

Revenue Metering Standing Committee



Minutes of Meeting

Date held: <i>Apr. 20, 2011</i>	Time held: 09:00 am	Location held: Monte Carlo Inn
Invited/Attended:	Company name:	Attendance Status: (A)ttended; (R)egrets; (S)ubstitute
Jeff Simpson	Westcast Industries	A
Luc Van Overberghe	Measurement Canada	A
JoAnn Turner	Brookfield Power	A
Kevin Myers	Veridian Connections Inc.	A
Paul Szymanski	Hydro One Networks Inc.	A
John Stonehouse	Hydro One Networks Inc.	A
Rob Henschel	Horizon Utilities Inc.	A
Domenic Consorti	Hydro One Networks Inc.	A
Alex Lunycz	Rodan Energy Solutions Inc.	A
Muhammad Ali	Ontario Power Generation Inc.	A
Gary Nunes	Rodan Energy Solutions Inc.	R
Matt Weninger	Guelph Hydro	R
Zoran Stojanovic	Utilismart	R
Francois Abdelnour	Ivaco Rolling Mills	R
Al Vance	Horizon Utilities Corporation	R
Mark Simpson	Brantford Power	R
Adam White	AMPCO	R
Bunli Yan	E4 Inc.	R
Tom Wasik	Enersource Hydro Mississauga	R
Mark Passi	Falconbridge Limited	R
Heather Sears	Enermajica	R
Gord Roberts	Wardrop Engineering Inc.	R

IESO Staff :		
Richard Zaworski	IESO	A
John Antonakos	IESO	A
Neill Wong	IESO	A
Susan Harrison	IESO	A
Doug Thomas	IESO	A
Elizabeth Morris	IESO	A

Scribe: Neill Wong

Please report any corrections, additions or deletions e-mail to neill.wong@ieso.ca

All meeting material is available on the IESO web site at: http://www.ieso.ca/imoweb/consult/revMetering_sub.asp

Agenda item below:

Item 1 – Items from last meeting

- 1.1 IESO will plan to meet with Hydro One Networks Inc. in May, 2011 to review reverse power flow and losses applied to Delivered and Received channels in embedded generation facilities.

Item 2 – Status of Metering including 2011 Initiatives

Presentation by the IESO (Status of Metering including 2011 Initiatives.pdf)

- 2.1 84 metering installations with 2003-2010 seal expiry remain to be upgraded.
- 2.2 148 metering installations with Measurement Canada IT Temporary Permission program expiry in December 31, 2013.
 - IT Temporary Permission program extension beyond 2013 is conditional on progress. Luc Van Overberghe emphasized that Hydro One must either find the IT approvals or provide evidence of meter installation upgrades. If failing market participation results in a lack of progress, then the annual extensions will stop.
 - Richard Zaworski stated that MACD (Market Assessment & Compliance Division) is also working with the market participants.
- 2.3 364 meters interrogated via TCP/IP. This represents approximately 10% of the meter population
- 2.4 2085 metering installations have been registered from market opening (1957 physical meters and 128 virtual meters). 2120 Delivery points have been registered from market opening (914 energy DPs and 1206 transmission DPs)
- 2.5 IESO permits legacy meter replacement with IESO Conforming Meter List meters, as introduced at the October 2009 RMSC meeting. (84 MIs with 2003-2010 seal expiry – **10 remain in service**).
- 2.6 In December 2010, IESO issued a letter to affected market participants that continued support for legacy type meters will end Jan. 1, 2012. As a minimum, participants may install a single meter from the conforming meter list. MACD will continue to pursue compliance action to address seal expiry non-compliances.
- 2.7 The CICA 5970 Settlements audit is being conducted from Jan 1, 2011 to June 30, 2011. This is an audit of Settlements operations and internal control processes.
- 2.8 Revenue Metering System upgrade project as addressed in Agenda Item 3.
- 2.9 CDMS (Customer Data Management System) update:
 - Phase 1 – Delivered in December, 2010. Major users are Grid Assessments, Market Entry, Metering Installations and Finance. The Meter Registration Catalogue is housed inside the CDMS.
 - Phase 2 – CDMS Enhancement (Q2-Q4). This phase will: create rights management; rollout CDMS across the IESO; decommission PLC (Participant Life Cycle) and MRC.
 - Phase 3 – Enrollment Automation (Q3-Q4). This phase will permit market participants to submit registration information directly into the system via online forms. Once submitted, there will be no need to 're-ask' for this same information.

