



## Market Rule Amendment Proposal

### PART 1 – MARKET RULE INFORMATION

Identification No.:	MR-00258-R00		
Subject:	Metering		
Title:	Testing Requirements for Revenue Metering Installations		
Nature of Proposal:	<input checked="" type="checkbox"/> Alteration	<input type="checkbox"/> Deletion	<input type="checkbox"/> Addition
Chapter:	6	Appendix:	6.3
Sections:	1.4, 1.5		
Sub-sections proposed for amending:	1.4.3 (new), 1.5.1, 1.5.2		

### PART 2 – PROPOSAL HISTORY

Version	Reason for Issuing	Version Date
1.0	Submitted for Technical Panel Review	July 08, 2004
2.0	Incorporate Technical Panel comments and post for stakeholder review and written comment	July 14, 2004
3.0	Submitted for Technical Panel Vote	August 19, 2004
4.0	Recommended by Technical Panel and Submitted for IMO Board Approval	August 25, 2004
5.0	Approved by IMO Board	October 8, 2004
Approved Amendment Publication Date:	October 12, 2004	
Approved Amendment Effective Date:	December 8, 2004	

### 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**

It is proposed to amend the market rule provisions regarding the testing of revenue meter installation instrument transformers (IT). These amendments are in response to concerns identified by Market Participants (MPs), Meter Service Providers (MSPs), and Metered Market Participants (MMPs).

First, it is proposed to amend section 1.4 of Appendix 6.3 to reduce the required frequency of IT checks. The current market rules require a frequency of IT checks which is deemed to be excessive because of the very low frequency of IT failures witnessed to date in the market.

Second, it is proposed to amend the market rules such that metering installations with a main/alternate arrangement would be subject to an IT check – currently IT checks are not required for these installations.

Third, it is proposed to amend the threshold for determining the frequency of routine testing of revenue metering installations. The recommendation is to replace the use of transformer circuit capacity with a threshold based on actual usage – maximum monthly load.

These amendments are expected to result in more effective testing of revenue metering installations.

#### **Background**

Market Rules Chapter 6 Appendix 6.3 Section 1.5 requires the metering service provider (MSP) to test the primary and secondary voltages and currents of instrument transformers (IT) (voltage transformers (VTs) and current transformers (CTs)) for revenue metering installations that are not a main/alternate installation. Section 1.5 also specifies the frequency of routine tests (data reconciliation, meter spot checks and instrument transformer checks). MPs, MMPs, MSPs, and the IMO have identified that the current IT testing requirements are not appropriate for two reasons. First, the reliability of ITs since market commencement has been very high and does not warrant the frequency of checks currently required. Secondly, IT checks are not required for revenue metering installations with main/alt meters but should be as these ITs are subject to the same types of failures as other metering installations.

#### **Frequency of IT Checks.**

It is proposed that IT checks remain as a requirement - the IT check is the only way to find small partial failures and ratio errors – but the frequency be reduced to a 6 year cycle or triggered to specific events such as the commissioning of any new metering installation and thereafter at the earliest of the manufacturers' recommended maintenance cycle or evidence that the IT's accuracy has been compromised in the opinion of the IMO. These changes would save MMP's up to \$7.5 million over a 6 year period with very small risk to the market. Checking once or twice per annum is unreasonable considering the very low frequency of IT failure found in power systems. IT failures are typically 0.03% to 0.05% per annum. Based on the approximately 1,300 legacy metering installations (7,800 individual ITs) there would be 2 to 4 failures in a typical year.

### PART 3 – EXPLANATION FOR PROPOSED AMENDMENT

Conforming meters from the conforming meter list have the advantage in that they record volts and amps as well as energy. The IMO's validation software checks these measures of volts and amps to see if they are reasonable and where they fail the validation criteria, the IMO issues a meter trouble report (MTR) for immediate investigation. Catastrophic failures of ITs are also likely to be flagged this way. The expected consequence of the IMO validation is that the number of ITs that fail but pass the IMO validation and are only caught by the IT check amount to 1 or 2 failures per year i.e. an average of 1.5 failures per annum. The cost of completing IT checks for all installations on an annual basis is estimated to cost \$1.5 million. At this rate it costs the market approximately \$1 million to find one IT failure.

#### Main/alternate installations

The Market Rules currently exempt metering installations that contain a main/alternate installation from IT checks. The rationale for this is that conforming meters bring back measures of volts and amps and the IMO's software validates these measures. The drawback of this system is that while catastrophic failures will be identified by the IMO validation, partial failures and ratio errors may not be caught and may continue indefinitely. For this reason it is proposed that ITs for metering installations that contain a main/alternate meter be subject to the proposed IT check. Main/alternate installations would be subject to the IT checks and not the other routine testing. At a minimum, regardless of the metering installation ITs would be tested once every 6 years.

#### Frequency of Routine Testing:

It is proposed to replace the use of transformer or circuit capacity in section 1.5.1 and 1.5.2 of Appendix 6.3 with a threshold based on actual usage – maximum monthly load as the basis for determining the frequency of routine testing. Metered Market Participants that draw more than 10 MW should be required to do the routine tests more than twice per annum based on actual consumption. Those that pose a greater risk to the market should be subject to greater scrutiny.

