

IMO - MSC Meeting
Meter Installation Audits

Meter Installation Audits

- IMO has to satisfy itself metering complies with Chap 6, IMO policy or standard
- Three categories of audits in rules:
 - A. Security audits - physical security of MI
 - B. Installation audits - accuracy of MI
 - C. Data audits - meter data reconciliation

A. Security Audits

- Chap 6 Section 9.1.3 covers physical security of the installation
- IMO Security audit includes:
 - Physical check of seals, locks, enclosures and conduit
 - Check of security management - controlled access
 - Check for extraneous loads on IT's
 - Check for non-IMO time resets

A. Security Audits (cont.)

- Rules - all installations within 2 years of market commencement
- IMO to change rules
 - combine security audit with installation audits
 - when considered necessary

B. Installation Audits - MSP

- Chap 6 Sections 7.1.1 to 7.1.4 & App 6.3
- Requires MSP to do on-site tests:
 - Data reconciliation
 - Spot checks of accuracy using test set
 - Check volts, amps - correct operation of ITs
- IMO has to review results & carries out own audit where warranted

B. Installation Audits - IMO

- Chap 6 Section 7.1.5, Chap 9 Section 2.1A.3
- IMO may carry out periodic, random & unannounced audits
- Four types of audits:
 - Type 1 Office audit - information check
 - Type 2 Field audit - visual check
 - Type 3 Field audit - common tests
 - Type 4 Field audit - specific tests

B. Installation Audits - IMO

- Type 1 Office Audit includes a complete review of all registration documentation
 - SLD, MEC, SSLA, MIRT, DOC/AMS and EUReport
 - Completeness of IT information; ratio's, accuracy (factory test cards), MC Approval of Type (or dispensation) and Blondel conformance
 - Exemption status and power switching information
 - Review of Totalization Table

B. Installation Audits - IMO

- Type 2 Field Audit includes on-site visual assessment of MI including Security Audit
 - Accuracy of SLD, nameplate data, MC sealed, visual trace of IT secondaries, confirm IT burdens are within limits and verify SS estimates
 - Meter setup, CT/VT ratios, pulse and meter mult.
 - MEC components (size, length and # of conductors)
 - Check/review all commissioning results and test certificates

B. Installation Audits - IMO

- Type 3 Field Audit includes common testing of a meter installation
 - Communication test
 - Cross phase test using analyzer
 - Complete end to end test
 - IT burden test (overburdened CT's, poor connections etc)

B. Installation Audits - IMO

- Type 4 Field Audit performed on an as need basis and includes specialized installation tests
 - meter calibration verification test - inject from standard or bench test
 - complete CT and VT tests (verify ratio's, polarity and phase angles)

C. Data Audits

- Chap 6 Section 7.2 (subject to Appendix 6.3 section 1.2)
- MSP does data reconciliation 2x p.a. for <10 MW & 4x p.a. for > 10 MW
- IMO compares data in meter with data in IMO metering database
- MP can request IMO to do data audit
- Mimics what is done today

IMO Audit Frequency

- How often:
 - 10% of facilities - Type 1 Office audit
 - 10% of facilities - Type 2 Field audit including Security audit
 - Type 3 where concerns arise out of Type 2 audit (5% to 20%)
 - Type 4 where specific tests required and paid by person requesting the audit

IMO Audit Priorities

- Priorities:
 - At least one field audit per MSP
 - Large \$ accounts
 - Non-Blondel installations
 - ITs not ANSI revenue grade

Logistics

- Type 1 (incl. security) & 2 - IMO staff
- Type 3 - IMO staff and MSP working under the direction of IMO
- Type 4 - IMO staff and different crew (MSP) if necessary - dispute
- IMO will give min. 5 business days notice
- IMO finalizing audit checklists