Market participants will be able to access CDMS through a credential rights management process.

- 2.10 Regulation Service From Loads – This new source of regulation from loads will augment existing frequency control by AGC (automatic generation control).
- 2.11 TCPIP will expand across 5 or 6 MMPs/MSPs. TCPIP will be considered in ‘new’ facilities, however will be restricted by geographic availability. One issue forwarded concerned cyber security requirements with OPGI compliance to the NERC ‘CIP’ (Critical Infrastructure Protection) standards. Security must be accounted for in any external party connecting into the OPGI business network. The security issues will be the responsibility of the market participant to manage.
- 2.12 Process re-design will look at automating the 2 Day Communications MTR process (internal to IESO Metering/Settlements). IESO Settlements Production is realizing savings of ½ to 1 FTE staff. HONI MSP acknowledges that the MTRs now issued have ‘problem’ issues, and do require more time for analysis.
- 2.13 IESO CML Process – conforming meter application and testing processes are being streamlined
- 2.14 Metering installation audit program – Audits reports require a response within 30 days, but may remain open pending the nature of the action item. Some audit findings are straightforward to address, while other action items such as requiring an outage, may take 12 to 18 months. The IESO will be adopting a risk management approach to close those audits which pose a limited or zero risk.
- 2.15 The metering installation commissioning review will expand the ‘Request for Commissioning Reports’ process.
- 2.16 MSP Performance Measures project has been deferred. The measures will be refined to drive the desired MSP behaviours and activities.

Item 3 – Revenue Metering System (RMS) Replacement Project

Presentation by the IESO (Revenue Metering System (RMS) Replacement Project.pdf)

3a. Overview

- 3.1 IESO Settlements is proceeding with the first phase for the RMS Replacement/Upgrade Project. This will involve the MV90, MVSTAR, MVWEB and MTR systems.
- 3.2 The key drivers include:
 - Tools which are approaching end-of-life and are imposing functional/performance limitations
 - Growth in revenue meters and PPs
 - Integration of existing ECT (End-user computing tools) into IT supported solutions
 - Compliance with infrastructure standards
- 3.3 The project will be a ‘full upgrade’ or ‘refresh’ or some combination of both
 - Analysis will consider factors such as time, cost, process efficiencies and service level improvement
 - Looking for an ‘out of the box’ solution with minimum customization

3b. Proposed MR Amendments

- 3.4 Main/check metering installations are provided in WRMS-Hardware Sec 12 and MM 5.2
- 3.4 However, check meters are non-MC approved and provide no interface with IESO systems
- 3.5 No main/check metering installations have been registered since Market Opening. Main/check metering installations require a correlation factor and require daily submissions of meter data for the check meter.
- 3.6 **A motion to remove main/check metering installation option was carried by the RMSC committee supported by a majority 8 votes - YEA.**

3c. Validation Principles

- 3.7 To review existing Market Rule requirements and processes as related to validation principles for meter data management.
 - Main/Alt comparison – roll up to hourly data to eliminate false ‘positives’
 - Voltage/Current presence check – such as identifying a ‘deadband’
 - Automate ‘Power outage’ case assessment

- With respect to new requirements from external drivers, MC proposed a LUM (Legal Units of Measure) and VA JWG. These requirements will need to flag the data block when meter time tolerance is exceeded, and to validate PLUM demand with SLUM demand.

3.8 A recommendation forwarded will be to adopt a tertiary meter data source from direct connect facilities which have real-time operating metering requirements. Real-time data is presently stored in the IESO's PI (Plant Information) database. The considerations will be to:

- Identify tertiary source as part of registration process
- Understand the accuracy and operating limits for 2 second instantaneous data
- Establish a correlation factor
- Understand when not available for all metering installations (e.g. embedded)
- Auto-transfer into RMS system
- Market Rules and VEE process change will be required

3.9 A vote resulted in 2 show of hands in support. Stakeholders expressed concerns that:

- Many metering installation sites may not be Chapter 4 (Grid Connection Requirements) compliant
- SCADA data may be used to shadow settlements
- Stakeholding needs to be more than casually conducted due to cost and maintenance for a continuous data stream. What will be the resource and cost impacts.