### PART 4 – PROPOSED AMENDMENT

## Appendix 6.3 – Inspecting and Testing Requirements

### 1.4 Instrument Transformer Checks

- 1.4.1 The testing of currents and voltages applied to a *meter*, supported by independent confirmation of primary current and voltage, shall be used to test the correct operation of all *instrument transformers*.

1.4.2 The procedure referred to in section 1.4.1 may be conducted by a *metering service provider* by remote means if the *meter* is capable of transmitting the applied currents and voltages and if primary current and voltage can be independently confirmed by remote access.

1.4.3 Each *metering service provider* shall conduct the procedure referred to in section 1.4.1 in respect of each *metering installation* for which it acts as a *metering service provider* at the commissioning of any new *metering installation* and for all existing *metering installations* at the earliest of the following:

- a. as per the *instrument transformer's* manufacturer's recommended maintenance schedule;
- b. when the *IMO* has evidence that the *instrument transformer's* accuracy has been compromised; and
- c. in any event, no less than once in six years.

## 1.5 Frequency of Routine Testing

1.5.1 Each *metering service provider* shall conduct the routine tests referred to in sections 1.2 to 1.34 of this Appendix in respect of each *metering installation* for which it acts as a *metering service provider* that is not a *main/alternate metering installation* and that is associated with a *facility* that has an average annual maximum monthly load transformer or circuit capacity of less than 10 MW as follows:

- 1.5.1.1 once every six months no less than twice in each successive twelve-month period following the date of registration of the *metering installation*, in the case of the procedure referred to in section 1.2.1; and
- 1.5.1.2 once every twelve months no less than once in each successive twelve-month period following the date of registration of the *metering installation*, in the case of each of the procedures referred to in sections 1.3.1 and 1.4.1.

1.5.2 Each *metering service provider* shall conduct the routine tests referred to in sections 1.2 to 1.34 of this Appendix in respect of each *metering installation* for which it acts as a *metering service provider* that is not a *main/alternate metering installation* and that is associated with a *facility* that has an average annual maximum monthly load transformer or circuit capacity of 10 MW or more as follows:

- 1.5.2.1 once every 3 months no less than four times in each successive twelve-month period following the date of registration of the *metering*

*installation*, in the case of the procedure referred to in section 1.2.1;  
and

- 1.5.2.2 ~~once every six months no less than twice in each successive twelve-month period~~ following the date of registration of the *metering installation*, in the case of each of the procedures referred to in sections 1.3.1, ~~and 1.4.1.~~

**PART 5 – IMO BOARD COMMENTS**

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## Market Rule Amendment Proposal

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Identification No.:	MR-00258-R01		
Subject:	Metering		
Title:	Testing Requirements for Revenue Metering Installations		
Nature of Proposal:	<input checked="" type="checkbox"/> Alteration	<input type="checkbox"/> Deletion	<input type="checkbox"/> Addition
Chapter:	6	Appendix:	
Sections:	11.1		
Sub-sections proposed for amending:	11.1.3.3a		

### PART 2 – PROPOSAL HISTORY – PLEASE REFER TO MR-00258-R00

Version	Reason for Issuing	Version Date
Approved Amendment Publication Date:		
Approved Amendment Effective Date:		

**PART 3 – EXPLANATION FOR PROPOSED AMENDMENT**

Provide a brief description of the following:

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On a related metering market rule issue when MR-00228-R00-03: Seal Expiry – Metering Installations was approved by the IMO Board one of the market rule amendments (R02) increased the time allowed for the replacement of an instrument transformer (IT) to 12 weeks from 8 weeks. Increasing the time period reduces inventory costs for the Metered Market Participant (MMP). Through an oversight a necessary amendment to section 11.1.3.3a of Chapter 6 which would increase the time from 8 weeks to 12 weeks was missed. It is proposed to facilitate this minor amendment during the processing of MR-00258-R00.

**PART 4 – PROPOSED AMENDMENT**

- 11.1.3 Where the *IMO* becomes aware, other than by means of the notice referred to in section 11.1.2, that a *metering installation* has gone out of service, is defective or malfunctions, the *IMO* shall:
- 11.1.3.1 promptly notify the *metered market participant* for that *metering installation* of the *outage*, defect or malfunction and issue a trouble call to the *metering service provider* for that *metering installation*;
- 11.1.3.2 where the *outage*, defect or malfunction relates to any portion of the *metering installation* other than an *instrument transformer*, direct the *metered market participant* to ensure that the *metering installation* or the defective portion thereof is replaced or that repairs are made to the *metering installation* as soon as practicable and in any event within 2 *business days* of the date of the notice referred to in section 11.1.3.1 or within such longer period of time as may be specified by the *IMO*; and
- 11.1.3.3 where the *outage*, defect or malfunction relates to an *instrument transformer*, direct the *metered market participant* to:
- a. ensure that the *instrument transformer* is replaced as soon as practicable and in any event within 128 weeks of the date of the notice referred to in section 11.1.3.1 or within such longer period of time as may be specified by the *IMO*; and
  - b. ensure that the emergency restoration plan referred to in section 1.3.2.17 of Appendix 6.5 is implemented within 2 *business days* of the date of the notice referred to in section 11.1.3.1 and



remains in effect until the *instrument transformer* has been replaced.

**PART 5 – IMO BOARD COMMENTS**

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