

PROCEDURE



Market Manual 3: Metering

Part 3.2: Meter Point Registration and Maintenance

Issue 23.0

This document describes the procedures for registering *meter points* and changes to *metering installations* in the IESO marketplace.

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This *market manual* may contain a summary of a particular *market rule*. Where provided, the summary has been used because of the length of the *market rule* itself. The reader should be aware, however, that where a *market rule* is applicable, the obligation that needs to be met is as stated in the *market rules*. To the extent of any discrepancy or inconsistency between the provisions of a particular *market rule* and the summary, the provision of the *market rule* shall govern.

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MDP_PRO_0007	Market Manual 3: Metering, Part 3.1: Metering Service Provider (MSP) Registration, Revocation, and De-registration
MDP_PRO_0010	Market Manual 3: Metering, Part 3.4: Measurement Error Correction
MDP_PRO_0011	Market Manual 3: Metering, Part 3.5: Site Specific Loss Adjustments
MDP_PRO_0012	Market Manual 3: Metering, Part 3.6: Conceptual Drawing Review
MDP_PRO_0014	Market Manual 1: Market Entry, Maintenance and Exit, Part 1.1: Participant Authorization, Maintenance and Exit
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MDP_STD_0004	Wholesale Revenue Metering Standard - Hardware

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Reference	Description of Change
Section 1.4.9	Added notation that <i>metering service providers</i> are required to submit a commissioning report package to the <i>IESO</i> following the commissioning test of a <i>metering installation</i> during <i>meter point</i> registration.
Section 2	Updated and/or added steps in the following Procedural Work flow diagrams: <ul style="list-style-type: none"> - Figure 2.1 ‘Registration of a Meter Point’: 2B.31, 2B.32, 2B.36a (New), 2B.36b (New), 2B.36c (New); - Figure 2.2 ‘Registration of Changes to MV90 Master File that Affect Metering Data’: 2C.44, 2C.47, 2C.48.
Section 3	Updated and/or added steps in the following Procedural Steps: <ul style="list-style-type: none"> - Table 3-1 ‘Procedural Steps for Registration of a Meter Point: 2B.31, 2B.32, 2B.36a (New), 2B.36b (New); - Table 3-2 ‘Procedural Steps for Registration of Changes to MV90 Master File that Affect Metering Data: 2C.44, 2C.47, 2C.48.
Appendix B	Updated commissioning requirements. Added commissioning reporting requirements and report types.
Appendix C	Added when and how a <i>metering service provider</i> is advised that a commissioning report package is required.

Market Manuals

The *market manuals* consolidate market procedures and associated forms, standards, and policies that define certain elements relating to the operation of the *IESO-administered markets*. Market procedures provide more detailed descriptions of the requirements for various activities than is specified in the *market rules*. Where there is a discrepancy between the requirements in a document within a *market manual* and the *market rules*, the *market rules* must prevail. Standards and policies appended to, or referenced in, these procedures provide a supporting framework.

Market Procedures

The “Metering Manual” is Volume 3 of the *market manual*, and this document is “Part 3.2: Meter Point Registration and Maintenance”.

A list of the other component parts of the “Metering Manual” is provided in “Part 3.0: Metering Overview”, in Section 2, “About This Manual”.

Structure of Market Procedures

Each market procedure is composed of the following sections:

1. **“Introduction”**, which contains general information about the procedure, including an overview, a description of the purpose and scope of the procedure, and information about roles and responsibilities of the parties involved in the procedure.
2. **“Procedural Work Flow”**, which contains a graphical representation of the steps and flow of information within the procedure.
3. **“Procedural Steps”**, which contains a table that describes each step and provides other detail related to each step.
4. **“Appendices”**, which may include such items as forms, standards, policies, and agreements.

Conventions

The *market manual* standard conventions are as defined in the “Market Manual Overview” document.

– End of Section –

1. Introduction

1.1 Purpose

This procedure describes the process of *meter point* registration, which is one part of the registration process for a *metering installation* in the *IESO* marketplace. This procedure also describes the registration of changes that can occur to a *metering installation*.

1.2 Scope

This procedure covers the steps for *meter point* registration and changes to registration for a *metering installation*, but other procedures in “Market Manual 3” may need to be performed before, after, or in parallel with steps in this procedure, namely:

1. “Part 3.8: Creating and Maintaining Delivery Point Relationships” describes how the *IESO* creates *delivery points* for both *energy market* and *transmission tariff* customers. *Delivery points* must be set up by the *IESO* before *meter point* registration can begin. Additional details regarding the creation of *delivery points* for the *energy market* are given in *IESO’s* “Market Manual 1: Market Entry, Maintenance and Exit, Part 1.2: Facility Registration, Maintenance and De-registration”.
2. “Part 3.7: Totalization Table Registration”, where totalization tables associated with a *delivery point* are registered with the *IESO* in order to allow *settlement* for the *energy market* and/or calculation of *transmission tariffs*.

Links to these two procedures appear, where relevant, in the workflow diagrams of this procedure.

1.3 Overview

The *market rules* require *market participants* to register their *metering installations* with the *IESO* in order to participate in the wholesale electricity market. The process of registering a *meter point* can occur in parallel with other registration procedures, as described in Section 1.2. The process of *meter point* registration results in a *meter point* ID being assigned to the *metering installation*.

The *IESO* can refuse registration of *meter points* that it deems unsuitable for registration.

Table 1-1, below, describes which sub-procedures to follow for specific tasks. The sub-procedures are illustrated in the procedural workflows (PWF) presented in Section 2, and explained in more detail in Section 3.

Table 1-1: Which Sub-Procedure Should You Do?

To do this task....	Perform this Sub-Procedure...	Described in this Section and Work Flow...
Register a <i>meter point</i> .	Registration of a <i>meter point</i>	2.1 / B
Register a change due to an <i>emergency</i> or malfunction impacting <i>metering data</i> (new <i>meter</i> , new IT ratios, new channel destinations)	Registration of changes to MV-90 Master File that affect <i>metering data</i>	2.2 / C
Register a change due to an <i>emergency</i> or malfunction not impacting <i>metering data</i> (telephone line/numbers, communication settings, passwords)	Registration of changes to MV-90 Master File that do not affect <i>metering data</i>	2.3 / D
Register a change that has no impact on the MV-90 Master File (changes to secondary cables, replacement of IT transformers not affecting ratios)	Registration of changes to a <i>metering installation</i> that do not affect MV-90 Master File	2.4 / E
Change the <i>metering service provider</i> responsible for a <i>metering installation</i> .	Change of <i>metering service provider</i> for a <i>meter point ID</i>	2.5 / F
Permanently <i>disconnect</i> a <i>metering installation</i> at a specific <i>meter point</i> or de-register a <i>facility</i> .	De-registration of one or more <i>meter point</i> Ids	2.6 / G

1.4 Task Highlights

This section describes important tasks performed in some, or all, of the sub-procedures covered by this document. See Sections 2 and 3 of this document for a more detailed description of the tasks.

1.4.1 Preparing and Submitting the Single Line Diagram (SLD)

To document the location of the components of the *metering installation* in relation to the electrical transmission/distribution network, the *metering service provider* submits to the *IESO* a Single Line Diagram (SLD) of the *metering installation*. This SLD must be prepared in accordance with the provisions of Sections 1.5, 1.6 and Appendix B of “Part 3.6: Conceptual Drawing Review”, and accompanied by the completed “SLD-Submission Form”, as available on the *IESO* Web site. If *transmission tariffs* exist at the *delivery point* associated with the *meter point*, the *metering service provider* must make a copy of the SLD and submit it to its *transmitter* for review, before submitting this copy to the *IESO*.

The *IESO* reviews both the SLD and the accompanying “SLD-Submission Form” that will become part of the official *meter point* documentation. The *IESO* must be satisfied with the SLD in order for registration to proceed.

1.4.2 Declaration of Metering Installation Compliance

Following the *IESO's* successful review of the SLD submitted, the *metering service provider* must assess whether the *metering installation* is compliant or not with Chapter 6 of the *market rules* and the standards and policies of the *IESO* regarding metering. If the *metering service provider* believes the *metering installation* is compliant, the *metering service provider* must inform the *IESO* accordingly, by sending a signed “Metering Service Provider Declaration of Metering Installation Compliance”. Otherwise, the *metering service provider* must perform the Alternative Standard/*Exemption* procedure, as described in the next section.

1.4.3 Alternative Metering Installation Standards and General Exemptions

This sub-process is specific to the registration of *meter point* associated with *metering installations* that do not fully comply with Chapter 6 of the *market rules* and the standards and policies of the *IESO* regarding metering. The process is described in detail in Appendix E.

1.4.4 Preparing and Submitting Site-Specific Loss Adjustments and Measurement Error Correction Factors

The *metering service provider* must have a registered Professional Engineer, recognized as such by the Professional Engineers Ontario, prepare, sign and stamp a Site-Specific Loss Adjustments Register and a Measurement Error Correction Register for the Metering Installation submitted for registration. These Registers are then submitted to the *IESO*. *Metering service providers* must refer to “Part 3.4: Measurement Error Correction” and “Part 3.5: Site-Specific Loss Adjustments” for further information about how to perform these calculations and to complete the Registers, as well as to the “Site-Specific Loss Adjustments Standard”.

1.4.5 Total Loss Factors (TLF)

Total Loss Factors (TLF) take into account distribution losses up to the *Defined Meter Point*. TLFs, as approved by the *Ontario Energy Board* and communicated by the relevant LDC, must also be submitted by the *metering service provider*, when appropriate.

1.4.6 Emergency Restoration Plan (EITRP)

The “Emergency Instrument Transformer Restoration Plan” (EITRP) is a document that describes the actions that the *metering service provider* must take in case of failure of the *instrument transformers* and *meters* that are part of a *metering installation*. The EITRP, which is described in Appendix D, must also be submitted by the *metering service provider*, whenever relevant to the specific process.

1.4.7 Statement of Metered Market Participant Identification

During the registration process for a *metering installation*, or at any time after a *metering installation* has been registered, the *metered market participant* must inform the *IESO* that more than one *metering service provider* is being registered for the *metering installation*. When this condition occurs, the *metered market participant* must complete “Assigning a Metering Service Provider to a Meter Point” (IMO-FORM-1390) and send it to the *IESO*. If IMO-FORM-1390 is not completed, the *IESO* deems the assigned *metering service provider* at the *delivery point* to be the *metering service provider* for the *metering installation*.

Note: Only the *metering service provider* assigned to the *delivery point* submits totalization table information to the *IESO*.

1.4.8 Submitting the MV-90 Master File(s) to the IESO

As part of the registration process for a *meter point ID*, the *metering service provider* must communicate to the *IESO* specific configuration information for the *meter* at that *meter point ID*. This information must be submitted in the form of a MV-90 Master File. The *metering service provider* must create the file and email it to the *IESO* (MV90MasterFiles@ieso.ca).

The *IESO* reviews the submitted MV-90 Master File for completeness. Where the MV-90 Master File submitted by the *metering service provider* is either incomplete or incorrect, the *IESO* notifies the *metering service provider* accordingly and asks for the MV-90 Master file to be resubmitted. The registration process will not proceed until a satisfactory MV-90 Master File is received by the *IESO*.

In the case of registering a *meter point ID* for which the *metering installation* is currently interrogated by the *IESO*, the *IESO* will also compare the new MV-90 Master File with the one currently residing in the MV-90 Production module. See Section 1.4.12 for more details.

1.4.9 Commissioning Test

The *metering service provider* must perform a commissioning test of the *metering installation* during *meter point* registration. Following the successful completion of the test, the *metering service provider* must submit a commissioning report package to the *IESO*. The package includes a commissioning report and *IESO*-Form-1716 “Commissioning – Metering Installation Report”. Refer to Appendix B for the requirements for commissioning a metering installation..

1.4.10 Communication Test

The communication test of a *metering installation* is performed during changes to an MV-90 Master File that do not affect the *metering data*. This test ensures that the communication channel is still functional, once the change to the MV-90 Master File has been implemented.

1.4.11 End-to-End Test

The end-to-end test of a *metering installation* is another mandatory step in registering a *meter point*. The test ensures that the correct MV-90 Master File(s) for the *metering installation* is being used by the *IESO*; the *metering installation* can be successfully interrogated; and the *metering data* thus obtained is accurate; and ensures that the *IESO* can synchronize the time clock within the *meter*. A “Confirmation of Engineering Units Report” is produced by the *IESO* and sent to the *metering service provider* for confirmation. The *metering service provider* reviews and signs the relevant report verifying that the information is correct and then returns it to the *IESO* within 2 *business days* of the report date (see Appendix C). Guidelines for conducting the end-to-end test and Confirmation of Engineering Report of a *metering installation* appear in Appendix C.

1.4.12 The Metering Hotline

Metering service providers require authorization from the *IESO* on every occasion when they need to perform work that may:

- a. Affect the quality of currently metered data from a metering installation, or
- b. Introduce changes to current Meter Point Registration information about these *metering installations*.

The Settlements Production Department of the *IESO* operates the Metering Hotline as part of the Meter Point Registration process. The Metering Hotline offers weekday service (normally 7 a.m. to 4 p.m.) to *metering service providers* who need to schedule various types of work with the *IESO*, or report *emergency* repairs made in response to a Meter Trouble Report for *metering installations*. Upon placing a call to the Hotline, the *IESO* will provide *metering service providers* with a Hotline ticket indicating a ticket number and the scope of work required. The various scopes of work for Hotline tickets are as follows:

- ‘New Connections’ of *metering installations* to be registered for the market.
- Scheduled maintenance on an existing *metering installation* to replace a *meter* with a similar or identical *meter* that has the same programming configuration (‘Scheduled Maintenance - Like for Like’).
- Scheduled maintenance on an existing *metering installation* to replace a non-compliant *meter* with a single fully compliant main *meter*, de-register the non-compliant *meter* and re-register the new main compliant single *meter* (‘Scheduled Maintenance - Critical Change’).
- Report *emergency* work already performed on an existing *metering installations* in the past 24 hours, to replace an existing *meter* with a similar or identical *meter* that has the same programming configuration, de-register the defective *meter*, and re-register the *metering installation* (‘Emergency - Like for Like’).
- Report *emergency* work already performed on an existing *metering installation* in the past 24 hours, to replace a non-compliant *meter* with a fully compliant *meter*, de-register the defective *meter*, and re-register the *metering installation* (‘Emergency - Critical Change’).
- Changes to a *meter’s* MV-90 Master File, including de-registration of individual channels of non-compliant *meters*, that do not require the re-registration of the *metering installation* (‘MIRT Update only’).
- Updates to an existing Totalization Table for a *metering installation* (‘Totalization Table’).
- Scheduled work on an existing *metering installation* to replace a fully compliant *meter* with another fully compliant *meter* (Compliant *meter* Replacement).

The Metering Hotline telephone number is (905) 855-6490 and the FAX number is (905) 855-8688.

1.4.13 Registration of Small or Minor Embedded Generation Facilities

Revenue *metering installations* for small or minor embedded *generation facilities* of less than 2 MVA nameplate rating and injecting less than 17 gigaWatt-hours per annum into the *IESO-controlled grid*, shall comply with the registration processes as detailed in this *Market Manual* but with the following modifications and clarifications: (i) An Emergency Instrument Transformer Restoration Plan (EITRP) shall not be required. Where this manual requires the submission of an EITRP, it shall not apply. The *IESO* will register the *metering installation* without an EITRP. (ii) Correction factors will be applied on the failure of an IT, according to Appendix D, Section 5 of this *market manual*,

provided the *IESO* can continue to communicate with the *meter*. However, *metering service provider* - or *metered market participant*-supplied estimated data will not be used under any circumstances.

- A “Declaration of Compliance of Metering Installation” (IMO-FORM-1298) shall be required; however, it shall be stated that this declaration is in accordance Chapter 6, Section 4.6 of the *market rules* for embedded *generation facilities*.
- Embedded generation may or may not attract transmission service as per the Ontario Energy Board Transmission Rate Schedule. Where the embedded *generation facility* does not attract network, line or transformation connection service charges and does not have transmission *delivery points*, the registration of the *facility* does not need the notification of, or the approval of, the *transmitter*.
- Channels 3 and 4 (received channels) shall be adjusted using a default load factor (LF) of 1.0 unless all the parties agree to a different value. The *metering service provider* shall ensure that the parties are in agreement with the proposed LF prior to submission to the *IESO*. See “Market Manual 3: Metering, Part 3.7: Totalization Table Registration”, Appendix D for additional information on *settlement* of embedded generators.

1.4.14 Temporary Withdrawal of Electricity without a Registered Wholesale Meter

Subject to Section 2.1.5 of Chapter 6 of the *market rules* the *IESO* may permit a *metered market participant* to connect equipment to the *IESO-controlled grid* without a *registered wholesale meter* under certain conditions. The request shall come from the *metered market participant* when an unforeseeable or unavoidable situation prevents them from registering the *registered wholesale meters* prior to the connection date. This process does not qualify for poor planning or changing a commissioning sequence. The conditions for granting connection without a *registered wholesale meter* include, but are not limited to:

- The temporary withdrawal of electricity from the *IESO-controlled grid* will be strictly for connecting equipment for commissioning purposes and not for load (e.g. soaking a power transformer for the purpose of commissioning);
- The *metered market participant* will submit factory test cards of the power transformer they wish to connect;
- Wholesale *revenue meters* will be in service and registered within 48 hours of connecting; and
- Once connected, if the *metered market participant* cannot fulfill the conditions outlined above (e.g. the *registered wholesale meters* are not registered within 48 hours and/or draws load without *registered wholesale meters*), the *metered market participant* and the *IESO* will refer the matter to the *Market Assessment and Compliance Division*.

The approval for such a request is at the sole discretion of the *IESO*.

1.5 Changes to a Metering Installation

This document also describes processes for changes that can be applied to, or in relation to, a *metering installation* up to, and including, de-registration. The processes associated with such changes are as follows:

- Registration of changes to MV-90 Master File that affect *metering data*;
- Registration of changes to MV-90 Master File that do not affect *metering data*;
- Registration of changes that do not affect MV-90 Master File;
- Change of *metering service provider* for a *meter point ID*; and
- De-registration of one or more *meter points* IDs.

A list of all these processes, together with the associated workflows and triggers, is presented in Table 1-1 in Section 1.3.

1.6 Additional Registration Requirements

1.6.1 Requirements for Alternative Meter Use

Metered market participants who intend to use *IESO*-registered *meters* for purposes in addition to *IESO* transactions must ensure that the selected *meter* has been accepted by the *IESO* for simultaneous communication functions. *Meters* that meet *IESO* requirements for this functionality are identified on the “Conforming Meter List”. Only these *meters* can be used by *market participants* for alternative *meter* use in the *IESO-administered markets*.

1.6.2 Requirements for Passwords

Metered market participants must ensure that *security* controls for passwords in *meters* registered, or being registered, with the *IESO* meet the requirements set out in Chapter 6, Section 9.2 of the *market rules*. However, only the *metering service provider* and the *IESO* shall have the “read plus synchronize time” and “read plus write” passwords. If password requirements are not met, access to *metering data* will be allowed only from the *metering database* and only by the *metered market participant*; *metering service provider*; connected *transmitter* or *distributor*; authorized agents of the *metered market participants*; and the *IESO*.

1.7 Retaining Registration under the Alternative Metering Installation Standard

Metering installations registered under the alternative metering installation standard can remain registered until such time as a substantial upgrade or refurbishment is performed. At this time, the registration expires and the *metering installation* has to be upgraded to be fully compliant with Section 4.1 of Chapter 6 of the *market rules* and a signed “Declaration of Compliance of Metering Installation” (IMO-FORM-1298) submitted.

There are some installations however, where an upgrade to full compliance requires rebuilding of major components of a *facility* or power system and is impractical. Under these circumstances the *metered market participant* may apply to retain registration under Section 4.4.8 of Chapter 6 of the

market rules. The right to retain registration granted by the *IESO* under these conditions would permit qualifying *metered market participants* to retain registration of certain components of the *metering installation* under the alternative metering installation standard.

Refer to Appendix E for a detailed description, conditions, cases and the application process for retaining registration under the alternative metering installation standard.

1.8 Contact Information

The documents the *metering service provider* requires to undertake the procedures covered by this document, as listed in Appendix A, are generally available for downloading on the *IESO* Web site (www.ieso.ca). Specific documents, such as the MV-90 Master File, are sent by customized means.

The documents that are submitted in support of this procedure must be mailed or couriered to the addresses and phone numbers provided on the *IESO* Web site (<http://www.ieso.ca/imoweb/about/contact.asp>), to the attention of **Metering Installations**.

To fax documents:

Dial (905) 855 8688

The ***IESO* MIR Hotline** supports specific technical tasks performed during the process of registering a *metering installation*. This telephone number is reserved for *metering service providers* only and is provided to them upon successful registration as a *metering service provider*.

To email the MV-90 Master File:

MV90MasterFiles@ieso.ca

If the *market participant* wishes to contact the *IESO* Customer Relations, they can do so via email at customer.relations@ieso.ca or via telephone by using the number given on the *IESO* Web site (www.ieso.ca).

1.9 IT Applications that Support this Procedure

The process of registration of a *metering installation* is supported by a number of applications as described below:

1.9.1 Metering Installation Registration Tool (MIRT)

This tool enables the *metering service provider* to provide the *IESO*, via email, with an MV-90 Master File. *Metering service providers* can either create the MV-90 Master File in MIRT, or import the Master File into MIRT from MV-90, complete it, and then send it to the *IESO*.

1.9.2 MV-90

MV-90 consists of a Registration and Production module.

The MV-90 module is used only during the registration process of a *meter point ID*. The module imports the Master File provided by the *metering service provider* and transfers it to the MV-90 Production module, upon the successful completion of the end-to-end test. The Registration module performs the end-to-end test during the registration process, by interrogating the *meters* pertaining to the installation being registered.

The MV-90 Production module is employed by *IESO* in order to collect, validate, estimate, and edit *metering interval* data that is then transmitted to MV Star. In addition, the MV-90 Production module will provide the information required to produce trouble reports.

1.9.3 MV-Star and MV-Web

MV-Star receives *metering data* validated by MV-90 and generates totalization tables. MV-Web is the tool *market participants* can use to view and download market transactions.

1.9.4 PLC

The Participant Life Cycle (PLC) system supports *facility* registration and Maintenance. The PLC database maintains lists and profiles of valid *market participants*, *metered market participants*, *metering service providers*, *transmitters*, *distributors*, and *delivery points*. Relationships between these entities and user permissions are also maintained in the PLC.

1.10 Roles and Responsibilities

The following section describes the roles and responsibilities of the *IESO*, *metering service provider*, and *metered market participants* during the *meter point* registration sub-procedure (Sections 2.1 and 3.1). Some of these responsibilities may not exist for other sub-procedures in this document.

The *IESO* is responsible for:

- Reviewing the SLD submitted by the *metering service provider*;
- Assigning *meter point* ID(s) and other IDs, as applicable, for the *metering installation*;
- Conducting the end-to-end test and preparing the “Confirmation of Engineering Units Report”;
- Sending the “Confirmation of Engineering Units Report” (with attached Engineering Units Report and Meter Master File) to the *metering service provider* for verification and signoff; and
- Informing the relevant *metered market participant* / *metering service provider* of the successful or unsuccessful registration.

Metering service providers are responsible for:

- Submitting the SLD to the *IESO* for review;
- Submitting a copy of the SLD to the *transmitter* for review where *transmission tariffs* exist at the associated *delivery point*;
- Submitting the *transmitter*-reviewed SLD to the *IESO*;
- Formally notifying the *IESO* that the *metering installation* is compliant, as described above, or, alternately, applying for an *exemption*;
- Submitting Site-Specific Loss Adjustments (SSLA), Measurement Error Correction (MEC) factors, “Emergency Restoration Plan” and, if required, Total Loss Factors (TLF) to the *IESO*. The SSLA Register and the MEC Register must be certified by a registered professional engineer;

- Completing the “Assigning a Metering Service Provider to a Meter Point” (IMO-Form-1390), as applicable;
- Using one of the three methods described in Section 1.9.2 to create the MV-90 Master File for the relevant *meter point* ID and submitting the information to the *IESO*;
- Initiating the end-to-end test, by calling the *IESO* and providing the information required, and participating in the completion of the test;
- Performing the commissioning test and recording the results;
- Signing the *IESO*-completed “Confirmation of the Engineering Units Report Form” for each *meter point* ID upon verifying that the information in the Report is correct and accurate;
- Following the procedure for changes to MV-90 Master File that do not affect *metering data* for a *meter point* ID when *metered market participant* or *metering service provider* changes occurred at *delivery point* level; and
- Providing, upon request from its *metered market participant*, any relevant information regarding the *metering installation*; and
- Providing the *transmitter* with the *meter point* documentation on completion of the registration procedure or changes to registration procedure.

Metered market participants are responsible for:

- Providing the *Delivery Point* Name and ID to his *metering service provider*, as received from the *IESO* during *facility* registration;
- Ensuring that their contracts relating to each *metering installation* in respect of which it is the *metered market participant* contain such terms and conditions related to the *metering installation* as may be required for compliance with the *market rules*;
- Initiating the procedure of changing an *metering service provider* for a *meter point*; and
- Ensuring a proper transfer of documentation between an outgoing and a newly-appointed *metering service provider* for a *meter point* in respect of which it is the *metered market participant*.

– End of Section –

2. Procedural Work Flow

The following diagrams represent the flow of work and information related to *meter point* registration among the *IESO*, the *metering service provider*, and any other parties.

Table 2–1: Legend for Work Flow Diagrams

Legend	Description
Oval	An event that triggers task or that completes task. Trigger events and completion events are numbered sequentially within procedure (01 to 99)
Task Box	Shows reference number, party responsible for performing task (if “other party”), and task name or brief summary of task. Reference number (e.g., 1A.02) indicates procedure number within current <i>market manual</i> (1), sub-procedure identifier (if applicable) (A), and task number (02)
Solid horizontal line	Shows information flow between the <i>IESO</i> and external parties
Solid vertical line	Shows linkage between tasks
Broken line	Links trigger events and completion events to preceding or succeeding task

Links labelled MIR-xx represent letters that the *IESO* sends to the participants at various steps.

The steps illustrated in the diagrams are described in detail in Section 3.

2.1 Registration of a Meter Point

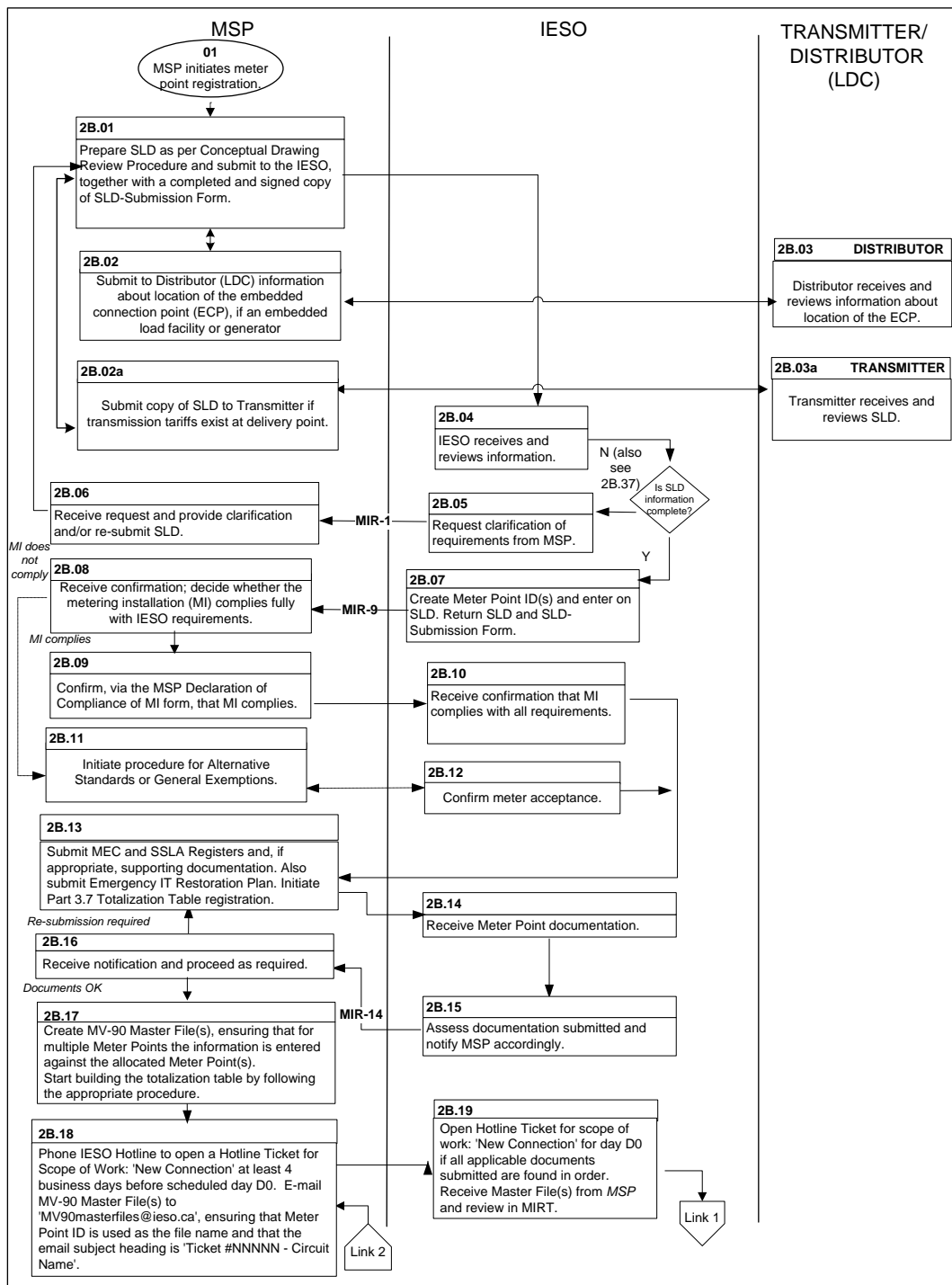


Figure 2–1: Work flow for Registration of a Meter Point

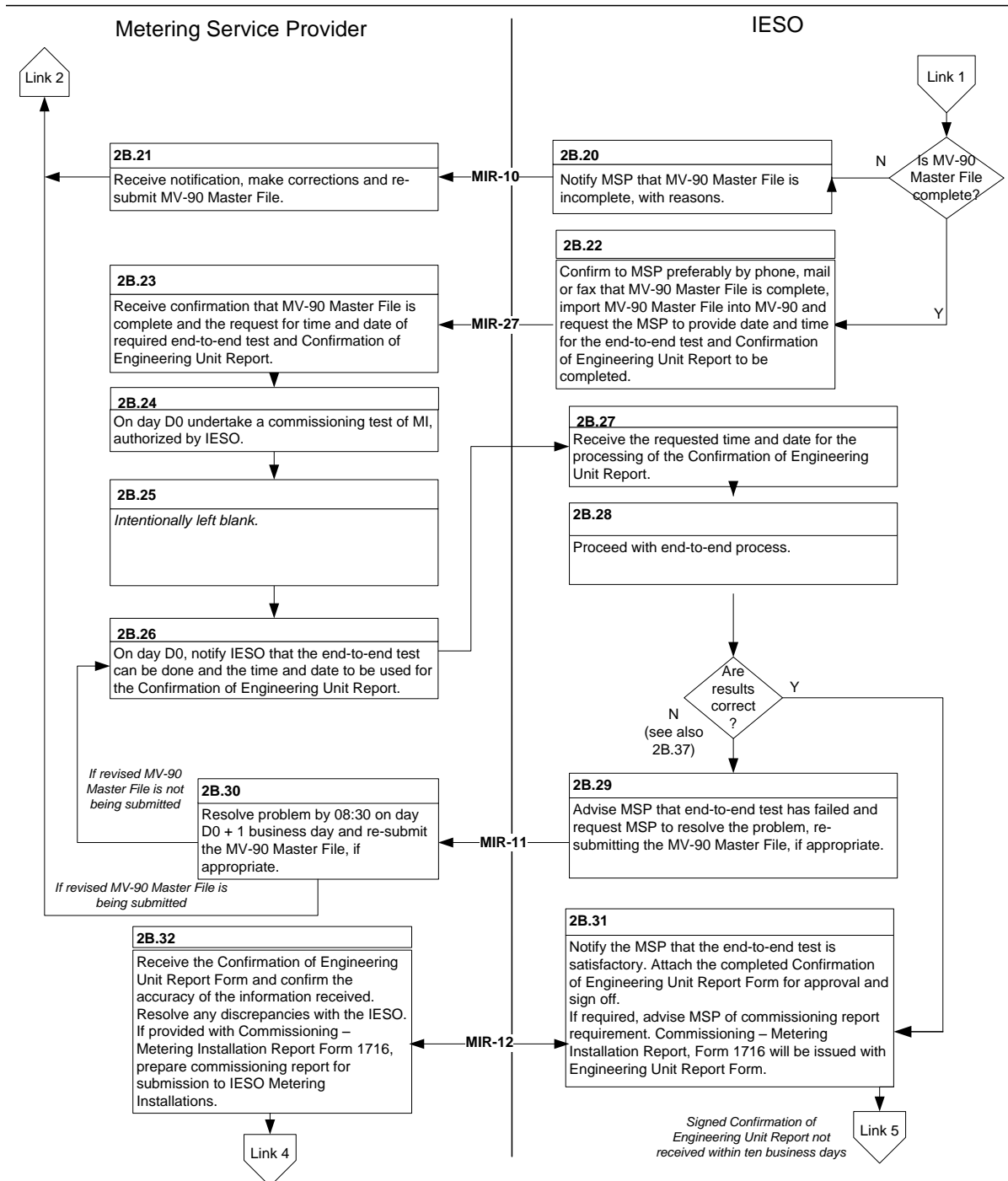


Figure 2-1: Work flow for Registration of a Meter Point (continued)

