this standard unless and until their exciter is replaced.

Static excitation provides faster response and is significantly more costly than the alternative brushless excitation. While the faster response is required for system reliability reasons in certain circumstances, it has been acknowledged in discussion with IMO staff as having no- or low-impact on reliability in robust areas of the grid, except potentially for large units.

This rule change is therefore proposed to relieve investors in new facilities from a requirement that is unnecessarily onerous and expensive. This has emerged as a high priority issue in recent months. In particular the “commodity” LM6000 gas turbine produced for the North American market incorporates brushless excitation. The ability to utilise such commodity machines in Ontario would enable developers to procure equipment on the secondary market (machines ordered for projects which were then cancelled) and would remove both time and cost obstacles in developing such projects.

It is difficult to make a definitive and exact cutoff, and it is recognised that grid location matters, so the proposed rule amendment would give the IMO a degree of discretion at the time of connection assessment to require static excitation. Given such discretion to impose the requirement on smaller units, the rule amendment proposes a normal cutoff of 100 MVA unit size. The IMO may wish to consider a higher cutoff.

Many projects of this scale will be embedded generation projects, and consideration was given to limiting the proposed rule change to such circumstances. This was not seen as a necessary restriction. However, where the generation units are embedded with distribution systems or with industrial loads, it may be important that the host distributor or load has confirmed that it is not negatively impacted by adoption of the lower standard. The proposed rule change therefore makes the lower standard subject to approval of any such host.

The requirement that the IMO decide at the time of connection assessment whether to impose the higher requirement is an essential feature. Potential investors need certainty no later than such date; and the IMO has had the opportunity to evaluate the connection impacts.

PART 4 – PROPOSAL (BY SUBMITTER)

Provide your proposed amendment. If possible, provide suggested wording of proposed amendment.

Appendix 4.2, section 12, Excitation system performance:

Each synchronous *generation unit* that is rated at 100 MVA or larger shall be equipped with an

excitation system with voltage response time not longer than 50 ms, and ceiling voltage at least twice the rated field voltage.

Generation units rated less than 100 MVA ~~within a generation facility with an aggregated rated net output of greater than 50 MVA may~~ shall be required to observe these criteria if identified by the IMO as part of the connection assessment.

Generation units rated less than 100 MVA but more than 10 MVA, and embedded in a distribution system or load facility shall be required to observe these criteria unless it is confirmed by the host distributor or load facility market participant at the time of connection assessment that it is not a requirement.

PART 5 – FOR *IMO* USE ONLY

Technical Panel Decision on Rule Amendment Submission	
MR number: MR-00244-Q00	
Date submitted to Technical Panel: October 9, 2003	
Accepted by Technical Panel as: <input checked="" type="checkbox"/> General <input type="checkbox"/> Urgent <input type="checkbox"/> Minor (please indicate with X)	Date: October 14, 2003
Criteria for acceptance: Identifies ways to simplify the market and/or reduce participant or IMO costs. Relaxed generator excitation performance standards, where appropriate, could result in lower costs for persons building new generation in Ontario.	
Priority: High	
Criteria for assigning priority: It is likely that a technically feasible solution can be quickly developed that is acceptable to market participants and the IMO. Timely resolution of this issue may also remove a barrier to new generation capacity investment in Ontario.	
Not accepted (please indicate with X):	
Clarification/interpretation required (please indicate with X):	
Technical Panel minutes reference: IMOTP 132-1	

PART 5 – FOR *IMO* USE ONLY

Technical Panel Comments: Rather than the approach suggested in Part 4 above, the Technical Panel believes that rule amendments should be developed as follows:

- The market rules should specify, in addition to the existing standard, a “minimum” performance standard for generator excitation systems. Both standards would be applicable to all generators, embedded or directly connected, rated above 10 MVA. The minimum performance standard would be based on the typical performance characteristics of equipment that is readily and commercially available.
- At the time of the generation unit connection assessment, the IMO would determine if the minimum performance standard would apply to the connection application in question. The IMO would permit the application of the minimum performance standard provided that its application would not result in an adverse impact on the reliable operation of the IMO-controlled grid.
- The market rules would retain the existing provisions regarding the performance standard for generator unit excitation systems for generation units rated less than 10 MVA.

The market rules should only define generator excitation system performance standards as they relate to the reliable operation of the IMO-controlled grid. It is recognized, but should not be reflected in the market rules, that host distributors and loads can impose stricter performance standards as part of the connection agreement with an embedded generator.

The Panel also noted that the exercise of discretion by the IMO with respect to the excitation system performance standard requirements as contemplated at the time of the connection assessment must be fair and equitable.

The Panel also noted the potential for the minimum performance standards to have an adverse impact on the reliable operation of the IMO-controlled grid. Recognizing this potential, and in light of the recent blackout and heightened awareness of the importance of reliability, the IMO would exercise this discretion conservatively.