
 California ISO	Operating Procedure	Procedure No.	5710
		Version No.	1.4
		Effective Date	2/14/2018
Certification of Metering Facilities		Distribution Restriction: None	

Table of Contents

Purpose	1
1. Responsibilities	2
2. Scope/Applicability	3
2.1 Background	3
2.2 Scope / Applicability.....	3
3. Procedure Detail	3
3.1 Certifying Metering Facilities.....	3
3.1.1 Initializing the Process	3
3.1.2 Meter Installation Activity	5
3.1.3 Communication Test.....	6
3.1.4 Operational Test	7
3.1.5 Meter Data Validation Activity	7
3.2 Responsibilities for Maintaining Certificate of Compliance	8
3.2.1 Facility Maintenance	8
3.2.2 Certificate Revocation.....	9
3.3 Installation of Additional Metering	10
3.3.1 ISO Metered Entity Election to Install Additional Metering.....	10
3.3.2 ISO Requirement to Install Additional Metering.....	10
4. 4. Supporting Information	11
Operationally Affected Parties	11
References.....	11
Definitions	11
Version History	12
5. Periodic Review Procedure	12
Review Criteria	12
Frequency	12
Incorporation of Changes	12
Technical Approval	13
Director Approval	13
Appendix	13


Purpose

Provides guidelines throughout the Metering Certification process including the initial submission of information, site and Meter Data validation, and maintaining the certified Metering Facility.

 California ISO	Operating Procedure	Procedure No.	5710
		Version No.	1.4
		Effective Date	2/14/2018
Certification of Metering Facilities		Distribution Restriction: None	

1. Responsibilities

ISO Energy Data Acquisition Specialists(EDAS) Team	<ul style="list-style-type: none"> • Validate all required metering documents according to New Resource Implementation timeline (Buckets). • Establish meter communication(s). • Support related testing for synchronization <ul style="list-style-type: none"> ○ If applicable, request for Hand Held Format (HHF) file(s) from the ISO Authorized Inspector in the event that the ISO is not able to communicate with the respective meter(s). EDAS shall forward applicable HHF(s) to mdas@caiso.com. • Perform meter data validation and issuance of Certificate of Compliance required to achieve Commercial Operational Date (COD).
ISO Meter Data Acquisition Systems Team (MDAS)	<ul style="list-style-type: none"> • Input meter configuration information into internal meter collection system based on information from the ISO Meter Configuration Worksheet. • Support meter data validation and issuance of Certificate of Compliance required to achieve Commercial Operational Date (COD).
ISO Metered Entity (ISOME)	<ul style="list-style-type: none"> • Provide required documentation according to New Resource Implementation (NRI) timeliness. • Ensure that the external field personnel who installs/programs any meter(s) within the Certified Meter Facility is different from the ISO Authorized Inspector who inspects the meter. • Ensure meter communications are operational with the ISO. • Secure Fieldwork Support from the ISO to support troubleshooting and/or testing. • Ensure that their Metering Facilities continue to comply with the certification criteria referred to in the CAISO tariff and the Business Practice Manuals.
ISO Authorized Inspector	<ul style="list-style-type: none"> • Fill out the ISO Meter and Site Verification Sheet (MSVS) and forward it to the ISOME for review. • Perform testing and inspection of the Meter Facility. • Ensure that the meter is programmed using the read-write password. • If applicable, forward the HHF to edas@caiso.com within two (2) business days after operational testing.

 California ISO	Operating Procedure	Procedure No.	5710
		Version No.	1.4
		Effective Date	2/14/2018
Certification of Metering Facilities		Distribution Restriction: None	

2. Scope/Applicability

2.1 Background

This process is to ensure all related documentation, tests, and validations are performed resulting in the issuance of the Certificate of Compliance. The Certificate of Compliance is required to commercially participate and generate settlement statements based on Meter Data within the ISO market.

2.2 Scope / Applicability

This procedure includes an overview of the ISO Meter Facility certification process and requirements for maintaining the Metering Facilities.

