Market Rule Amendment Proposal

PART 1 – *MARKET RULE* INFORMATION

Identification No.: MR-00228-R00
Subject: Metering
Title: Seal Expiry – Metering Installations
Nature of proposal (please indicate with X): **_X__Alteration___Deletion ___Addition**
Chapter: 6 **Appendix:** **Sections: 4.4**
Sub-sections proposed for amending: 4.4.1; 4.4.1A (new), 4.4.1B (new) and 4.4.1C (new)

PART 2 – PROPOSAL HISTORY

Version	Reason for Issuing	Version Date
1.0	Submitted for Technical Panel Review (TP124)	April 17, 2003
2.0	Recommended by Technical Panel and submitted for IMO-Board Approval	April 23, 2003

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 *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*.

It is proposed to amend the market rules to provide market participants with options with respect to the requirements regarding revenue metering installations at the time of seal expiry. These options are intended to address issues regarding the cost of meeting the existing requirements.

The seals of approximately 380 revenue metering installations will expire in 2003. In accordance with the requirements of Measurement Canada, these meters will have to be replaced with newly sealed meters. Doing nothing and leaving the meters in service is not an option.

The issue at hand is that the cost of meeting the current requirements of the market rules (at seal expiry) during this time of cost restraint is judged by metered market participants to be too high.

In response, the IMO submitted the issue to a stakeholder consultation process and arrived at the compromise position to amend the market rules as outlined below.

Capital expenditures from about $100 million to $300 million would be required to bring metering installations into compliance with the market rules, not all of which would have to be spent over the next three years, which is the period of restraint. Depending on the options selected by metered market participants, capital expenditures of $50 million or more would be deferred during the period of restraint.

New installations

It is recommended that all new revenue-metering installations be required to comply with the market rules as they are presently written.

Existing installations

There are four areas of proposed rule amendments:

1. **Seal Expiry:**

   The proposed seal expiry amendments will allow the metered market participant (MMP) to choose the best option for its particular situation, while continuing to move the market in a direction that improves the overall accuracy and reliability of the metering. The proposed amendments will allow the MMP to comply with the market rules as presently written or choose a lesser standard (as described below) to save costs. It is further proposed that meters from the IMO Conforming Meter List must be used in all cases. The proposed options are as follows.

   For installations that were in-service on the date of coming into force of Chapter 6, section 4.4, including those registered under Appendix 6.2, Alternative Metering Installation Standards, of the market rules, it is proposed that the MMP be able to select from one of the following options:

   a) The MMP can bring the installation into full compliance with the market rules as presently written as if it were a new installation.

   b) The MMP can continue complying with the market rules, as presently written, and the seal

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expiry provisions in Appendix 6.2, Alternative Metering Installation Standards.

c) The MMP can keep its existing metering installation but replace the meters whose seal expired with main and alternate meters from the IMO conforming meter list. This option requires a market rule amendment. See proposed amendment to section 4.4 of Chapter 6 (MR-00228-R00).

d) The MMP can keep its existing metering installation but replace the seal expired meter with a single main meter from the IMO conforming meter list. This option requires a market rule amendment. See proposed amendment to section 4.4 of Chapter 6 (MR-00228-R00).

Under the amendment, alternatives c) and d) above would expire on May 1, 2006. These alternatives would be available for all meters whose seals expire by that time. Meters with seal expiry dates after May 1, 2006 would be required to comply with the market rules for new installations or the market rules for Alternative Metering Installations Standards as outlined in Appendix 6.2 i.e. (a) and (b) above.

A cost assessment of c) and d) above is outlined below under the heading Attachment A. It compares the cost of replacing seal expired meters with:

- like meters,
- main and alternate meters from the conforming meters list (i.e. c) above) , and
- a single standalone main meter from the conforming meters list (i.e. d) above).

2. **Substantial Upgrade or Refurbishment:**

Meters registered under the Alternative Metering Installation Standard, Chapter 6, Appendix 6.2, lose their registration under this standard should the MMP make changes that in the IMO's opinion constitute "substantial upgrade or refurbishment". Loss of registration under this standard requires the MMP to bring the metering installation into full compliance with the market rules as is if it were a new installation.

There are several instances that are judged to constitute a "substantial upgrade or refurbishment" in the Alternative Metering Installation Standard, and any one of them would be grounds for the loss of registration under the alternate standard. For example, should the MMP change the secondary cabling and the IMO judges it constitutes a substantial upgrade or refurbishment, the metering installation has to be brought into full compliance.

