

# New Resource Implementation Guide

Version 55

# **Revision History**

Version	Date	Description	
1	10/15/2013	Initial version	
2	12/6/2013	RIMS GEN	
3	1/29/2014	RIMS GEN closed for usability issues	
4	2/18/2014	Update to web links	
5	4/22/2014	Update to SC Association process in Bucket 4 and meter documentation requirements for Bucket 3	
6	6/6/2014	New Bucket 2 requirement (Site Information Form) for FERC 764 order regarding forecasting requirements for Eligible Intermittent Resources.	
7	6/25/2014	Moved FERC 764 required documents (Topographical map, Site Info) to Bucket 3. Meter Configuration document also in Bucket 3. Meter Certification Form, Meter Site Verification Data Sheet (SVDS), and Meter Calculations worksheet now do after synchronization and must be approved 5 days before Commercial Operations for standard resources; QF conversion project must submit them 5 days before their planned QF conversion date	
8	8/25/2014	New sub section in section 3 related to moving a projects sync date.	
9	9/10/2014	Update of information needed on NetAppInfo document.	
10	9/22/2014	Update to Test Energy process to align with NRI checklist	
11	11/17/2014	Changes to the Bucket 1 and 2 document requirements, added file naming examples at each required document, consolidated RIG and Metering bucket 1 and 2 information. An additional of two new generator modeling files in bucket 2.	
12	12/5/2014	Added QF Completion Section. Moved Metering submittals from Bucket 7 to Bucket 6. Included additional information about moving the estimated sync date and its effect on the Commerci- Operation Date.	
13	12/30/14	New project creation process.	
14	2/13/15	Standard email subject lines for requesting Sync, COD, COM and QF Conversion. Other minor formatting of the document	
15	3/25/15	Added naming convention guidelines for Generators and clarification to requirements before the Interconnection Customer can submit the Request for Svnchronization to NRI.	
16	9/28/15	Remove Turbine Coordinates from Bucket 1 & 2 and added Site Info Sheet requirement for Wind resources to replace the Turbin Coordinates requirement. NetAppInfo template linked to website	
17	12/17/15	Clarification of COM process	
18	2/24/15	Combined Bucket 1 & 2 to Bucket 1 and renumbered remaining buckets. Added Meter Site Verification Sheet in place of the meter certification and SVDS forms. Added New file naming conventions.	
19	4/29/16	MSVS effective May , 2016.	

Version	Date	Description	
20	7/11/16	Update instruction to RIMS 5 access. Update to links to the ISO web site. Added real-time communication path options.	
21	8/15/16	Updated guidelines to resource name quick guide. Updated instructions for Resource Interconnection management system guidelines. Updated instructions to RIG and Meter ISO Testing Schedule. Updated COD and COM process.	
22	8/29/16	Updated contact phone number to the ISO Real-Time Desk.	
23	9/27/16	Remove initial GRDT from NRI requirement.	
24	2/9/17	Updated the Project Naming Guidelines. Updated control and protection guidelines.	
25	4/10/17	Update to RIG Details: Dispersive Technology ISO approved. Addition of SQMD Meter Configuration Worksheet.	
26	4/19/17	Updated QF section to include RMTMax procedure information.	
27	5/4/17	Update to section 4F, the QF Conversion flowchart Update to SQMD MeterConfig file naming convention	
28	5/26/17	Update to section 4F, the QF Conversion flowchart Update to SQMD MeterConfig file naming convention to omit device ID Update to section 5A and 5D, Single Line and 3 Line Drawing Update to section 1J, Dynamic and Pseudo Tie Email subject Lines Update to section 7D and 9F, Final Control Protection Review Documentation	
29	4/18/18	Project Type Definitions Updates made to encompass RIMS User Interface	
30	3/5/19	IA Requirements QF Conversions clarification around MSVS Acceptance before requesting to complete 3-Party QF Conversion IR information Section 1	
31	7/10/19	24Hour Contact form location update Section 6D – Meter Config SQMD Section 6C – Met sharing contract Sections 2- 6 - Full Network Model Build Schedule Changes and Impacts Section 5F- G – Site Information and Topo Map changes Section 6B - Meter Configuration Worksheet updates Section 2H - File Naming Convention and Version Control Standards update	
32	8/14/19	Addition of section 2h - 3-Party App & Study Project Transition to NRI Module	
33	9/12/19	Updates to NRI Timeline, project creation and Bucket 1 is due - 203 days from implementation date.	
34	10/3/2019	Addition to Bucket 1 – SCME PE Attestation Letter Addition to Bucket 3 – Qualified Reporting Entity Service Agreement	
35	10/22/2019	Removal of Dispersive Technology	
36	11/25/2019	Addition of a GRDT Supporting Explanation & Documentation Requirement	
37	03/01/2020	Bucket item resubmittals	