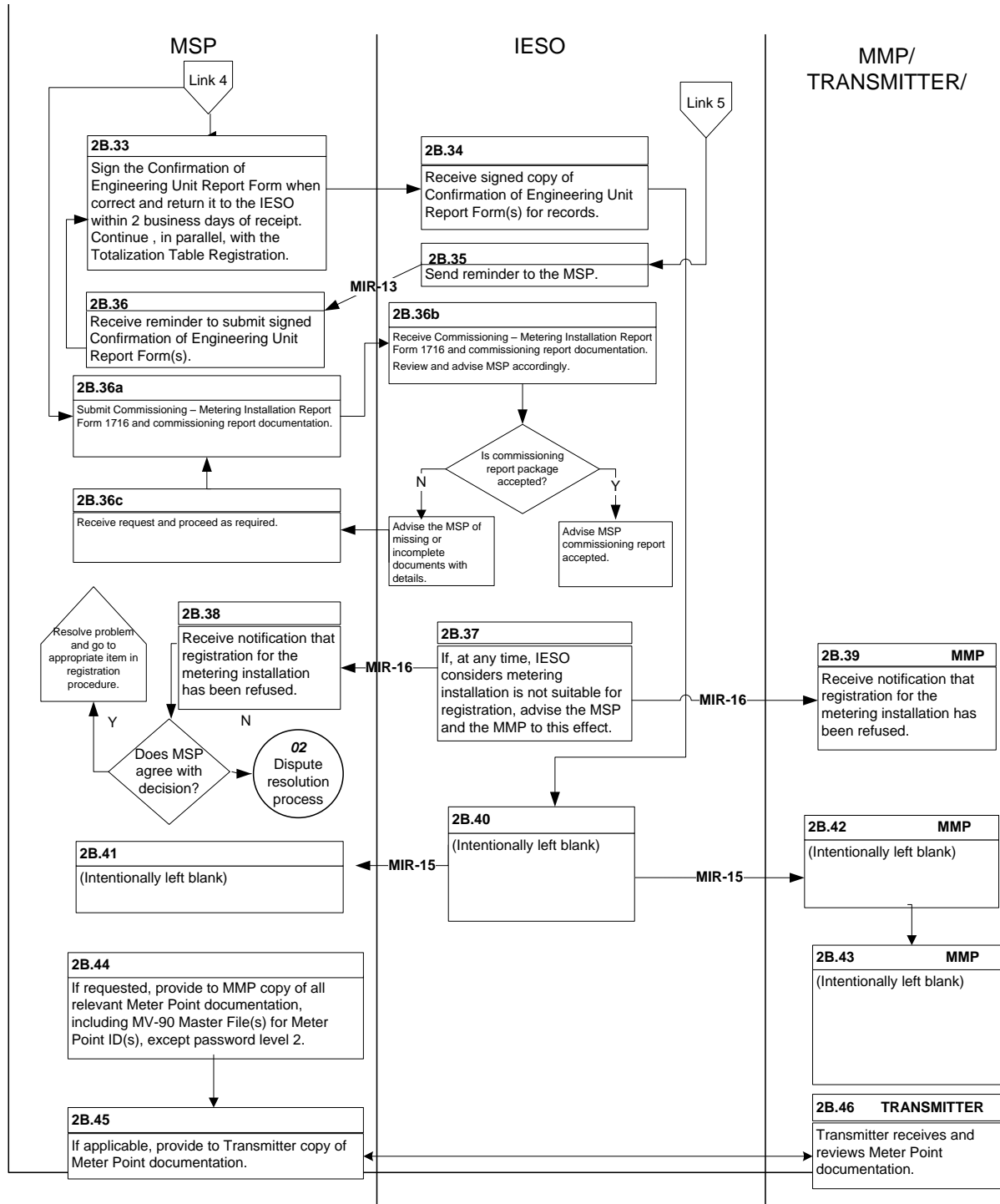


Figure 2-1: Work flow for Registration of a Meter Point (continued)

2.2 Registration of Changes to MV-90 Master File that Affect Metering Data

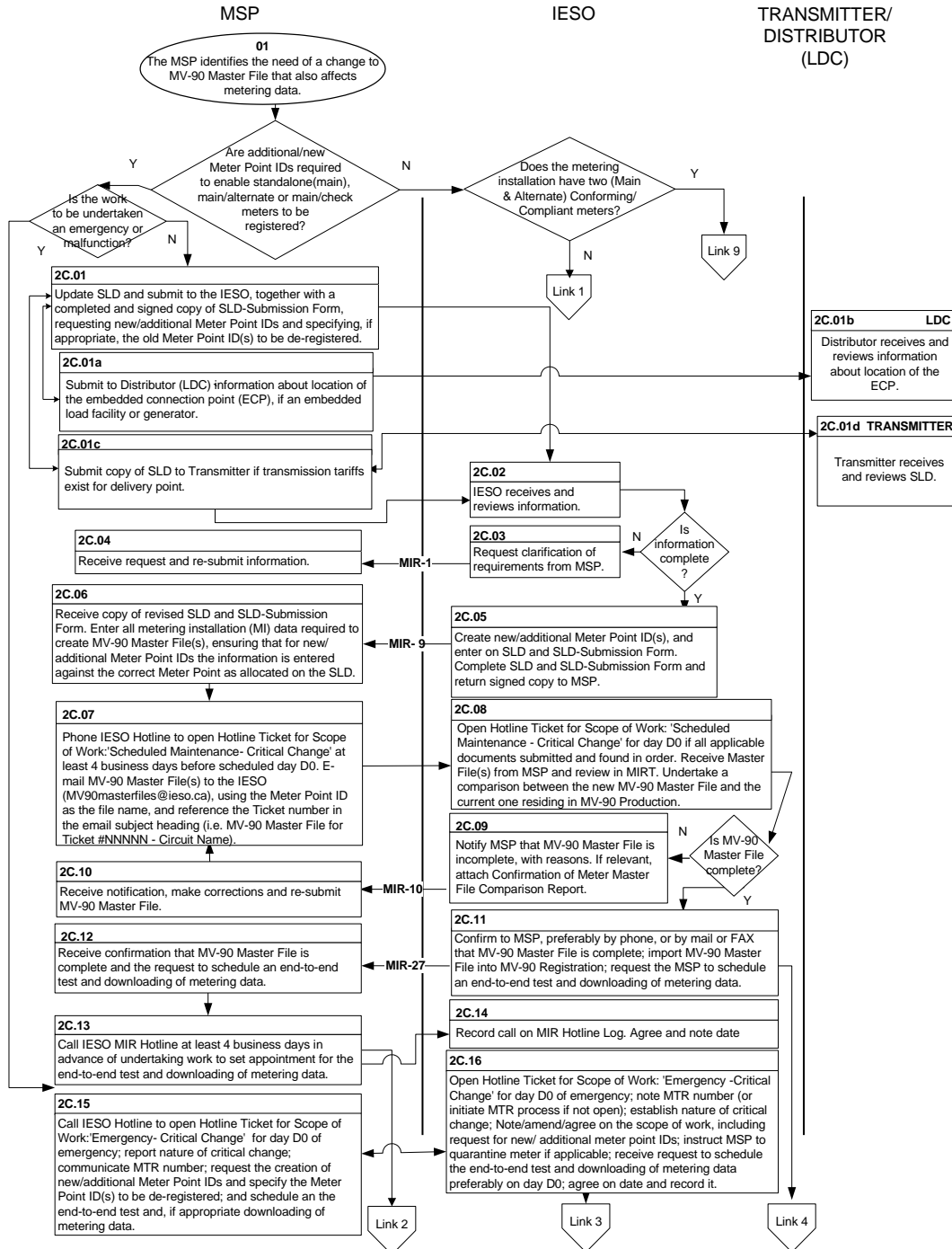


Figure 2–2: Work flow for Registration of Changes to MV-90 Master File that Affect Metering Data

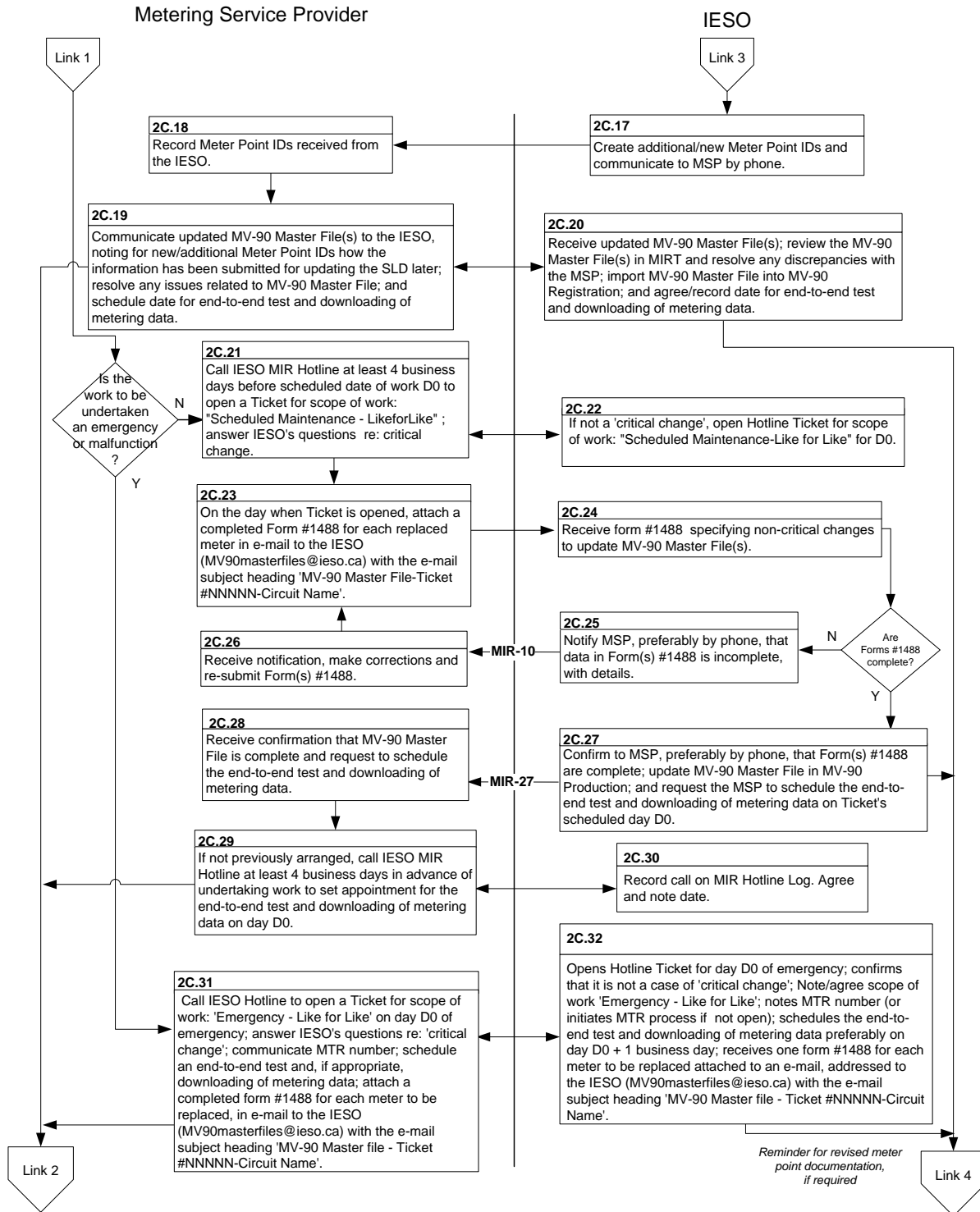


Figure 2–2: Work flow for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

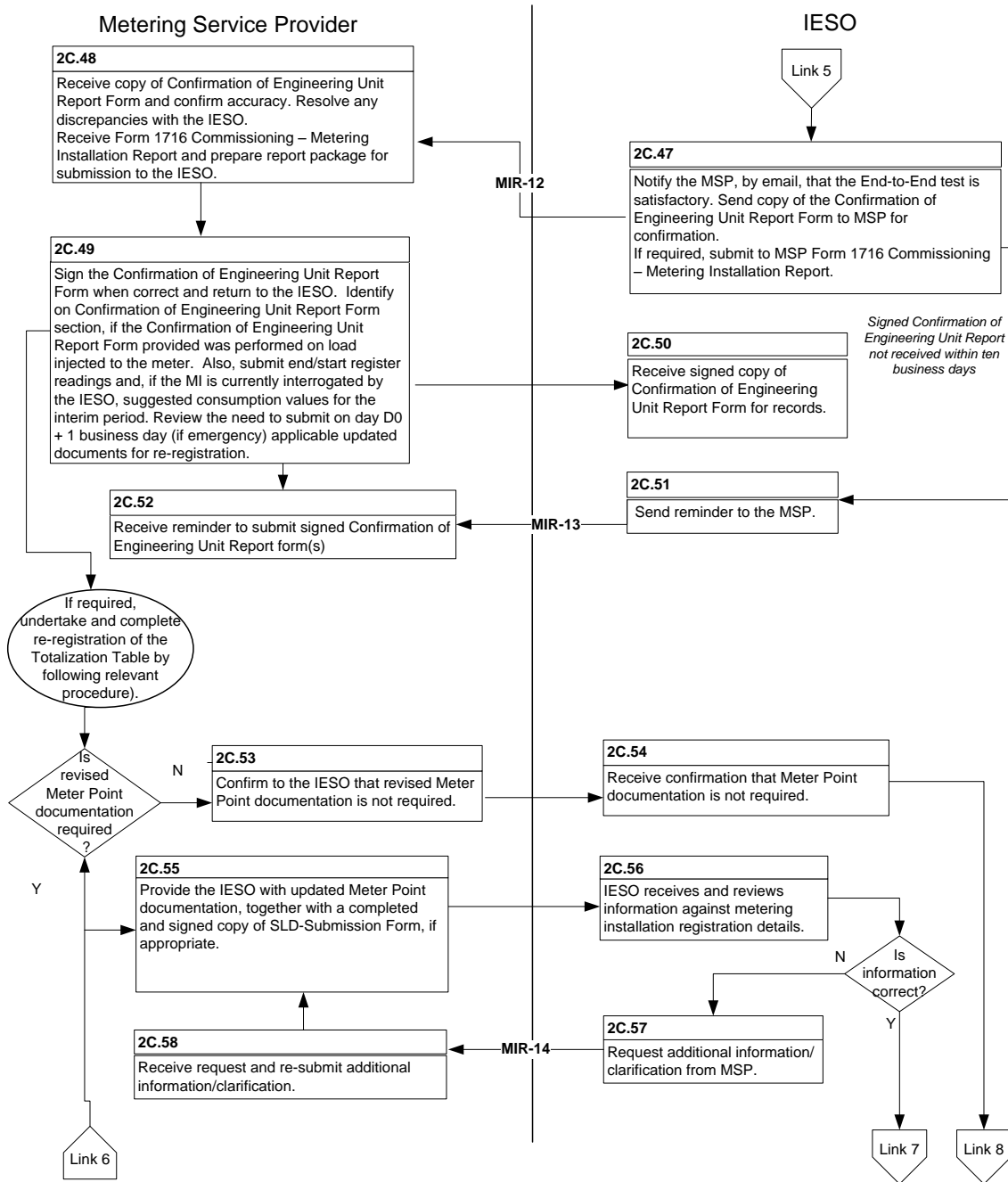


Figure 2–2: Work flow for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

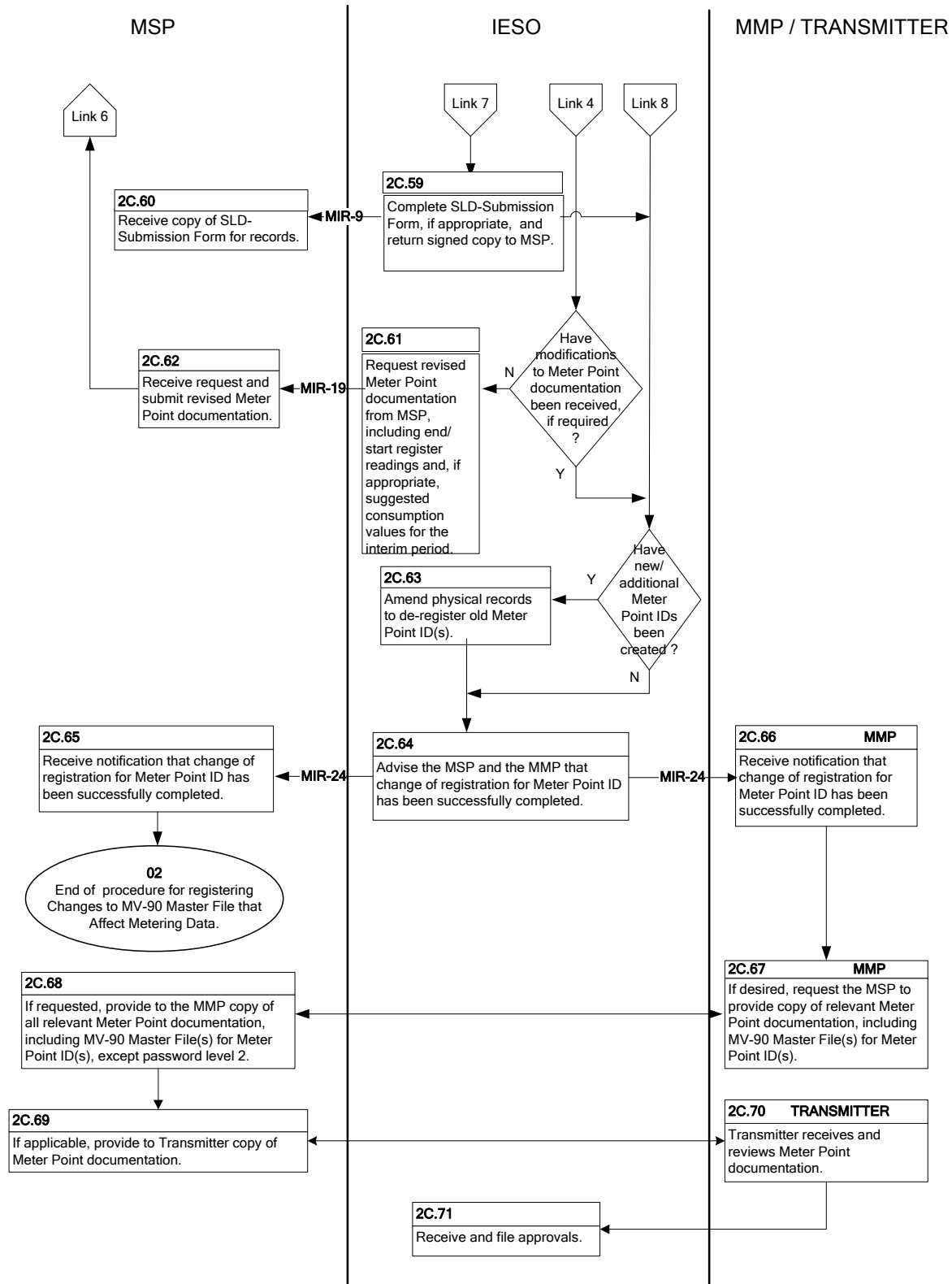


Figure 2–2: Work flow for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

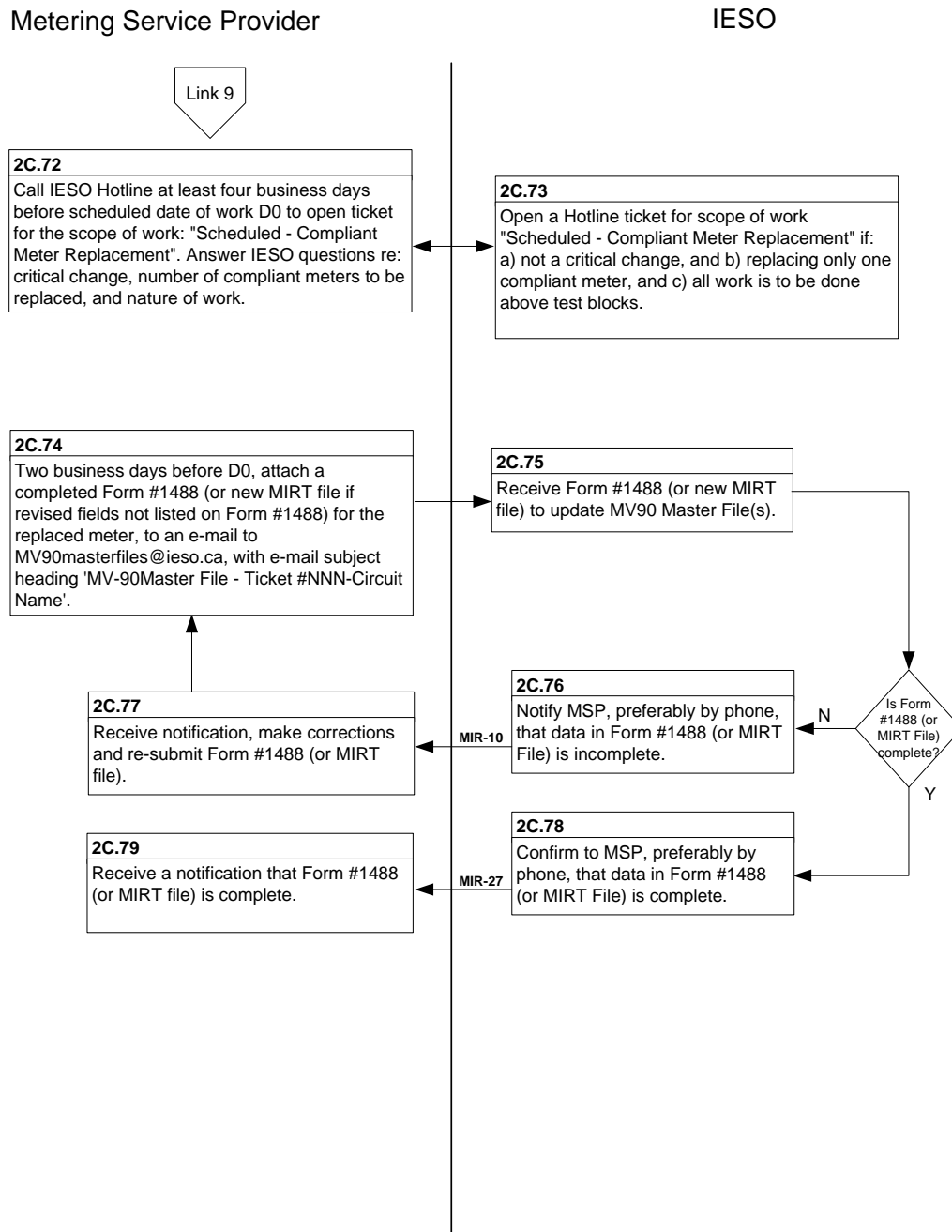


Figure 2–2: Work flow for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

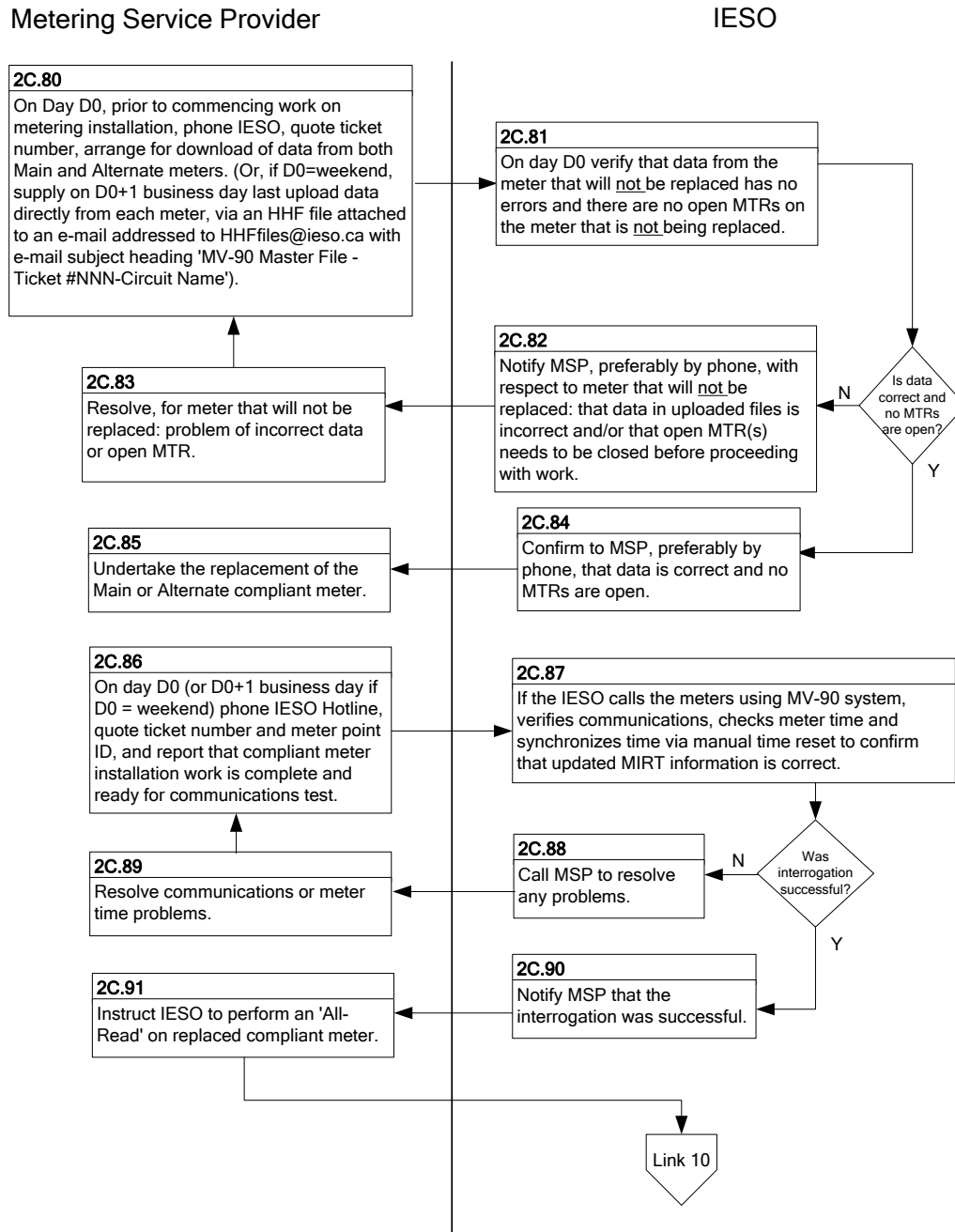


Figure 2–2: Work flow for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

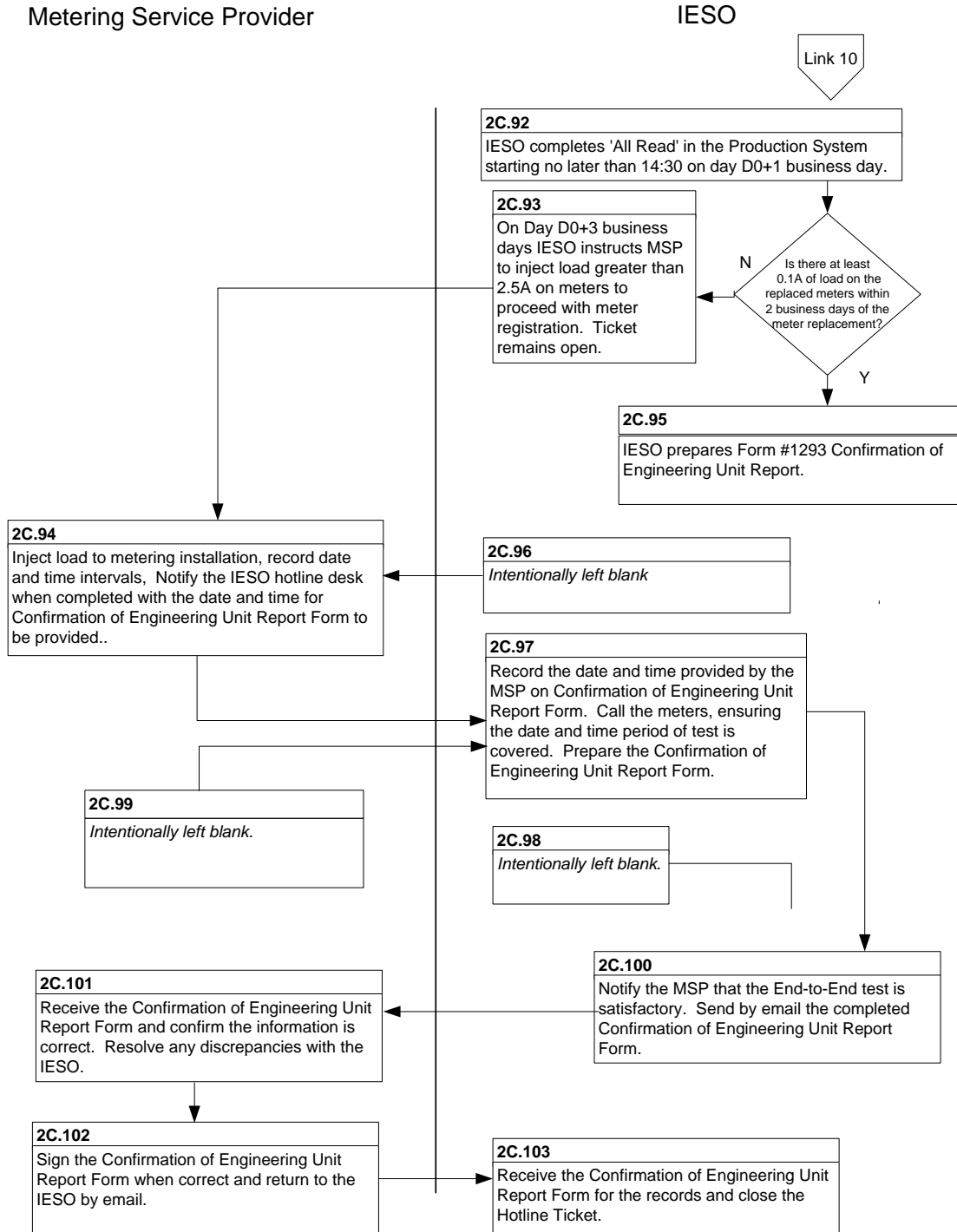


Figure 2–2: Work flow for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

2.3 Registration of Changes to MV-90 Master File that Do Not Affect Metering Data

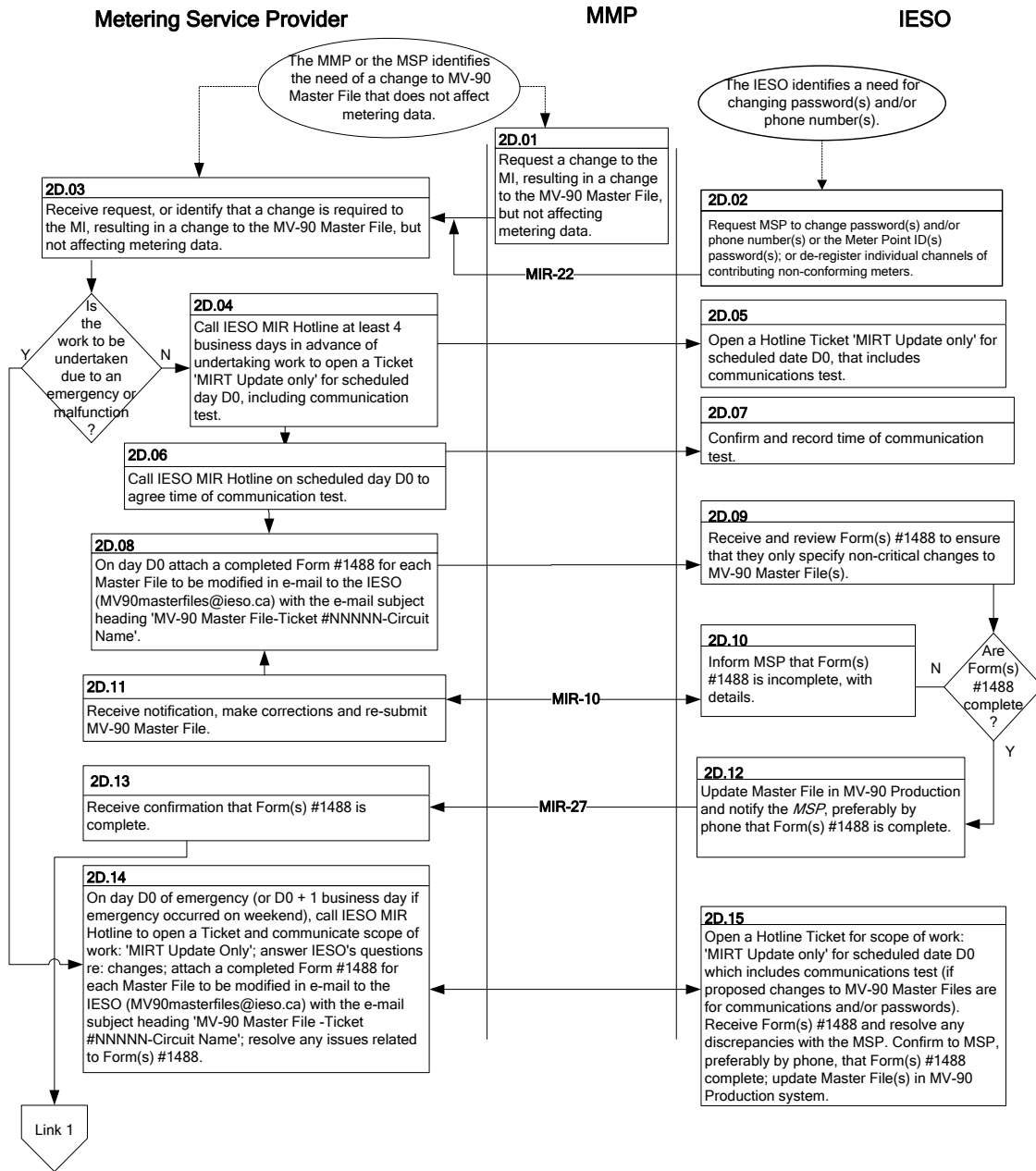


Figure 2-3: Work flow for Registration of Changes to MV-90 Master File that Do Not Affect Metering Data