Under the proposed amendment (see MR-00228-R00, new section 4.4.1B), the MMP would be required to bring the upgraded or refurbished aspect of the metering installation into full compliance, but not the whole installation. Considering the secondary cabling example above – the secondary cabling would have to be brought into full compliance, but not the rest of the installation and it would continue to be registered under the Alternative Metering Installation Standard. The intent of this change is to reduce costs by reducing the impact on an MMP of a substantial upgrade or refurbishment, while continuing to move the market in a direction that improves the overall accuracy and reliability of the metering.

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This proposal would not apply to non-Blondel installations where the error is greater than 3% - registration for these would expire. See amended section 1.2.5 of Appendix 6.2 (MR-00228-R01).

3. **Time allowed for instrument transformer replacement:**

   It is proposed to increase the time allowed for the replacement of an instrument transformer (IT) to 12 weeks from 8 weeks. Increasing the time allowed will reduce inventory costs for the MMP. Changing to 12 weeks will require an amendment to Chapter 6 section 11.1.2.2. See MR-00228-R02.

4. **Instrument transformer proof of accuracy**:

   Metering installations registered under the Alternative Metering Installation Standard (Chapter 6, Appendix 6.2, section 1.7.1) are presently required to have factory test cards as proof of accuracy of the instrument transformers (ITs). If the test cards are not available, the MMP is obliged to test the accuracy on-site or produce manufacturer's records showing the accuracy of an identical unit. It is proposed to allow the use of additional sources of accuracy information as follows:

   i) Accept IT nameplate data as proof of accuracy, where the nameplate contains the required ANSI accuracy information and is affixed to the IT.

   ii) Accept Measurement Canada type approval information as proof of accuracy of the ITs, where such approval contains the required ANSI accuracy information.

   Accepting IT nameplate data and Measurement Canada information as proof will require a market rule amendment. See MR-00228-R02. The benefit of allowing these proofs is that the MMP will not have to carry out on-site instrument transformer accuracy tests at an estimated $15,000 to $20,000 per set of 3 ITs.

Attachment A

Metering Installation Seal Expiry: Cost Comparison and Other Considerations Relating to the Market Rule Amendment Options

1. 6 Year Owning Costs for 2003 meters that seal expire in 2003

The following is a cost comparison of the proposed additional seal expiry options being considered for Market Rule amendment. The options included are numbered as per the seal expiry consultation i.e.

1.1. Legacy meter – "like-for-like" Option 2 means going back to the metering requirements before the Market Rules and replacing seal expired meters with like meters
1.2. Conforming Meters – main/alt Option 4 is replacing the seal expired meters with main and alternate meters from the Conforming Meter List
1.3. Conforming meter – main Option 5 is replacing the seal expired meter with a single, standalone main meter from the Conforming Meter List

Note 1. These options are in addition to the options currently included in the Market Rules; that is, installing fully compliant main/alt meters or continuing with the Alternate Metering Standard.
Note 2. The cost comparisons are based on the premise that after seal expiry the metered market participant (MMP) will pay all costs associated with the metering installation for which they are responsible.

Considering a typical metering installation - HONI transformer station with the metering installed on the panel in the control & protection building. For those meters expiring in 2003, the total capital and cumulative 6-year operating costs of the options are:

	Legacy meters – Opt 2	Conforming main/alt – Opt 4	Conforming standalone main – Opt 5
Capital costs	$540,000	$9,180,000	$7,830,000
Operating costs	$13,154,400	$0	$5,184,000
Total market	$13,694,400	$9,180,000	$13,014,000

Note the above costs are based on the average capital cost from a range of costs provided by MSPs. As a sensitivity check, the highest capital costs from the range were also used - results as follows:

	Legacy meters – Opt 2	Conforming main/alt – Opt 4	Conforming standalone main – Opt 5
Capital costs	$540,000	$13,392,000	$12,042,000
Operating costs	$13,154,400	$0	$5,184,000
Total market	$13,694,400	$13,392,000	$17,226,000

2. Meter Problems

There have been a number of instances in the market where the existing meter had problems but, because the meter was of a non-conforming type, the problem was not discovered promptly. The result was that the participant was not billed correctly. The highest of these instances was caused by an intermittent failure of the meter and resulted in unbilled energy of $2m over a seven-month period. The second highest was a similar intermittent failure and resulted in unbilled energy of $1.5m. It cannot be guaranteed that, if such situations occur in the future, they will be discovered

promptly. In both the above cases, an alternative source of data was available and the unbilled amount could be accurately calculated; however, they would not have happened had they been conforming meters.