Version	Date	Description	
		Bucket dates	
38	03/24/2020	Bucket timeline example added	
30	3/10/2021	Section 2E: Addition of Storage Project Type	
55	5/10/2021	Section 6B:Additional Metering Devices Form Section 7D: Addition of Bucket item "Control Protection Inverter"	
40	4/13/2021	Section 2E: Updates to Storage and NGR Project definitions	
40	4/13/2021	Section 10: Market Participation	
41	9/2/2021	Section 7D: Control Protection Inverter Report Section 10C: DERP DO Final Approval	
42	11/5/2021	Section 2F: Addition of Max_Gen (Pmax) Process	
43	03/14/2022	Addition of Section 2d; Project Creation Update to section 3	
44	4/20/2022	Updated ECN contact information	
45	5/18/2022	Correction to filename section 6b. Update to section 2f – Max_Gen Adjustment projects to include MSVS instead of Meter Config	
46	10/18/2022	Section 2D: Moving implementation date Section 2E: New Project Type of Pseudo Tie New Construction & Dynamic New Construction Section 5I: Further clarification Met Station Sharing Contract	
Section 9D: Addition of Tele		Section 9D: Addition of Telemetry Exemption File	
47	02/21/2023	Section 2D: Addition of the Configuration and Forecast election functionality Addition of EIA requirements Section 2 F: Control & Protection information required: SC letters	
		required if changing SC's. Section 7F: Addition of requirements for SC letters acceptance Section 10I: Created Hybrid COM for a single fuel type	
48	06/02/2023	Section 2f: For Pmax adjustment projects, if Scheduling Coordinator is not changing then the SC must update the Pmax via the MF UI once sync approval has been provided. Section 2d: Co Located Resources with an ACC must initiate the request with regulatory contracts	
49	08/25/2023	Section 5: 3-Party IA clarifications of approved MMA and inclusion in FNM	
50	09/28/2023	Section 2m: Remove device ID from the Meter Exemption file naming Section 7o: Remove device ID from the Meter Exemption file naming	
51	10/16/2023	Section 7f, removal of the SC automated process. Section 7g, addition of Balancing Authority Extreme Weather Template	
52	10/31/2023	Section 2e, note addition regarding NOTE: MWh & PMin required when Battery fuel type is selected Section 7n, added: Entities can submit Qualified Reporting Entity Service Agreement request form prior to obtaining Commercial	
53	01/17/2024	Section 5J: Updated communication paths to ISO real-time system.	

Version	Date	Description	
		Section 7m: New External Network Guidelines Agreement link.	
54	05/31/2024	Section 7f: Updated SC Letters instructions involving effective dates, blackout dates, and Regulatory Contracts and GRDTs requirements. Section 10d: Updated COD/COM request to allow at least 10 Business days Section 10i: Updated COD/COM request to allow at least 10 Business days	
55	02/11/2025	Section 10i: Removal of Hybrid Resource Requesting COM for a Single Fuel Type	

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# 1. Introduction

This guide is designed to assist a New or Qualifying Facility (QF) Interconnection Customer (IC) with a smooth transition from build to bid into the ISO markets. It is meant to provide guidance on submitting files and clarify why a deliverable is sometimes required to be resubmitted.