3. Procedure Detail


3.1 Certifying Metering Facilities

3.1.1 Initializing the Process

The following actions take place to obtain a Certification of Compliance for a new or existing site:


Description	
To obtain a Certificate of Compliance (prior to the installation of any metering equipment) it is necessary for the execution of the actions below:	

Step	ISO Metered Entity Actions
1	Contact the ISO by email or phone for information and direction about how to get started. The ISO will provide support documentation, a Certification Checklist, and describe how to locate information about meter installation on the ISO webpage. <ul style="list-style-type: none"> Email: NewResourceImplementation@caiso.com

 California ISO	Operating Procedure	Procedure No.	5710
		Version No.	1.4
		Effective Date	2/14/2018
Certification of Metering Facilities		Distribution Restriction: None	

2	<table border="1"> <thead> <tr> <th style="background-color: #e1f5fe;">If...</th> <th style="background-color: #e1f5fe;">Then...</th> </tr> </thead> <tbody> <tr> <td>New Site</td> <td> <p>Contact the ISO by email or phone for information and direction about how to get started. The ISO will provide support documentation, a Certification Checklist, and describe how to locate information about meter installation on the ISO webpage at: http://www.caiso.com/participate/Pages/ResourceInterconnectionGuide/default.aspx</p> </td> </tr> <tr> <td>Existing Site</td> <td> <p>Contact the ISO prior to making any modifications to existing metering equipment at EDAS@caiso.com.</p> <p><i>Note: Meter replacement(s) or meter reprogram(s) will require the creation of new Device ID(s) to differentiate it from the existing metering equipment(s).</i></p> </td> </tr> </tbody> </table>	If...	Then...	New Site	<p>Contact the ISO by email or phone for information and direction about how to get started. The ISO will provide support documentation, a Certification Checklist, and describe how to locate information about meter installation on the ISO webpage at: http://www.caiso.com/participate/Pages/ResourceInterconnectionGuide/default.aspx</p>	Existing Site	<p>Contact the ISO prior to making any modifications to existing metering equipment at EDAS@caiso.com.</p> <p><i>Note: Meter replacement(s) or meter reprogram(s) will require the creation of new Device ID(s) to differentiate it from the existing metering equipment(s).</i></p>
If...	Then...						
New Site	<p>Contact the ISO by email or phone for information and direction about how to get started. The ISO will provide support documentation, a Certification Checklist, and describe how to locate information about meter installation on the ISO webpage at: http://www.caiso.com/participate/Pages/ResourceInterconnectionGuide/default.aspx</p>						
Existing Site	<p>Contact the ISO prior to making any modifications to existing metering equipment at EDAS@caiso.com.</p> <p><i>Note: Meter replacement(s) or meter reprogram(s) will require the creation of new Device ID(s) to differentiate it from the existing metering equipment(s).</i></p>						
3	<p>Provide the following metering documentation per NRI process timelines:</p> <ul style="list-style-type: none"> • Schematics <ul style="list-style-type: none"> ○ Three-Line Drawings ○ Detailed Station One-Line ○ Communication Block Diagram • The ISO Meter Configuration Worksheet and ISO Meter and Site Verification Sheet (MSVS) can be found at: http://www.caiso.com/participate/Pages/MeteringTelemetry/Default.aspx • Transformer and Line Loss Worksheets, where applicable • Distribution Compensation Factor (DCF) engineering study with letter of agreement of DCF from appropriate UDC/Distribution Company/Interconnection entity • Supplemental Documentation which may be required at ISO discretion: <ul style="list-style-type: none"> ○ Map to the site ○ Contact personnel ○ System Description Overview 						

Step	ISO EDAS Actions
1	<p>Ensure completeness and overall accuracy according to NRI timelines. Validate submitted meter documentation to avoid delays in meter certification.</p>


 California ISO	Operating Procedure	Procedure No.	5710
		Version No.	1.4
		Effective Date	2/14/2018
Certification of Metering Facilities		Distribution Restriction: None	