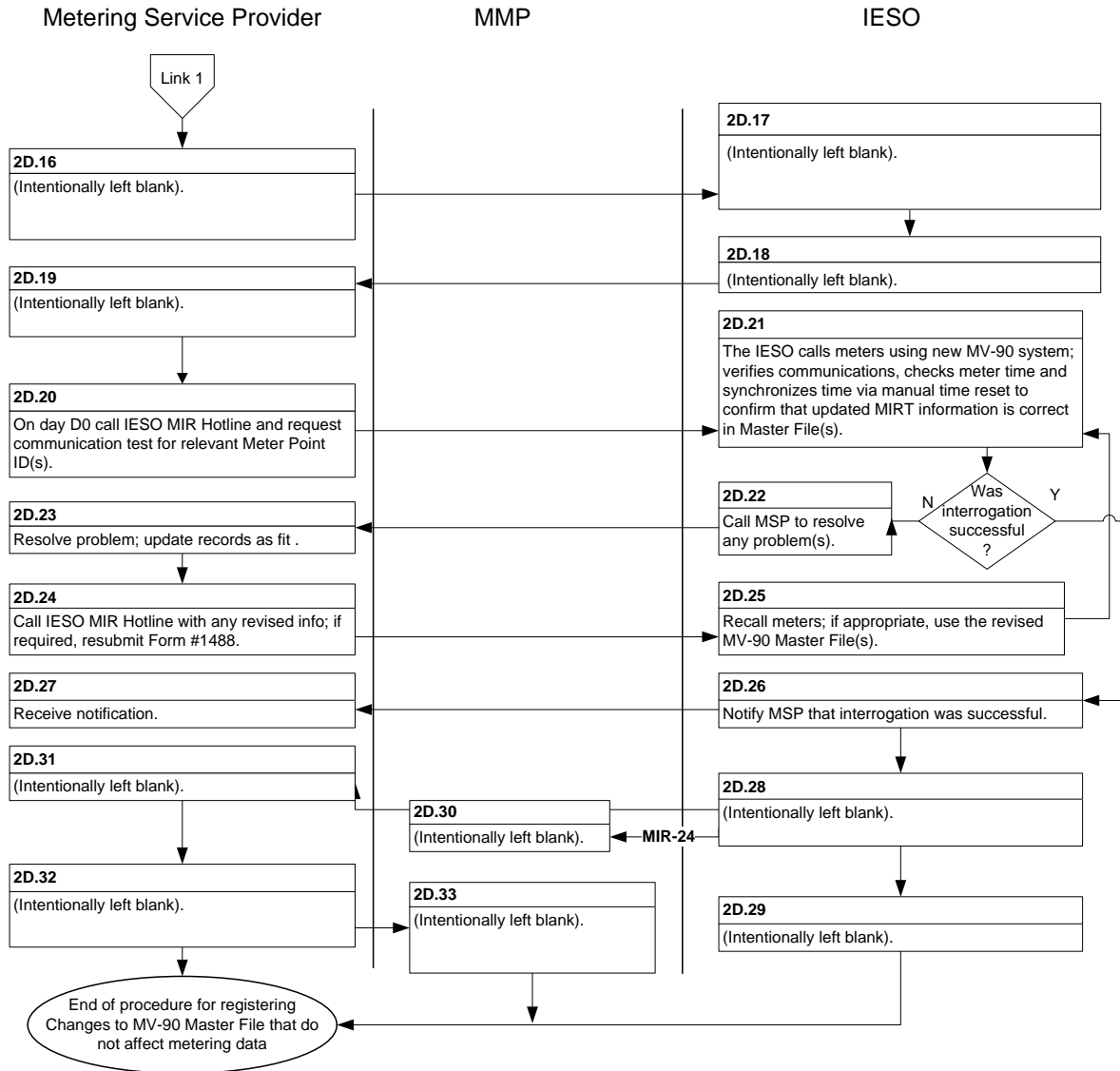


Figure 2-3: Work flow for Registration of Changes to MV-90 Master File that Do Not Affect Metering Data (continued)

2.4 Registration of Changes to Metering Installation that Do Not Affect MV-90 Master File

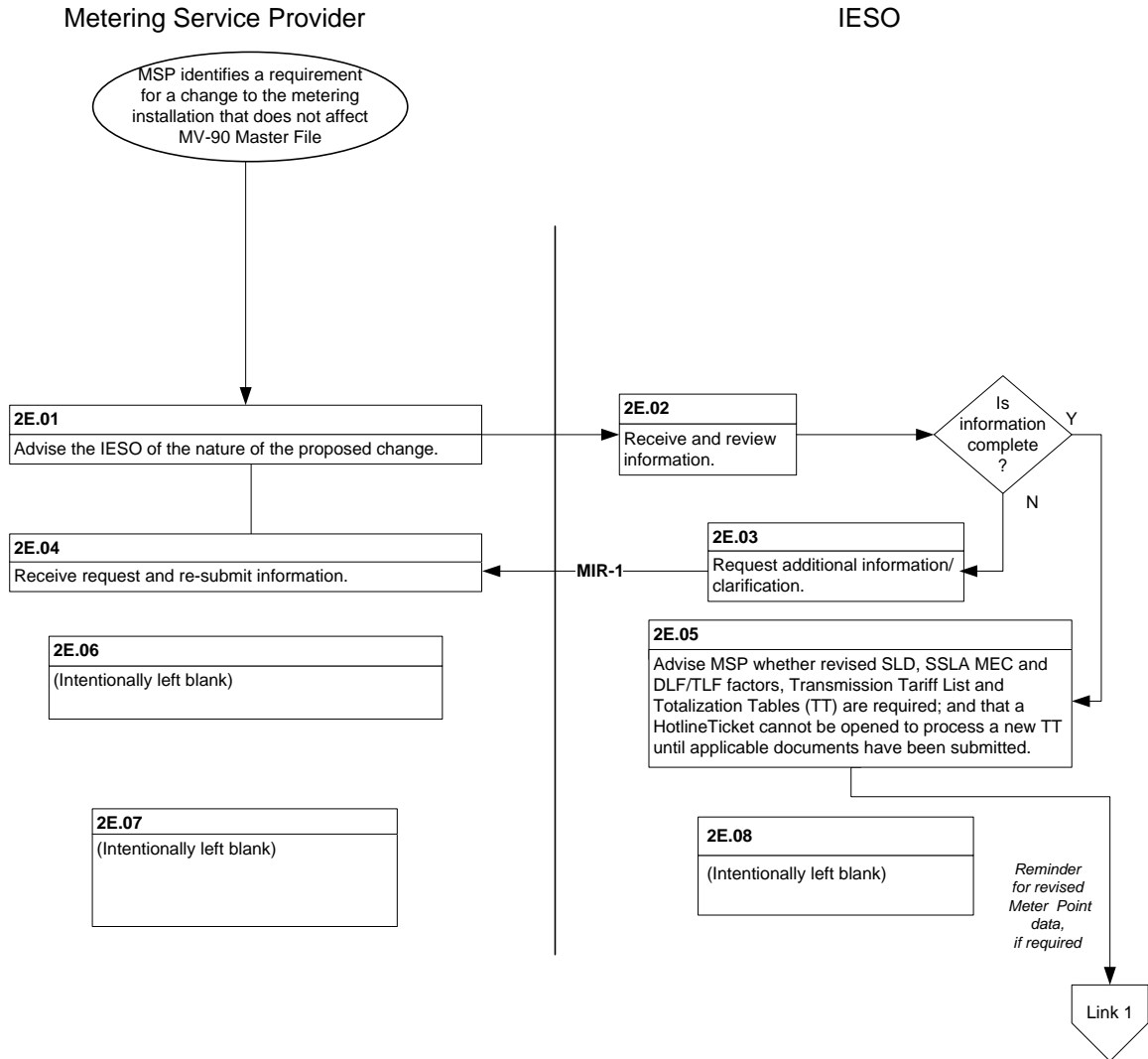


Figure 2-4: Work flow for Registration of Changes to Metering Installation that Do Not Affect MV-90 Master File

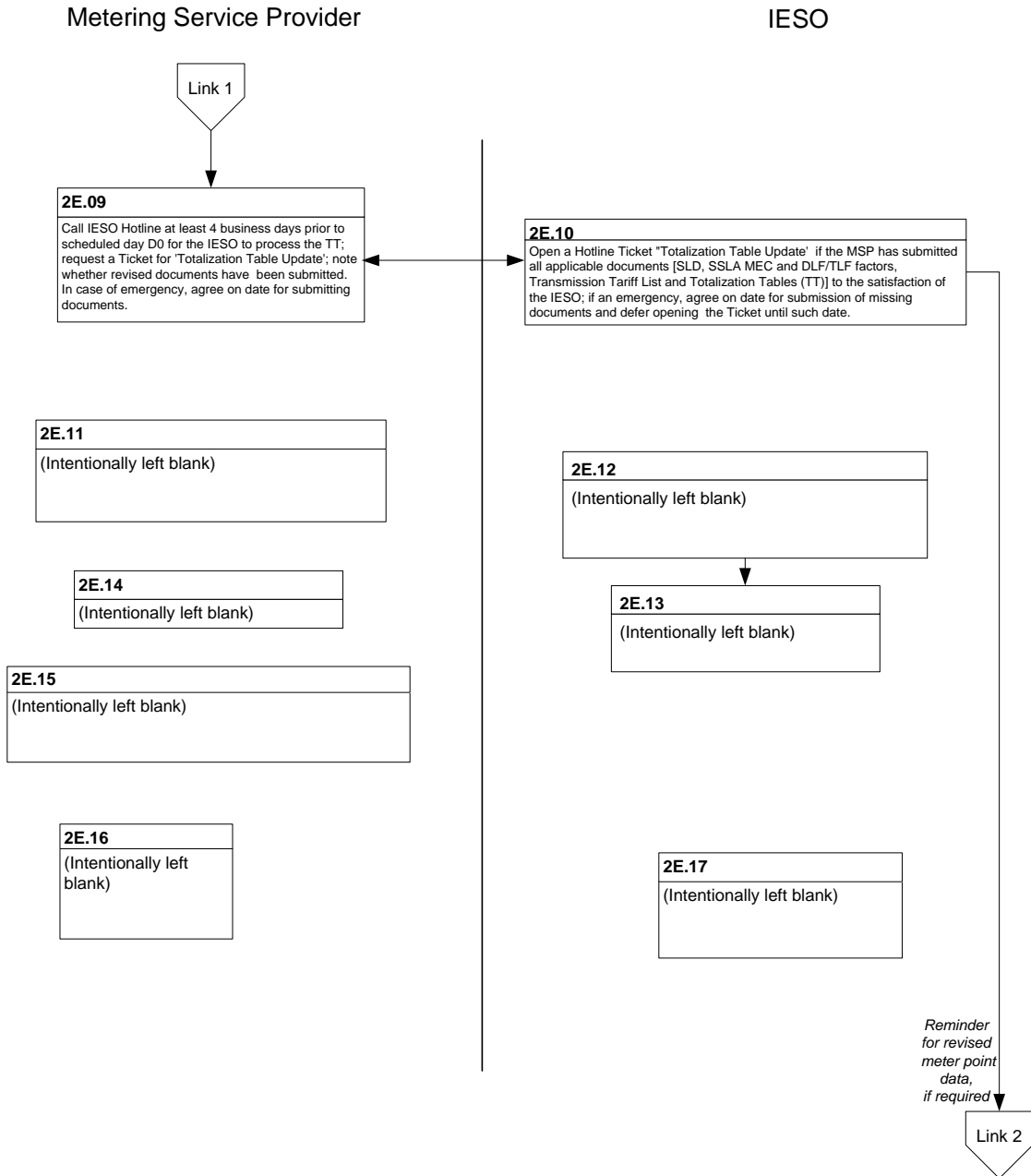


Figure 2-4: Work flow for Registration of Changes to Metering Installation that Do Not Affect MV-90 Master File (continued)

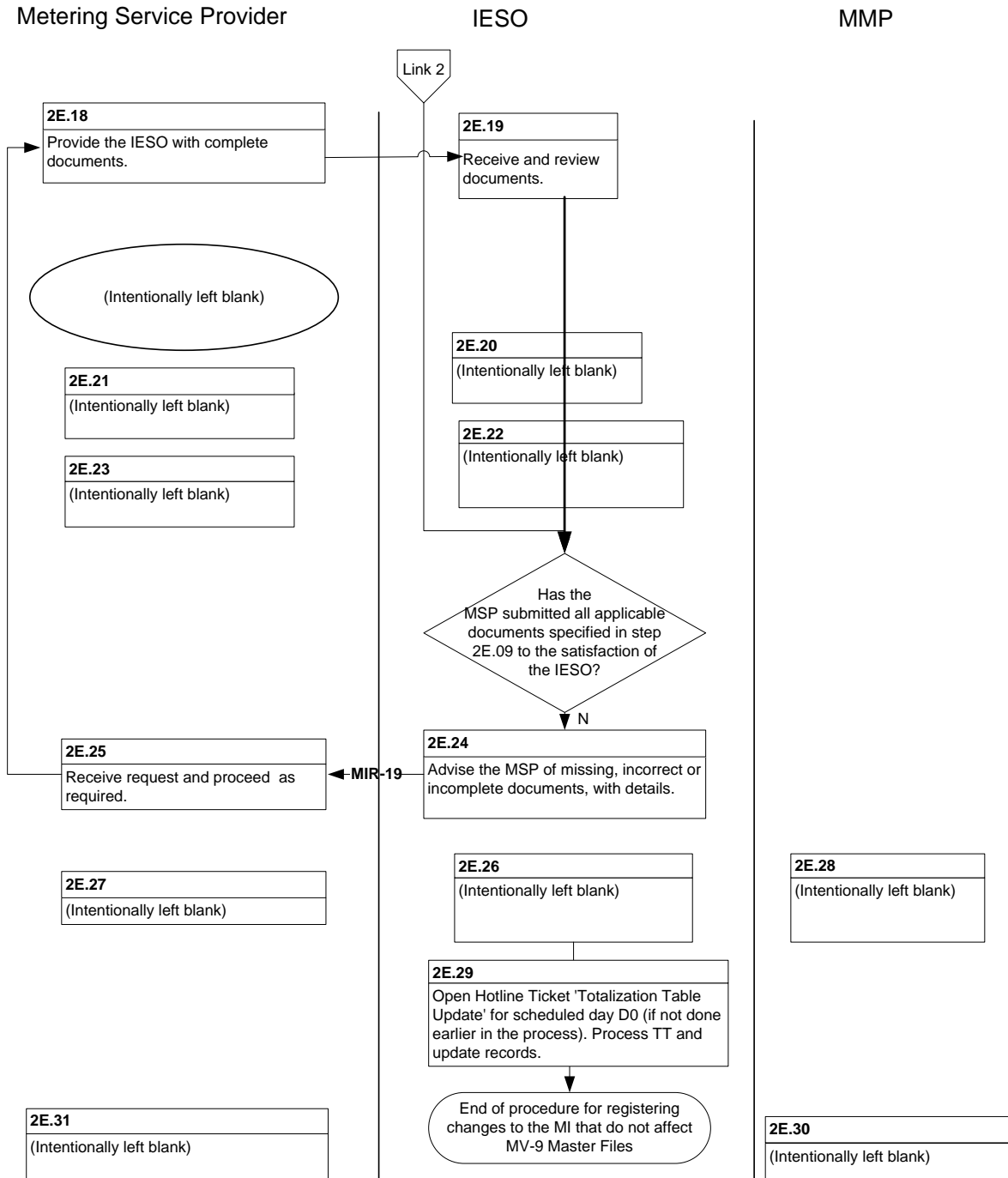


Figure 2-4: Work flow for Registration of Changes to Metering Installation that Do Not Affect MV-90 Master File (continued)

2.5 Change of Metering Service Provider (for a Meter Point) Not Assigned to a Delivery Point

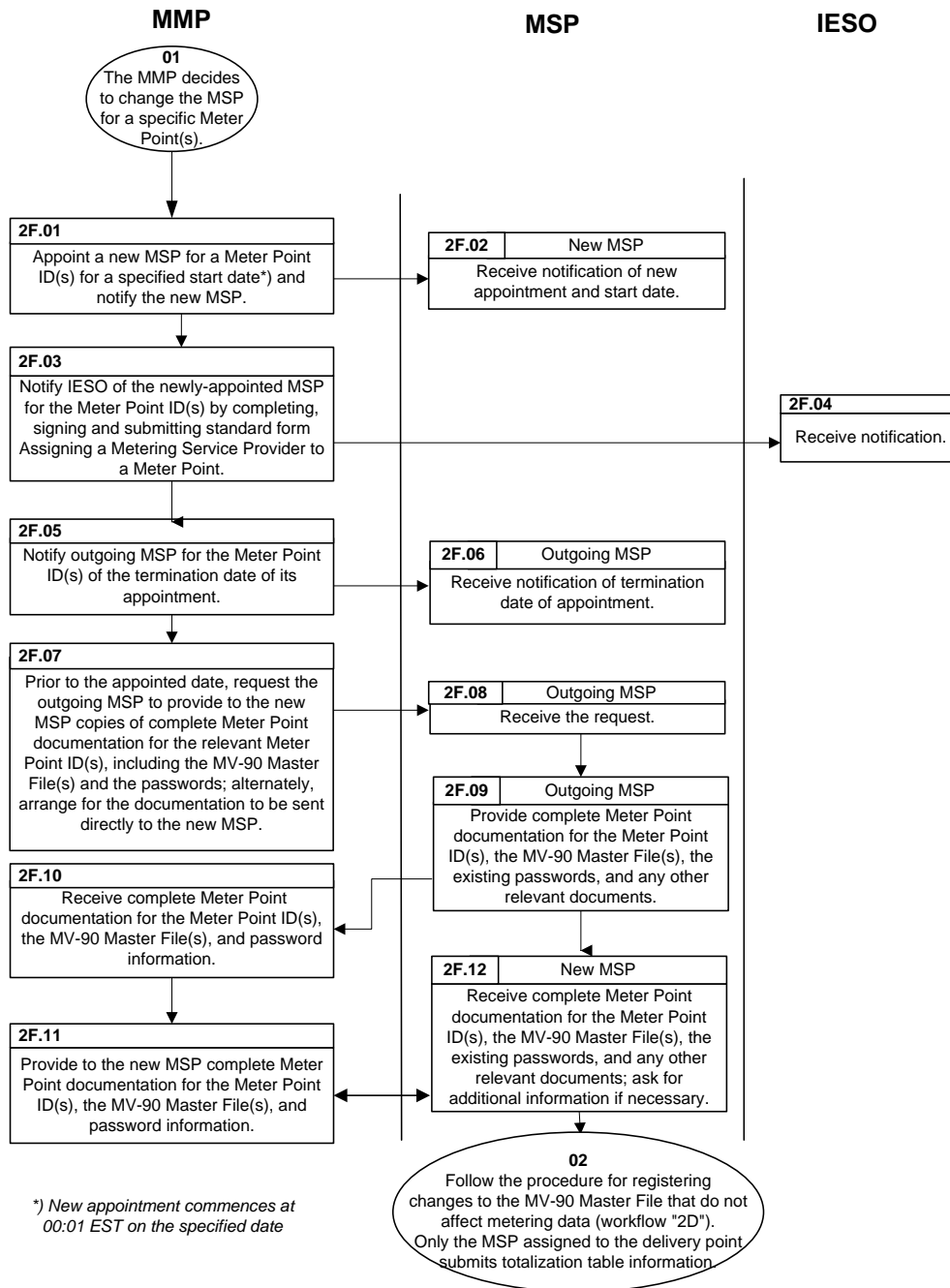


Figure 2-5: Work flow for Change of Metering Service Provider (for a Meter Point) Not Assigned to a Delivery Point

2.6 De-registration of one or more Meter Points associated with a Delivery Point

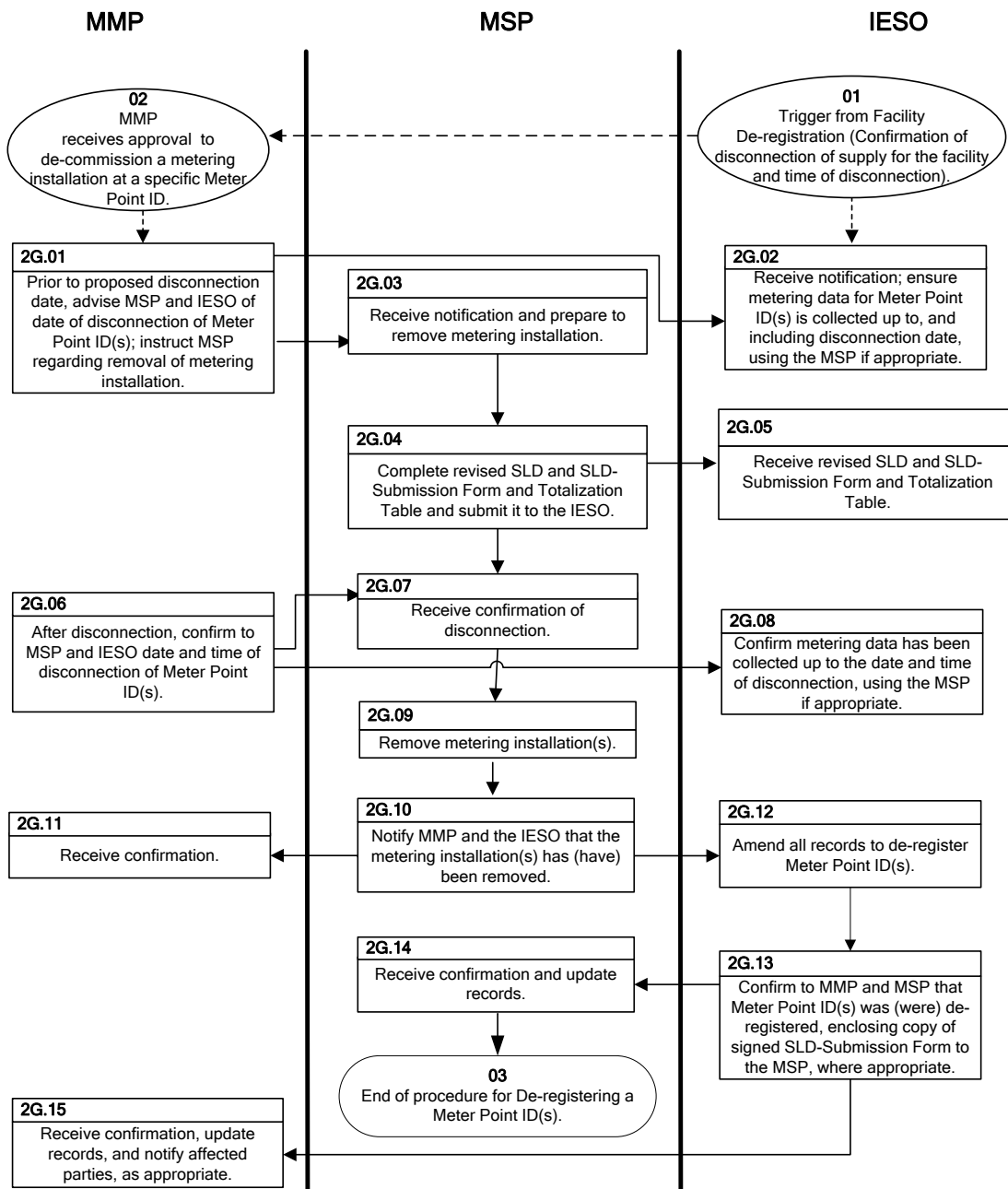


Figure 2–6: Work flow for De-registration of one or more Meter Points associated with a Delivery Point

– End of Section –

3. Procedural Steps

This section contains detail on the tasks (steps) that comprise the “Meter Point Registration and Maintenance” procedure. The steps in the following tables are illustrated in the corresponding sub-sections of Section 2.

Each table contains seven columns, as follows:

Ref

The numerical reference to the task.

Task Name

The task name as identified in Section 2.

Task detail

Detail about the task.

When

A list of all the events that can trigger commencement of the task.

Resulting information

A list of the information flows that may or must result from the task.

Method

The format and method for each information flow are specified.

Completion events

A list of all the circumstances in which the task should be deemed finished.

3.1 Registration of a Meter Point

The steps in the following table are illustrated in Section 2.1, Figure 2-1.

Table 3–1: Procedural Steps for Registration of a Meter Point						
Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2B.01	Prepare SLD as per “Conceptual Drawing Review” procedure and submit to the <i>IESO</i> together with a completed and signed copy of “SLD-Submission Form”.	The <i>metering service provider</i> prepares the SLD as outlined in Sections 1.5.1 and Appendix B of “Market Manual 3: Metering, Part 3.6: Conceptual Drawing Review”. The <i>metering service provider</i> completes and signs a copy of the “SLD-Submission Form”, as available on the <i>IESO</i> Web site. The <i>metering service provider</i> submits the above documents to the <i>IESO</i> .	Initial step for registration of a <i>meter point</i> .	SLD and completed and signed copy of the “SLD-Submission Form”.	Fax, mail or courier.	The <i>IESO</i> receives the documents.
2B.02	Submit to <i>distributor</i> (LDC) information about location of the <i>embedded connection point</i> (ECP), if an <i>embedded load facility</i> or <i>generator</i> ,	The <i>metering service provider</i> informs the LDC the precise location of the <i>embedded load facility</i> or <i>generator’s</i> point of connection to the <i>distribution system</i> . The details of the ECP –pole number and civic address / geographic location, or GPS co-ordinates– will be as shown on the SLD submitted to the <i>IESO</i> .	After step 2B.01.	Notification in writing by the <i>metering service provider</i> to the LDC	Fax, mail or courier.	The LDC receives precise information about the location of the ECP.
2B.02a	Submit copy of SLD to <i>transmitter</i> if <i>transmission tariffs</i> exist at <i>delivery point</i> .	The <i>metering service provider</i> submits a copy of the SLD prepared in step 2B.01 to the <i>transmitter</i> if a <i>transmission tariff delivery point</i> is associated with the <i>meter point</i> .	After step 2B.01.	SLD.	Fax, mail or courier.	<i>Transmitter</i> contacts the MMPT regarding any issues about SLD.

Table 3–1: Procedural Steps for Registration of a Meter Point

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2B.03	<i>Distributor</i> receives and reviews information about location of the ECP.	<i>Distributor</i> reviews information about location of ECP being submitted by the <i>metering service provider</i> to the <i>IESO</i> on SLD for registration of the <i>embedded facility</i> .	After step 2B.02.	Location of ECP communicated to <i>Distributor</i> .	Fax, mail or courier.	LDC contacts the MMP re: any issue about ECP location.
2B.03a	<i>Transmitter</i> receives and reviews SLD.	The <i>transmitter</i> receives and reviews the SLD.	Simultaneously with step 2B.02a.	SLD.		
2B.04	<i>IESO</i> receives and reviews information.	The <i>IESO</i> reviews the SLD and determines whether the drawing is complete.	Following receipt of SLD and “SLD-Submission Form”.			The <i>IESO</i> sends a notification as to completeness of SLD.
2B.05	Request clarification of requirements from <i>metering service provider</i> .	The <i>IESO</i> requests the <i>metering service provider</i> to provide further clarifications about the SLD because, in its current form, it is not complete. If the <i>IESO</i> decides the <i>metering installation</i> is not suitable for registration, proceed to Step 2B.37.	If SLD does not conform to requirements or the information is incomplete.	Notification by <i>IESO</i> requesting clarification on the SLD.	Fax, mail, or email.	The <i>metering service provider</i> receives the <i>IESO</i> notification.
2B.06	Receive request and re-submit SLD with clarification.	To continue the registration process, the <i>metering service provider</i> must resubmit to the <i>IESO</i> the SLD and the “SLD-Submission Form”, as available on the <i>IESO</i> Web site with the requested clarifications.	After receiving the clarification request from the <i>IESO</i> .	SLD with clarifications and completed and signed “SLD-Submission Form”.	Fax, mail or courier.	<i>IESO</i> receives the documents.

Table 3–1: Procedural Steps for Registration of a Meter Point

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2B.07	Create <i>meter point</i> ID(s) and enter on SLD. Return SLD and “SLD-Submission Form”.	The <i>IESO</i> creates new <i>meter point</i> ID(s), as applicable, enters them on the SLD and returns both signed documents to the <i>metering service provider</i> .	After Steps 2B.06.	<i>Meter point</i> ID(s) created.	Mail or fax.	Create <i>meter point</i> ID(s) and enter on SLD. Return SLD and “SLD-Submission Form”.
2B.08	Receive confirmation; decide whether the <i>metering installation</i> complies fully with <i>IESO</i> requirements.	The <i>metering service provider</i> should review Chapter 6 of the <i>market rules</i> and the standards (including the “Wholesale Revenue Metering Standard-Hardware”) and policies of the <i>IESO</i> to decide whether the <i>metering installation</i> fully complies with all requirements for <i>metering installations</i> . If the <i>metering service provider</i> determines that the <i>metering installation</i> complies, proceed to Step 2B.09. If the <i>metering service provider</i> determines that the <i>metering installation</i> does not comply, proceed to Step 2B.11.				The <i>metering service provider</i> decides compliance status of the <i>metering installation</i> .

Table 3–1: Procedural Steps for Registration of a Meter Point

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2B.09	Confirm, via the <i>metering service provider</i> “Declaration of Compliance of Metering Installation” form, that <i>metering installation</i> complies.	The <i>metering service provider</i> confirms to the <i>IESO</i> that the <i>metering installation</i> complies with Chapter 6 of the <i>market rules</i> and the standards (including the “Wholesale Revenue Metering Standard-Hardware”) and policies of the <i>IESO</i> . The confirmation is sent by completing and signing the “Declaration of Compliance of Metering Installation” available for downloading on the <i>IESO</i> Web site.	After deciding that the <i>metering installation</i> complies with all requirements for <i>metering installations</i> .		Fax, mail, or email.	The <i>metering service provider</i> submits to the <i>IESO</i> a signed “Metering Service Provider Declaration of Metering Installation”.
2B.10	Receive confirmation that <i>metering installation</i> complies with all requirements.	The <i>IESO</i> receives confirmation from the <i>metering service provider</i> that the <i>metering installation</i> complies with all requirements for <i>metering installations</i> . Proceed to Step 2B.11.				The <i>IESO</i> receives <i>metering service provider</i> confirmation.
2B.11	Initiate procedure for Alternative Standards or General <i>Exemptions</i> .	The <i>metering service provider</i> must complete either the “Alternative Metering Installation Standard Checklist” or apply for a General <i>Exemption</i> for the <i>metering installation</i> from the <i>IESO</i> as described in Appendix E.	After <i>metering service provider</i> decides that <i>metering installation</i> does <i>not</i> comply with requirements.		Appendix E.	The <i>metering service provider</i> completes the required checklist or <i>exemption</i> procedure.

Table 3–1: Procedural Steps for Registration of a Meter Point

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2B.12	Confirm <i>meter</i> acceptance.	<p>The <i>IESO</i> determines whether the <i>metering installation</i> meets the criteria for Alternative Metering Installation Standards or can be granted a General <i>Exemption</i>.</p> <p>If the <i>metering installation</i> meets the criteria or is granted a General <i>Exemption</i>, proceed to Step 2B.13.</p> <p>If the <i>IESO</i> denies the <i>metering installation</i>, the registration process terminates.</p>			Fax, mail or email.	The <i>metering service provider</i> receives confirmation from the <i>IESO</i> that the <i>metering installation</i> meets the criteria for Alternative Standards or can be granted a General <i>Exemption</i> .