3. Misallocation due to Meter Inaccuracies

The 1% legacy meter is less accurate than the 0.2% main (conforming) meter. This lesser accuracy results in an annual misallocation of $20,000 per annum per metering installation based on a common $10m p.a. meter. This value is confirmed by actual samples taken from the market where the annual misallocation is shown as $28,000. Misallocation affects the amounts paid by MMPs and the OEFC. Misallocation has not been included in the cost comparisons.

4. Conclusions:

- The conforming main/alternate meters have the lowest owning costs over a 6-year seal period for a typical installation in a transformer station.
- The "like-for-like" option does not have a cost of owning advantage. There are also disadvantages due to physical meter problems and misallocation in the market.
- Metered market participants and the OEFC are affected by any misallocation.

PART 4 – PROPOSED AMENDMENT

4.4 Alternative Metering Installation Standards

4.4.1 Subject to sections 4.4.1A, 4.4.1B and 4.4.1C a~~A~~ *metering installation* in service on the date of coming into force of this section 4.4 or that is the subject of an application for registration filed prior to the *market commencement date* and in respect of which the major components were ordered or procured prior to or within 30 days following the date of coming into force of this section 4.4, shall meet the requirements set forth in this Chapter, in the wholesale revenue metering and site specific loss adjustments standards, or in any policy or standard established by the *IMO* pursuant to this Chapter in respect of a *metering installation* unless alternative standards are set forth in Appendix 6.2. *Metering installations* referred to in section 4.4.1 shall meet all of the conditions of registration set forth in Appendix 6.2. The *meter service provider* seeking to register the *metering installation* relying on any of the alternative standards in Appendix 6.2 shall provide all of the information required by Appendix 6.2 to be submitted in support of the application for registration.

4.4.1A Subject to section 4.4.1C and notwithstanding section 4.4.1, with respect to the expiration of *metering installations* registered under the alternative standards on the earliest expiry dates of the seal period of any *meter* within the *metering installations* as outlined in Appendix 6.2, sections 1.1A.2, 1.4.2, 1.5.3 and 1.10.3, these *metering installations* may be re-registered provided the *meters* are replaced

with *meters* of a type that are described on the list of conforming *meters* established by the *IMO*. These *meters* may be replaced by either a single main *meter* or a main and alternate meter from the list of conforming meters.

4.4.1B Subject to section 4.4.1C and notwithstanding section 4.4.1, with respect to the expiration of *metering installations* registered under the alternative standards on the date that such *metering installations* undergo upgrading or refurbishment that is, in the opinion of the *IMO*, substantial, as outlined in Appendix 6.2, sections 1.6.4, 1.7.4, 1.8.4, 1.9.4, 1.11.4, 1.12.3, and 1.13.3 these *metering installations* may retain their registration under the remaining alternative standards for the portion of the *metering installations* not substantially upgraded or refurbished.

4.4.1C Sections 4.4.1A and 4.4.1B apply to *metering installations* whose seal expires before May 1, 2006. Sections 4.4.1A and 4.4.1B shall expire on May 1, 2006.

PART 5 – IMO BOARD COMMENTS

Market Rule Amendment Proposal

PART 1 – *MARKET RULE* INFORMATION

Identification No.: MR- MR-00228-R01
Subject: Metering
Title: Seal Expiry – Metering Installations
Nature of proposal (please indicate with X): _X__**Alteration**___**Deletion** ___**Addition**
Chapter: **Appendix:6.2** **Sections: 1.1A and 1.2**
Sub-sections proposed for amending:1.1A.2 and 1.2.5

PART 2 – PROPOSAL HISTORY – REFER TO MR-00228-R00

Version	Reason for Issuing	Version Date

Approved Amendment *Publication* Date:

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PART 3 – EXPLANATION FOR PROPOSED AMENDMENT

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Section 1.1A.2 of Appendix 6.2 has been amended so that the registration of a *metering installation* shall not expire in instances where there are multiple *metering installations* served by a single *data logger* whose seal expires.