2	<table border="1"> <thead> <tr> <th style="background-color: #e1f5fe;">If...</th> <th style="background-color: #e1f5fe;">Then...</th> </tr> </thead> <tbody> <tr> <td>Documentation is missing, incomplete or inaccurate</td> <td>Notify the ISO Metered Entity (ISOME) and provide details of issue(s).</td> </tr> <tr> <td>There is no questionable information</td> <td>Go to <u>Section 3.1.2</u></td> </tr> </tbody> </table>	If...	Then...	Documentation is missing, incomplete or inaccurate	Notify the ISO Metered Entity (ISOME) and provide details of issue(s).	There is no questionable information	Go to <u>Section 3.1.2</u>
If...	Then...						
Documentation is missing, incomplete or inaccurate	Notify the ISO Metered Entity (ISOME) and provide details of issue(s).						
There is no questionable information	Go to <u>Section 3.1.2</u>						

3.1.2 Meter Installation Activity

Once the required metering documents have been approved, the meter installation process begins:

Step	ISO Metered Entity Actions
1	ISOME has meter(s) and associated equipment installed per tariff/BPM requirements and approved drawings. Note: <i>The installed meter(s) must be listed on the Approved ISO Meter document found at: http://www.caiso.com/market/Pages/MeteringTelemetry/Default.aspx.</i>
2	Once the meter(s) and associated equipment are installed, the ISOME must secure an ISO Authorized Inspector (different from the vendor who installed and/or programmed the meter) and have the metering equipment validated. Note: <i>The inspector must be from the ISO Authorized Inspectors document found at: http://www.caiso.com/market/Pages/MeteringTelemetry/Default.aspx.</i>
3	Submit ISO Meter Configuration Worksheet at least ten (10) business days prior to the operational testing date. This will allow ISO MDAS to set-up configuration in internal meter collection system. A successful communication test (based on the information capture within the form) is required to secure and execute the Operational Test. Note: <i>Please note that the Site Owner is responsible for the accuracy of the information on this form. The submission must comply with the NRI time frames found at: http://www.caiso.com/participate/Pages/ResourceInterconnectionGuide/default.aspx.</i>

 California ISO	Operating Procedure	Procedure No. 5710
		Version No. 1.4
		Effective Date 2/14/2018
Certification of Metering Facilities		Distribution Restriction: None


3.1.3 Communication Test

Step	ISO Metered Entity
1	Verifies the installation of the installed meter and associated equipment. Technical Specifications can be found in Attachment B within the Metering Business Practice Manual.
2	Informs the ISO of readiness for Operational Testing by scheduling an appointment via the ISO Fieldwork Appointment Request User Interface (UI)
Note: Meter communications should be successful to avoid delays in meter testing.	

Step	ISO MDAS Actions
3	Input meter information into internal meter collection system based information from the ISO Meter Configuration Worksheet.

Step	ISO EDAS Actions
4	Conduct communications test against the installed meter(s).

Step	ISO Metered Entity Actions						
5	Ensure successful communication test between the meter and the ISO prior to Operational Testing. A fieldwork appointment is not required to check the communication to the Meter prior to the point-to-point test. Site owner(s) can simply either call EDAS or send an email to EDAS@caiso.com to verify the communication.						
Note: Communication testing must be successful in order to perform the Operational Test.							
6	<table border="1"> <thead> <tr> <th>If...</th> <th>Then...</th> </tr> </thead> <tbody> <tr> <td>Communication is unsuccessful</td> <td>Work with vendor and notify the ISO personnel once it has been resolved to re-test.</td> </tr> <tr> <td>Communication is unsuccessful the day of the Operational Test</td> <td>The test will be cancelled and will need to be rescheduled once communications to the meter(s) have been reestablished.</td> </tr> </tbody> </table>	If...	Then...	Communication is unsuccessful	Work with vendor and notify the ISO personnel once it has been resolved to re-test.	Communication is unsuccessful the day of the Operational Test	The test will be cancelled and will need to be rescheduled once communications to the meter(s) have been reestablished.
If...	Then...						
Communication is unsuccessful	Work with vendor and notify the ISO personnel once it has been resolved to re-test.						
Communication is unsuccessful the day of the Operational Test	The test will be cancelled and will need to be rescheduled once communications to the meter(s) have been reestablished.						