Table 3–1: Procedural Steps for Registration of a Meter Point

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2B.13	Submit MEC and SSLA Registers and, if appropriate, supporting documentation. Also submit ‘Emergency Instrument Transformer Restoration Plan’. Initiate “Part 3.7: Totalization Table Registration”.	<p>A registered professional engineer must calculate the MEC and SSLA factors as described in Section 1.4.4. The <i>metering service provider</i> submits these factors recorded in the Site-Specific Loss Adjustments Register and the Measurement Error Corrections Register, signed and stamped by the registered professional engineer. If a Total Loss Factor is required for the <i>metering installation</i>, the supporting documents for this factor, as per Section 1.4.5 must be included as well. In addition, the <i>metering service provider</i> must submit an “Emergency Instrument Transformer Restoration Plan” (EITRP), as detailed in Section 1.4.6.</p> <p>If more than one <i>metered market participant</i> will be registered at the <i>metering installation</i>, the <i>metering service provider</i> must complete the “Statement of Metered Market Participant Identification”. These forms are described in Section 1.4.7.</p> <p>The <i>metering service provider</i> should begin to develop the totalization table for the <i>meter point</i> at this time also, as described in “Part 3.7: Totalization Table Registration”.</p>		<i>Meter point</i> documentation.	Mail, fax or courier.	<i>Meter point</i> documentation submitted to the <i>IESO</i> .

Table 3–1: Procedural Steps for Registration of a Meter Point

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2B.14	Receive <i>meter point</i> documentation.	The <i>IESO</i> receives <i>meter point</i> documentation submitted by the <i>metering service provider</i> .				
2B.15	Assess documentation submitted and notify <i>metering service provider</i> accordingly.	The <i>IESO</i> assesses the documentation submitted and notifies the <i>metering service provider</i> accordingly.			Mail or fax.	
2B.16	Receive notification and proceed as required.	The <i>metering service provider</i> receives notification of <i>IESO</i> 's assessment of <i>meter point</i> documentation. If the result is negative, the <i>metering service provider</i> must re-submit the faulty documents or provide additional information; proceed to 2B.14. If the result is positive, proceed to 2B.18.				
2B.17	Create MV-90 Master File(s), ensuring that for multiple <i>meter points</i> the information is entered against the allocated <i>meter point(s)</i> . Start building the totalization table by following the appropriate procedure.	The <i>metering service provider</i> creates MV-90 Master File(s) for each <i>meter point</i> ID associated with the <i>metering installation</i> using one of the methods described in Section 1.9.2. Since the <i>meter point</i> ID is known and the MEC factors have been approved, the <i>metering service provider</i> may start building the Totalization Table as per "Market Manual 3: Metering Part 3.7: Totalization Table Registration".	After Step 2B.16.	MV-90 Master File.	MIRT, MV-90 or MMISPC.	MV-90 Master File(s) is created for the relevant <i>meter point(s)</i> .

Table 3–1: Procedural Steps for Registration of a Meter Point

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2B.18	Phone <i>IESO</i> Hotline to open Ticket, Scope of Work: ‘New Connection’ at least 4 <i>business days</i> before scheduled date, DO. Email MV-90 Master File(s) to the <i>IESO</i> using the <i>meter point</i> ID as the file name, and reference the Hotline Ticket number in subject heading MV-90 Master File(s) for Ticket #NNNNN – Circuit Name’.	The <i>metering service provider</i> phones <i>IESO</i> Hotline, requests ticket for Scope of Work ‘New Connection’. The <i>metering service provider</i> e-mails the MV-90 Master File(s) to the <i>IESO</i> (MV90masterfiles@ieso.ca) as an attachment, using the <i>meter point</i> ID as the file name and reference the Hotline Ticket number in subject heading MV-90 Master File(s) for Ticket #NNNNN – Circuit Name’.	After submitting all applicable documents for registration, and creating the MV-90 Master File(s) using one of the first three methods described in Section 1.9.2.		Phone for Hotline ticket; Fax or courier for documents; Email for Master File.	<i>IESO</i> receives MV-90 Master File(s) attached to an email from the <i>metering service provider</i> .
2B.19	Receive Master File(s) from <i>metering service provider</i> and review in MIRT.	The <i>IESO</i> Hotline will open a ticket if applicable documents were submitted and found in order: forms # 1299, # 1300, #1304, #1041 and SLD, #1298 or #1042, #1039, #1040, #1310, EITRP and updated Transmission List. On receiving the MV-90 Master File(s) from the <i>metering service provider</i> an auto-confirmation reply is being generated. The <i>IESO</i> then reviews the MV-90 Master File in MIRT. If correct/complete, proceed to Step 2B.22. If incorrect/incomplete, proceed to step 2B.20.	After <i>metering service provider</i> emails MV-90 Master File(s) to the <i>IESO</i> .		Phone for Hotline ticket; and email and MIRT for Master File(s).	<i>Metering service provider</i> receives auto confirmation. MV-90 Master File reviewed.

Table 3–1: Procedural Steps for Registration of a Meter Point

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2B.20	Notify <i>metering service provider</i> that MV-90 Master File is incomplete, with reasons.	If MV-90 incorrect/incomplete, the <i>IESO</i> asks the <i>metering service provider</i> to make the necessary corrections and resubmit MV-90 Master File.	Upon reviewing MV-90 Master File in MIRT.			
2B.21	Receive notification, make corrections and resubmit MV-90 Master File.	Upon receiving the notification, the <i>metering service provider</i> makes the necessary corrections to the MV-90 Master File and resubmits it to the <i>IESO</i> .		Corrected MV-90 Master File.	Email.	
2B.22	Confirm to <i>metering service provider</i> preferably by phone, mail or fax that MV-90 Master File is complete, import MV-90 Master File into MV-90 and request the <i>metering service provider</i> to provide date and time for the end-to-end test and Confirmation of Engineering Unit Report Form to be completed.	The <i>IESO</i> notifies the <i>metering service provider</i> that MV-90 Master File is complete and requests the <i>metering service provider</i> to undertake the commissioning test and to provide date and time for the end-to-end test to be completed.	Upon finding the MV-90 Master File is satisfactory, for installations not interrogated by the <i>IESO</i> .		Phone or Email.	

Table 3–1: Procedural Steps for Registration of a Meter Point

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2B.23	Receive confirmation that MV-90 Master File is complete and the request for time and date of required end-to-end test and Confirmation of Engineering Unit Report Form.	The <i>metering service provider</i> receives confirmation that the MV-90 File is complete and prepares to undertake the commissioning.	After Step 2B.22.		Phone.	
2B.24	On day D0, undertake a commissioning test of <i>metering installation</i> , authorized by the <i>IESO</i> .	On scheduled day D0, <i>metering service provider</i> phones <i>IESO</i> Hotline, quotes ticket number, informs <i>IESO</i> that <i>metering service provider</i> will proceed to commission the <i>meter(s)</i> . The <i>metering service provider</i> conducts the commissioning test in accordance with the guidelines in Appendix B and records the results in its <i>metering installation</i> records.	After Step 2B.23.	Results of commissioning test.	Phone.	<i>Metering service provider</i> records test results.
2B.25	Intentionally left blank		After Step 2B.24.			
2B.26	On day D0, notify <i>IESO</i> that the end-to-end test can be done and the time and date to be used for the Confirmation of Engineering Unit Report Form.	On day D0 the <i>metering service provider</i> notifies the <i>IESO</i> that the end-to-end test can be done and the time and date to be used for the Confirmation of Engineering Unit Report Form.	After Step 2B.25.		Phone	

Table 3–1: Procedural Steps for Registration of a Meter Point

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2B.27	Receive the requested time and date for the processing of the Confirmation of Engineering Unit Report Form.	On day D0 the <i>IESO</i> receives the date and time request for processing the Confirmation of Engineering Unit Report Form and prepares to undertake the end-to-end test and preparation of report.	After Step 2B.26.	Field meter data available to the <i>IESO</i> .		
2B.28	Proceed with end-to-end process.	The <i>IESO</i> performs the end-to-end test, by interrogating the <i>metering installation</i> using the MV-90 system. The test consists of: <ul style="list-style-type: none"> • Status check • Time set • All read Refer to Appendix C for details of tests. <i>IESO</i> records the appropriate information in the Confirmation of Engineering Unit Report Form. Proceed to Step 2B.31.		<i>IESO</i> interrogation readings.	Phone.	<i>IESO</i> records interrogation readings.
2B.29	Advise <i>metering service provider</i> that end-to-end test has failed and request <i>metering service provider</i> to resolve the problem, re-submitting the MV-90 Master File, if appropriate.	<i>IESO</i> is unable to complete the end-to-end test. <i>IESO</i> notifies the <i>metering service provider</i> accordingly and instructs them to resolve issues.	End-to-end test has failed.	Problem is identified.	Phone or Email.	<i>Metering service provider</i> informs <i>IESO</i> what the cause of the discrepancy is.

Table 3–1: Procedural Steps for Registration of a Meter Point

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2B.30	Resolve problem and resubmit the MV-90 Master File, if appropriate.	<p>The <i>metering service provider</i> rectifies the problem by 08:30 on day D0+1 <i>business day</i> – for example, an incorrect multiplier factor—and implements the required updates to the MV-90 Master File(s), if required.</p> <p>If resubmission of MV-90 Master File is required, proceed to Step 2B.18.</p> <p>If resubmission of MV-90 Master File is not required, proceed to Step 2B.25.</p>	When notified by the <i>IESO</i> .			<i>Metering service provider</i> updates/ resubmits MV-90 Master File(s) if necessary.

Table 3–1: Procedural Steps for Registration of a Meter Point

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2B.31	<p>Notify the <i>metering service provider</i> that the end-to-end test is satisfactory. Attach the completed Confirmation of Engineering Unit Report Form for approval and signoff. If required, advise MSP of commissioning report requirement. Commissioning – Metering Installation Report, Form 1716 will be issued with Engineering Unit Report Form.</p>	<p>The <i>IESO</i> generates the Confirmation of Engineering Unit Report Form for the <i>metering installation</i>. The <i>IESO</i> sends the Form to the <i>metering service provider</i> for confirmation (see also Appendix C). If the signed report has not been returned within 2 <i>business days</i>, proceed to 2B.35.</p> <p>The <i>IESO</i> generates the Commissioning – Metering Installation Report Form for the <i>metering installation</i> if required. The <i>IESO</i> sends the Form to the <i>metering service provider</i> advising them of requirement. (see also Appendix B).</p>	End-to-end test is satisfactory.		Email.	<p>The <i>metering service provider</i> receives the complete Confirmation of Engineering Unit Report Form from the <i>IESO</i>.</p> <p>If the <i>metering service provider</i> receives a request for a commissioning report they must submit to the <i>IESO</i> a completed report by the date identified on the Commissioning – Metering Installation Report Form.</p>

Table 3–1: Procedural Steps for Registration of a Meter Point

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2B.32	Receive Confirmation of Engineering Unit Report Form and confirm it is correct. Resolve any discrepancies with the <i>IESO</i> . If provided with Commissioning – Metering Installation Report form 1716, prepare commissioning report for submission to <i>IESO</i> Metering Installations.	The <i>metering service provider</i> reviews the Confirmation of Engineering Units and Report Form for accuracy and informs the <i>IESO</i> of any discrepancies (see Appendix C). The <i>metering service provider</i> reviews the Commissioning – Metering Installation Report Form for request and prepares report package for submission. (see Appendix B).	On receipt of the Confirmation of Engineering Unit Report Form		If discrepancies exist, by phone.	The <i>metering service provider</i> has reviewed the Confirmation of Engineering Unit Report Form. Submit to the <i>IESO</i> a completed report by the date identified on the Commissioning – Metering Installation Report Form.
2B.33	Sign the Confirmation of Engineering Unit Report Form when correct and return to the <i>IESO</i> within 2 business days of receipt. Continue, in parallel, with the Totalization Table Registration.	The <i>metering service provider</i> signs the Confirmation of Engineering Unit Report Form and returns it to the <i>IESO</i> (see Appendix C). The <i>metering service provider</i> may proceed with the totalization process that it started at Step 2B.17.	After reviewing the Confirmation of Engineering Unit Report Form and confirming that no discrepancies exist.		Email	The <i>IESO</i> receives signed Confirmation of Engineering Unit Report Form.

Table 3–1: Procedural Steps for Registration of a Meter Point

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2B.34	Receive signed copy of Confirmation of Engineering Unit Report Form for records.	The <i>IESO</i> receives the signed Confirmation of Engineering Unit Report Form. Proceed to 2B.40.	After Step 2B.33.			<i>IESO</i> files the signed Confirmation of Engineering Unit Report Form.
2B.35	Send reminder to the <i>metering service provider</i> .	For registration to proceed, the <i>metering service provider</i> must mail or fax the signed Confirmation of Engineering Unit Report Form to the <i>IESO</i> . The <i>IESO</i> sends out a reminder to the <i>metering service provider</i> if this form has not been received within 2 <i>business days</i> of the report date.	<i>Metering service provider</i> has not submitted signed Confirmation of Engineering Unit Report Form within 2 <i>business days</i> of the report date.		Mail, fax, or email.	Reminder to <i>metering service provider</i> regarding the return of signed Confirmation of Engineering Unit Report Form.
2B.36	Receive reminder to submit signed Confirmation of Engineering Unit Report Form.	The <i>metering service provider</i> receives reminder to submit signed Confirmation of Engineering Unit Report Form.	After Step 2B.35.			<i>Metering service provider</i> submits signed Confirmation of Engineering Unit Report Form.
2B.36a New	Submit Commissioning – Metering Installation Report Form 1716 and commissioning report documentation.	The <i>metering service provider</i> prepares commissioning report package and submits to the <i>IESO</i> for review and acceptance. Resolves any requests made by <i>IESO</i> accordingly.	After <i>metering service provider</i> has performed the required elements of commissioning as outlined in Appendix B.		Email	<i>Metering service provider</i> submits completed commissioning report package to the <i>IESO</i> .

Table 3–1: Procedural Steps for Registration of a Meter Point

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2B.36b New	Receive Commissioning – Metering Installation Report Form 1716 and commissioning report documentation. Review and advise <i>metering service provider</i> accordingly.	The <i>IESO</i> reviews submitted commissioning report package and resolves any further requirements accordingly with the <i>metering service provider</i> .	After <i>metering service provider</i> has submitted commissioning report package as outlined in Appendix B		Email	<i>IESO</i> accepts submitted commissioning report package.
2B.36c New	Receive request and proceed as required.	The <i>metering service provider</i> receives the outcome of the <i>IESO</i> review of their commissioning report and responds accordingly.	After Step 2B.36b.			<i>Metering service provider</i> submits revised commissioning report package as requested by the <i>IESO</i> .

Table 3–1: Procedural Steps for Registration of a Meter Point

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2B.37	If, at any time, <i>IESO</i> considers <i>metering installation</i> is not suitable for registration, advise the <i>metering service provider</i> and the <i>metered market participant</i> to this effect.	<p>The <i>IESO</i> can refuse registration of the <i>metering installation</i>, if <i>IESO</i> requirements and standards are not fulfilled.</p> <p>The <i>IESO</i> advises the <i>metering service provider</i> and <i>metered market participant</i> in writing of the reasons for the refusal, and the options available to rectify the problem, or to dispute the decision.</p>	<p>The reasons for refusing registration may be, but not be limited to, one of the following:</p> <ul style="list-style-type: none"> • SLD depicts a <i>metering installation</i> that does not conform to <i>IESO</i> requirements. • End-to-end test or data comparison repeatedly fails. • <i>Metering service provider</i> does not return signed Confirmation of Engineering Unit Report Form to the <i>IESO</i> within the prescribed period. • Supporting documentation is incomplete or does not meet <i>IESO</i> requirements. 	Decision by <i>IESO</i> to refuse <i>meter point</i> registration.	Fax or mail.	Notification of refusal of registration sent to <i>metering service provider</i> and <i>metered market participant</i> .

Table 3–1: Procedural Steps for Registration of a Meter Point

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2B.38	Receive notification that registration for the <i>metering installation</i> has been refused.	<p>The <i>metering service provider</i> receives the notification from the <i>IESO</i> that registration of the <i>metering installation</i> has been refused.</p> <p>The <i>metering service provider</i> has the option of disputing the <i>IESO</i> refusal or rectifying the problem(s) identified in the refusal notification.</p> <p>If the <i>metering service provider</i> decides to dispute the decision, the <i>metering service provider</i> should call the <i>IESO</i> Customer Relations about the decision.</p> <p>If the <i>metering service provider</i> decides to rectify the identified problems(s), the <i>metering service provider</i> returns to the appropriate Step of this registration procedure after rectifying the problem(s).</p>	After Step 2B.37.			<i>Metering service provider</i> notified and <i>metering service provider</i> either decides to rectify problems(s) or dispute the <i>IESO</i> decision.
2B.39	Receive notification that registration for the <i>metering installation</i> has been refused.	The <i>metered market participant</i> receives the notification from the <i>IESO</i> that registration of the <i>metering installation</i> has been refused.	After Step 2B.37.			<i>Metered market participant</i> notified.

Table 3–1: Procedural Steps for Registration of a Meter Point

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2B.40	Advise the <i>metering service provider</i> and the <i>metered market participant</i> that <i>meter point ID(s)</i> has been successfully registered.	The <i>IESO</i> advises both the <i>metering service provider</i> and the <i>metered market participant</i> that <i>meter point ID(s)</i> has been successfully registered.			Fax or mail.	Notification from <i>IESO</i> that <i>meter point ID(s)</i> has been successfully registered sent to <i>metering service provider/ metered market participant</i> .
2B.41	Receive notification that <i>meter point ID(s)</i> has been successfully registered.	The <i>metering service provider</i> receives notification that <i>meter point ID(s)</i> has been successfully registered and is thus enabled to continue and complete the second stage of <i>metering installation</i> registration, the registration of Totalization Tables (see “Market Manual 3: Metering, Part 3.7: Totalization Table Registration”).	After Step 2B.40.			<i>Metering service provider</i> notified.
2B.42	Receive notification that <i>meter point ID(s)</i> has been successfully registered.	The <i>metered market participant</i> receives notification that <i>meter point ID(s)</i> has been successfully registered. If desired, go to Step 2B.59.	After Step 2B.40.			<i>Metered market participant</i> notified.

Table 3–1: Procedural Steps for Registration of a Meter Point

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2B.43	If desired, request the <i>metering service provider</i> to provide copy of relevant <i>meter point</i> documentation, including MV-90 Master File(s) for <i>meter point</i> ID(s).	If desired the <i>metered market participant</i> may request the <i>metering service provider</i> to provide copies of selected or all <i>meter point</i> documentation, including MV-90 Master File(s) for <i>meter point</i> ID(s).	Upon the <i>meter point</i> ID(s) being registered, if desired.			
2B.44	If requested, provide to <i>metered market participant</i> a copy of all relevant <i>meter point</i> documentation, including MV-90 Master File(s) for <i>meter point</i> ID(s), except password level 2.	The <i>metering service provider</i> provides to the <i>IESO</i> additional information, except for password level 2 (required for setting the <i>meter</i> time).		Additional information available to the <i>metered market participant</i> .	Fax, mail or email.	
2B.45	If applicable, provide to <i>transmitter</i> copy of <i>meter point</i> documentation.	The <i>metering service provider</i> provides the <i>transmitter</i> with a copy of the <i>meter point</i> documentation, where a <i>transmission tariff</i> exists at the associated <i>delivery point</i> .	After step 2B.44.	<i>Meter point</i> documentation.	Fax, mail or courier.	<i>Transmitter</i> contacts the MMPT regarding any issues about the <i>meter point</i> documentation.
2B.46	<i>Transmitter</i> receives and reviews <i>meter point</i> documentation.	The <i>transmitter</i> receives and reviews the <i>meter point</i> documentation.	Simultaneously with step 2B.45.	<i>Meter point</i> documentation.		

3.2 Registration of Changes to MV-90 Master File that Affect Metering Data

This procedure covers changes that include: change of *meters*, addition of *meters*, change of *meter* configuration and change of IT ratio. The steps in the following table are illustrated in Section 2.2, Figure 2-2.

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
N/A	Are additional/new <i>meter point</i> IDs required to enable main/alternate or main/ <i>check meters</i> to be registered?	The Change procedure differs if the <i>meter point</i> IDs for the main/alternate or main/ <i>check meters</i> already exists or if they have to be created. If these <i>meter point</i> IDs already exist, proceed to Step 2C.31 for changes due to an <i>emergency</i> or malfunction; or to Step 2C.21 for planned changes. Otherwise proceed below.	When deciding upon the scope of change.			
N/A	Is the work to be undertaken an <i>emergency</i> or malfunction?	If the change is in <i>response</i> to an <i>emergency</i> or a malfunction, the <i>IESO</i> allows the <i>metering service provider</i> to “fast-track” the change and skip the SLD review until after the problem is rectified. In this case, proceed to Step 2C.15. For routine changes, the <i>IESO</i> requires a SLD review first. In this case, proceed to Step 2C.01, below.				

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.01	Update SLD and submit to the <i>IESO</i> together with a completed and signed copy of “SLD-Submission Form”, requesting new/additional <i>meter point</i> IDs and specifying, if appropriate, the old <i>meter point</i> ID(s) to be de-registered.	The <i>metering service provider</i> updates changes to the SLD. The <i>metering service provider</i> completes and signs a copy of the “SLD-Submission Form”, as available on the <i>IESO</i> Web site. The <i>metering service provider</i> specifies the number of new/additional <i>meter points</i> ID(s) required to be required and, if necessary, the existing <i>meter point(s)</i> to be de-registered.	New/additional <i>meter points</i> required and the changes are due to routine maintenance.	SLD and completed and signed copy of the “SLD-Submission Form”.	Fax, mail or courier.	The <i>metering service provider</i> sends the documents supporting the change.
2C.01a	Submit to <i>distributor</i> (LDC) information about location of the <i>embedded connection point</i> (ECP), if an <i>embedded load facility</i> or <i>generator</i> .	The <i>metering service provider</i> informs the LDC the precise location of the <i>embedded load facility</i> or <i>generator’s</i> point of connection to the <i>distribution system</i> . The details of the ECP –pole number and civic address / geographic location, or GPS co-ordinates– will be as shown on the SLD submitted to the <i>IESO</i> .	After step 2C.01.	Notification in writing by the <i>metering service provider</i> to the LDC.	Fax, mail or courier.	The LDC receives precise information about the location of the ECP.
2C.01b	Distributor receives and reviews information about location of the ECP.	Distributor reviews information about location of ECP being submitted by the <i>metering service provider</i> to the <i>IESO</i> on SLD for registration of the <i>embedded facility</i> .	After step 2C.01a.	Location of ECP communicated to <i>Distributor</i> .	Fax, mail or courier.	LDC contacts the MMP re: any issue about ECP location.
2C.01c	Submit copy of SLD to <i>transmitter</i> if <i>transmission tariffs</i> exist at <i>delivery point</i> .	The <i>metering service provider</i> submits a copy of the SLD prepared in step 2C.01 to the <i>transmitter</i> if a <i>transmission tariff delivery point</i> is associated with the <i>meter point</i> .	After step 2C.01.	SLD.	Fax, mail or courier.	<i>Transmitter</i> contacts the MMPT regarding any issues about SLD.

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2c.01d	<i>Transmitter</i> receives and reviews SLD.	The <i>transmitter</i> receives and reviews the SLD.	Simultaneously with step 2C.01c.	SLD.		
2C.02	<i>IESO</i> receives and reviews information.	Proceed to Step 2C.03 if information incomplete or to Step 2C.05 if information complete.	Following receipt of SLD and “SLD-Submission Form”.			
2C.03	Request clarification of requirements from <i>metering service provider</i> .	The <i>IESO</i> requests the <i>metering service provider</i> to provide further clarifications about the SLD, because it is incomplete or does not conform to <i>IESO</i> requirements in its current form.	After Step 2C.02 if information is incomplete.	Notification by <i>IESO</i> requesting the clarifications on the SLD.	Fax, mail, or email.	The <i>metering service provider</i> receives the <i>IESO</i> ’s notification.
2C.04	Receive request and re-submit information.	To continue the change of registration process, the <i>metering service provider</i> must resubmit the SLD and the “SLD-Submission Form” to the <i>IESO</i> with the requested clarifications.	After receiving the clarification request from the <i>IESO</i> .	SLD with clarifications and completed and signed “SLD-Submission Form”.	Fax, mail or courier.	The <i>metering service provider</i> sends the revised documents supporting the change.
2C.05	Create new/additional <i>meter point</i> IDs and enter on SLD and “SLD-Submission Form”. Complete SLD and “SLD-Submission Form” and return signed copy to <i>metering service provider</i> .	The <i>IESO</i> creates ID(s) as requested, for example, a <i>meter point</i> for a new alternate/ <i>check meter</i> . The <i>IESO</i> returns completed and signed copies of the SLD and the “SLD-Submission Form” to the <i>metering service provider</i> .	After Step 2C.02 if information is complete.	<i>Meter point</i> IDs and revised and signed copies of SLD and “SLD-Submission Form”.	IDs – on SLD and “SLD-Submission Form”. Documents – by fax or mail.	The <i>metering service provider</i> receives <i>metering installations</i> IDs and signed documents from the <i>IESO</i> .

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.06	Receive copy of revised SLD and “SLD-Submission Form”. Enter all <i>metering installation</i> data required to create MV-90 Master File(s), ensuring that for new/additional <i>meter point</i> IDs the information is entered against the correct <i>meter point</i> as allocated on the SLD.	The <i>metering service provider</i> receives copies of the SLD and the “SLD-Submission Form”, signed by the <i>IESO</i> . The <i>metering service provider</i> creates and/or updates the proposed MV-90 Master File(s) for the changes to the <i>metering installation</i> , using one of the methods described in Section 1.9.2.	After Step 2C.05.			The <i>metering installation</i> is updated.

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.07	Phone <i>IESO</i> Hotline to open Ticket for Scope of Work: ‘Scheduled Maintenance-Critical Change’ at least 4 <i>business days</i> before scheduled date D0. Email MV-90 Master File(s) to the <i>IESO</i> using <i>meter point ID</i> as the file name and reference the Hotline Ticket in the email subject heading (MV-90 Master File(s) for Ticket #NNNNN – Circuit Name’).	<i>Metering service provider</i> phones <i>IESO</i> Hotline and requests Ticket for Scope of Work: ‘Scheduled Maintenance-Critical Change*’ at least 4 <i>business days</i> before scheduled date D0 and reports nature of applicable critical change: a) Units of Measurement; b) Interval; c) Number of channels; and d) Direction of power. The <i>metering service provider</i> emails the MV-90 Master File(s) to the <i>IESO</i> (MV90masterfiles@ieso.ca) as an attachment, with the <i>meter point ID</i> as the file name referencing the Hotmail Ticket number in subject heading and (‘Ticket #NNNNN – Circuit Name’) as the file name. Note: Replacing a standalone (main) <i>meter</i> with only <u>one conforming main meter</u> is permitted.	After Step 2C.06 and submitting all applicable documents.	MV-90 Master File.	Phone for Hotline ticket; FAX or courier for documents; and Email for Master file.	MV-90 Master File(s) sent to <i>IESO</i> .

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.08	Open a Hotline Ticket for Scope of Work: ‘Scheduled Maintenance-Critical Change’ if applicable documents submitted were found in order. Receive Master File(s) from <i>metering service provider</i> and review in MIRT. If appropriate, undertake a comparison between the new MV-90 Master File and the current one residing in MV-90 Production.	The Hotline will open a Ticket for Scope of Work: ‘Scheduled Maintenance-Critical Change*’ if applicable documents submitted were found in order: forms #1299, #1300, #1304, #1401 and SLD, #1298 or 1042, #1039, #1040, #1310, EITRP and updated Transmission List. On receiving the MV-90 Master File(s) from the <i>metering service provider</i> by email, an auto-confirmation reply is being generated. The <i>IESO</i> then reviews the MV-90 Master File in MIRT. If appropriate, the <i>IESO</i> also undertakes a comparison of the new MV-90 Master File with the one residing in MV-90 Production system. If the MV-90 Master File is found to be complete, proceed go to Step 2C.11; if incomplete, go to Step 2C.09. Note: Replacing a standalone (main) <i>meter</i> with only <u>one conforming main meter</u> is permitted.	After Step 2C.07.	MV-90 Master File assessed.	MIRT and, if appropriate, MV-90 Master File comparison software.	Auto confirmation sent to <i>metering service provider</i> . MV-90 Master File reviewed in MIRT. If appropriate, MV-90 Master File comparison also completed.
2C.09	Notify <i>metering service provider</i> that MV-90 Master File is incomplete, with reasons.	The <i>IESO</i> notifies the <i>metering service provider</i> that MV-90 Master File is incomplete, while also providing specific reasons.	After Step 2C.07 when MV-90 Master File was found incomplete.			Notification sent to the <i>metering service provider</i> .

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.10	Receive notification, make corrections and re-submit MV-90 Master File.	The <i>metering service provider</i> receives notification, makes necessary corrections and re-submits MV-90 Master File as per Step 2C.07.	After Step 2C.09.	Revised MV-90 Master File.	Email.	Notification received by the <i>metering service provider</i> .
2C.11	Confirm to <i>metering service provider</i> that MV-90 Master File is complete; import MV-90 Master File into MV-90 and request the <i>metering service provider</i> to schedule an end-to-end test and, if appropriate, downloading of <i>metering data</i> .	The <i>IESO</i> confirms to the <i>metering service provider</i> that MV-90 Master File is complete; imports MV-90 Master File into MV-90 and requests the <i>metering service provider</i> to schedule an end-to-end test and, if appropriate, downloading of <i>metering data</i> , prior to undertaking work related to change.	After Step 2C.07 when MV-90 Master File was found complete.		Phone, mail or fax.	Notification and request sent to the <i>metering service provider</i> .
2C.12	Receive confirmation that MV-90 Master File is complete and the request to schedule an end-to-end test and, if appropriate, downloading of <i>metering data</i> .	The <i>metering service provider</i> receives confirmation that MV-90 Master File is complete and the request to schedule an end-to-end test and, if appropriate, downloading of <i>metering data</i> .	After Step 2C.11.			
2C.13	Call <i>IESO</i> MIR Hotline at least 4 <i>business days</i> in advance of undertaking work to set appointment for the end-to-end test and, if appropriate, downloading of <i>metering data</i> .	The <i>metering service provider</i> calls the <i>IESO</i> MIR Hotline, at least 4 <i>business days</i> in advance of undertaking work, to set appointment for the end-to-end test and, if appropriate, downloading of <i>metering data</i> . Proceed to Step 2C.33.	After Step 2C.12.		Phone.	

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.14	Record call on MIR Hotline Log. Agree and note date.	The <i>IESO</i> agrees to a date for the end-to-end test and records the date for reference.	After Step 2C.13.	Scheduled date for the end-to-end test.	Phone.	
2C.15	Call <i>IESO</i> MIR Hotline to open a Ticket for Scope of Work: ‘ <i>Emergency – Critical Change</i> ’ for day D0 of emergency; report nature of critical change; communicate MTR number; request the creation of new/additional <i>meter point</i> IDs and specify the <i>meter point</i> ID(s) to be de-registered; and schedule the end-to-end test and, if appropriate, downloading of <i>metering data</i> .	The <i>metering service provider</i> calls <i>IESO</i> MIR Hotline to <ul style="list-style-type: none"> a) Report the emergency that occurred on day D0 and the Metering Trouble Report number; b) Communicate the scope of work for a Ticket: ‘<i>Emergency – Critical Change</i>’; c) Report the nature of applicable critical change: UOM, interval, number of channels ,or direction of power; d) Request the creation of new/ additional <i>meter point</i> ID(s) for relevant <i>defined meter point</i> ID and, if necessary, de-registration of existing <i>meter point</i> ID(s); and e) Schedule the end-to-end test and downloading of <i>metering data</i>. 	Starting steps for an <i>emergency</i> change that requires the creation of new/additional <i>meter point</i> IDs.		Phone.	

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.16	Open Hotline Ticket for Scope of Work: ‘Emergency – Critical Change’ for day D0 of emergency; note MTR number (or initiate MTR process if not open); establish nature of critical change; Note/amend/agree on the scope of work, including request for new/additional <i>meter point</i> IDs; instruct MSP to quarantine <i>meter</i> , if applicable; receive request to schedule the end-to-end test and downloading of <i>metering data</i> preferably on day D0; agree on date and record it.	<p>The <i>IESO</i>:</p> <ul style="list-style-type: none"> a) Opens a Hotline Ticket with Scope of Work: ‘Emergency –Critical Change’ for day D0 of the emergency; b) Enters the MTR number, if available, or instructs the <i>metering service provider</i> to contact the <i>IESO</i> Customer Relations to open a MTR; c) Notes/agrees on/amends the scope of work , including request for new and/or additional <i>meter point</i> IDs; d) Establishes the nature of the critical change: UOM, interval, number of channels, or direction of power; e) Supplies new/additional <i>meter point</i> ID(s) for relevant <i>defined meter point</i> ID and, if necessary, de-registration of existing <i>meter point</i> ID(s). f) Instructs the <i>metering service provider</i> to quarantine the <i>meter</i>, if applicable; g) Agrees with <i>metering service provider</i> and records a date/time for the end-to-end test – (preferably D0+1 <i>business day</i>) and for downloading of <i>metering data</i>; and h) Decides whether a ‘substantial upgrade’ of <i>metering installation</i> is required. 	Upon receiving phone call from <i>Metering Service Provider</i> .	Scope of work agreed and noted. Date for end-to-end test agreed and recorded.	Phone.	