The ISO has implemented a bucket date system that is derived from our Full Network Model Database Release schedule, and a generation project's estimated sync date or QF conversion date. A series of bucket acceptance dates are calculated and then provided to the interconnection customer single point of contact. The se dates should be viewed as ISO acceptance dates not the last day to submit information, forms or details required to move the project forward. If a Bucket is not completed by its acceptance deadline a new synchronization/QF conversion date will need to be submitted in order to put the acceptance deadline into the future. No documents will be processed until this is done. The ISO will also provide a project progress update via email called the FNM Project Auto Update. This email will show the status of the bucket items as they are submitted and accepted. The ISO will send back to designated points of contact the comments from ISO requesting more information or details to the review as needed. These internal group comments are listed under the "Project Memo's" in the FNM Project Auto Update.

# 2. Getting Started

# a. New Resource Implementation Resources

Please use all the valuable resources and templates on our NRI webpage.

Metering and telemetry resources:

<u>Metering and Real-Time Device Drawing Requirements</u> <u>Meter Configuration Worksheet Requirements</u> <u>DocuSign Account</u> – Required for signing ISO meter documentation

# b. Resource name guidelines for new facilities

The National Electric Reliability Council (NERC) has expressed some concern to ISO Operations that in recent disturbances there has been confusion between different entities involved, over the names being used for generating units, which were critical for system reliability under stressed conditions. This confusion made maintaining reliable operations more difficult than it needed to be. Therefore the ISO will only accept generator project names that follow the rules below. All resource names are subject for review and can be changed by the ISO at any time. If the projects resource name does not adhere to the guideline below you will be contacted by the ISO to initiate the name change.

# c. Project Naming Guidelines

Please refer to **Section 5.2** of the BPM for <u>Generator Interconnection and Deliverability</u> <u>Allocation Procedures (GIDAP)</u>. Section 5.2 of the BPM will help assist you with the project naming guidelines when choosing your resource name.

# d. Project Creation

## Full Network Model Schedule

The ISO website has posted the dates of when a new production model will be released in the <u>Full Network Model</u> (FNM) schedules.

Interconnection customer users must follow the critical dates within the FNM process in order to ensure resource modeling is implemented into the model within the desired timeline.

The following items within the schedule are important to plan and abide by.

1. FNM Label: Model Build identifying label for each production release.

2. Customer Model Document Submission Deadline: All necessary Bucket 1 & 2 items must be submitted to be considered in the scope of the corresponding FNM model build by this date.

3. ISO Published Final Scope: The ISO completes final approved scope after considering submissions for completeness, timeliness and available ISO bandwidth to build the model.

4. Production Deployment: The week that the ISO is targeting to push implementation into Production.

FNM Label	Customer Model Document Submission Deadline	ISO Publishes Final Scope	Production Deployment
22MI_DBII0	10/14/2021	11/4/2021	Week of 1/10/2022
22M3_DB111	12/15/2021	1/5/2022	Week of 3/14/2022
22M4_DB112	2/2/2022	2/23/2022	Week of 4/25/2022
22M6_DB113	3/17/2022	4/7/2022	Week of 6/13/2022
22M7_DB114	5/5/2022	5/26/2022	Week of 7/25/2022
22M8_DB115	6/16/2022	7/7/2022	Week of 8/29/2022
22M10_DB116	7/21/2022	8/11/2022	Week of 10/3/2022
22M11_DB117	8/25/2022	9/15/2022	Week of 11/14/2022

# **Project Creation Date Validation**

Project creation will operate off of the Implementation Date, verifying that the implementation date for the desired model build is at least 15 calendar days after the production deployment date and that the Customer Model Document Submission deadline has not passed.

- Allow up to 10 days processing time for provisioning user access to the project with regards to the Customer Model Document Submission Deadline.



## **RIMS Project Details Form**

The "RIMS Project Details Form" shall be used to create a new project for the following project types.

- Solar
- Wind/Wind repower
- Existing QF
- Wind QF
- Conventional
- Dynamic
- Dynamic New Construction
- Pseudo Tie

- Pseudo Tie New Construction
- Non-Generation Resource
- Storage
- Load
- Custom LAP
- Meter Replacement
- Meter Maintenance
- RIG Reconfiguration

This form is located on the New Resource Implementation webpage.