 California ISO	Operating Procedure	Procedure No. 5710
		Version No. 1.4
		Effective Date 2/14/2018
Certification of Metering Facilities		Distribution Restriction: None

3.1.4 Operational Test

The Operational Test is to validate the Meter Data interrogated from the ISO certified meter corresponds to a given test scenario/condition.

Step	Certified Meter Inspector, ISO EDAS, and ISO Metered Entity Actions
1	Perform Operational Test in accordance with the Meter Program Validation document found at: http://www.caiso.com/market/Pages/MeteringTelemetry/Default.aspx
Note: The ISOME ensures all necessary access to meters and Metering Facilities for inspection and testing by ISO Authorized Inspectors.	


Step	ISO EDAS
2	<ul style="list-style-type: none"> If applicable, request for Hand Held Format (HHF) file(s) from the ISO Authorized Inspector in the event that the ISO is not able to communicate with the respective meter(s). EDAS shall forward applicable HHF(s) to mdas@caiso.com. Confirm that the meter is programmed using read-write access.

Step	Certified Meter Inspector Actions
3	Ensures that the Operational Test was performed successfully. Verifies any remaining testing and inspection.
4	Before leaving the Metering Facility, the inspector must place meter seals on all appropriate equipment.
5	Create/update and submit final MSVS to ISOME for submission to the ISO.
6	If applicable, forward the downloaded Hand Held Format (HHF) file(s) to EDAS@caiso.com at least two (2) business after the operational test.
Note: The ISOME is responsible for the submission of all documentation to the ISO before Meter Data validation can occur.	

Step	ISO Metered Entity Actions
7	Send the MSVS to the ISO and notify the ISO of meter passing inspection.

3.1.5 Meter Data Validation Activity

Step	ISO EDAS Actions
1	Gather meter generation data in order to perform validation.

 California ISO	Operating Procedure	Procedure No.	5710
		Version No.	1.4
		Effective Date	2/14/2018
Certification of Metering Facilities		Distribution Restriction: None	

2	Conduct Meter Data validation against the meter to ensure proper programming, documentation, and functionality.					
Note: The ISO reserves the right to perform a field audit.						
3	<table border="1" style="width: 100%;"> <tr> <th style="background-color: #e1f5fe;">If...</th> <th style="background-color: #e1f5fe;">Then...</th> </tr> <tr> <td>Meter validation fails</td> <td>Work with ISOME to resolve the issue until successful.</td> </tr> </table>		If...	Then...	Meter validation fails	Work with ISOME to resolve the issue until successful.
If...	Then...					
Meter validation fails	Work with ISOME to resolve the issue until successful.					
4	Review Final Meter Package once meter validation is successful.					
5	<table border="1" style="width: 100%;"> <tr> <th style="background-color: #e1f5fe;">If...</th> <th style="background-color: #e1f5fe;">Then...</th> </tr> <tr> <td>Final Meter Package is complete</td> <td>The ISO will issue a Certificate of Compliance and notify ISOME of Commercial Operational Data (COD).</td> </tr> </table>		If...	Then...	Final Meter Package is complete	The ISO will issue a Certificate of Compliance and notify ISOME of Commercial Operational Data (COD).
If...	Then...					
Final Meter Package is complete	The ISO will issue a Certificate of Compliance and notify ISOME of Commercial Operational Data (COD).					


Step	ISO Metered Entity Actions					
6	<table border="1" style="width: 100%;"> <tr> <th style="background-color: #e1f5fe;">If...</th> <th style="background-color: #e1f5fe;">Then...</th> </tr> <tr> <td>Final Meter Package is not complete</td> <td>Submit missing/corrected documentation to the ISO.</td> </tr> </table>		If...	Then...	Final Meter Package is not complete	Submit missing/corrected documentation to the ISO.
If...	Then...					
Final Meter Package is not complete	Submit missing/corrected documentation to the ISO.					
Note: The ISO will not issue a Certificate of Compliance unless the Final Meter Package is complete. The required information can be found in Attachment C and 3.2.3.4 of the BPM for Metering.						