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.17	Create new/additional <i>meter point</i> IDs, and communicate to <i>metering service provider</i> by phone.	The <i>IESO</i> creates IDs required by the <i>metering service provider</i> , for example, an additional <i>meter point</i> ID for a new alternate/ <i>check meter</i> .	After Step 2C.16.	New <i>meter point</i> IDs created.	Phone.	New <i>meter point</i> IDs communicated to the <i>metering service provider</i> .
2C.18	Record <i>meter point</i> IDs received from the <i>IESO</i> .	The <i>metering service provider</i> updates its records with the new <i>meter point</i> IDs.	After Step 2C.17.			
2C.19	Communicate updated MV-90 Master File(s) to the <i>IESO</i> , noting for new/additional <i>meter point</i> IDs how the information has been submitted for updating the SLD later; resolve any issues related to MV-90 Master File; and schedule date for end-to-end test and, if appropriate, downloading of <i>metering data</i> .	After receiving the new/additional <i>meter point</i> IDs from the <i>IESO</i> , the <i>metering service provider</i> makes the required changes to the MV-90 Master File(s) for the new/additional <i>meter point</i> IDs. The <i>metering service provider</i> creates the MV-90 Master File(s) by using one of the methods described in Section 1.9.2, sends it in an e-mail to the <i>IESO</i> (MV90MasterFiles@ieso.ca) as an attachment, referencing the Hotline Ticket number in subject heading (i.e. 'Ticket '#NNNNN – Circuit Name') and using the <i>meter point</i> ID as the file name. Proceed to Step 2C.33.	After Step 2C.18.	MV-90 Master File(s) for new/additional <i>meter point</i> IDs.	Email or phone.	<i>Metering service provider</i> sends completed MV-90 Master File(s) to <i>IESO</i> or informs <i>IESO</i> which MV-90 Master File template to use while also providing relevant <i>metering installation data</i> .

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.20	Receive updated MV-90 Master File(s); review the MV-90 Master File(s) in MIRT and resolve any discrepancies with the <i>metering service provider</i> ; import MV-90 Master File into MV-90 and agree/record date for end-to-end test and downloading of <i>metering data</i> .	The <i>IESO</i> reviews the new MV-90 Master File in MIRT for completeness/correctness and resolves any discrepancies with the <i>metering service provider</i> ; re-submission of MV-90 Master File may be required. A date/time for the end-to-end test and for downloading of <i>metering data</i> is agreed and recorded.	After Step 2C.19.		MIRT.	MV-90 Master File(s) for new/additional <i>meter point</i> IDs created and reviewed.
2C.21	Call <i>IESO</i> MIR Hotline at least 4 <i>business days</i> before scheduled date D0 to open a Ticket for scope of work: ‘Scheduled Maintenance – Like-for-Like’; answer <i>IESO</i> ’s questions regarding ‘critical change’.	The <i>metering service provider</i> calls <i>IESO</i> MIR Hotline at least 4 <i>business days</i> in advance of undertaking work to open a Ticket; communicates scope of work: ‘Scheduled Maintenance – Like-for-Like’; answers the <i>IESO</i> ’s questions to confirm that it is not a ‘critical change’ (UOM, interval, number of channels, or direction of power) and therefore no new <i>meter points</i> are required.	Starting step for a routine change whereby no additional/new <i>meter point</i> IDs are required.		Phone.	

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.22	If not a 'critical change', open a Hotline Ticket for day D0 for scope of work: "Scheduled Maintenance – Like for Like".	The <i>IESO</i> receives/records the call; establishes through questions to the <i>metering service provider</i> that it is not a 'critical change' (UOM, interval, number of channels, or direction of power); and opens a Hotline Ticket for day D0 for the scope of work: "Scheduled Maintenance – Like for Like".	After Step 2C.21.	Scope of work agreed and noted.		
2C.23	On the day the Ticket is opened, attach a completed Form #1488 for each <i>meter</i> to be replaced, in e-mail to the <i>IESO</i> ('MV90masterfiles@ieso.ca') with the e-mail subject heading as 'MV-90 Master file – Ticket #NNNNN-Circuit Name'.	On the days of the call to open the Hotline Ticket "Like for Like" the <i>metering service provider</i> sends one Form #1488 for each <i>meter</i> to be replaced attached to an e-mail to the <i>IESO</i> (MV90masterfiles@ieso.ca) with the e-mail subject heading as 'MV-90 Master file – Ticket #NNNNN-Circuit Name'.	After Step 2C.22.		Email.	
2C.24	On the day the Ticket is opened, the <i>IESO</i> receives form(s) #1488 specifying non-critical changes to update the MV-90 Master File(s).	On the day the Ticket is opened, the <i>IESO</i> receives and reviews Form #1488, specifying non-critical changes for each <i>meter</i> to be replaced.	After Step 2C.23.	MV-90 Master File reviewed.		
2C.25	Notify <i>metering service provider</i> that MV-90 Master File is incomplete, with reasons.	The <i>IESO</i> notifies the <i>metering service provider</i> , preferably by fax, that MV-90 Master File is incomplete, while also providing reasons.	After Step 2C.24, if MV-90 Master File incomplete.		Mail or fax.	Notification sent to the <i>metering service provider</i> .

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.26	Receive notification, make corrections and re-submit MV-90 Master File.	The <i>metering service provider</i> receives notification, makes the necessary adjustments and re-submits MV-90 Master File.	After Step 2C.25.	Revised MV-90 Master File.	Email.	Notification received by the <i>metering service provider</i> . MV-90 Master File revised and resubmitted.
2C.27	Confirm to <i>metering service provider</i> , preferably by phone, that Form(s) #1488 is complete; update MV-90 Master File in MV-90 Production; and request the <i>metering service provider</i> to schedule the end-to-end test and downloading of <i>metering data</i> on Ticket's scheduled day D0.	The <i>IESO</i> confirms to the <i>metering service provider</i> fax that MV-90 Master File is complete; imports MV-90 Master File into MV-90 and requests the <i>metering service provider</i> to schedule the end-to-end test and downloading of <i>metering data</i> on Ticket's scheduled day D0.	After Step 2C.24, if MV-90 Master File complete.		Mail or fax.	Notification and request sent to the <i>metering service provider</i> .
2C.28	Receive confirmation that MV-90 Master File is complete and request to schedule the end-to-end test and downloading of <i>metering data</i> .	The <i>metering service provider</i> receives confirmation that MV-90 Master File is complete and request to schedule the end-to-end test and downloading of <i>metering data</i> .	After Step 2C.27.			Notification and request received by the <i>metering service provider</i> .

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.29	If not previously arranged, call <i>IESO</i> MIR Hotline at least 4 <i>business days</i> in advance of undertaking work to set appointment for the end-to-end test and, if appropriate, downloading of <i>metering data</i> on day D0.	If not previously arranged, the <i>metering service provider</i> calls <i>IESO</i> MIR Hotline at least 4 <i>business days</i> in advance of undertaking work or to set appointment for the end-to-end test and, if appropriate, downloading of <i>metering data</i> on day D0. Proceed to Step 2C.33.	After Step 2C.28.	Date for subsequent call set.	Phone.	
2C.30	Record call on MIR Hotline Log. Agree and note date.	The <i>IESO</i> records the call on MIR Hotline Log. And agrees on a date for the subsequent call.		Date for subsequent call set.		

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.31	Call <i>IESO</i> Hotline to open a Ticket for scope of work: ‘Emergency – Like for Like’ on day D0 of <i>emergency</i> answer <i>IESO</i> ’s questions re: ‘critical change’; communicate MTR number; schedule an end-to-end test and, if appropriate, download <i>metering data</i> ; attach a completed Form #1488 for each <i>meter</i> to be replaced, in e-mail to the <i>IESO</i> (‘MV90masterfiles@ieso.ca’) with the e-mail subject heading ‘MV-90 Master file – Ticket #NNNNN-Circuit Name’.	<p>The <i>metering service provider</i> calls the <i>IESO</i> Hotline to</p> <ol style="list-style-type: none"> Report the emergency that occurred on day D0; Open a Ticket for day D0 of <i>emergency</i>, communicate the scope of work ‘Emergency –Like for Like’; Answer the <i>IESO</i>’s questions to confirm that it is not a ‘critical change’(UOM, interval, number of channels, or direction of power) and therefore no new <i>meter points</i> are required; Communicate the MTR number or initiates the process to open a MTR; Schedule the time for end-to-end test and downloading of <i>metering data</i>, if applicable; and The <i>metering service provider</i> attaches a completed Form #1488 for each meter to be replaced, in e-mail to the <i>IESO</i> (‘MV90masterfiles@ieso.ca’) with the e-mail subject heading ‘MV-90 Master file – Ticket #NNNNN-Circuit Name’. <p>Proceed to Step 2C.33.</p>	Starting step for an <i>emergency</i> change whereby new <i>meter point</i> IDs are not required.		Phone and, if MV-90 Master File submitted by <i>metering service provider</i> , email.	

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.32	Opens Hotline Ticket for day D0 of <i>emergency</i> ; confirms that it is not a case of ‘critical change’; Note/agree scope of work ‘Emergency – Like for Like’; notes MTR number (or initiates MTR process if not open); schedules the end-to-end test and downloading of <i>metering data</i> preferably on day D0+1 <i>business day</i> ; receives one Form #1488 for each meter to be replaced attached to an e-mail, addressed to the <i>IESO</i> (‘MV90masterfiles@ieso.ca’) with the e-mail subject heading ‘MV-90 Master file – Ticket #NNNNN-Circuit Name’.	The <i>IESO</i> : a) Opens a Hotline ticket for day D0 of the <i>emergency</i> ; b) Confirms that it is not a case of critical change (UOM, interval, number of channels, or direction of power); c) Agrees or <i>amends</i> and notes the scope of work ‘Emergency – Like for Like’; d) Enters the MTR number, if available, or instructs the <i>metering service provider</i> to contact the <i>IESO</i> Customer Relations to open a MTR; e) Agrees with <i>metering service provider</i> and records a date/time for the end-to-end test – preferably D0+1 <i>business day</i> and for downloading of <i>metering data</i> ; and f) Receives one Form #1488 for each meter to be replaced attached to an e-mail, addressed to the <i>IESO</i> (‘MV90masterfiles@ieso.ca’) with the e-mail subject heading ‘MV-90 Master file – Ticket #NNNNN-Circuit Name’.	After Step 2C.31.	Scope of work agreed/noted; MV-90 Master File reviewed.		MV-90 Master File imported in MV-90.

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.33	On day D0 (or D0+1 <i>business day</i> , if an <i>emergency</i>), prior to commencing work on installation, call <i>IESO</i> MIR Hotline and arrange for download of <i>metering data</i> .	The <i>metering service provider</i> arranges for the <i>IESO</i> to download data currently stored in the <i>metering installation</i> , before undertaking the change.	On day D0, (or D0+1 <i>business day</i> , if an <i>emergency failure</i>). And after Steps 2C.19, 2C.29 or 2C.31.		Phone.	<i>IESO</i> engaged.
2C.34	Interrogate <i>meters</i> using Production MV-90 or arrange for data to be collected by <i>metering service provider</i> . Compare EU data for each channel with historic data.	The <i>IESO</i> may remotely interrogate the <i>metering installation</i> to download <i>metering data</i> since the last routine reading, or arrange for the <i>metering service provider</i> to retrieve data from the <i>metering installation</i> for transmission to the <i>IESO</i> MV-90 system. If data cannot be extracted, the <i>IESO</i> requests any reading available for data estimation. Compare Engineering Units data for each channel with historic data, to ensure it is correct.	After Step 2C.33.	Up-to-date <i>metering data</i> or estimation data.		The <i>IESO</i> receives all <i>metering data</i> before change is made to the <i>metering installation</i> , or estimated data, for billing purposes.

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.35	Call <i>metering service provider</i> to confirm successful collection of <i>metering data</i> , agree on the time for conducting the end-to-end test; notify <i>metering service provider</i> that end/start readings and, if required, suggested consumption values for the interim period must be submitted.	The <i>IESO</i> phones the <i>metering service provider</i> to confirm that it has successfully downloaded or received the <i>metering data</i> . The <i>IESO</i> also agrees on (or confirms previously agreed) date for the end-to-end test and requests the <i>metering service provider</i> to provide end/start register readings and if required, suggested consumption values for the interim period.	After Step 2C.35.	Date for end-to-end test set.	Phone.	Notification and request sent to the <i>metering service provider</i> .
2C.36	Receive confirmation and agree on the time of scheduled day D0 for conducting the end-to-end test. If applicable, collect end-register readings for the <i>meter(s)</i> being de-commissioned and send in HHF format attached to e-mail to the <i>IESO</i> ('MV90masterfiles@ieso.ca') with the e-mail subject heading 'MV-90 Master file – Ticket #NNNNN-Circuit Name'.	The <i>metering service provider</i> receives confirmation while also being provided with a time for the call on the scheduled day D0 to initiate the end-to-end test. If a change of <i>meters</i> is in process, the <i>metering service provider</i> collects end-register readings for the <i>meter(s)</i> being de-commissioned and sends data in HHF format attached to e-mail to the <i>IESO</i> ('MV90masterfiles@ieso.ca') with the e-mail subject heading 'MV-90 Master file – Ticket #NNNNN-Circuit Name'.	After Step 2C.36.	Time for subsequent call set; end-register readings collected, if appropriate.		

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.37	Undertake the work related to change, noting, if <i>metering installation</i> is being de-commissioned, estimate consumption.	The <i>metering service provider</i> undertakes and completes the work related to change.				Work related to change completed.
2C.38	On day D0 (or D0+1 <i>business day</i> , if an <i>emergency</i>), conduct commissioning test on <i>metering installation</i> . Send MV90 Master File to the <i>IESO</i> (MV90masterfiles@ieso.ca) (if required and not previously submitted) using the <i>meter point ID</i> as the file name, in an email referencing the Hotline Ticket number in subject heading (i.e. ‘MV-90 Master File(s) for Ticket #NNNNN – Circuit Name’).	On day D0 (or D0+1 <i>business day</i> , if an <i>emergency</i>) the <i>metering service provider</i> undertakes a commissioning test on <i>metering installation</i> , record results. Also, if <i>metering installation</i> is currently interrogated by the <i>IESO</i> , collect start register readings for newly installed meters. See Appendix B for details. If required and not previously submitted, the <i>metering service provider</i> e-mails the MV-90 Master File(s) in an e-mail addressed to the <i>IESO</i> (MV90masterfiles@ieso.ca) as an attachment, referencing the Hotline Ticket number in subject heading (i.e. ‘MV-90 Master File(s) for Ticket #NNNNN – Circuit Name’ as the file name).	On day D0, (or D0+1 <i>business day</i> , if an <i>emergency failure</i>).	Results of commissioning test.	Email.	Commissioning test completed.

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.39	On day D0 (or D0+1 <i>business day</i> , if an <i>emergency</i>), gather information for the end-to-end test as described in Appendix C and the time of the test; and submit the completed Confirmation of Engineering Unit Report Form to the IESO, (MV90EndtoEndTest@ieso.ca) referencing the type of test and Ticket number in the e-mail.	<p>The <i>metering service provider</i> submits the completed Confirmation of Engineering Unit Report Form to the IESO. (MV90EndtoEndTest@ieso.ca) referencing the type of test ('Injection' or 'True Load') and the Ticket number in the e-mail:</p> <ul style="list-style-type: none"> • 'MPID_INJ_Ticket#NNNNN' for an Injection test, or • 'MPID_TRU_Ticket#NNNNN' for a True Load test. <p>The information required is described in points 2 to 5 of Appendix C.</p>	On day D0, (or D0+1 <i>business day</i> , if an <i>emergency</i> failure).	<i>Meter point</i> ID. Information as described in Appendix C.	Phone.	The IESO Hotline staff receives <i>metering service provider</i> phone call with required information.
2C.40	Record the results provided by the <i>metering service provider</i> on a "Confirmation of Engineering Unit Report Form(s)". Call <i>meters</i> , enter the readings obtained onto the form and create the EU Report. Compare the two sets of readings for the test period.	<p>The IESO, using the registration MV-90 system, interrogates the <i>metering installation</i> and performs the end-to-end test by:</p> <ol style="list-style-type: none"> Verifying communications, checking meter time, synchronizing time via manual reset and verifying MIRT file for new meter(s); and Comparing readings to those reported by the <i>metering service provider</i>. <p>Record readings on the "Confirmation of Engineering Unit Report Form(s)". If the results of the end-to-end test are unsatisfactory, proceed to Step 2C.41. If the results of the end-to-end test are satisfactory, proceed to Step 2C.45.</p>	On day D0 (or D0+1 <i>business day</i> if an <i>emergency</i>).		Modem/phone.	

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.41	Call <i>metering service provider</i> to resolve any problem(s).	If the <i>IESO</i> interrogation readings obtained in Step 2C.40 do <i>not</i> agree with the commissioning-test results, the <i>IESO</i> calls the <i>metering service provider</i> to identify the cause of the discrepancy and to resolve it.	After Step 2C.40, if the end-to-end test has failed.	Problem is identified.	Phone.	<i>Metering service provider</i> notified.
2C.42	Resolve problem by 08:30 on day D0+1 <i>business day</i> ; update records, as necessary.	The <i>metering service provider</i> rectifies the problem – for example, an incorrect multiplier factor—and notes the required updates to the MV-90 Master File(s).	By 08:30 on day D0+1 <i>business day</i> .			Problems resolved. Records updated.
2C.43	Call <i>IESO</i> MIR Hotline with any revised information; if necessary re-submit MV-90 Master File.	The <i>metering service provider</i> calls the <i>IESO</i> , identifies the <i>meter point ID</i> being called, and requests the <i>IESO</i> to repeat the end-to-end test; if necessary, the <i>metering service provider</i> resubmits the MV-90 Master File(s).			Phone.	

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.44	Import the new MV-90 Master File(s), if resubmitted; recall <i>meters</i> and compare readings obtained for the test period to those provided by the <i>metering service provider</i> . Create modified Confirmation of Engineering Unit Report. If required, advise <i>metering service provider</i> of commissioning report requirement. Commissioning – Metering Installation Report, Form 1716 issued with Engineering Unit Report Form.	The <i>IESO</i> imports the new MV-90 Master File(s) into MV-90, if resubmitted. The <i>IESO</i> then repeats the end-to-end test as detailed in Step 2C.41 and generate a revised Confirmation of Engineering Unit Report. If the results of the end-to-end test are unsatisfactory, proceed to Step 2C.42. If the results of the end-to-end test are satisfactory, proceed to Step 2C.46.				
2C.45	Notify <i>metering service provider</i> that interrogation was successful.	The <i>IESO</i> notifies the <i>metering service provider</i> , via telephone, that the end-to-end test was successful so the <i>metering service provider</i> can leave the site.			Phone.	
2C.46	Receive notification.	The <i>metering service provider</i> receives <i>IESO</i> 's notification so they can leave the site.				The <i>metering service provider</i> leaves the site.

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.47	Notify the <i>metering service provider</i> , by email, that the end-to-end test is satisfactory. Send copy of Confirmation of Engineering Unit Report Form to <i>metering service provider</i> for confirmation. If required, submit to <i>metering service provider</i> Form 1716 Commissioning – Metering Installation Report.	The <i>IESO</i> officially notifies the <i>metering service provider</i> that the end-to-end test is satisfactory. It generates the Confirmation of Engineering Unit Report Form for the <i>metering installation</i> , based on the data received in Steps 2C.41/45. The <i>IESO</i> sends the Form to the <i>metering service provider</i> for signoff. If required, the <i>IESO</i> generates Form 1716 Commissioning – Metering Installation Report and sends it to the <i>metering service provider</i> with the Confirmation of Engineering Unit Report Form.		Confirmation of Engineering Report Form. Commissioning – Metering Installation Report Form.	Preferably by email.	Confirmation of Engineering Unit Report Form sent to the <i>metering service provider</i> . Commissioning – Metering Installation Report Form sent to the <i>metering service provider</i> .
2C.48	Receive copy of Confirmation of Engineering Unit Report and confirm it is correct. Resolve any discrepancies with the <i>IESO</i> . Receive Form 1716 Commissioning – Metering Installation Report and prepare report package for submission to the <i>IESO</i> .	The <i>metering service provider</i> reviews the Confirmation of Engineering Unit Report Form for accuracy, along with any MV-90 Master Files created or amended by the <i>IESO</i> , and informs the <i>IESO</i> of any discrepancies. Such discrepancies must be resolved (see Appendix C). If requested, prepare the commissioning report packages as identified on Form 1716 Commissioning – Metering Installation Report and submit to <i>IESO</i> for review and acceptance.			If discrepancies exist, by phone.	If Commissioning – Metering Installation Report Form received, submit to the <i>IESO</i> a completed report by the date identified on the form.

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.49	<p>Sign the Confirmation of Engineering Unit Report Form when correct and return to the <i>IESO</i>. Identify on EUR form section, if EUR provided was performed on data injected to the meter. Also, submit end/start register readings and, if the <i>metering installation</i> is currently interrogated by the <i>IESO</i>, suggested consumption values for the interim period.</p> <p>Review the need to submit on day D0+1 <i>business day</i> (if an emergency) applicable updated documents for re-registration.</p>	<p>The <i>metering service provider</i> signs the Confirmation of Engineering Unit Report Form and returns it, preferably by email, to the <i>IESO</i> (see Appendix C). If applicable, the <i>metering service provider</i> also submits end/start register readings and, if the <i>metering installation</i> is currently interrogated by the <i>IESO</i>, suggested consumption values for the interim period.</p> <p>The <i>metering service provider</i> must review the need for submitting on day D0+1 <i>business day</i> applicable updated documents for re-registration of the new <i>metering points</i>, namely: forms #1041 and SLD, #1298 or 1042, #1039, #1040, EITRP and #1482 (if removing non-compliant <i>meter</i>).</p> <p>If required, the <i>metering service provider</i> must initiate and complete the re-registration of the Totalization Table (Form # 1310) for the relevant <i>delivery point</i>, as well as ensure that other totalization tables affected are re-submitted. See “Market Manual 3: Metering, Part 3.7: Totalization Table Registration”.</p>		<p>Signed Confirmation of Engineering Unit Report Form and also identify if load was injected for test date and time.</p> <p>End/start register readings and, if applicable, suggested consumption values for the interim period.</p>	Email.	<p>Signed Confirmation of Engineering Unit Report Form sent to the <i>IESO</i> together with end/start register readings and, if applicable, suggested consumption values for the interim period.</p> <p>The <i>metering service provider</i> completes Totalization Table Registration and reviews the need for updated re-registration documents.</p>

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.50	Receive signed copy of Confirmation of Engineering Unit Report Form for records.	The <i>IESO</i> receives and files the signed Confirmation of Engineering Unit Report Form.				Confirmation of Engineering Unit Report Form filed.
2C.51	Send reminder to the <i>metering service provider</i> .	For registration to proceed, the <i>metering service provider</i> must mail or fax the signed Confirmation of Engineering Unit Report Form to the <i>IESO</i> . The <i>IESO</i> sends out a reminder to the <i>metering service provider</i> when this form has not been received within 2 <i>business days</i> .	<i>Metering service provider</i> has not submitted signed Confirmation of Engineering Unit Report Form within 2 <i>business days</i> of receipt from <i>IESO</i> .		Phone, mail, fax, or email.	Reminder to <i>metering service provider</i> regarding Confirmation of Engineering Unit Report Form.
2C.52	Receive reminder to submit signed “Confirmation of Engineering Unit Report Form(s)”.	The <i>metering service provider</i> receives reminder to submit signed “Confirmation of Engineering Unit Report Form(s)”.				<i>Metering service provider</i> receives <i>IESO</i> reminder.
2C.53	Confirm to the <i>IESO</i> that revised <i>meter point</i> documentation is not required.	The <i>metering service provider</i> confirms that revised <i>meter point</i> documentation is not required.	After Step 2C.49, or, if appropriate, after completion of Totalization Table registration for all <i>delivery points</i> affected.		Fax or mail.	Confirmation sent to the <i>IESO</i> .
2C.54	Receive confirmation that <i>meter point</i> documentation is not required.	The <i>IESO</i> receives <i>metering service provider’s</i> confirmation that <i>meter point</i> documentation is not required.				

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.55	Provide the <i>IESO</i> with updated <i>meter point</i> documentation, together with a completed and signed copy of “SLD-Submission Form”, if appropriate.	<p>On day D0+1 <i>business day</i> the <i>IESO</i> submits a revised diagram with the new/additional <i>meter point</i> IDs entered must be sent to the <i>IESO</i> together with the “SLD-Submission Form” (Form #1041), available on the <i>IESO</i> Web site. The <i>metering service provider</i> should attach an explanation as to the reason for the change undertaken.</p> <p>The <i>metering service provider</i> will also submit other applicable updated documents for re-registration (and possibly, a substantial upgrade) of new <i>metering installation</i>, namely: #1298 or 1042, #1039, #1040, EITRP and #1482 (if non-compliant <i>meter(s)</i> were removed).</p>	After Step 2C.49, or, if appropriate, after completion of Totalization Table registration for all <i>delivery points</i> affected.	Updated SLD and “SLD-Submission Form”.	Fax or mail.	Revised SLD and “SLD - Submission Form” (Form #1041) and applicable forms #1298 or 1042, #1039, #1040, EITRP and #1482 (if non-compliant meter(s) removed).sent to the <i>IESO</i> .
2C.56	<i>IESO</i> receives and reviews information against <i>metering installation</i> registration details.	<p><i>IESO</i> reviews information and applicable documents received [(Forms #1041 and SLD, #1298 or #1042, #1039, #1040, EITRP and #1482 (if non-compliant <i>meter(s)</i> were removed)] against all of the registration details, ensuring that for multiple <i>meter points</i> the numbers have been correctly assigned.</p> <p>Proceed to Step 2C.58, if information is incorrect or incomplete, or to Step 2C.60 if information complete.</p>	Following receipt of SLD and “SLD-Submission Form”.			

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.57	Request additional information/clarification from <i>metering service provider</i> .	The <i>IESO</i> requests the <i>metering service provider</i> to provide further clarifications about the <i>meter point</i> documentation, as this may be incomplete or may not conform to <i>IESO</i> requirements.			Fax, mail, or email.	Notification sent to the <i>metering service provider</i> .
2C.58	Receive request and re-submit additional information/ clarification.	The <i>metering service provider</i> receives <i>IESO</i> 's request and re-submits corrected/completed information/ clarification.		Revised <i>meter point</i> documentation.	Fax, mail or courier.	Revised <i>meter point</i> documentation submitted to the <i>IESO</i> .
2C.59	Complete “SLD-Submission Form”, if appropriate, and return signed copy to <i>metering service provider</i> .	The <i>IESO</i> completes its section of the “SLD-Submission Form” and returns a signed copy to the <i>metering service provider</i> .	After 2C.56 if information is correct.		Fax or mail.	Revised “SLD-Submission Form” sent to <i>metering service provider</i> .
2C.60	Receive copy of “SLD-Submission Form” for records.	The <i>metering service provider</i> receives a copy of “SLD-Submission Form” for its metering records.				<i>Metering service provider</i> records updated.
2C.61	Request revised <i>meter point</i> documentation from <i>metering service provider</i> , including end/start register readings and, if appropriate, suggested consumption values for the interim period.	The <i>IESO</i> requests from <i>metering service provider</i> revised <i>meter point</i> documentation, including end/start register readings and, if appropriate, suggested consumption values for the interim period.	If required and not received at this point.			Request sent to the <i>metering service provider</i> .

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.62	Receive request and submit revised <i>meter point</i> documentation.	The <i>metering service provider</i> receives the request and submits revised <i>meter point</i> documentation.		<i>Meter point</i> documentation.	Fax, mail or courier.	<i>Meter point</i> documentation submitted to the <i>IESO</i> .
2C.63	<i>Amend</i> physical records to de-register old <i>meter points</i> ID(s).	The <i>IESO</i> <i>amends</i> its physical records to de-register old <i>meter point</i> ID(s) that has been replaced.	Prior to Step 2C.65, if any <i>meter points</i> have been de-registered due to replacement.			De-registration of old <i>meter point</i> ID(s) completed.
2C.64	Advise the <i>metering service provider</i> and the <i>metered market participant</i> that change of registration for <i>meter point</i> ID has been successfully completed.	<i>IESO</i> advises the <i>metering service provider</i> and the <i>metered market participant</i> that change of registration for <i>meter point</i> ID(s) has been successfully completed.	When all the above conditions are met.		Mail, fax, or email.	Notification sent to the <i>metering service provider/metered market participant</i> . Change of registration for <i>meter point</i> ID(s) successfully completed.
2C.65	Receive notification that change of registration for <i>meter point</i> ID has been successfully completed.	The <i>metering service provider</i> receives notification that change of registration for <i>meter point</i> ID(s) has been successfully completed.			Change of registration for <i>meter point</i> ID(s) successfully completed.	

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.66	Receive notification that change of registration for <i>meter point</i> ID(s) has been successfully completed.	The <i>metered market participant</i> receives notification that change of registration for <i>meter point</i> ID(s) has been successfully completed. If desired, go to Step 2C.67.				
2C.67	If desired, request the <i>metering service provider</i> to provide copy of relevant <i>meter point</i> documentation, including MV-90 Master File(s) for <i>meter point</i> ID(s).	If desired the <i>metered market participant</i> may request the <i>metering service provider</i> to provide copies of selected or all <i>meter point</i> documentation, including MV-90 Master File(s) for <i>meter point</i> ID(s) Advise other affected parties, as appropriate.				<i>Metered market participant</i> receives notification. Affected parties notified, as required.
2C.68	If requested, provide to the <i>metered market participant</i> copy of all relevant <i>meter point</i> documentation, including MV-90 Master File(s) for <i>meter point</i> ID(s), except password level 2.	The <i>metering service provider</i> provides to the <i>metered market participant</i> the requested information but excluding password level 2 (required for setting the <i>meter</i> time).		Information provided to the <i>metered market participant</i> , as requested.	As agreed between <i>metered market participant</i> and <i>metering service provider</i> .	<i>Metered market participant</i> is provided with relevant <i>meter point</i> documentation, including MV-90 Master File(s).
2C.69	If applicable, provide to <i>transmitter</i> copy of <i>meter point</i> documentation.	The <i>metering service provider</i> provides the <i>transmitter</i> with a copy of the <i>meter point</i> documentation, where a <i>transmission tariff</i> exists at the associated <i>delivery point</i> .	After step 2C.68	<i>Meter point</i> documentation.	Fax, mail or courier.	<i>Transmitter</i> contacts the MMPT regarding any issues about the <i>meter point</i> documentation.

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.70	<i>Transmitter</i> receives and reviews <i>meter point</i> documentation.	The <i>transmitter</i> receives and reviews the <i>meter point</i> documentation.	Simultaneously with step 2C.69	<i>Meter point</i> documentation.		<i>Transmitter</i> sends approved documents to <i>IESO</i> .
2C.71	(Intentionally left blank)	(Intentionally left blank)	(Intentionally left blank)	(Intentionally left blank)	(Intentionally left blank)	(Intentionally left blank)
2C.72	Call <i>IESO</i> Hotline at least four <i>business days</i> before scheduled date of work D0 to open a ticket for the scope of work: “Scheduled – Compliant Meter Replacement”. Answer <i>IESO</i> questions re: critical change, number of compliant <i>meters</i> to be replaced, and nature of work.	The <i>metering service provider</i> calls <i>IESO</i> MIR Hotline at least 4 <i>business days</i> in advance of undertaking work to open a Ticket; communicates scope of work: “Scheduled – Compliant Meter Replacement”; answers the <i>IESO</i> ’s questions to confirm that it is not a ‘critical change’ (UOM, interval, number of channels, or direction of power), that only one compliant <i>meter</i> will be changed, and the nature of work.	Starting step for a routine change whereby no additional/new <i>meter point</i> IDs are required and any one of two conforming (compliant) <i>meters</i> will be replaced.		Phone.	
2C.73	Open a Hotline ticket for Scope of Work “Scheduled – Compliant Meter Replacement” if: a) not a critical change, and b) replacing only one compliant <i>meter</i> , and c) all work is to be done above test blocks.	The <i>IESO</i> opens a Hotline Ticket for day D0 for the scope of work “Scheduled – Compliant Meter Replacement” if it can be established through questions to the <i>metering service provider</i> that a) it is not a ‘critical change’ (UOM, interval, number of channels, or direction of power); and b) only one of two compliant <i>meters</i> will be replaced, and c) all work is to be done above the test blocks.	After Step 2C.72.	Scope of work agreed and noted.		

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.74	Two <i>business days</i> before D0, attach a completed Form #1488 (or new MIRT file if revised fields not listed on Form #1488) for the replaced <i>meter</i> , to an e-mail to MV90masterfiles@ieso.ca , with e-mail subject heading ‘MV-90 Master File –Ticket #NNN-Circuit Name’.	Two <i>business days</i> before D0 the <i>metering service provider</i> send one Form #1488 for the <i>meter</i> to be replaced (or new MIRT file if revised fields not listed on Form #1488) attached to an e-mail to the <i>IESO</i> (MV90masterfiles@ieso.ca) with the e-mail subject heading as ‘MV-90 Master file – Ticket #NNNNN-Circuit Name’.	After Step 2C.73.		Email.	
2C.75	Receive Form #1488 (or new MIRT file) to update MV90 Master File(s).	Two <i>business days</i> before D0, the <i>IESO</i> receives and reviews Form #1488 (or new MIRT file), specifying non-critical changes for each <i>meter</i> to be replaced.	Two <i>business days</i> before D0.	MV-90 Master File reviewed.		
2C.76	Notify MSP, preferably by phone, that data in Form #1488 (or MIRT File) is incomplete.	The <i>IESO</i> notifies the <i>metering service provider</i> , preferably by fax, that data in Form # 1488 (or MIRT File) is incomplete, while also providing reasons.	After Step 2C.75, if Form # 1488 (or MIRT File) is incomplete,		Mail or fax.	Notification sent to the <i>metering service provider</i> .
2C.77	Receive notification, make corrections and re-submit Form #1488 (or MIRT file).	The <i>metering service provider</i> receives notification, makes the necessary adjustments and re-submits submit Form #1488 (or MIRT file).	After Step 2C.76.	Revised MV-90 Master File.	Email.	Notification received by the <i>metering service provider</i> . Form #1488 (or MIRT file) revised and resubmitted.