Within the form, we ask that the free tool <u>iTouchMap.com</u> be used to find the latitude and longitude coordinates of the project.

<u>Note: Please note that if your proposed project requires more than one market resource ID</u> you will need to create one project per resource ID. For example, if the project is a large solar resource requiring two market resource IDs, two Project Details Forms will be required.

The "RIMS Quick start guide", located on the NRI webpage will walk you through the project creation details. Once it has been submitted through RIMS, processed and created, an email will be sent to the generator owner and other listed Points of Contact with an attachment that contains the project code as confirmation that your project has been created within the NRI Process.

## Configuration

Configuration selection will provide the user the option to select the type of resource interconnection assigned. RIMS allows multiple fuel type and capacity combinations at the component level.

The Configuration field breakdown with valid combinations are listed below:

<u>Single</u> – A resource with **one** fuel type with a unique Resource ID.

<u>Co-located</u> – A resource with **one** fuel type with a unique Resource ID that is part of a generating facility with other generating units.

<u>Hybrid</u> – A resource with **more than one** fuel type (up to four within RIMS) with a unique Resource ID at a single Point of Interconnection, with components that use different fuel sources or technologies.

<u>Hybrid & Co-located</u> - A resource with **more than one** fuel type (up to four within RIMS) with a unique Resource ID at a single Point of Interconnection, with components that use different fuel sources or technologies. This resource is part of a generating facility with other generating units.

\*If an Aggregate Capability Constraint (ACC) is required the interconnection customer must initiate the request with regulatory contracts.

## **Forecast Election**

As specified in section 3.1 of Appendix Q, CAISO and WEIM <u>hybrid resources</u> with VER components can elect to provide their own VER forecast or elect for a CAISO produced VER forecast, which requires paying the forecast fee (See Appendix F, Schedule 4). This selection is allowed to differ between components belonging to the same resource. Sections 34.1.6 and 4.8.2.1 of the tariff contain details on both potential selections. If it is an ISO forecasted

hybrid resource component ID, the forecasts are displayed on CMRI. Regardless of forecast selection, the resource is required to provide VER component ID MW telemetry, HSL, and meteorological data to the CAISO. If SC forecast is selected, then VER component ID SC forecasts need to be submitted. At this time the ISO does not offer persistence forecasting for the hybrid resources VER component IDs.

Each fuel component provided must have a selection chosen for forecast election either "CAISO" forecast or "Scheduling Coordinator" forecast.

- For configurations "Single" or "Co-located", only CAISO forecast is a valid selection.
- For configurations of Hybrid and Hybrid & Co-located **that have** a Solar or Wind component may select either CAISO forecast or Scheduling Coordinator forecast.
- For configurations of Hybrid and Hybrid & Co-located that **do not** have a Solar or Wind component may only select CAISO forecast.

#### **Project Details Form**

The Project Details Form shall be used to create a new project for the following project types :

- Distributed Energy Resource (DERP)
- SCME WEIM onboarding
- SCME WEIM Updates
- Existing resources converting from ISOME to SCME

These project types do not use RIMS.

Within the form, we ask that the free tool <u>iTouchMap.com</u> be used to find the latitude and longitude coordinates of the project.

<u>Note: Please note that if your proposed project requires more than one market resource ID</u> you will need to create one project per resource ID. For example, if the project is a large solar resource requiring two market resource IDs, two Project Details Forms will be required.

The "New Resource Implementation Quick start guide", located on the NRI webpage will walk you through the project creation details. Once it has been emailed to NRI, processed and created, an email will be sent to the generator owner and other listed Points of Contact with an attachment that contains the project code as confirmation that your project has been created within the NRI Process.

The EIA information required is the EIA Plant Name, EIA Plant Code and the EIA Generator ID. All of these items are required to be submitted by the resource owner to the EIA through form EIA-860. If a resource does not know the EIA information they should contact EIA to determine the appropriate code. All generators are required to complete Form EIA-860 for planned resources as well as operational resources. The ISO requires that resources provide the EIA data to the ISO prior to the SC Association process being completed.