3.2 Responsibilities for Maintaining Certificate of Compliance

3.2.1 Facility Maintenance

If the Metering Facility is in need of maintenance, the Metered Entity is responsible for the following actions:

Description
Once an ISO Metered Entity has a Certificate of Compliance it is necessary to maintain the facility in accordance with the CAISO tariff and Business Practice Manual for Metering. If the Metering Facility is judged to be out of compliance by the ISO, the Certificate of Compliance may be revoked.


 California ISO	Operating Procedure	Procedure No.	5710
		Version No.	1.4
		Effective Date	2/14/2018
Certification of Metering Facilities		Distribution Restriction: None	

Step	ISO Metered Entity Actions
1	Inform the ISO prior to any replacements, changes, or modifications that are made to any meters or Metering Facilities of an ISO Metered Entity that has been certified. <ul style="list-style-type: none"> • Under CAISO tariff Section 10.2.4.7, the ISO may require the recertification of the Metering Facility if desired. Emails should be sent to EDAS@caiso.com.
<p>Note: For any site maintenance that involves the removal of ISO seals, it is necessary to contact the ISO in accordance with Section 5.1.4 of the BPM for Metering and Section 10.2.13.1 of the CAISO tariff.</p>	
2	Continue to comply with the certification criterion that is found within the CAISO tariff and the Business Practice Manual for Metering. <ul style="list-style-type: none"> • Section 10.2.4.5 in the CAISO tariff requires ISO Metering Entities to follow the criteria found in the CAISO tariff as well as Business Practice Manual Appendix C.
<p>Note: If Field Support is needed, an appointment must be scheduled in advance by using Fieldwork Appointment Request Form at:</p> <p style="text-align: center;">http://www.caiso.com/fieldworksupport/Pages/default.aspx</p>	

3.2.2 Certificate Revocation

If the ISO believes a Metered Entity to be out of compliance, the following actions may be taken:

Step	ISO EDAS Actions
1	Under Section 3.2.3.9 of the BPM for Metering, the ISO may revoke any Certificate of Compliance if there are reasonable grounds to believe that the ISO Metered Entity no longer meets the certification criteria found in the CAISO tariff and the Business Practice Manual.
2	If the ISO chooses to revoke a Certificate of Compliance and has given written notice to the relevant ISO Metered Entity stating that it does not believe that the identified Metering Facilities meet the certification criteria: <ul style="list-style-type: none"> • The ISO will not accept Revenue Quality Meter Data (RQMD) from an ISO Metered Entity unless that RQMD is produced by a currently certified Metered Entity in accordance with Section 10.2.4.6 of the CAISO tariff. • ISO Metered Entities may seek recertification of the relevant Metering Facilities in accordance with Section 10.2.4.6 of the CAISO tariff. Any appeals may be made to EDAS@caiso.com.

 California ISO	Operating Procedure	Procedure No.	5710
		Version No.	1.4
		Effective Date	2/14/2018
Certification of Metering Facilities		Distribution Restriction: None	

3.3 Installation of Additional Metering

3.3.1 ISO Metered Entity Election to Install Additional Metering

If the ISO Metered Entity chooses to install additional metering the following actions must be taken:


Description
If there is a desire to install any additional meters or equipment within the certified Metering Facilities it is necessary for the ISO and ISO Metered Entity to properly coordinate on the installation process in accordance with Section 10.2.14 of the CAISO tariff and Section 3.3 of the BPM for Metering.