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.78	Confirm to MSP, preferably by phone, that data in Form #1488 (or MIRT File) is complete.	The <i>IESO</i> confirms to the <i>metering service provider</i> , preferably by phone, that MV-90 Master File is complete.	After Step 2C.77 if Form #1488 (or MIRT File) is complete.		Mail, fax or preferably by phone.	Notification and request sent to the <i>metering service provider</i> .
2C.79	Receive notification that Form #1488 (or MIRT file) is complete	The <i>metering service provider</i> receives confirmation that Form #1488 (or MIRT file) is complete.	After Step 2C.27, Form #1488 (or MIRT File) is complete.			Notification and request received by the <i>metering service provider</i> .
2C.80	On day D0, prior to commencing work on <i>metering installation</i> , phone <i>IESO</i> , quote Ticket number, and arrange for download of data from both <i>main</i> and <i>alternate meters</i> . (Or, if D0=weekend, supply on D0+1 <i>business day</i> last upload data directly from each <i>meter</i> , via an HHF file attached to an e-mail addressed to HHFfiles@ieso.ca with e-mail subject heading ‘MV-90 Master File –Ticket #NNN-Circuit Name’).	On day D0, prior to commencing work on the <i>metering installation</i> , the <i>metering service provider</i> : a) Phones <i>IESO</i> , b) Quotes Ticket number, and c) Arranges for <i>IESO</i> to download data from both <i>Main</i> and <i>Alternate meters</i> . (If D0=weekend, supply on D0+1 <i>business day</i> last upload data directly from the <i>meter</i> , via an HHF file attached to an e-mail addressed to HHFfiles@ieso.ca with e-mail subject heading ‘MV-90 Master File –Ticket #NNN-Circuit Name’).	On day D0, (or D0+1 <i>business day</i> , if D0 =weekend), and after step 2C.79.		Phone.	<i>IESO</i> engaged.

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.81	On day D0, verify that the data from the <i>meter</i> that will <u>not</u> be replaced has no errors and there are no open MTRs on the <i>meter</i> that will <u>not</u> be replaced.	The <i>IESO</i> reviews, for the <i>meter</i> that will not be replaced: a) The data file (to establish whether it has any errors); and b) Whether there are any open MTRs.	On day D0, (or D0+1 <i>business day</i> , if D0 = weekend) upon review of data file.	Accuracy of data files and existence of open MTRs.	Review of <i>meter's</i> data file and MTR system.	Establishment of correct/incorrect data, and existence/ non-existence of MTRs.
2C.82	Notify MSP, preferably by phone, with respect to <i>meter</i> that will <u>not</u> be replaced: that data in uploaded files is incorrect and/or that open MTR(s) needs to be closed before proceeding with work.	The <i>IESO</i> notifies the <i>metering service provider</i> , preferably by phone, with respect to <i>meter</i> that will <u>not</u> be replaced: that data in uploaded files is incorrect and/or that open MTR(s) needs to be closed.	After Step 2C.81, if data from uploaded files is incorrect and/or there are open MTRs for the <i>meter</i> that will not be replaced.		Mail, fax or preferably by phone.	Notification to the <i>metering service provider</i> .
2C.83	Resolve, for the <i>meter</i> that will not be replaced, problem of incorrect data or open MTR.	The <i>metering service provider</i> receives notification and proceeds to: <ul style="list-style-type: none"> Make the necessary adjustments and re-submit Form #1488 (or MIRT file), and/or Resolve open MTR for <i>meter</i> that will not be replaced. 	After being notified by the <i>IESO</i> that data from the uploaded files is incorrect and/or there are open MTRs for the <i>meter</i> that will not be replaced	Revised Form #1488 (or MIRT file) and/or resolved MTRs for <i>meter</i> that will not be replaced.	Email.	Form #1488 File (or MIRT file) revised and resubmitted and/or resolved MTRs.
2C.84	Confirm to the <i>metering service provider</i> , preferably by phone, that data is correct and no MTRs are open.	The <i>IESO</i> confirms to the <i>metering service provider</i> that Form #1488 (or MIRT file) is complete.	After Step 2C.81, if data is correct and no MTRs are open.		Mail, fax or phone.	Notification and request sent to the <i>metering service provider</i> .

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.85	Undertake the replacement of the <i>main</i> or <i>alternate</i> compliant <i>meter</i> .	The <i>metering service provider</i> undertakes and completes the work related to change.	After Step 2C.84.			Work related to change completed.
2C.86	On day D0 (or D0+ 1 <i>business day</i> if D0 = weekend), phone the <i>IESO</i> Hotline, quote ticket number and <i>meter point ID</i> , and report that compliant <i>metering installation</i> work is complete and ready for communications test.	On day D0 (or D0+ 1 <i>business day</i> if D0 = weekend), the <i>metering service provider</i> : <ul style="list-style-type: none"> • Phones the <i>IESO</i> Hotline, • Quotes ticket number and <i>meter point ID</i>, and • Reports that compliant <i>metering installation</i> work is complete and ready for communications test. 	After Step 2C.85, upon completion of scheduled work.	Scheduled work completed.	Phone.	
2C.87	The <i>IESO</i> calls the <i>meters</i> using MV-90 system, verifies communications, checks <i>meter</i> time and synchronizes time via manual time reset to confirm that updated MIRT information is correct.	The <i>IESO</i> , using the registration MV-90 system, interrogates the <i>metering installation</i> and performs the end-to-end test by: <ol style="list-style-type: none"> a) Verifying communications, checking meter time, synchronizing time via manual reset, and b) Verifying MIRT file for new meter. If the results of the test are unsatisfactory, proceed to Step 2C.88. If the results of the test are satisfactory, proceed to Step 2C.91.	On day D0 (or D0+1 <i>business day</i> if D0 = weekend).		Modem/phone.	

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.88	Call <i>metering service provider</i> to resolve any problems.	If the communication problems or the <i>meter</i> time difference is greater than 1 minute, the <i>IESO</i> instructs the <i>metering service provider</i> to re-commission the <i>meter</i> and call back.	After Step 2C.87, if there are communication or synchronization problems.	Problem is identified.	Phone.	<i>Metering service provider</i> notified.
2C.89	Resolve communications or <i>meter</i> time problems.	The <i>metering service provider</i> rectifies the communications or <i>meter</i> time difference problem and notifies the <i>IESO</i> .	By 08:30 on day D0+1 <i>business day</i> .			Problems resolved.
2C.90	Notify <i>metering service provider</i> that the interrogation was successful.	The <i>IESO</i> notifies the <i>metering service provider</i> that the replaced <i>meter</i> was successfully interrogated.	After 2C.87, if <i>meter</i> interrogation was successful.		Phone.	
2C.91	Instruct <i>IESO</i> to perform an ‘All-Read’ on replaced compliant <i>meter</i> .	The <i>metering service provider</i> instructs the <i>IESO</i> to perform an ‘All Read’ on the replaced compliant <i>meter</i> .	After 2C.90, upon being notified of successful <i>meter</i> interrogation.		Phone.	
2C.92	<i>IESO</i> completes ‘All Read’ in the Production system starting no later than 14:30 on day D0+1 <i>business day</i> .	The <i>IESO</i> completes an ‘All Read’ in the Production system. The process must be supervised by <i>IESO</i> staff, and therefore started by 14:30 and completed during office hours.	After 2C.91, upon being instructed by the <i>metering service provider</i> .	Instruction from <i>metering service provider</i> .	Modem/phones.	

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.93	On D0+3 <i>business days</i> , the <i>IESO</i> instructs the <i>metering service provider</i> to inject load greater than 2.5 amps on meters to proceed with meter registration. Ticket remains open.	If there is less than 0.1 amps of load on the circuit during the 2 <i>business days</i> following the day of <i>meter</i> replacement, the <i>IESO</i> will instruct the <i>metering service provider</i> to inject load greater than 2.5 amps on meters to proceed with meter registration. The Hotline Ticket will remain open until the Confirmation of Engineering Unit Report Form is signed and returned by email to the <i>IESO</i> .	After 2C.92, if there is less than 0.1 amps of load on the circuit of the <i>meter</i> .		Phone.	
2C.94	Inject load to metering installation, record data and time intervals. Notify the <i>IESO</i> hotline desk when completed with the date and time for the Confirmation of Engineering Unit Report Form to be provided.	The <i>metering service provider</i> injects load to metering installation, and records data and time intervals and notifies the <i>IESO</i> hotline desk when completed with the date and time for the Confirmation of Engineering Unit Report Form to be prepared by the <i>IESO</i> .	After 2C.93.	<i>Meter point ID</i> . Information as described in Appendix C.	Phone.	The <i>IESO</i> Hotline staff receives <i>metering service provider</i> phone call with required information.
2C.95	<i>IESO</i> prepares Confirmation of Engineering Unit Report Form.	If there is load on the circuit during the 2 <i>business days</i> following the day of <i>meter</i> replacement, the <i>IESO</i> will complete all fields in Confirmation of Engineering Unit Report Form.	After 2C.92.		MV90 system.	
2C.96	<i>Intentionally left blank</i>					

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.97	Record the date and time provided by the <i>metering service provider</i> on Confirmation of Engineering Unit Report Form. Call the <i>meters</i> , ensuring the date and time period of test is covered.	The <i>IESO</i> , using the Registration MV-90 system, interrogates the <i>metering installation</i> and performs the end-to-end test by: <ul style="list-style-type: none"> - verifying communications, checking <i>meter</i> time, synchronizing time via manual reset and verifying MIRT file for new <i>meter(s)</i>; and preparing the Confirmation of Engineering Unit Report Form. 	On day D0 (or D0+1 <i>business day</i> if D0 = weekend).		Modem/phone.	
2C.98	Intentionally left blank.		After Step 2C.97.			
2C.99	Intentionally left blank.					
2C.100	Notify the <i>metering service provider</i> that the end-to-end test is satisfactory. Send the completed Confirmation of Engineering Unit Report Form by email.	The <i>IESO</i> officially notifies the <i>metering service provider</i> that the end-to-end test is satisfactory. It generates the Confirmation of Engineering Unit Report Form and the EU Report with the Master File listing for the <i>metering installation</i> , based on the data received in Steps 2C.41/45. The <i>IESO</i> sends the Form and the Report to the <i>metering service provider</i> for signoff.	After 2C.97.	Confirmation of Engineering Unit Report Form completed.	Email	Confirmation of Engineering Unit Report Form to the <i>metering service provider</i> .
2C.101	Receive the Confirmation of Engineering Unit Report Form and confirm it is correct.	The <i>metering service provider</i> reviews the Confirmation of Engineering Unit Report Form for accuracy, and informs the <i>IESO</i> of any discrepancies. Such discrepancies must be resolved (see Appendix C).	After 2C.100.		If discrepancies exist, by phone.	

Table 3–2: Procedural Steps for Registration of Changes to MV-90 Master File that Affect Metering Data (continued)

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2C.102	Sign the Confirmation of Engineering Unit Report Form when correct and return to the <i>IESO</i> by email.	The <i>metering service provider</i> signs the Confirmation of Engineering Unit Report Form and returns it, preferably by fax, to the <i>IESO</i> (see also Appendix C).		Signed Confirmation of Engineering Unit Report Form.	Email	Signed Confirmation of Engineering Unit Report Form sent to the <i>IESO</i> .
2C.103	Receive the Confirmation of Engineering Unit Report Form for the records and close the Hotline ticket.	The <i>IESO</i> : <ul style="list-style-type: none"> • Receives and files the signed Confirmation of Engineering Unit Report Form, and • Closes the Hotline ticket. 	After 2C.102, upon receipt of signed Confirmation of Engineering Unit Report Form.			Confirmation of Engineering Unit Report Form filed and Hotline ticket closed.

3.3 Registration of Changes to MV-90 Master File that Do Not Affect Metering Data

Changes that warrant using this sub-procedure include the method of communication (telephone line, radio, etc.), telephone numbers, the configuration of communications (daisy chain, multi-drop, master/slave), and passwords (level 1 and/or level 2). Such changes may be triggered by the *metered market participant*, the *metering service provider* or, if a breach of *security* has been noted by the *IESO*, or by the *IESO* itself.

Since the above changes do not affect *metering data*, a full end-to-end test is not required in this case, but only a check of the communication means to confirm the *metering installation* can be properly interrogated following the changes. The steps in the following table are illustrated in Section 2.3, Figure 2-3.

Table 3-3: Procedural Steps for Registration of Changes to MV-90 Master File that Do Not Affect Metering Data

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2D.01	Request a change to the <i>metering installation</i> , resulting in a change to the MV-90 Master File, but not affecting the <i>metering data</i> .	<i>Metered market participant</i> sends a request for a change to information in the MV-90 Master File to the <i>metering service provider</i> .	When <i>metered market participant</i> or <i>metering service provider</i> identifies the need of a change to MV-90 Master File that does not affect <i>metering data</i> .	Change request.	Fax, mail, or email.	
2D.02	Request <i>metering service provider</i> to change password(s) and/or phone numbers for the <i>meter point</i> ID(s); or de-register individual channels of non-conforming <i>meters</i> .	The <i>IESO</i> request the <i>metering service provider</i> to change password(s) and/or phone for the <i>meter point</i> ID(s); or de-register individual channels* of non-compliant <i>meters</i> *Note: Seal expiry of kVArh <i>meters</i> or non-conforming alternate kWh <i>meters</i> will trigger the need for deregistration of the corresponding individual channels.	When the <i>IESO</i> identifies a need for changing password(s) and/or phone numbers; or de-registering individual channels of non-conforming <i>meters</i> .		Mail or fax.	Request sent to the <i>metering service provider</i> .

Table 3–3: Procedural Steps for Registration of Changes to MV-90 Master File that Do Not Affect Metering Data

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2D.03	Receive request, or identify that a change is required to the <i>metering installation</i> , resulting in a change to the MV-90 Master File, but not affecting the <i>metering data</i> .	<i>Metering service provider</i> receives request, or identifies the need, for change to the <i>metering installation</i> . Also <i>metering service provider</i> determines whether the change relates to regular, planned maintenance or is imposed by an <i>emergency</i> or malfunction.	After Step 2D.01 or 2D.02 or independently.	Change request.	Fax, mail, or email.	
2D.04	Call <i>IESO</i> MIR Hotline at least 4 <i>business days</i> in advance of undertaking work to open a Ticket ‘MIRT Update only’ for scheduled day D0, including a communication test.	If the change request is not a result of an <i>emergency</i> or malfunction, <i>metering service provider</i> call <i>IESO</i> MIR Hotline to open a Ticket ‘MIRT Update only’ for scheduled day D0, including a communication test.	After Step 2D.03, and at least 4 <i>business days</i> in advance of implementing a planned change.	Request for appointment.	Telephone.	
2D.05	Open a Ticket ‘MIRT Update only’ for scheduled day D0, including a communication test.	<i>IESO</i> records <i>metering service provider’s</i> call; and opens a Ticket ‘MIRT Update only’ for scheduled day D0.	After Step 2D.04.	Agreed date.	Telephone.	
2D.06	Call <i>IESO</i> MIR Hotline on appointed day to agree on time (or cancellation) of communication test.	<i>Metering service provider</i> calls <i>IESO</i> MIR Hotline on scheduled day D0 to agree on time of communication test.	After Step 2D.04.	Request to set time or notification of cancellation.	Telephone.	
2D.07	Confirm and record agreed time of communication test.	<i>IESO</i> confirms with <i>metering service provider</i> the agreed time of communication test on day D0.	After Steps 2D.06.	Confirm time or cancellation.	Telephone.	

Table 3–3: Procedural Steps for Registration of Changes to MV-90 Master File that Do Not Affect Metering Data

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2D.08	On day D0 attach a completed Form #1488 for each Master File to be modified, in e-mail to the <i>IESO</i> (‘MV90masterfiles@ieso.ca’) with the e-mail subject heading ‘MV-90 Master File-Ticket #NNNNN-Circuit Name’.	On day D0, the <i>metering service provider</i> creates one Form #1488 for each Master File to be updated; and attaches them in an e-mail addressed to the <i>IESO</i> (‘mailto:MV90MasterFiles@ieso.ca’) with the e-mail subject heading ‘MV-90 Master File-Ticket #NNNNN-Circuit Name’.	After Step 2D.06 or, if a re-submission, after Step 2D.11.	Updated MV-90 Master File(s) to the <i>IESO</i> .	Email or File Transfer Protocol (FTP).	
2D.09	Receive and review Form(s) #1488 to ensure that they only specify non-critical changes to MV-90 Master File(s).	<i>IESO</i> receives and reviews Form #1488 for each Master File with updated information for MV-90 Master File(s), prior to importing it into MV-90 Production. If incorrect/incomplete, go to Step 2D.10. If correct/complete, go to Step 2D.12.	After Step 2D.08.			MV-90 Master File is imported into MV-90.
2D.10	Inform <i>metering service provider</i> that Form(s) #1488 is incomplete, with details.	If incorrect/incomplete, the <i>IESO</i> requests the <i>metering service provider</i> to make the necessary corrections and resubmit Form(s) #1488.	Upon reviewing Form(s) #1488 and finding it/them faulty.	Notification of incomplete submission.		
2D.11	Receive notification, make corrections and re-submit MV-90 Master File.	Upon receiving the notification, the <i>metering service provider</i> makes the necessary corrections to the MV-90 Master File and resubmits it to the <i>IESO</i> .		Corrected MV-90 Master File.	Email.	

Table 3–3: Procedural Steps for Registration of Changes to MV-90 Master File that Do Not Affect Metering Data

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2D.12	Confirm to <i>metering service provider</i> that Form(s) #1488 is complete; update Master File(s) into MV-90 Production; and notify the <i>metering service provider</i> , preferably by phone, that Form(s) #1488 is complete.	The <i>IESO</i> notifies the <i>metering service provider</i> that Form(s) #1488 is complete, updates Master File(s) in MV-90 Production and notifies the <i>metering service provider</i> , preferably by phone, that Form(s) #1488 is complete.	Upon reviewing MV-90 Master File and finding it satisfactory.	Confirmation that MV-90 Master File is complete.	Preferably by phone, mail or fax.	
2D.13	Receive confirmation that Form(s) #1488 is complete.	The <i>metering service provider</i> receives confirmation that the Form(s) #1488 is complete.	After Step 2D.12.			

Table 3–3: Procedural Steps for Registration of Changes to MV-90 Master File that Do Not Affect Metering Data

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2D.14	On day D0 of emergency (or D0+1 <i>business day</i> if emergency occurred on weekend), call <i>IESO</i> MIR Hotline to open a Ticket and communicate scope of work: ‘MIRT Update Only’; answer <i>IESO</i> ’s questions re: changes; attach a completed Form #1488 for each Master File to be modified in e-mail to the <i>IESO</i> (‘MV90masterfiles@ieso.ca’) with the e-mail subject heading ‘MV-90 Master File-Ticket #NNNNN-Circuit Name’; resolve any issues related to Form(s) # 1488.	On day D0 of emergency (or D0+1 <i>business day</i> if emergency occurred on weekend) the <i>metering service provider</i> : a) Calls the <i>IESO</i> MIR Hotline to open a Ticket and communicates scope of work: ‘MIRT Update Only’; b) Answers <i>IESO</i> ’s questions re: changes; c) Attaches a completed Form #1488 for each Master File to be modified in e-mail to the <i>IESO</i> (‘MV90masterfiles@ieso.ca’) with the e-mail subject heading ‘MV-90 Master File-Ticket #NNNNN-Circuit Name’; and d) Resolves any issues related to Form(s) # 1488.	Starting step for an <i>emergency change</i> .	Scope and date agreed.	Phone.	

Table 3–3: Procedural Steps for Registration of Changes to MV-90 Master File that Do Not Affect Metering Data

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2D.15	Open a Hotline Ticket “MIRT Update only” for scheduled date D0, which includes communications test, if proposed changes to MV-90 Master File(s) are for communications and/or passwords); review the Form(s) #1488 and resolve any discrepancies with the <i>metering service provider</i> ; confirm to the MSP, preferably by phone, that Form(s) #1488 are complete; update Master File(s) in MV-90 Production system.	Upon receiving a call, the <i>IESO</i> : a) Opens a Hotline Ticket for the scope of work: ‘MIRT Update only’ for scheduled date D0, which includes communications test, (if proposed changes to MV-90 Master File(s) are for communications and/or passwords only); b) Reviews the Form(s) #1488 and resolves any discrepancies with the <i>metering service provider</i> ; c) Confirm to <i>metering service provider</i> , preferably by phone, that Form(s) #1488 are complete; and d) Updates Master File(s) in MV-90 Production system.	After Step 2D.14.	Scope and date agreed.	Phone.	
2D.16	(Intentionally left blank)	(Intentionally left blank)	(Intentionally left blank)	(Intentionally left blank)	(Intentionally left blank)	
2D.17	(Intentionally left blank)	(Intentionally left blank)				
2D.18	(Intentionally left blank)	(Intentionally left blank)		(Intentionally left blank)	(Intentionally left blank)	
2D.19	(Intentionally left blank)	(Intentionally left blank)				
2D.20	On day D0, call <i>IESO</i> MIR Hotline and request communication test for relevant <i>meter point ID(s)</i> .	On day D,0 <i>metering service provider</i> telephones <i>IESO</i> MIR Hotline to request communication test for relevant <i>meter point ID(s)</i> .	Day D0.	Request for communication test.	Phone.	

Table 3–3: Procedural Steps for Registration of Changes to MV-90 Master File that Do Not Affect Metering Data

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2D.21	On day D0, call <i>meters</i> using new MV-90 system; verify communications, check <i>meter</i> time, and synchronizes time via manual time reset to confirm that updated MIRT information is correct in Master Files.	On day D0, <i>IESO</i> calls <i>meters</i> using MV-90 system; verifies communications checks <i>meter</i> time, and synchronizes time via manual time reset to confirm that updated MIRT information is correct in Master Files. If successful, go to Step 2D.26. If unsuccessful, go to Step 2D.22.	Day D0.		Phone.	
2D.22	Call <i>metering service provider</i> to resolve any problem(s).	The <i>IESO</i> notifies the <i>metering service provider</i> and requests that the problem be corrected.		Request for resolution of problems.	Phone.	
2D.23	Resolve problem; update records as fit.	The <i>metering service provider</i> resolves problem and updates records as required.				
2D.24	Call <i>IESO</i> MIR Hotline with any revised info; if required, resubmit Form #1488.	The <i>metering service provider</i> calls the <i>IESO</i> MIR Hotline with any revised information and, if necessary, re-submits MV-90 Master File.		Revised information and, if appropriate, MV-90 Master File.	Phone.	
2D.25	Recall <i>meters</i> , if appropriate, use the revised MV-90 Master File(s).	The <i>IESO</i> re-interrogates <i>meters</i> , and uses, if appropriate the revised MV-90 Master File(s), if necessary.			MV-90	
2D.26	Notify <i>metering service provider</i> that interrogation was successful.	The <i>IESO</i> informs the <i>metering service provider</i> that interrogation was successful so the <i>metering service provider</i> can leave the site.			Phone.	

Table 3–3: Procedural Steps for Registration of Changes to MV-90 Master File that Do Not Affect Metering Data

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2D.27	Receive notification.	The <i>metering service provider</i> is informed that interrogation was successful.				The <i>metering service provider</i> leaves the site.
2D.28	(Intentionally left blank)	(Intentionally left blank)		(Intentionally left blank)	(Intentionally left blank)	(Intentionally left blank)
2D.29	(Intentionally left blank)	(Intentionally left blank)				
2D.30	(Intentionally left blank)	(Intentionally left blank)				(Intentionally left blank)
2D.31	(Intentionally left blank)	(Intentionally left blank)				(Intentionally left blank)
2D.32	(Intentionally left blank)	(Intentionally left blank)		(Intentionally left blank)		
2D.33	(Intentionally left blank)	(Intentionally left blank)				(Intentionally left blank)

3.4 Registration of Changes to the Metering Installation that Do Not Affect MV-90 Master File

Changes that warrant using this sub-procedure include changes of secondary cables, replacement of *instrument transformers* whereby ratios are not affected, etc.

The steps in the following table are illustrated in Section 2.4, Figure 2-4.

Table 3–4: Procedural Steps for Registration of Changes to the Metering Installation that Do Not Affect MV-90 Master File

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2E.01	Advise the <i>IESO</i> of the nature of the proposed change.	The <i>metering service provider</i> advises the <i>IESO</i> of the nature of the proposed change to the <i>metering installation</i> .	Upon determination that changes to the <i>metering installation</i> are not required as a result of an <i>emergency</i> or malfunction.	Nature of work.	Mail, fax, or email.	Notification sent to the <i>IESO</i> of the nature of the work to be undertaken.
2E.02	Receive and review information.	The <i>IESO</i> receives and reviews the information submitted by the <i>metering service provider</i> . If the information is complete, proceed to Step 2E.05. If the information is incomplete, proceed to Step 2E.03.	Following Step 2E.01.			Information received and reviewed by the <i>IESO</i> .
2E.03	Request additional information /clarification.	The <i>IESO</i> requests clarification of requirements from the <i>metering service provider</i> . This step is not required for unplanned changes.	Upon determination in Step 2E.02 that the information is incomplete.	Request for clarification.	Mail, fax, or email.	Clarification requested from the <i>metering service provider</i> .

Table 3–4: Procedural Steps for Registration of Changes to the Metering Installation that Do Not Affect MV-90 Master File

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2E.04	Receive request and resubmit information.	The <i>metering service provider</i> receives the request for clarification from the <i>IESO</i> and resubmits the required information.	Following Step 2E.03.	Additional information / clarification.	Mail, fax, or email.	Request received and information resubmitted.
2E.05	Advise MSP whether revised SLD, SSLA, MEC and DLF/TLF factors, <i>Transmission Tariff List and Totalization Tables (TT)</i> are required; and that a Hotline Ticket cannot be opened to process a new TT until applicable documents have been submitted.	The <i>IESO</i> also advises the <i>metering service provider</i> whether it is required to submit a revised SLD, SSLA, and/or MEC factors. DLF/TLF, <i>Transmission Tariff List and Totalization Tables (TT)</i> ; and that a Hotline Ticket cannot be opened to process a new TT until applicable documents have been submitted. Proceed to step 2E.09.	Upon determination in Step 2E.02 that information is complete.	Confirmation that work may begin.	Mail, fax, or email.	Confirmation sent to the <i>metering service provider</i> .
2E.06	(Intentionally left blank)	(Intentionally left blank)	(Intentionally left blank)			(Intentionally left blank)
2E.06	(Intentionally left blank)	(Intentionally left blank)	(Intentionally left blank)			(Intentionally left blank)

Table 3–4: Procedural Steps for Registration of Changes to the Metering Installation that Do Not Affect MV-90 Master File

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2E.09	Call <i>IESO</i> Hotline at least 4 <i>business days</i> prior to scheduled day D0 for the <i>IESO</i> to process the TT; request a Ticket for ‘Totalization Table Update’; note whether revised documents have been submitted. In case of emergency, agree on date for submitting documents.	The <i>metering service provider</i> calls the <i>IESO</i> MIR Hotline and agrees work to be undertaken and note whether revised SLD, SSLA, and/or MEC factors have to be submitted.	Starting step for changes to a <i>metering installation</i> due to an <i>emergency</i> or malfunction.	Date scheduled for downloading <i>metering data</i> .	MIR Hotline.	Uploading of <i>metering data</i> arranged by the <i>metering service provider</i> .

Table 3–4: Procedural Steps for Registration of Changes to the Metering Installation that Do Not Affect MV-90 Master File

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2E.10	Open a Hotline Ticket ‘Totalization Table Update’ if the MSP has submitted all applicable documents [SLD, SSLA MEC and DLF/TLF factors, Transmission Tariff List and Totalization Tables (TT)] to the satisfaction of the <i>IESO</i> ; if an emergency, agree on date for submission of missing documents and defer opening the Ticket until such date.	If the changes to the <i>metering installation</i> are planned, the <i>IESO</i> opens a Hotline Ticket ‘Totalization Table Update’ if the <i>metering service provider</i> has submitted all applicable documents [SLD, SSLA MEC and DLF/TLF factors, Transmission Tariff List and Totalization Tables (TT)] to the satisfaction of the <i>IESO</i> ; if an <i>emergency</i> , the <i>IESO</i> agrees with the <i>metering service provider</i> on date for submission of missing documents and defers opening the Ticket until such date. If satisfied with documents the <i>IESO</i> proceeds to step 2E.29. If documents are missing, incorrect or incomplete, the <i>IESO</i> proceeds to step 2E.24.	Within 2 <i>business days</i> following Step 2E.09.	Details about documents submitted by the <i>metering service provider</i> to support changes to a TT; or, if an emergency, the date when missing documents will be submitted.		Documents to support opening of a ‘Totalization Table Update’ Hotline ticket or date when the documents will be submitted.
2E.11	(Intentionally left blank)	(Intentionally left blank)	(Intentionally left blank)		(Intentionally left blank)	
2E.12	(Intentionally left blank)	(Intentionally left blank)	(Intentionally left blank)			(Intentionally left blank)
2E.13	(Intentionally left blank)	(Intentionally left blank)		(Intentionally left blank)	(Intentionally left blank)	(Intentionally left blank)
2E.14	(Intentionally left blank)	(Intentionally left blank)				(Intentionally left blank)

Table 3–4: Procedural Steps for Registration of Changes to the Metering Installation that Do Not Affect MV-90 Master File

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2E.15	(Intentionally left blank)	(Intentionally left blank)		(Intentionally left blank)	(Intentionally left blank)	(Intentionally left blank)
2E.16	(Intentionally left blank)	The <i>metering service provider</i> confirms to the <i>IESO</i> that revised <i>meter point</i> documentation is not required.			(Intentionally left blank)	(Intentionally left blank)
2E.17	(Intentionally left blank)	(Intentionally left blank)				(Intentionally left blank)
2E.18	Provide the <i>IESO</i> with applicable documents to update the Totalization Tables. At any time prior to the date of call to open a Hotline Ticket; or, if following an emergency change, as soon as possible.	The <i>metering service provider</i> provides the <i>IESO</i> with updated applicable documents to update the Totalization Tables.		Updated applicable documents to update the Totalization Tables.	Mail, fax, or email.	Updated documents sent to the <i>IESO</i> .
2E.19	Receive and review documents against list of details specified in step 2E.24.	The <i>IESO</i> receives and reviews documents against list of details specified in step 2E.24. If the information received is correct and complete, the <i>IESO</i> proceeds to Step 2E. 29. If the information is incorrect, the <i>IESO</i> proceeds to Step 2E.24.			Internal process.	Information received and reviewed against previously specified details.

Table 3–4: Procedural Steps for Registration of Changes to the Metering Installation that Do Not Affect MV-90 Master File

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2E.20	(Intentionally left blank)	(Intentionally left blank)	(Intentionally left blank)	(Intentionally left blank)	(Intentionally left blank)	(Intentionally left blank)
2E.21	(Intentionally left blank)	(Intentionally left blank)			(Intentionally left blank)	(Intentionally left blank)
2E.22	(Intentionally left blank)	(Intentionally left blank)	(Intentionally left blank)	(Intentionally left blank)	(Intentionally left blank)	(Intentionally left blank)
2E.23	(Intentionally left blank)	(Intentionally left blank)	(Intentionally left blank)	(Intentionally left blank)		
2E.24	Advise the MSP of missing, incorrect or incomplete documents, with details.	This is a check point at which the <i>IESO</i> requests and gives details about any missing or incomplete documentation outlined in step 2C.09 to complete the Totalization Tables that is missing, incorrect or incomplete.	Within <i>2 business days</i> of receipt of documents from the <i>metering service provider</i> .	Detailed request for documentation.	Phone, mail, fax, or email.	Request for documentation.
2E.25	Receive request and proceed as required.	The <i>metering service provider</i> receives the request and submits all applicable documents to the <i>IESO</i> .	As soon as possible following the receipt of response from the <i>IESO</i> . Note: delays in submitting the information may cause delays beyond D0 in processing the Totalization Table.	Submission of applicable documentation.		Revised documentation sent to the <i>IESO</i> .
2E.26	(Intentionally left blank)	(Intentionally left blank)		(Intentionally left blank)	(Intentionally left blank)	(Intentionally left blank)
2E.27	(Intentionally left blank)	(Intentionally left blank)	(Intentionally left blank)			

Table 3–4: Procedural Steps for Registration of Changes to the Metering Installation that Do Not Affect MV-90 Master File

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2E.28	(Intentionally left blank)	(Intentionally left blank)				
2E.29	Open Hotline Ticket ‘Totalization Table Update’ for scheduled day D0 (if not done earlier in the process). Process TT and update records.	The <i>IESO</i> opens Hotline Ticket ‘Totalization Table Update’ for scheduled day D0 (if not done earlier in the process); processes TT and updates its records.	Upon determination in step 2E.10 or 2E.19 that <i>IESO</i> is satisfied with documents as submitted.			End of procedure.
2E.30	(Intentionally left blank)	(Intentionally left blank)		(Intentionally left blank)		
2E.31	(Intentionally left blank)	(Intentionally left blank)		(Intentionally left blank)	(Intentionally left blank)	(Intentionally left blank)

3.5 Change of Metering Service Provider for a Meter Point ID

This sub-procedure is triggered by a *metered market participant's* decision to change the *metering service provider* for a *meter point* at a *metering installation*. The initial assignment of an *metering service provider* to a *meter point* happens automatically when the *metering service provider* is associated with a *delivery point*, as described in “Market Manual 3: Metering, Part 3.8: Creating and Maintaining Delivery Point Relationships”. This sub-procedure must be followed by the sub-procedure for the Registration of Changes to the MV-90 Master File that Do Not Affect *metering data*, as illustrated in Figure 2–4 and detailed in Section 3.4.