Section 1.2 of Appendix 6.2 has been modified so that the registration of a metering installation expires when the maximum error of the installation exceeds 3%. This makes the rule current and is consistent with the existing rule that has them expiring on the date that is two years from the date of the coming into force of section 4.4. of Chapter 6 (i.e. in April 2002).

PART 4 – PROPOSED AMENDMENT

1.1A Metering Installation Not Comprised of Two Meters

1.1A.1 Each *metering installation* for which registration is being sought pursuant to section 4.4.1 that does not comply with the dual *meter* requirement referred to in section 4.1.1.2 of this Chapter shall meet the following conditions:

1.1A.1.1 the *meter* within the *metering installation* is one in respect of which Measurement Canada has granted approval of type;

1.1A.1.2 a person that is an accredited meter verifier within the meaning of the *Electricity and Gas Inspection Act* (Canada) has verified and sealed the *meter* within the *metering installation*;

1.1A.1.3 the seal period for the *meter*, including the seal period for the *data logger* if sealed separately from the remainder of the *meter*, within the *metering installation* has not expired;

1.1A.1.4 the *metering installation* shall, subject to section 1.1A.1.5, be capable of collating *metering data* into *dispatch intervals*;

1.1A.1.5 the *metering installation* shall, if used in respect of a *non-dispatchable load facility*, a *self-scheduling generation facility*, a *transitional scheduling generator* or an *intermittent generator*, be capable of collating *metering data* into 5 or 15 minute intervals; and

1.1A.1.6 the *meter* contained in the *metering installation* shall be capable of time synchronization by the *IMO* to eastern standard time in the Province of Ontario.

1.1A.1.7 [Intentionally left blank]

1.1A.2 Registration of a *metering installation* that meets the conditions set out in section 1.1A.1 shall expire on the earliest expiry date of the seal period of the *meter* within the *metering installation*, including the expiry date of the seal period of the *data logger* if sealed separately from the remainder of the *meter*. Registration of a *metering installation* shall not expire in instances where there are multiple *metering installations* served by a single *data logger* whose seal expires.

1.2 Compliance with Blondel's Theorem

1.2.1 Each *metering installation* for which registration is being sought pursuant to section 4.4.1 that does not comply with Blondel's theorem shall:

1.2.1.1 comply with rulings issued by Measurement Canada on two and one-half element *metering*; and

1.2.1.2 have a magnitude of maximum error satisfactory to the *IMO*.

1.2.2 The *metering service provider* shall provide to the *IMO* the magnitude of maximum error for both active power and reactive power for a *metering installation* that does not comply with Blondel's theorem.

1.2.3 Where the magnitude of maximum error referred to in section 1.2.2 is less than or equal to 0.2%, no correction factor shall be applicable.

1.2.4 Where the magnitude of maximum error referred to in section 1.2.2 exceeds 0.2%, the *IMO* shall apply to the *metering data* a fixed correction factor based on the actual maximum error figure submitted by the *metering service provider*, subject to the following:

1.2.4.1 *energy flows* in respect of injections shall not be increased; and

1.2.4.2 *energy flows* in respect of withdrawals shall not be decreased.

1.2.5 Where the magnitude of maximum error referred to in section 1.2.2 exceeds 3.0%, registration relating thereto shall expire.~~:~~

1.2.5.1 [Intentionally left blank]~~ on the date that is two years from the date of coming into force of section 4.4 of this Chapter; or~~

1.2.5.2 [Intentionally left blank]~~on the date on which an *instrument transformer* within the *metering installation* undergoes upgrading or refurbishment that is, in the *IMO's* opinion, substantial,~~

~~whichever is the earlier.~~

PART 5 – IMO BOARD COMMENTS

Market Rule Amendment Proposal

PART 1 – *MARKET RULE* INFORMATION

Identification No.: MR- MR-00228-R02
Subject: Metering
Title: Seal Expiry – Metering Installations
Nature of proposal (please indicate with X): **_X_Alteration___Deletion ___Addition**
Chapter:6 **Appendix:** **Sections:11.1**
Sub-sections proposed for amending: 11.1.2.2 a.

PART 2 – PROPOSAL HISTORY – REFER TO MR-00228-R00

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PART 3 – EXPLANATION FOR PROPOSED AMENDMENT

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Section 11.1 of Chapter 6 is amended to extend the time allowed for the replacement of an instrument transformer from 8 to 12 weeks. See MR-00228-R00.