3d. Loss Principles

3.10 Reverse power flow and losses applied to Delivered and Received channels in embedded generation facilities will be reviewed.

Item 4 – CEA Metering Task Group – Rob Henschel, Chair

Presentation titled CEA (CEA – MC Process and EPAC Update.pdf)

4.1 Rob Henschel presented a process overview of CEA (Canadian Electrical Association) initiatives and successes. The overview included the following topics:

- Bill C-14 - Software security and event logger
- LUM – SLUM and PLUM (source and processed legal units of measure)
- VA – Involves different VA calculation methods
- Meter attestation for high end meters
- Test Console Joint Working Group – SE-01 (Specifications for the Calibration, Certification and Use of Electricity Calibration Consoles) with C-D-01 (Conditions for the Delegation of Authorities for the Calibration and Certification of Measuring Apparatus Pursuant to the *Electricity and Gas Inspection Act*).

4.2 An overview of the CEA D-Council (Distribution Council) organization structure was presented. The council is balanced consensus based. Issues reviewed include the 10 year seal issue; LUM; VA; Measurement uncertainty; meter attestation; compliance sampling under SS-06

4.3 KPI's (Key Performance Indicators) were to start the implementation of S-S-06 (Sampling Plans for the Inspection of Isolated Lots of Meters in Service) by January, 2011 with full implementation by December, 2014. It will be the meter owner's choice to apply 'measurement uncertainty' to the meter testing in assessing for 'risk of group failure'.

4.4 Bill C-14 (Act to amend the Criminal Code) was recently passed. There are 'AMP' (Administrative Monetary Penalties) provisions for doubling of fines up to \$10,000 per day per unit of recurrence. MC implements its enforcement training role with its own enforcement policy.

4.5 'Software Security Project' was undertaken by the manufacturer members. Seven JWG meetings via working conference calls including ANSI, IEEE and Certicom have resulted in adopting OIML D31 – General requirements for software controlled measuring instruments (International Organization of Legal Metrology)

4.6 VA and LUM projects – Final reports presented to CEA have been posted for public consultation.

Item 5 – Alternative Metering Installation Standards (AMIS)

Presentation by the IESO (Alternative Metering Installation Standards.pdf)

- 5.1 Three registration lifecycle scenarios were presented.
 - 5.1.1 Registration Lifecycle Scenario #1 – AMIS installation upgrade
 - Metering installation is registered at Market Opening under AMIS with seal year expiration
 - Metering installation is upgraded at seal expiry with Main/Alternate meters **with enclosure**
 - Metering installation **continues under AMIS** until substantial upgrade is triggered
 - 5.1.2 Registration Lifecycle Scenario #2 – AMIS installation upgrade with NO enclosure
 - Metering installation is registered at Market Opening under AMIS with seal year expiration
 - Metering installation is upgraded at seal expiry with Main/Alternate meters **with NO enclosure**
 - Metering installation at **Device Seal Expiry** with Main/Alternate meters; must **Add enclosure**
 - Metering installation **continues under AMIS** until substantial upgrade is triggered
 - 5.1.3 Registration Lifecycle Scenario #3 – AMIS installation upgrade with IT Dispensation
 - Metering installation is registered at Market Opening under AMIS with seal year expiration
 - Metering installation is upgraded at seal expiry with Main/Alternate meters **with enclosure** and with IT dispensation
 - Metering installation is upgraded at IT Expiry; now under DOC
 - Metering installation **continues under DOC**
- 5.2 One scenario was presented for ‘Retail Meter Installations – Seeking AMIS registration’
 - Metering installation is NOT registered at Market Opening; Embedded in retail settlement
 - Metering installation is registered after Market Opening under AMIS with Main/Alternate meters with enclosure. IESO will not permit Section 1.1A, 1.4, 1.5 and 1.10 under Appendix 6.2. IESO will require MMP to declare metering installation was in service prior to April 17, 2000 and may request submission of record of installation in support of declaration.
 - Metering installation **continues under AMIS** until substantial upgrade is triggered