The steps in the following table are illustrated in Section 2.5, Figure 2-5.

Table 3–5: Procedural Steps for the Change of Metering Service Provider for a Meter Point ID

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2F.01	Appoint a new <i>metering service provider</i> for <i>meter point</i> ID(s) for a specified start date and notify the new <i>metering service provider</i> .	The <i>metered market participant</i> appoints a new <i>metering service provider</i> for each <i>meter point</i> ID for a specified start date and notifies the new <i>metering service provider</i> of its appointment which commences at 00:01 EST on the specified date.	Upon <i>metered market participant's</i> decision to appoint a new <i>metering service provider</i> for a specific <i>meter point</i> or as an extension of changing the <i>metering service provider</i> for a <i>delivery point</i> .	Notification of appointment of new <i>metering service provider</i> .		Notification of new appointment sent to new <i>metering service provider</i> .
2F.02	Receive notification of new appointment and start date.	The new <i>metering service provider</i> receives notification of its appointment and start date.	Following Step 2F.01.			Notification of new appointment received by new <i>metering service provider</i> .

Table 3–5: Procedural Steps for the Change of Metering Service Provider for a Meter Point ID

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2F.03	Notify <i>IESO</i> of the newly-appointed <i>metering service provider</i> for the <i>meter point</i> ID(s) by completing, signing and submitting standard form “Assigning a Metering Service Provider to a Meter Point”.	The <i>metered market participant</i> advises the <i>IESO</i> of the new <i>metering service provider</i> appointed for the <i>meter point</i> ID(s) and the effective date of appointment via the standard form “Assigning a Metering Service Provider to a Meter Point” (available on the <i>IESO</i> Web site).	Following Step 2F.01.	“Assigning a Metering Service Provider to a Meter Point” completed and signed.	Mail or fax.	Notification of new <i>metering service provider</i> appointment sent to the <i>IESO</i> .
2F.04	Receive notification.	The <i>IESO</i> receives notification of the new <i>metering service provider</i> appointment from the <i>metered market participant</i> . However, there is no amendment of records yet as this is to be undertaken once the ensuing procedure (changes to MV-90 Master File that do not affect <i>metering data</i> will be completed.	Following Step 2F.03.			Notification of new <i>metering service provider</i> appointment received by the <i>IESO</i> .
2F.05	Notify outgoing <i>metering service provider</i> for the <i>meter point</i> ID(s) of the termination date of its appointment.	The <i>metered market participant</i> notifies the outgoing <i>metering service provider</i> for the <i>meter point</i> ID(s) of the termination date of its appointment.	Following Step 2F.03.	Notification of termination date.	Mail or fax.	Notification of termination of appointment sent to the old <i>metering service provider</i> .

Table 3–5: Procedural Steps for the Change of Metering Service Provider for a Meter Point ID

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2F.06	Receive notification of termination date of appointment.	The old <i>metering service provider</i> receives notification of the termination date of its appointment.	Following Step 2F.05.			Notification of termination of appointment received by old <i>metering service provider</i> .
2F.07	Prior to the appointed date, request the outgoing <i>metering service provider</i> to provide to the new <i>metering service provider</i> copies of complete <i>meter point</i> documentation for the relevant <i>meter point</i> ID(s), including the MV-90 Master File(s) and the passwords; alternately, arrange for the documentation to be sent directly to the new <i>metering service provider</i> .	The <i>metered market participant</i> requests the old <i>metering service provider</i> to provide copies of complete <i>meter point</i> documentation for the <i>meter point</i> ID(s), the MV-90 Master File(s), and the passwords, or arranges for the documentation to be sent directly to the new <i>metering service provider</i> .	Following Step 2F.05 and prior to the appointed termination date.	Request for complete <i>meter point</i> documentation for the <i>meter point</i> ID(s), MV-90 Master File(s), passwords, and any other relevant documents.	Mail or fax.	Request for complete <i>meter point</i> documentation sent to the old <i>meter</i> .
2F.08	Receive the request.	The outgoing <i>metering service provider</i> receives the request for complete <i>meter point</i> documentation from the <i>metered market participant</i> .	Following Step 2F.07.			Request for complete <i>meter point</i> documentation received by the old <i>metering service provider</i> .

Table 3–5: Procedural Steps for the Change of Metering Service Provider for a Meter Point ID

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2F.09	Provide complete <i>meter point</i> documentation for the <i>meter point</i> ID(s), the MV-90 Master File(s), the existing passwords, and any other relevant documents.	The outgoing <i>metering service provider</i> provides the <i>metered market participant</i> , or the new <i>metering service provider</i> , with complete <i>meter point</i> documentation for the <i>meter point</i> ID(s), the MV-90 Master File(s), the existing passwords, and any other relevant documents.	Following Step 2F.08.	Complete <i>meter point</i> documentation for the <i>meter point</i> ID(s), MV-90 Master File(s), passwords, and any other relevant documents.		Complete <i>meter point</i> documentation provided to the <i>metered market participant</i> or to the new <i>metering service provider</i> .
2F.10	Receive complete <i>meter point</i> documentation for the <i>meter point</i> ID(s), the MV-90 Master File(s), and password information.	The <i>metered market participant</i> receives the complete <i>meter point</i> documentation from the outgoing <i>metering service provider</i> .	Following Step 2F.09.			Complete <i>meter point</i> documentation received by the <i>metered market participant</i> .
2F.11	Provide to the new <i>metering service provider</i> complete <i>meter point</i> documentation for the <i>meter point</i> ID(s), the MV-90 Master File(s), and password information.	The <i>metered market participant</i> provides to the new <i>metering service provider</i> complete <i>meter point</i> documentation for the <i>meter point</i> ID(s), the MV-90 Master File(s), and password information.	Following Step 2F.10.	Complete <i>meter point</i> documentation for the <i>meter point</i> ID(s), MV-90 Master File(s), passwords, and any other relevant documents.		Complete <i>meter point</i> documentation sent to the new <i>metering service provider</i> .

Table 3–5: Procedural Steps for the Change of Metering Service Provider for a Meter Point ID

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2F.12	Receive complete <i>meter point</i> documentation for the <i>meter point</i> ID(s), the MV-90 Master File(s), the existing passwords, and any other relevant documents; ask for additional information if necessary.	The new <i>metering service provider</i> receives complete <i>meter point</i> documentation for the <i>meter point</i> ID(s), the MV-90 Master File(s), the existing passwords, and any other relevant documents from the <i>metered market participant</i> and requests additional information, if necessary.	Following Step 2F.11.			Complete <i>meter point</i> documentation received by the new <i>metering service provider</i> . The new <i>metering service provider</i> , then follows the procedure for registering Changes to the MV-90 Master File that Do Not Affect <i>Metering Data</i> , as detailed in Table 3-3.

3.6 De-registration of One or More Meter Point ID(s) Associated with a Delivery Point

This sub-procedure is triggered by the de-registration of a *facility* (as described in “Market Manual 1: Market Entry, Maintenance and Exit, Part 1.2: Facility Registration, Maintenance and De-registration”; or by a *metered market participant* that undertakes to de-commission an existing installation at a specific *meter point ID*.

The steps in the following table are illustrated in Section 2.6, Figure 2-6.

Table 3–6: Procedural Steps for the De-registration of One or More Meter Point ID(s) Associated with a Delivery Point

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2G.01	Prior to proposed disconnection date, advise <i>metering service provider</i> and <i>IESO</i> of date of disconnection of <i>meter point ID(s)</i> ; instruct <i>metering service provider</i> regarding removal of <i>metering installation</i> .	The <i>metered market participant</i> advises the <i>metering service provider</i> and the <i>IESO</i> of the date of disconnection of the <i>meter point ID(s)</i> and instructs the <i>metering service provider</i> regarding removal of <i>metering installation</i> .	When the <i>metered market participant</i> decides to de-commission a <i>metering installation</i> at a specific <i>meter point ID</i> .	Notification to the <i>IESO</i> and the <i>metering service provider</i> .		Notification of date of disconnection sent to the <i>metering service provider</i> and the <i>IESO</i> and instruction for <i>metering installation</i> removal sent to the <i>metering service provider</i> .
2G.02	Receive notification; ensure <i>metering data</i> for <i>meter point ID(s)</i> is collected up to, and including disconnection date, using the <i>metering service provider</i> if appropriate	Upon receiving <i>metered market participant’s</i> notification, the <i>IESO</i> ensures that <i>metering</i> is collected up to the date and time of disconnection. Alternately, the <i>metering service provider</i> may be requested to provide such data	Following Step 2G.01.			Verification of data collection completed by the <i>IESO</i> .

Table 3–6: Procedural Steps for the De-registration of One or More Meter Point ID(s) Associated with a Delivery Point

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2G.03	Receive notification and prepare to remove <i>metering installation</i> .	The <i>metering service provider</i> receives the notification from the <i>metered market participant</i> and prepares to remove the <i>metering installation</i> .	Following Step 2G.01.			Notification received by the <i>metering service provider</i> and plans initiated to remove the <i>metering installation</i> .
2G.04	Complete revised SLD and “SLD-Submission Form” and submit it to the <i>IESO</i> .	The <i>metering service provider</i> revises the SLD and the “SLD-Submission Form” to reflect the disconnection of the <i>metering installation</i> and submits a signed copy to the <i>IESO</i> .	Following Step 2G.03	Revised SLD and the “SLD-Submission Form”		Revised SLD and the “ <i>SLD-Submission Form</i> ” sent to the <i>IESO</i> .
2G.05	Receive revised SLD and “SLD-Submission Form”.	The <i>IESO</i> receives the revised SLD and the “SLD-Submission Form” for the records.	Following Step 2G.04			Revised SLD and the “SLD-Submission Form” received and filed by the <i>IESO</i> .
2G.06	After disconnection, confirm to <i>metering service provider</i> and <i>IESO</i> date and time of disconnection of <i>meter point ID(s)</i> .	The <i>metered market participant</i> advises the <i>metering service provider</i> and the <i>IESO</i> of the date and time the disconnection of <i>metering installation</i> occurred.	Following notification from <i>transmitter/distributor</i> .			
2G.07	Receive confirmation of disconnection.	The <i>metering service provider</i> receives confirmation of disconnection from the <i>transmitter</i> .	Upon confirmation of disconnection of supply for <i>meter point ID(s)</i> and time of disconnection.			Notification of disconnection received by the <i>metering service provider</i> .

Table 3–6: Procedural Steps for the De-registration of One or More Meter Point ID(s) Associated with a Delivery Point

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2G.08	Confirm <i>metering data</i> has been collected up to the date and time of disconnection, using the <i>metering service provider</i> if appropriate.	The <i>IESO</i> confirms that <i>metering data</i> have been collected up to the date and time of the disconnection. Alternately, the <i>metering service provider</i> may be requested to provide such data.	Upon confirmation of disconnection of supply for <i>meter point ID(s)</i> and time of disconnection.			Confirmation of data collection completed.
2G.09	Remove <i>metering installation(s)</i> .	The <i>metering service provider</i> removes the <i>metering installation(s)</i> .	Following Step 2G.07.			<i>Metering installations(s)</i> removed by the <i>metering service provider</i> .
2G.10	Notify <i>metered market participant</i> and the <i>IESO</i> that the <i>metering installation(s)</i> has (have) been removed.	The <i>metering service provider</i> notifies the <i>metered market participant</i> and the <i>IESO</i> that the <i>metering installation(s)</i> has (have) been removed.	Following Step 2I.06.	Notification of removal of <i>metering installation(s)</i> .	Mail or fax.	Notification of removal of <i>metering installation(s)</i> sent to the <i>metered market participant</i> and to the <i>IESO</i> .
2G.11	Receive confirmation.	The <i>metered market participant</i> receives confirmation of removal of the <i>metering installation</i> from the <i>metering service provider</i> .	Following Step 2G.10.			Confirmation of <i>metering installation</i> removal received by the <i>metered market participant</i> .
2G.12	<i>Amend</i> records to de-register <i>meter point ID(s)</i> .	The <i>IESO</i> receives confirmation of removal of the <i>metering installation</i> from the <i>metering service provider</i> and <i>amends</i> metering records accordingly.	Following Step 2G.10.			Records amended by the <i>IESO</i> .

Table 3–6: Procedural Steps for the De-registration of One or More Meter Point ID(s) Associated with a Delivery Point

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2G.13	Confirm to <i>metered market participant</i> and <i>metering service provider</i> that <i>meter point ID(s)</i> was (were) de-registered, enclosing copy of signed “ <i>SLD-Submission From</i> ” to the <i>metering service provider</i> , where appropriate.	The <i>IESO</i> notifies the relevant <i>metering service provider</i> and <i>metered market participant</i> that the <i>meter point ID(s)</i> was (were) de-registered.	Following Step 2G.12.	Confirmation of de-registration.	Mail or fax.	Notification of de-registration sent to the <i>metering service provider</i> and the <i>metered market participant</i> by the <i>IESO</i> .
2G.14	Receive confirmation and update records.	The <i>metering service provider</i> receives the confirmation of de-registration from the <i>IESO</i> and updates its records accordingly.	Following Step 2G.13.			Notification of de-registration received by the <i>metering service provider</i> and records updated. The <i>metering service provider</i> also ensures that affected Totalization Tables are re-submitted as detailed in “Market Manual 3: Metering, Part 3.7: Totalization Table Registration”.

Table 3–6: Procedural Steps for the De-registration of One or More Meter Point ID(s) Associated with a Delivery Point

Ref.	Task Name	Task Detail	When	Resulting Information	Method	Completion Events
2G.15	Receive confirmation, update records, and notify other affected parties, as appropriate.	The <i>metered market participant</i> receives the confirmation of de-registration from the <i>IESO</i> , updates its records accordingly and notifies other affected parties, as appropriate.	Following Step 2G.13.			Notification of de-registration received by the <i>metered market participant</i> , records updated; other affected parties notified, as appropriate.

– End of Section –

Appendix A: Forms

This appendix contains a list of forms associated with the procedure for the initial registration of *metering installations*, which are available on the *IESO* Web site (<http://www.ieso.ca>). The forms included are as follows:

Form Name	FORM No.
Measurement Error Correction Register	IMO-FORM-1039
Site-Specific Loss Adjustment Register	IMO-FORM-1040
Single Line Diagram Submission Form	IMO-FORM-1041
Alternative Metering Installation Standard Checklist	IMO-FORM-1042
Declaration of Compliance of Metering Installation	IMO-FORM-1298
Assigning an Registered Market Participant and Metered Market Participant for an Energy Market Resource	IMO-FORM-1299
Assigning a Metering Service Provider and a Distributor for an Energy Market Delivery Point	IMO-FORM-1300
Assigning a Metering Service Provider and a Transmitter for a Transmission Tariff Delivery Point	IMO-FORM-1304
Totalization Table Form	IMO-FORM-1310
Assigning a Metering Service Provider to a Meter Point	IMO-FORM-1390
Meter Change Form	IMO-FORM-1482
Application to Retain Registration under the Alternative Metering Installation Standard	IESO-FORM-1663

– End of Section –

Appendix B: Requirements for Commissioning a Metering Installation

This Appendix provides the requirements for carrying out the commissioning of a *metering installation*. Each *metering service provider* is responsible for the proper commissioning of its *metering installations* in accordance with the *market rules* and all applicable standards and policies of the *IESO*. The *metering service provider* shall have in place testing and commissioning procedures to ensure that these requirements are met.

The matter of safety is paramount and each *metering service provider* must adhere to all applicable occupational health and safety requirements. All personnel shall be equipped with the proper safety equipment and training for the job.

The following section outlines the commissioning requirements. The recorded results will form part of the Commissioning Report Package for a *metering installation*.

Commissioning Requirements

1. Visual Check

Accuracy of the *IESO* approved single line diagram (SLD) for the *facility* shall be confirmed. Using the *metering installation* wiring diagram, a visual check of all equipment which forms part of the *metering installation* shall be conducted. Checks include tracing of the secondary cabling from the *instrument transformers* to the *meters*, inspecting all connections, recording nameplate ratings (e.g. supply transformers, PT/CT ratios, accuracy, burden rating) and placement of seals.

2. Secondary Wiring

Conduct a continuity and insulation resistance test on all secondary cabling.

3. Meters

Record all required information and verify programming and configuration of the *meters*.

4. Instrument Transformers

Record all required information for the *instrument transformers*. Conduct and record ratio meter and polarity tests.

All of the above steps shall be completed prior to energizing any part of the *metering installation*.

5. Instrument Transformer Checks

Confirm the connected current transformer (CT) ratio by comparing the primary current reading obtained from an independent source. This could include reading the primary currents by means of a clip-on ammeter, operational panel ammeters or SCADA readings. If the primary current readings are within +/- 5%, the connected current transformer ratio is considered correct.

Where the voltage transformer (VT) secondary voltage is within +/- 5% of the nominal secondary voltage, the connected VT ratio is considered correct. Results outside of these limits shall be verified against an independent source.

6. Time Synchronization

Ensure that each *meter's* clock is synchronized within +/- 30 seconds of EST.

7. Cross-Phase Test

Normally the *facility* operating load is used as test current and voltage for the *metering installation*. The Cross-Phase Test confirms the correct operation of the *metering installation*. This is accomplished by using a high accuracy analyzer and recording the following information from both the analyzer and the *meters* under test:

- Per phase instantaneous magnitude and phase angle of voltage inputs
- Per phase instantaneous magnitude and phase angle of current inputs
- Per phase (if available) and total instantaneous power quantities
- Energy quantities recorded during the clocked 5 minute test interval

The kW/kVAR power and energy quantities recorded by the circuit analyzer shall be compared to the kW/kVAR power and energy quantities recorded by the *meter*. The error between the compared kW quantities cannot exceed +/- 1.0% and the error between the compared kVAR quantities cannot exceed +/- 3.0%. The *metering service provider* may accept errors outside these limits provided the results are qualified and documented.

The Cross-Phase Test shall be completed with a minimum secondary current of 0.25A per phase. If the secondary current is below 0.25A per phase, the test must be rescheduled and completed within five business days of the *metering installation* having a minimum secondary current of 0.25A per phase and no later than 90 days of the *metering installation* being energized. The commissioning procedure shall not be considered complete until the Cross-Phase Test has been performed.

The circuit analyzer must have an accuracy class of 0.2 or better and be used within its verified operating range.

8. Communication Test

The *metering service provider* shall confirm that the communication equipment at the *metering installation* is functioning properly. This test shall include remote download of all *metering data* to verify reliable communications.

Steps 6 and 8 are to be completed by the *metering service provider* prior to the *IESO* conducting end-to-end testing and Confirmation of Engineering Unit (EUR) process as outlined in Appendix C of this *market manual*. The results of these steps are confirmed by the *IESO* as part of the end-to-end process.

Commissioning Reporting Requirements

The *metering installation* registration process is completed with the *metering service provider* submission and *IESO* acceptance of the commissioning reporting package.

The requirement to submit a commissioning reporting package will be notified to the *metering service provider* as part of the end-to-end testing and Confirmation of Engineering Unit (EUR) process. Forming part of the notification, Form 1716 "Commissioning – Metering Installation Report" will be issued identifying commissioning report requirements. Table B-1 of this Appendix illustrates the reporting requirements for various registration activities.

Commissioning Report Types

1. New/Upgrade Metering Installation Registration

When a new *metering installation* or upgrade to an existing *metering installation* is registered, all elements of the commissioning requirement must be reported as part of the commissioning report. This requirement will be directed by the *IESO* and specified on *IESO-Form-1716*.

2. Meter Replacement

When *meter* replacement is performed for a registered metering installation, the requirement forming part of the commissioning report are elements 3 and 6 of the commissioning requirements. This requirement will be directed by the *IESO* and specified on *IESO-Form-1716*.

3. Metering Installation Maintenance (as specified by *IESO*)

Where the *metering installation* undergoes maintenance that affect the secondary wiring, instrumentation transformer replacement or other changes that impact *metering data*, the *IESO* may require the *metering service provider* to submit a commissioning report. Dependent on the function performed, the *metering service provider* is directed by the *IESO* to perform the elements of commissioning as specified on *IESO-Form-1716*.

Table B-1: Requirements for Commissioning Report

Commissioning Requirements	Initial Registration or Upgrade of a Metering Installation Registration	Meter Replacement	Installation Maintenance
1. Visual Check	√		As specified by <i>IESO</i> Metering Staff.
2. Secondary Wiring	√		
3. Meters	√	√	
4. Instrument Transformers	√		
5. Instrument Transformer Check	√		
7. Cross Phase Test	√	√	

– End of Section –

Appendix C: Conducting End-to-End Testing & Confirmation of Engineering Unit Report

This Appendix provides information on how the *IESO* and the *metering service* provider will conduct the end-to-end test and the signoff of relevant documentation by the *metering service providers*.

This process confirms that the *metering service provider* agrees and certifies that the *metering data* recorded in the *metering installation* and the *metering data* recorded in the *metering database* is accurate.

End-to-End Test

Once commissioning of the *metering installation* has been completed in accordance with Appendix B and notification by the *IESO* that the Master File is complete, the *metering service provider* will instruct the *IESO* to proceed with the end-to-end test.

1. The *IESO* will proceed with the end-to-end test. The test consists of:
 - a. Status Check
 - Successful communication to the *meter* and status check using MV90. As part of the status check, the *IESO* shall confirm the meter time is within +/- 60 seconds of EST.
 - b. Time Set
 - Successful time synchronization of the *meter*.
 - c. All Read
 - Successful download of *metering data* including interval *meter* data, encoder readings and events.
2. Where the *IESO* is unable to perform any of the following:
 - a. Communicate with the *meter* and verify the *meter* time is within +/- 60 seconds EST;
 - b. Set time in the *meter*; or
 - c. Perform All Read of *meter* data,

the *IESO* shall consider that the end-to-end test has failed. The *metering service provider* will be advised accordingly and shall resolve any problems.

3. Once the end-to-end test is successfully completed, the *IESO* will inform the *metering service provider* and request the date and time for the preparation of the Confirmation of Engineering Unit Report Form.

Confirmation of Engineering Unit Report

Following the receipt of notification from the *metering service provider* with the date and time for the Confirmation of Engineering Unit Report, the *IESO* will proceed with the process of preparing the Confirmation of Engineering Unit Report Form (IMO-FORM-1293). Where the *IESO* determines the secondary current is below 0.1A per phase for the time and date specified by the *metering service provider*, an alternate time and date will be requested. The *metering service provider* may elect to perform a secondary injection test at approximately 2.5A per phase to complete the Confirmation of Engineering Unit Report Form for the *metering installation*.

The Confirmation Engineering Unit Report Form consists of:

- relevant *metering installation* information;
- detailed MV90 Engineering Unit report covering the period of 60 minutes before to 60 minutes after the time and date provided by the *metering service provider*; and
- detailed *meter* Master File listing used to interrogate the *meter point(s)*.

The Confirmation Engineering Unit Report Form is also used to indicate to the *metering service provider* if a commissioning report package is required to be submitted to complete the registration process of the *metering installation*. This requirement will be indicated on Confirmation of Engineering Unit Report Form (IMO-FORM-1293). When the *metering service provider* is required to submit a commissioning report package, the *IESO* will provide Form 1716 “Commissioning – Metering Installation Report” when issuing a Confirmation Engineering Unit Report Form. The *IESO* will issue to the *metering service provider*, via email, the completed Confirmation of Engineering Unit Report Form.

Sign-Off of the Confirmation of Engineering Unit Report

Upon receipt of the Confirmation of Engineering Unit Report Form, the *metering service provider* shall verify that all information contained within the form accurately represents the *metering installation* and agree that the *metering data* recorded in a *metering installation* and the *metering data* recorded in the *metering database* is accurate. The *metering service provider* signs the Confirmation of Engineering Unit Report Form and returns it to the *IESO* via the signedEUR@ieso.ca mailbox, retaining a copy for their records.

Where Secondary Injection has been performed, the *metering service provider* shall indicate this in Part 2 “MSP Instructions” of the Confirmation of Engineering Unit Report Form.

If there are any discrepancies with information contained within the Confirmation of Engineering Unit Report Form, the *metering service provider* must resolve such issues with the *IESO* Metering Registration Hotline staff.

The *IESO* will file the original of the Confirmation of Engineering Unit Report Form, duly authorized by the *metering service provider*, with the rest of the *meter point* documentation for that location.

– End of Section –

Appendix D: Emergency Restoration Plan for Instrument Transformers

Transactions in the *IESO-administered market* are settled based on readings from registered wholesale metering. Since *energy* trading takes place on a continuous, 7 days a week, 24 hours a day, basis, data from each *registered wholesale meter* must also be continuously available.

As no electromechanical system is hundred percent reliable, *market rules* do allow for the failure of *meters* or *instrument transformers* while, at the same time, requiring timely restoration measures. *Metering installations* are generally designed such as to support interchangeable *meters* and *metering service providers* are expected to have replacements available whenever responding to trouble calls.

According to the *market rules*, in the event of an *instrument transformer* failure, the *metering service provider* has 12 weeks to replace the failed element with a Measurement Canada approved device that conforms to the of 0.3 ANSI accuracy class. Since some *instrument transformers* have procurement lead times that exceed 12 weeks, the *metering service provider* is required to have in place a plan of action that will allow such devices to be replaced within the required time limits.

Upon the failure of an *instrument transformer*, the *metering service provider* has twelve *business days* to restore dial-up access to the *metering data*. During the interim, *metering data* need not comply with the full accuracy requirements of the *market rules*. For such interim periods, the *metering service provider* is required to file in advance a plan with the *IESO* showing how this dial-up access will be provided and the correction factor to be applied to the data by the *IESO*.

The “Emergency (*instrument transformer*) Restoration Plan” (EITRP) must specify the location of spare devices as well as details on the specific actions to be taken by the *metering service providers* staff in case of IT failure, including the correction factors to be applied. Thorough implementation of this plan will ensure a smooth restoration process with no negative impact on the continuity and accuracy of *metering data* collection.

The *market rules* require an EITRP to be developed for each *metering installation* submitted for registration. This submission is an integral part of the process of registering a *metering installation*.

Guiding Principles

The *market rules* impose the following obligations on the *metering service provider*:

- Resolution of all trouble calls within two *business days*;
- Repair of all metering defects, with the exception of *instrument transformer* failure, within two *business days*;
- Restoration of dial-up access to *metering data* and application of a suitable correction factor, within twelve *business days* of any failure of an *instrument transformer*;
- Replacement of failed *instrument transformers* with Measurement Canada approved devices that conform to the ANSI 0.3 accuracy class within 12 weeks of the issuance of the related trouble call.

Strategies for Emergency Instrument Transformer Restoration

In order to comply with the relevant requirements of the *market rules*, *metering service providers* are free to develop their own strategy with regard to IT failure. Such strategies may include, but not be limited to:

1. Use Relaying Instrument Transformers

In the *IESO* marketplace, revenue metering is normally installed at a generating plant or a transformer substation. Such *facilities* are always equipped with protective relaying driven by dedicated current and voltage transformers. These devices are often installed in a position such as to measure the same power flow as the *registered wholesale meter* and may thus be connected to the revenue metering during the interim between failure of the metering *instrument transformers* and their replacement. However, since *instrument transformers* used for relay protection are usually less accurate than ANSI 0.3 class imposed on similar devices employed for revenue metering, appropriate correction factors are required.

In the process of preparing the EITRP, the *metering service provider* would identify a suitable set of relaying *instrument transformers* to be used in the situation when either a metering CT or VT fails. To calculate the correction factors to be applied, a *revenue meter* or a calibrated analyzer should be temporarily connected to replacement, protection CTs and VTs and the *energy* measured during a one-hour interval. The values thus obtained should then be compared with the values recorded by the normally-connected *registered wholesale meter* during the same period. Correction factors would then be calculated based on the ratio of the two readings.

When a metering *instrument transformer* fails, the *metering service provider* will remove the main and alternate *meters* from the *metering installation* and mount them on a portable metering panel equipped with pre-installed *meter* sockets, test blocks, and clip leads. When the failure occurs, the *metering service provider* will place this portable panel on the floor, beside the protective relaying panel, with the appropriate clip lead connections made, the current links on the test panel closed, and the current links of the relaying panel opened, thus allowing the *revenue meter* to record the power flow. The *metering service provider* will then *connect* the *meter* to the telephone line normally used for revenue metering. Finally, the *metering service provider* will place temporary barriers or appropriate warning tape thus preventing accidental contact with live connections or accidental disturbance of the connections.

In light of the above, the EITRP must:

- Identify the relaying *instrument transformers* to be used in case of failure of a metering *instrument transformer*; such identification must include the site, building, and the panel number of the relaying panel;
- Include a sketch clearly identifying the links and fuses on the relaying panel that are to be used in an *emergency* and the required connections to the temporary *meter* panel;
- Indicate the location and the specific place where the temporary metering panel, barriers, and warning tape are kept, if not in the trouble truck;
- Indicate the correction factor to be applied to the *metering data* by the *IESO*; and
- Indicate where the *metering service provider*'s staff can find or requisition replacement *instrument transformers*.

2. Take Equipment Out of Service

If installation of a temporary metering panel is not feasible, a possible alternative is to take the equipment out of service. The equipment taken out of service must be physically disconnected from the transmission or *distribution system* in order to ensure that no flow through the defective *instrument transformers* is possible.

In such cases the EITRP must:

- Identify the equipment to be taken out of service and the switching devices to be operated, locked, and tagged;
- Provide reminder to the *metering service provider* to contact the appropriate Operating Authority to arrange for the equipment to be taken out of service; relevant contact information is also to be provided; and
- (optional) Specify that the *metered market participant* be notified of the equipment being taken out of service.

3. Use Dual Redundancy Feature

At some *metering installations*, the main and alternate transformers are supplied from two different sets of current transformers, while sharing the same set of voltage transformers.

The EITRP for such situations must:

- Require that the failed set of current transformers be shorted out and the connections in the *meter box* altered so that both *meters* are supplied from the remaining, healthy set of current transformers; and
- Include sketches showing how the remaining current transformers are to be re-connected when the other set fails.

Some *metering installations* may also be equipped with redundant voltage transformers. In such cases, the EITRP must provide additional documentation to show how the *metering service provider* would deal with failure of each.

4. Embedded Metered Market Participants

An agreement between an embedded *metered market participant* and a host *metered market participant* indicating that during the EITRP, the host *metered market participant* is willing to include all the embedded *metered market participant's metering data*, the EITRP submission would be acceptable to the *IESO*. A statement stating that such an agreement is in place would be the only requirement. However, the settled amount between the host and embedded *metered market participant* shall be decided between themselves with no involvement from the *IESO* what so ever, notwithstanding the host may use PAD allocation to settle the embedded *metered market participant*. The embedded *metered market participant's delivery point* will be kept active with zero values for the duration of the EITRP while the host's *delivery point* will include the *metering data* from the embedded *metered market participant* for the duration of the EITRP. The only other requirements would involve submission of Totalization Tables for both the embedded *metered market participant* and the host.

5. Use of Correction Factor in a Temporary Metering Installation

A Correction Factor (CF) may be calculated and applied to metered kWh for the duration of the *IT* repair in three specific failure cases:

- a. Loss of one of the three CTs or VTs in a *metering installation* for a single circuit;
- b. Loss of one, two or three of the six CTs (or one VT):
 - In a *metering installation* for one of two transformers T₁ and T₂,
 - Connected to a common load bus, and
 - Sharing a single set of bus VTs.
- c. Loss of two or three of the six CTs (or VTs):
 - In a *metering installation* for one of two transformers T₁ and T₂,
 - Connected to a common load bus.

In all cases, the *metering installation* must consist of three-element *meters* which are included in the “Conforming Meter List”.

In determining the Correction Factor, the *metering service provider* shall:

- a. Analyze three continuous weeks of historical data from a period of similar load profile, immediately prior to the *IT* failure;
- b. Calculate a CF for each time interval of the selected historical time period (excluding flagged intervals);
- c. Discard all the computed CF values which are not within three standard deviations (if any), and select the highest value which is in favour of the *IESO-administered markets*;
- d. Submit a Totalization Table in which the selected CF is applied to the registered *meter* within one week of the date of *IT* failure.

Case A: Loss of One of the Three CTs or VTs in a *Metering Installation* (Figure D-1)

If there is a failure of a CT on R phase (i.e. $I_R = 0$), the corresponding Correction Factor (CF_R) will be:

$$CF_R = \frac{I_R + I_Y + I_B}{0 + I_Y + I_B} \geq \frac{3}{2}$$

where I_R, I_Y and I_B are the respective primary R, Y and B phase currents for one interval of the selected historical time period. CF calculation is required for the failed phase only.