Step	ISO Metered Entity Actions
1	Inform the ISO before any changes or modifications are made to any Metering Facilities of an ISO Metered Entity that have been certified. <ul style="list-style-type: none"> • An ISO Metered Entity may not start installation of additional metering until the ISO has approved its proposal for installation. • Depending on the changes made to the Metering Facilities, it may be necessary to re-inspect or test all, or part, of the Metering Facilities.
2	Under Section 3.3.3 of the BPM for Metering, if an ISO Metered Entity installs additional metering, such metering must, unless the ISO agrees otherwise: <ul style="list-style-type: none"> • Be installed and maintained at the ISO Metered Entity's cost; • Be located on the ISO Metered Entity's side of any primary meter; and • Not interfere with the accuracy of any primary meter and, if that primary meter is directly polled by the ISO, the ISO's ability to directly poll that meter.

3.3.2 ISO Requirement to Install Additional Metering

Under Section 3.3.2 of the BPM for Metering, an ISO Metered Entity that is notified by the ISO that it is required to install additional Metering Facilities must:

Step	ISO Metered Entity Actions
1	Provide the ISO written confirmation of receipt of that notice within three (3) Business Days of receiving that notice.

 California ISO	Operating Procedure	Procedure No.	5710
		Version No.	1.4
		Effective Date	2/14/2018
Certification of Metering Facilities		Distribution Restriction: None	

2	Submit a proposal for installation to the ISO within 45 Business Days of receiving that notice containing the following information: <ul style="list-style-type: none"> • A description of the proposed Metering Facilities to be installed (which includes all relevant schematic drawings and one-line drawings). • A proposed timetable for installation. • Any other information requested by the ISO.
3	Upon ISO approval of the submitted installation proposal, the Metered Entity may begin the installation process.
<i>Note: Depending on the reason for installing additional metering, the Metering Facility may be subject to re-inspection and/or re-certification once the installation is completed.</i>	

4. Supporting Information

Operationally Affected Parties

Shared on the Internet.

References

Resources studied in the development of this procedure and that may have an effect upon some steps taken herein include but are not limited to:


<u>CAISO tariff</u>	Section 10
Business Practice Manual for Metering	Sections 3.2 and 3.3

Definitions

Unless the context otherwise indicates, any word or expression defined in the Master Definitions Supplement to the CAISO tariff shall have that meaning when capitalized in this Operating Procedure.

The following additional term(s) are capitalized in this Operating Procedure when used as defined below:

NRI	New Resource Implementation
-----	-----------------------------

 California ISO	Operating Procedure	Procedure No.	5710
		Version No.	1.4
		Effective Date	2/14/2018
Certification of Metering Facilities		Distribution Restriction: None	

Version History

Version	Change	Date
1.0	Document Implementation	11/19/13
1.1	Periodic Review – No content changes. Updated logo in header.	5/23/16
1.2	Changed Meter Engineering to EDAS and updated email address.	7/28/16
1.3	Updated the following sections: <ul style="list-style-type: none"> • 1 - Responsibilities • 3.1.1 – Initializing the Process • 3.1.2 – Installation Activity • 3.1.3 – Communication 3.1.4 - Operational Test	10/07/16
1.4	Section 3.1.1, Step 3: Corrected link and removed verbiage that MSVS had to be received prior to the operational test. Minor format and grammar updates.	2/14/18

5. Periodic Review Procedure

Review Criteria


There are no specific review criteria identified for this procedure, follow instructions in Procedures 5510 and 5520.

Frequency

Review as recommended in Procedures 5510 and 5520.

Incorporation of Changes

There are no specific criteria for changing this document, follow instructions in Procedures 5510 and 5520

 California ISO	Operating Procedure	Procedure No.	5710
		Version No.	1.4
		Effective Date	2/14/2018
Certification of Metering Facilities		Distribution Restriction: None	

Technical Approval

Reviewed By Content Expert	Date
Manager, Model & Contract Implementation	2/07/18
Manager, Metering and Market Services Compliance	2/12/18
Operations Procedures	2/12/18

Director Approval

Approved By	Date
Director, Market Services Production	10/03/16*
Director, Market Services Support	10/03/16*

Appendix

No references at this time.