PART 4 – PROPOSED AMENDMENT

11. Performance of Metering Installation

11.1.1 Each *metering service provider* shall ensure that *metering data* from each *metering installation* in respect of which it acts as *metering service provider* is made available to the *IMO* for each *dispatch interval* or, where permitted by section 10.3.2, for each *dispatch hour*, in accordance with the requirements of this Chapter and of any policy or standard established by the *IMO* pursuant to this Chapter and in accordance with the following:

11.1.1.1 95 percent or more of the *metering data* shall be available to the *IMO* on the first *business day* following the day on which the *dispatch interval* occurs; and

11.1.1.2 95 percent of the attempts by the *IMO* to initiate access to the *metering data* must be successful on the first attempt.

11.1.2 Where a *metered market participant* or a *metering service provider* becomes aware that a *metering installation* in respect of which it is the *metered market participant* or the *metering service provider* has gone out of service, is defective or malfunctions, the *metered market participant* or the *metering service provider*, as the case may be, shall notify the *IMO* of the *outage*, defect or malfunction within 1 *business day* of becoming aware of same. In addition, the *metered market participant* shall:

11.1.2.1 where the *outage,* defect or malfunction relates to any portion of the *metering installation* other than an *instrument transformer*, ensure that the *metering installation* or the defective portion thereof is replaced or 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 11.1.2 or within such longer period of time as may be agreed by the *IMO;* and

11.1.2.2 where the *outage,* defect or malfunction relates to an *instrument transformer*:

a. ensure that the *instrument transformer* is replaced as soon as practicable and in any event within 12~~8~~ weeks of the date of the notice referred to in section 11.1.2 or within such longer period of time as may be agreed 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 11.1.2 and remains in effect until such time as the *instrument transformer* has been replaced.

PART 5 – IMO BOARD COMMENTS

Market Rule Amendment Proposal

PART 1 – *MARKET RULE* INFORMATION

Identification No.: MR- MR-00228-R03
Subject: Metering
Title: Seal Expiry – Metering Installations
Nature of proposal (please indicate with X): **__X__Alteration___Deletion ___Addition**
Chapter: **Appendix:6.2** **Sections:1.7**
Sub-sections proposed for amending: 1.7.1A

PART 2 – PROPOSAL HISTORY – REFER TO MR-00228-R00

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Section 1.7.1 of Appendix 6.2 is amended to allow the use of additional sources of accuracy information. See MR-00228-R00.

PART 4 – PROPOSED AMENDMENT

1.7 Instrument Transformers – Accuracy Requirements

1.7.1 Subject to section 1.7.1A, ~~E~~each *metering installation* for which registration is being sought pursuant to section 4.4.1 that does not comply with the 0.3% accuracy requirements of ANSI standard C57.13, as evidenced by factory test cards complete with serial numbers, for *instrument transformers* set forth in this Chapter and in any policy or standard established by the *IMO* pursuant to this Chapter shall meet the following conditions:

1.7.1.1 the *instrument transformer* shall be of a type approved for use by Measurement Canada;

1.7.1.2 the *instrument transformer* shall:

a. [Intentionally left blank]

b. be tested on-site for accuracy in the manner described in, and meet the accuracy test point requirements of this Chapter and of any policy or standard established by the *IMO* pursuant to this Chapter with correction factors approved by the *IMO* in the manner described in this Chapter and in any policy or standard established by the *IMO* pursuant to this Chapter; or

c. be demonstrated, to the satisfaction of the *IMO*, by means of the provision to the *IMO* of copies of the manufacturer's records, to be

identical to an *instrument transformer* that has been tested on-site for accuracy, provided that installation or other documents have been provided to the *IMO* demonstrating that the applied burden for the *instrument transformer* is either identical to that of the tested *instrument transformer* or within the correction factors applied to that *instrument transformer*; and

1.7.1.3 the *instrument transformer* complies with the security requirements set forth in this Chapter and in any policy or standard established by the *IMO* pursuant to this Chapter.

1.7.1A Notwithstanding section 1.7.1.2 , the *IMO* shall accept the following as proof of accuracy of *instrument transformers*:

1.7.1A.1 *instrument transformer* nameplate data, where the nameplate contains the required ANSI accuracy information and is affixed to the *instrument transformer*; and

1.7.2A.1 Measurement Canada-type approval information, where such approval contains the required ANSI accuracy information.

PART 5 – IMO BOARD COMMENTS