Given that I_R, I_Y and I_B are not directly recorded values, the CF_R shall be calculated from the $\sqrt{I^2}$ h readings of the *meter's* Channels 8, 9 and 10:

$$CF_R = \frac{Ch8 + Ch9 + Ch10}{Ch9 + Ch10}$$

where Ch8, Ch9 and Ch10 are the respective values of Channel 8, 9 and 10 data for one interval of the selected historical time period.

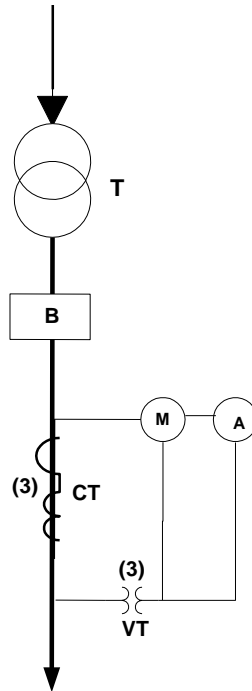


Figure D-1: Three CTs and Three VTs in a Metering Installation (Single Circuit)

Likewise, if there is a failure of a VT on R phase, the corresponding Correction Factor (CF_R) will be:

$$CF_R = \frac{V_R + V_Y + V_B}{V_Y + V_B} \geq \frac{3}{2}$$

where V_R , V_Y and V_B are the respective voltages across the R, Y and B phases for one interval of the selected historical time period. CF calculation is required for the failed phase only.

Given that V_R , V_Y and V_B are not directly recorded values, the CF_R shall be calculated from the $\sqrt{V^2}h$ readings of the *meter's* Channels 5, 6 and 7;

$$CF_R = \frac{Ch5 + Ch6 + Ch7}{Ch6 + Ch7}$$

where Ch5, Ch6 and Ch7 are the respective values of Channel 5, 6 and 7 data for one interval of the selected historical time period.

Case B: On the Metering Installation for One of Two Transformers T_1 and T_2 , Connected to a Common Load Bus, Sharing a Single Set of VTs (Figure D-2):

This case requires that the two transformers T_1 and T_2 be equivalent¹, individually-metered, equally-loaded (i.e. $I_{R1}=I_{R2}$), and connected in parallel on the load side.

The EITRP document submitted shall include a statement that three spare VTs are available in stock for replacement within twelve *business days* of the *IT* failure.

¹ Equivalent transformers, per the SSLA standard MDP_STD_0005, are of same manufacturer, vintage, type, MVA rating(s), number of windings, voltages and impedances.

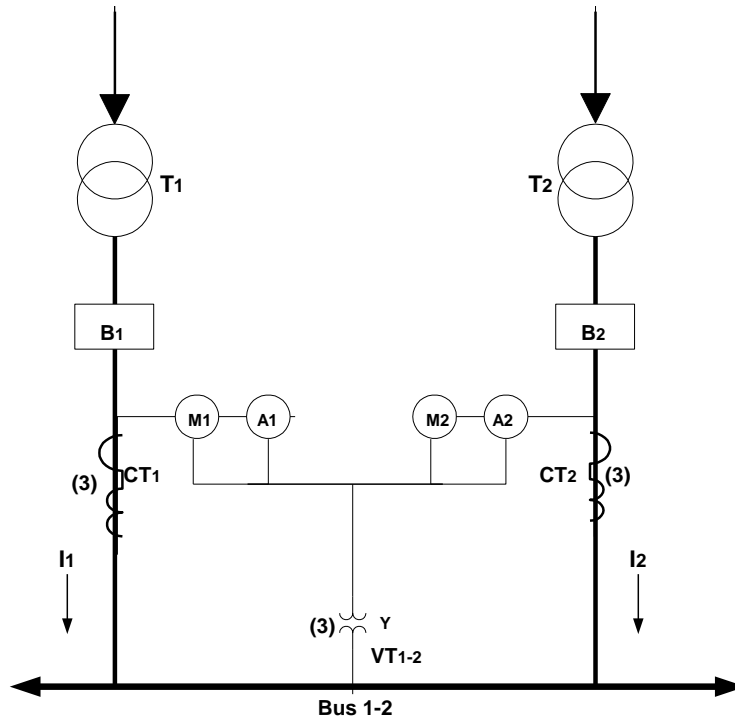


Figure D–2: Six CTs and Three VTs in a Metering Installation for Two Equally-Loaded, Equivalent Transformers T₁ and T₂, Connected to a Common Load Bus

B1: Loss of One of Six CTs (or One VT)

If there is a failure of a CT on R phase of T₁ (i.e. I_{R1} = 0), the corresponding Correction Factor (CF_{R1}) will be calculated as shown in Case A:

$$CF_{R_1} = \frac{I_{R1} + I_{Y1} + I_{B1}}{0 + I_{Y1} + I_{B1}} \geq \frac{3}{2}$$

where I_{R1}, I_{Y1}, and I_{B1} are the respective primary phase currents on T₁, for one interval of the selected historical time period.

Given that the currents are not directly recorded, the CF_{R1} shall be calculated in the same way as in Case A:

$$CF_{R_1} = \frac{Ch8 + Ch9 + Ch10}{Ch9 + Ch10}$$

where Ch8, Ch9 and Ch10 are the respective values of Channel 8, 9 and 10 data of the T₁ meter, for one interval of the selected historical time period.

For failure of a VT on R phase, the corresponding Correction Factors (CF_{R1} and CF_{R2}) for each T₁ and T₂ metering installation shall be calculated as shown in Case A.

B2: Loss of Two or Three CTs

If there is a failure of two or three CTs in the T₁ metering installation, and given that T₁ and T₂ are equally-loaded, the sum of T₁ and T₂ loads can be calculated by applying a CF_{T1} to the kWh delivered data of the T₂ meter.

Therefore, the corresponding Correction Factor (CF_{T1}) will be:

$$CF_{T_1} = \frac{T_1 + T_2}{T_2} \geq 2$$

and;

$$CF_{T_1} = \frac{Ch1[T_1] + Ch1[T_2]}{Ch1[T_2]}$$

where Ch1[T₁] and Ch1[T₂] are the respective metered kWh delivered data on Channel 1 of T₁ and T₂ meters for one interval of the selected historical time period.

Case C: Loss of Two or Three of the Six CTs (or VTs) in a Metering Installation for One of Two Transformers T₁ and T₂, Connected to a Common Load Bus (Figure D-3)

This case requires that the two transformers T₁ and T₂ be equivalent, individually-metered, equally-loaded, and connected in parallel on the load side. Also, if a tie breaker (T₁-T₂) is present, then it will be closed and tagged for the duration of the EITRP.

If there is a failure of two or three CTs in the T₁ metering installation, and given that T₁ and T₂ are equally-loaded, the sum of T₁ and T₂ loads can be calculated by applying a CF_{T₁} to the kWh delivered data of the T₂ meter.

Therefore, the corresponding Correction Factor (CF_{T₁}) will be:

$$CF_{T_1} = \frac{T_1 + T_2}{T_2} \geq 2$$

and;

$$CF_{T_1} = \frac{Ch1[T_1] + Ch1[T_2]}{Ch1[T_2]}$$

where Ch1[T₁] and Ch1[T₂] are the respective metered kWh delivered data on Channel 1 of T₁ and T₂ meters for one interval of the selected historical time period.

Likewise, if there is a failure of two or more VTs in the T₁ metering installation, the corresponding Correction Factor (CF_{T₁}) shall be calculated with the same equation and following the same process as shown above for the loss of two or more CTs.

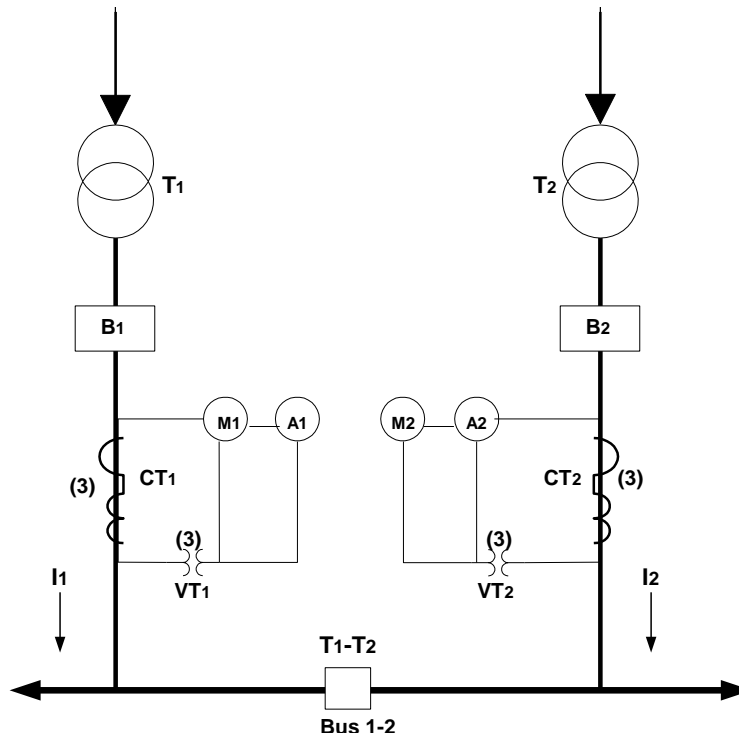


Figure D–3: Six CTs and Six VTs in a Metering Installation for One of Two Equally-Loaded, Equivalent Transformers T₁ and T₂, Connected to a Common Load Bus

Application of the Correction Factor (CF)

In all cases, the *metering service provider* shall submit, within one week of *IT* failure, a new Totalization Table, in which the calculated CF is applied to metered kWh of the appropriate T₁ and/or T₂ *meter(s)*, for a period not to exceed twelve weeks from the date of *IT* failure.

Essential Items to be Included in the EITRP

The EITRP must include the following items:

- Correction factor to be applied by the *IESO* for each failure scenario;
- Location of spares and contact information for obtaining spares;
- Essential requirements for spares such as BIL and nominal ratio; and
- Means of providing dial-up access if the equipment is to remain in service during the interim between *instrument transformer* failure and repair.

– End of Section –

Appendix E: Applying to Retain Registration under the Alternative Metering Installation Standard

E.1 Retaining Registration under the Alternative Metering Installation Standard - Description

This procedure details the process of applying to retain registration and assessing qualification for such continued registration under the alternative metering installation standard. It also lays out the cases and conditions that must be met for the *metering installation* to be considered for continued registration.

For example, a *metered market participant* may be granted the right to retain registration under the alternative metering installation standard in the situation where two *instrument transformers* continuing under the Measurement Canada dispensation fail. Under the present *market rules*, this failure would trigger a substantial upgrade of the entire *metering installation*. However, those *metering installations* that have been granted registration retention, would only need to replace the *instrument transformers* with 0.3 ANSI and would not be required to upgrade the entire installation.

E.2 Conditions

The conditions that must be satisfied for *IESO* approval to retain registration under the alternative metering installation standard are:

The *metering installation* is currently registered under the alternative metering installation standard (does not apply to a new *metering installation* that requires a signed “Declaration of Compliance of Metering Installation” (IMO-FORM-1298) to be submitted).

The registration is being retained in relation to one or more of the following sections under the alternative metering installation standard in Appendix 6.2 of the *market rules*:

- i) Section 1.2: Compliance with Blondel’s Theorem;
- ii) Section 1.6: Instrument Transformers – Power Switching;
- iii) Section 1.7: Instrument Transformers – Accuracy Requirements;
- iv) Section 1.8: Instrument Transformers – Secondary Cabling;
- v) Section 1.9: Parallel Current Transformer Secondaries;
- vi) Section 1.11: Instrument Transformers – Primary Connection Point;
- vii) Section 1.12: Instrument Transformers – Primary Cable; and
- viii) Section 1.13: Instrument Transformers – Burdens.

Each application shall be subject to review and approval by the *IESO*.

The *metering installation* is one of the cases below, either A, B or C.

Approval is at the sole discretion of the *IESO*.

E.3 Cases

The *IESO* will use the following cases to assess whether continued registration of a *metering installation* will be granted. In addition, the *IESO* may consider other circumstances applicable to each of these cases where, after investigation, the *IESO* agrees that upgrading the installation is impractical or cost prohibitive, or would create an unacceptable visual impairment.

Case A. Medium Voltage (MV) Indoor Metal-enclosed Switchgear < 69 kV

All of the following conditions must be present:

- a) The *metering installation* is located in a substation supplying the *metered market participant*;
- b) The *metering installation* is inside a medium voltage switchgear enclosed in metal housing;
- c) The *instrument transformers* are shared and used for other purposes;
- d) There is insufficient physical space to upgrade of the *metering installation* to be compliant with the *market rules*;
- e) High voltage metering is either not possible due to physical space limitations or if the cost is greater than replacing the MV bus *metering installation*; and
- f) It is not practical to install pole mounted metering units (PMEs) where:
 - i) The upgrade will require four or more PMEs per medium voltage bus *metering installation*;
 - ii) The substation is located in a congested area and there is no external room for poles and PMEs;
 - iii) The egress feeders are underground and it is not practical to excavate a vault for the *metering installations*; or
 - iv) The egress feeders are overhead, but space limitations remain.

Case B. Medium Voltage (MV) Open Bus Station < 69 kV

All of the following conditions must be present:

- a) The *metering installation* is located in a substation supplying the *metered market participant*;
- b) The *metering installation* is bus mounted or bushing mounted with difficult access;
- c) The *instrument transformers* are shared and used for other purposes;
- d) There is insufficient physical space to upgrade of the *metering installation* to be compliant with the *market rules*;
- e) High voltage metering is either not possible due to physical space limitations or if the cost is greater than replacing the MV bus *metering installation*; and
- f) It is not practical to install PMEs where:
 - i) The upgrade will require four or more PMEs per open bus medium voltage *metering installation*;

- ii) The substation is located in a congested area and there is no external room for poles and PMEs;
- iii) The egress feeders are underground and it is not practical to excavate a vault for the *metering installations*; or
- iv) The egress feeders are overhead, but space limitations remain.

Case C. High Voltage (HV) Open Bus Station > 69 kV

All of the following conditions must be present:

- a) The *metering installation* is located in a substation supplying the *metered market participant*;
- b) The *metering installation* is bus mounted with difficult access;
- c) The *instrument transformers* are shared and used for other purposes;
- d) There is insufficient physical space to upgrade of the *metering installation* to be compliant with the *market rules*;
- e) Medium voltage metering is either not possible due to physical space limitations or if the cost is greater than replacing the HV bus *metering installation*; and
- f) It is not practical to install PMEs where:
 - i) The upgrade will require four or more PMEs per open bus high voltage *metering installation*;
 - ii) The substation is located in a congested area and there is no external room for poles and PMEs;
 - iii) The egress feeders are underground and it is not practical to excavate a vault for the *metering installations*; or
 - iv) The egress feeders are overhead, but space limitations remain.

E.4 The Application Process

1. After reviewing the conditions and cases described above, the *metered market participant* shall file a completed IESO-FORM-1663: “Application to Retain Registration under the Alternative Metering Installation Standard” with supporting information. The application must contain sufficient information to enable the *IESO* to make a decision.

Any cost estimate provided by the applicant as part of the justification must be at least Class C (Indicative). Refer to Table E-1 for a Class C (Indicative) cost summary.

Table E-1: Class C (Indicative) Cost Estimate Summary

Project Details	Purpose	Methodology	Precision	Preparation Effort
Low (project plan)	Seeking preliminary project approval	Measured, priced, parameter quantities, where possible	Low (-15 to + 25% variance)	Low

Upon review of the submitted information, the *IESO* may:

- i) Determine that the *metering installations* do not meet the conditions specified in this *market manual* and reject the application;
- ii) Request additional information from the *metered market participant*; or
- iii) Decide the application has merit.

Where the *IESO* decides the application has merit, the *IESO* shall conduct an on-site assessment of each *metering installation* forming part of the application. The *metered market participant* shall arrange access to the site in a timely manner.

The *IESO* may hold additional meetings with the applicant to obtain clarification.

The *IESO* shall provide a written report to the *metered market participant* detailing its decision and reasons for the decision. This report is to be provided within three weeks of the on-site assessment or within three weeks of any additional meetings concerning the application.

Applicants must agree that their application information will be posted in its entirety (except for Part 4 of IESO-FORM-1663) on the *IESO* Web site. The applicant shall obtain consent for the disclosure of any and all *confidential information* from third parties that forms part of the application. The *IESO*'s decisions and reasons will also be posted.

The *IESO* shall report all applications received and decided to the Revenue Metering Sub-Committee.

The *metered market participant* shall pay the cost of processing the application and the cost of the on-site assessment:

- i) The cost of an application is \$1,000.00 per *facility*, to be submitted at the time of application.
- ii) The cost for the on-site assessment is the greater of \$1,000.00 per day or the actual cost to perform the on-site assessment. This cost would apply to all the days worked by the *IESO* or part thereof. This cost shall be paid by the *metered market participant* upon invoice.

2. When the substantial upgrade clause is triggered, the *metering installation* must be upgraded to meet full compliance of Section 4.1 of Chapter 6 of the *market rules*. The *metered market participant* has three options when upgrading the *metering installation*.

Option 1 – HV Metering Installation:

The existing MV Bus *metering installation* is replaced with a HV *metering installation* that is compliant with Section 4.1 of Chapter 6 of the *market rules* as illustrated in Figure E–2.

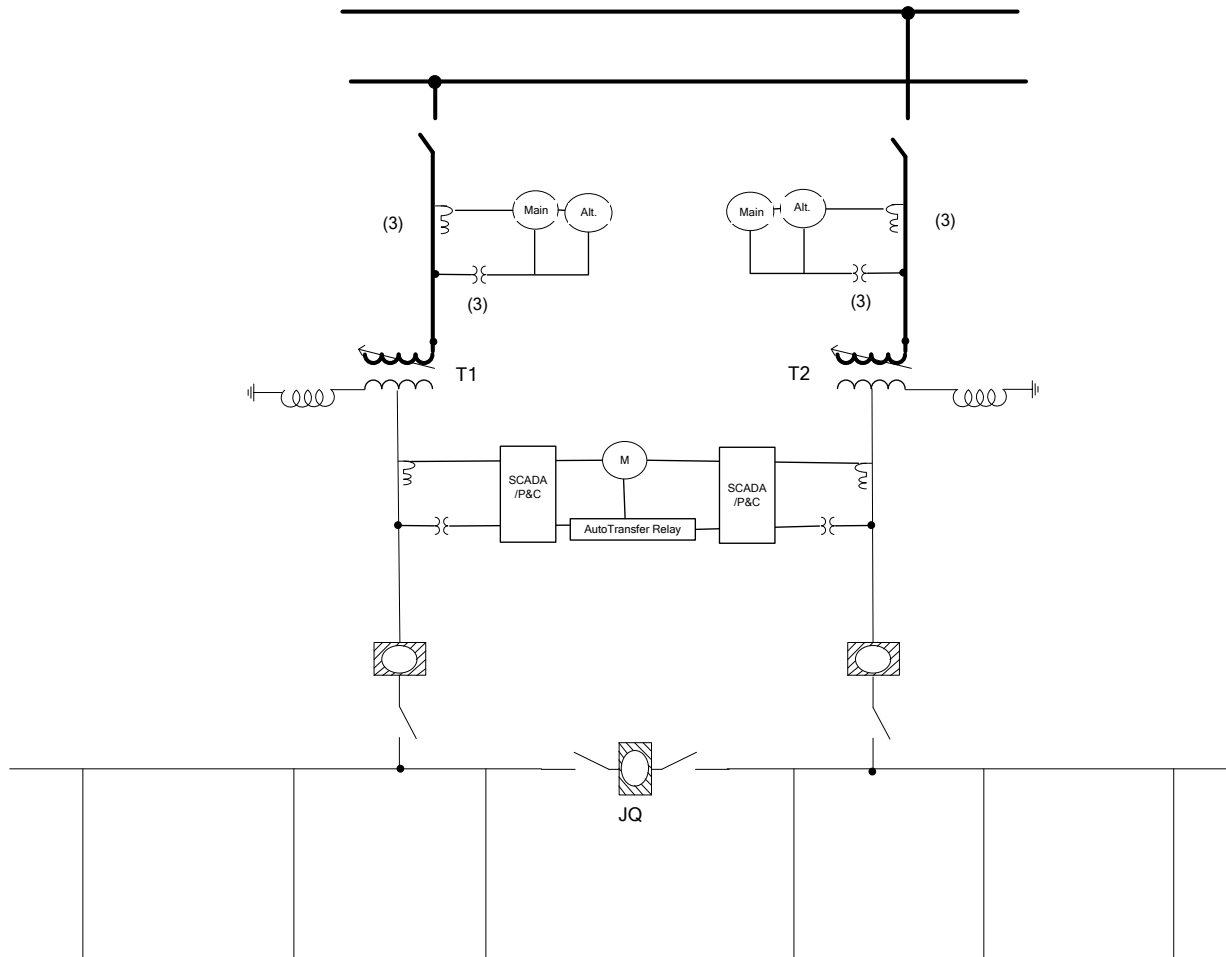


Figure E–2: HV Metering Installation Registered under Section 4.1 of Chapter 6 of the Market Rules

Option 2 – MV Bus Metering Installation:

The existing MV Bus *metering installation* is replaced with a MV Bus *metering installation* that is compliant with Section 4.1 of Chapter 6 of the *market rules* as illustrated in Figure E–3.

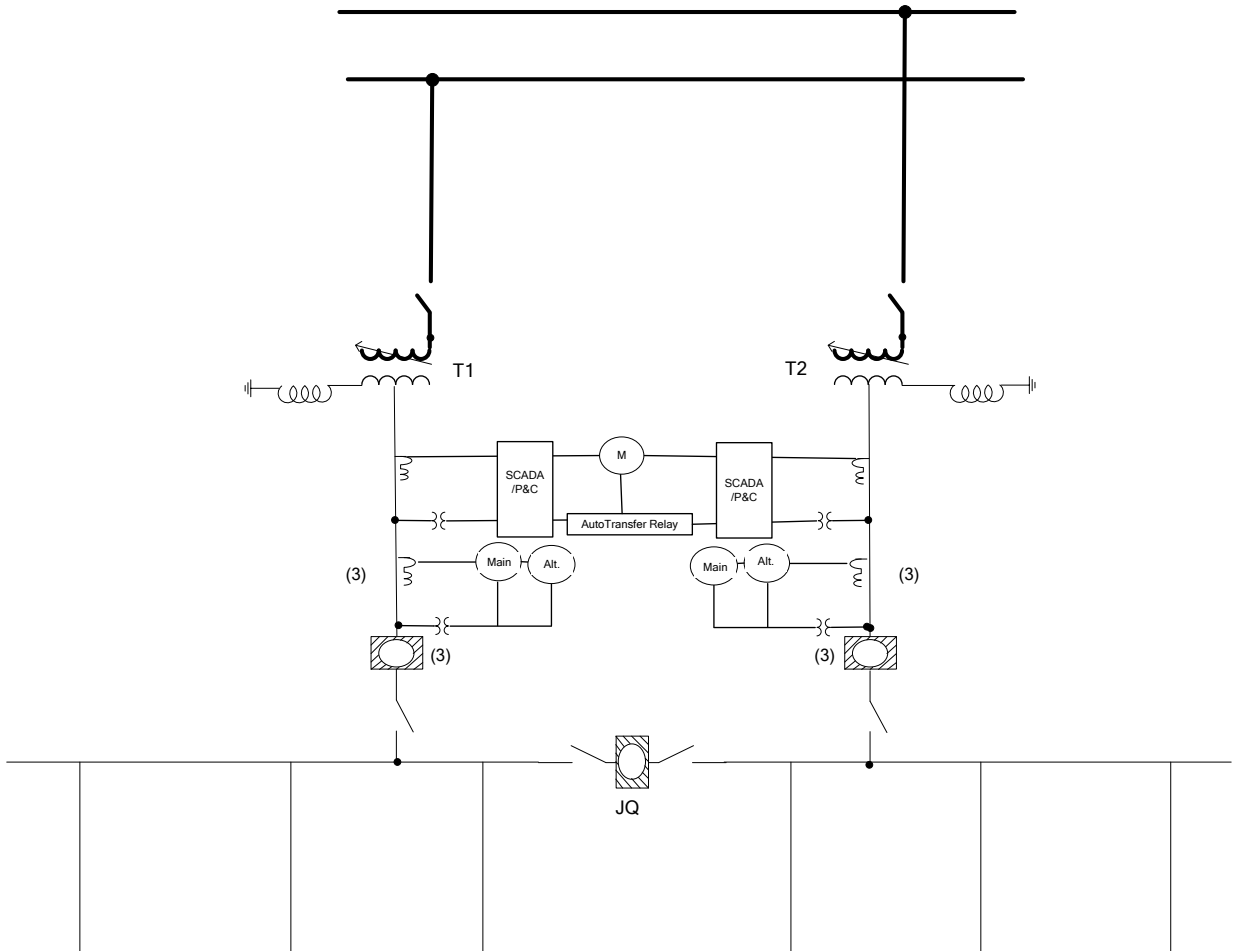


Figure E–3: MV Bus Metering Installation Registered under Section 4.1 of Chapter 6 of the Market Rules

Option 3 – MV Feeder Metering Installation:

The existing MV Bus *metering installation* is replaced with one or more MV feeder *metering installation(s)* that is compliant with Section 4.1 of Chapter 6 of the *market rules* as illustrated in Figure E-4. This is a viable option only when there are three or fewer feeders per bus *metering installation*.

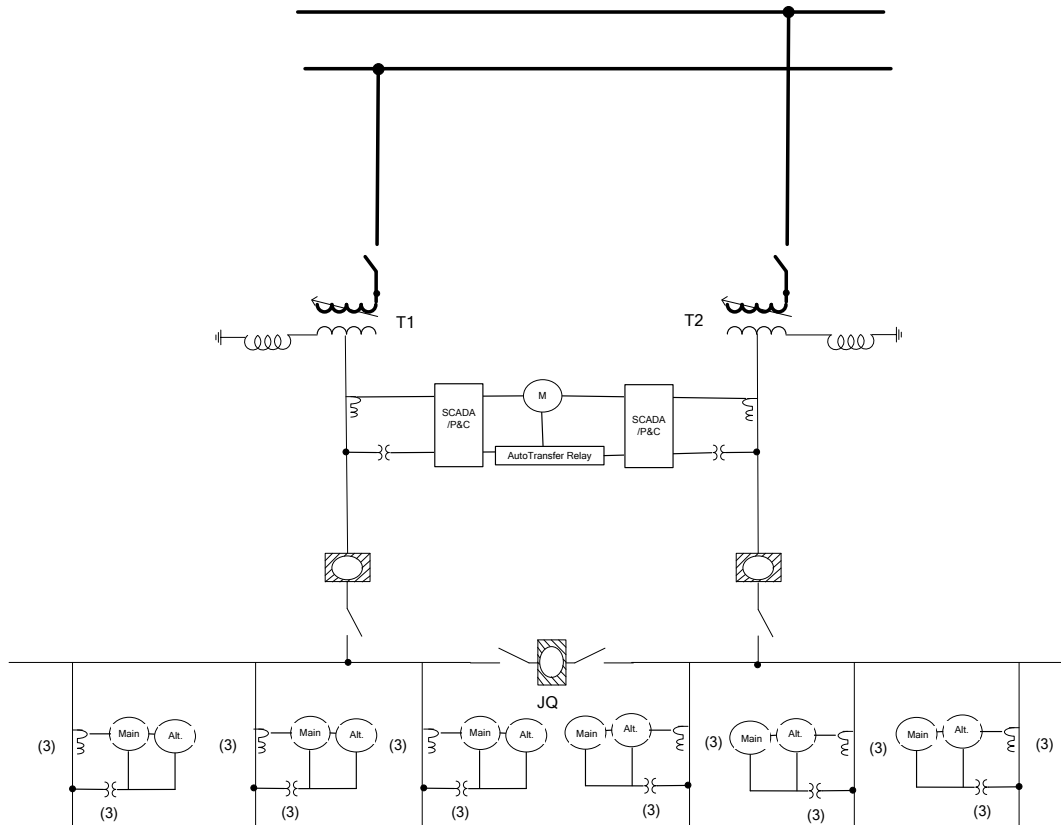


Figure E-4: MV Feeder Metering Installations Registered under Section 4.1 of Chapter 6 of the Market Rules

3. Where the *metered market participant* can demonstrate that Options 1, 2 and 3 require rebuilding of major components of the *facility* or power system and is, therefore, impractical, they may apply to retain registration under Section 4.4.8 of Chapter 6 of the *market rules*.

4. When the application to retain registration under the alternative metering installation standard is accepted by the *IESO*, the *metered market participant* is permitted to retain registration of the following components of the *metering installation* under Appendix 6.2 of the *market rules*:
- Section 1.2: Compliance with Blondel’s Theorem;
 - Section 1.8: Instrument Transformers – Secondary Cabling; and
 - Section 1.13: Instrument Transformers – Burdens.

All other sections under Appendix 6.2 of the *market rules* no longer apply to this *metering installation* and the *metering installation* must be in full compliance with Section 4.1 of Chapter 6 of the *market rules*. Figure E–5 illustrates the final configuration of the *metering installation* that has been granted the right to retain registration under the alternative metering installation standard.

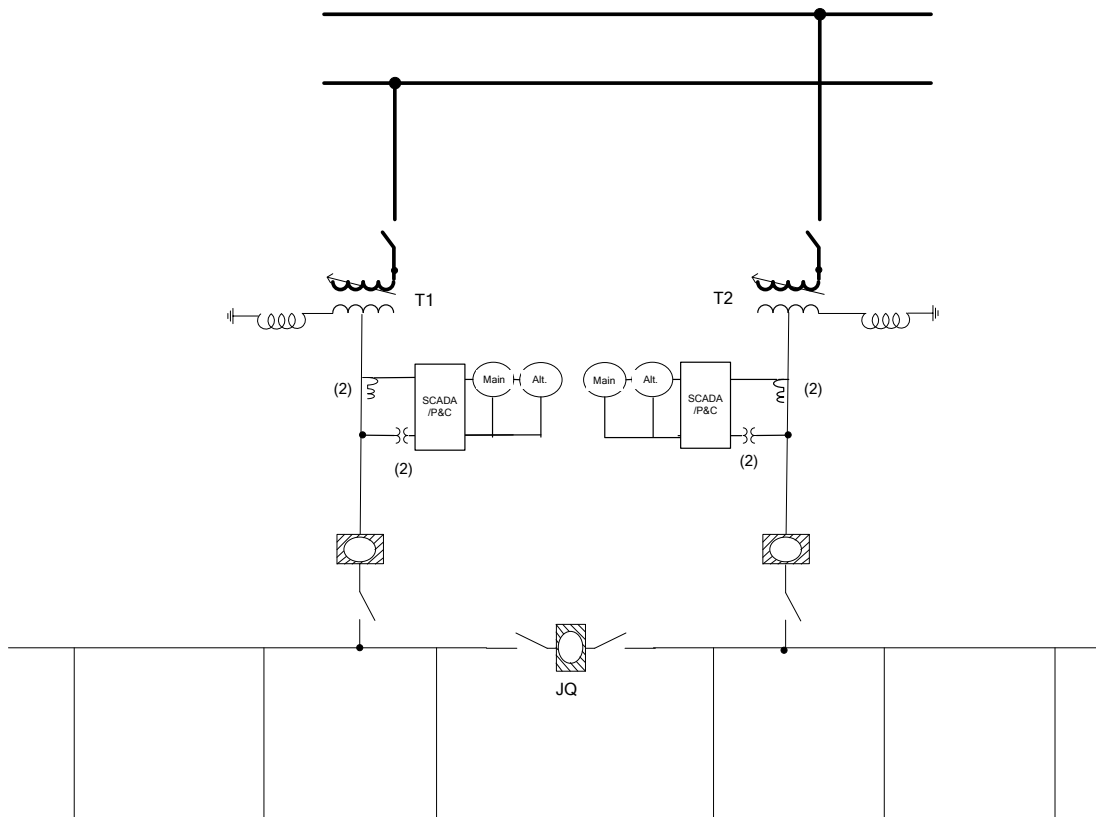


Figure E–5: MV Bus Metering Installation Registered under Section 4.4 of Chapter 6 of the Market Rules

– End of Section –

References

Document ID	Document Title
N/A	Electricity and Gas Inspection Act (Canada)
MDP_RUL_0002	Market Rules
MDP_STD_0004	Wholesale Revenue Metering Standard—Hardware
MDP_PRO_0014	Market Manual 1: Market Entry, Maintenance and Exit, Part 1.1: Participant Authorization, Maintenance and Exit
MDP_PRO_0016	Market Manual 1: Market Entry, Maintenance and Exit, Part 1.2: Facility Registration, Maintenance, and De-registration
MDP_PRO_0017	Market Manual 2: Market Administration, Part 2.1: Dispute Resolution
MDP_PRO_0007	Market Manual 3: Metering, Part 3.1: Metering Service Provider (MSP) Registration, Revocation, and De-registration
MDP_PRO_0010	Market Manual 3: Metering, Part 3.4: Measurement Error Correction
MDP_PRO_0011	Market Manual 3: Metering, Part 3.5: Site-Specific Loss Adjustments
MDP_PRO_0012	Market Manual 3: Metering, Part 3.6: Conceptual Drawing Review
IMP_PRO_0047	Market Manual 3: Metering, Part 3.7: Totalization Table Registration
IMP_PRO_0057	Market Manual 3: Metering, Part 3.8: Creating and Maintaining Delivery Point Relationships
N/A	MIRT online help
MDP_MAN_0003	Market Manual 3: Metering Overview
	Alternate Metering Standard

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