Item 6 – Conforming Meter List

Presentation by the IESO (Conforming Meter List – Firmware Version Updates.pdf)

- 6.1 Meter firmware version updates address new meter hardware; meter software upgrade and bug fixes; new meter functionality; and expanded feature set.
- 6.2 CML firmware version submitted for IESO approval may ‘leap-frog’ consecutive firmware versions, for example V3.03 to V4.02.
- 6.3 Meter manufacturer submits ‘Conforming Meter List’ listing model and firmware version, supported by MC Notice of Approval.
- 6.4 Meter manufacturer submits ‘Letter of Clarification’ stating compliance to minimum meter hardware functionality per Wholesale Revenue Meter Standard – Hardware; stating that new firmware version updates do not affect metrological functions, revenue measurement accuracy, nor revenue measurement security; and stating that new firmware version continues to be supported by IESO in-use TIM as confirmed by MV90 vendor ITRON.
- 6.5 IESO may require bench testing to ensure M90 system compatibility with no impact to existing CML approvals.
- 6.6 In the revised bench test, meter voltage/current and power flow inputs are varied for each major test section for defined test interval.

- 6.7 CML applicant records meter register start/stop readings; IESO interrogates and downloads interval register readings at end of each major section test. The CML summary package documents the meter bench test results for approval and archival. (See presentation)
- 6.8 Firmware version acceptance is enabled more quickly and with more processing control by the CML applicant. A fallback to meter bench testing continues to ensure IESO MV90 system interface compatibility.

Item 7 – Metering Installation Audits

Presentation by the IESO (Metering Installation Audits & IT Nameplate Data/Commissioning Report.pdf)

- 7.1 Audit finding classes have been set up to classify the various types of document and field findings. (See presentation)
- 7.2 The top three audit finding classes from 2010 included: (i) Sealing/Security; (ii) Station Service Estimates; and (iii) CT & VT Nameplate Data. Example audit findings from the remaining 23 audit finding classes were described. (See presentation)
- 7.3 The 2011 audit program focused on the large generation and transformer stations, and the station service estimates which are exposed to the Grid. 108 meter points, which represented 5% of all metering installations, were selected from a pool of 600 eligible points. Selected points were proportioned by meters registered by all the MSPs. The audit program geography spans the GTA, southwestern Ontario and northwestern Ontario.
- 7.4 The assessment of IT Nameplate Data will be to: (i) visually verify IT nameplate data, and (ii) take photos of the IT's. Where there is difficulty in visually verifying IT nameplate data due to energized switchgear or overhead structures, the IESO will accept MSP/MMP provided nameplate photos of installed IT's to proceed with the audit. Where no IT nameplate photos are available at time of audit, the IESO will use IT test records and/or Record of Installation (ROI) as source data to continue with the audit.
- 7.5 Two scenarios were described where:
 - (i) IT's could not be visually verified and audit completed using IT test records or ROI as source data. Registration documentation is consistent with ROI and commissioning, and IT nameplate photos requested to be provided to IESO. If nameplate photos are not provided, then IESO will proceed with closing of audit report, and will inform MMP of their obligations under the Market Rules.
 - (ii) IT's could not be visually verified and audit could not be completed using IT test records or ROI as source data. Registration documentation is not consistent with IT test records, or ROI and commissioning reports. The requirement will be to provide IT nameplate photos to the IESO.
- 7.6 For all new/upgrade metering installations, IESO requires commissioning reports to be provided. Of 66 commissioning reports requested, 45 have been reviewed and processed. For metering registration performed after September 2009 to June 2010, 74 commissioning reports were identified; 51 have been requested; 16 submitted and processed. Overall 68 of 140 have been reviewed and accepted.

Action Item Summary				
#	Date	Action	Status	Comments
1	Apr 20, 2011	Item #1.1 action: IESO to meet with Hydro One Networks Inc. to review reverse power flow and losses	Pending	