More information on completing EIA-860 as well as contact information can be found on the EIA website here: <u>https://www.eia.gov/Survey/</u> and then scrolling down to EIA-860. Any questions on obtaining the EIA information should be directed to the EIA.

For Non-RIMS project types: To update information on an existing project remove the word NEW at the top of the project details form and replace it with the project code to make any desired changes to project:



Enter the ISO Project Code or type NEW to create a new project: 18GEN1234 (Replace the word NEW with the ISO project code after receipt. Use this form to make updates to the project once created)

Fill in all fields and email this form to NRI@CAISO.com. If submitting the form to create a new project, please includ

#### **Updating Implementation/Commercial Operation Date in RIMS**

The project details form is only used to create the project, once this has occurred all updates are made directly in <u>RIMS</u>, including:

- Adding authorized contact email addresses;
- Contact information;
- Project description;
- Update the Implementation/QF conversion date;
- Update the Commercial Operation Date.

#### Moving an Implementation date

- The Implementation date listed in the RIMS project can be moved out to a later date at any time.
  - If the NRI project has an assigned DB model, RIMS will validate that the proposed new Implementation date is at least 15 calendar days after the assigned DB models Production Deployment date.
  - If the NRI project does NOT have an assigned DB model, follow the project creation date logic listed above.
- Moving the Implementation date to an earlier date, the following conditions must be met:
  - If the NRI project has an assigned DB model, RIMS will validate that the proposed new Implementation date is at least 15 calendar days after the assigned DB models Production Deployment date.





 If the NRI project does <u>not</u> have an assigned DB model, RIMS will verify that the Implementation date for the desired model build is at least 15 calendar days after the Production Deployment date and that the Customer Model Document Submission deadline has not passed, similar to the project creation logic mentioned above.

## e. Project Type Definitions

Please select one of the project types in section 1 of the project details form when creating a new project. Project type definitions are listed below.

Solar-New solar resource.

Wind/Wind repower: New or repowering wind resource.

**Existing QF:** Existing Qualifying Facility (QF) that is a conventional or hydro resource. Telemetry requirements apply if 10 MW or above.

Wind QF: Existing Qualifying Facility (QF) wind resource.

**Conventional**: New conventional resource. Telemetry requirements apply if 10 MW or above.

**Dynamic (Existing)** A Dynamic System Resource that is a specific generation resource outside the California ISO Balancing Authority Area. For more information regarding this project type: <u>http://www.caiso.com/participate/Pages/DynamicTransfers/Default.aspx</u>

**Dynamic New Construction**: A Dynamic System Resource that is a specific generation resource outside the California ISO Balancing Authority Area. This project type will go through the Sync and COD process.

For more information regarding this project type: <u>http://www.caiso.com/participate/Pages/DynamicTransfers/Default.aspx</u>

**Pseudo Tie (Existing):** A functionality by which the output of a generating unit physically interconnected to the electric grid in a Native Balancing Authority Area is telemetered to and deemed to be produced in an Attaining Balancing Authority Area that provides Balancing Authority services for and exercises Balancing Authority jurisdiction over the Pseudo-Tie generating unit.

For more information regarding this project type: <u>http://www.caiso.com/participate/Pages/DynamicTransfers/Default.aspx</u>

**Pseudo Tie New Construction:** A functionality by which the output of a generating unit physically interconnected to the electric grid in a Native Balancing Authority Area is telemetered to and deemed to be produced in an Attaining Balancing Authority Area that provides Balancing Authority services for and exercises Balancing Authority jurisdiction over the Pseudo-Tie generating unit. This project type will go through the Sync and COD process.

For more information regarding this project type: <u>http://www.caiso.com/participate/Pages/DynamicTransfers/Default.aspx</u>

**Non-Generation Resource**: Includes Limited Energy Storage Resource and Dispatchable Demand Resources.

**Hybrid**: A mixed fuel type project, or a combination of multiple different generation technologies that are physically and electronically controlled by a single owner/operator and Scheduling Coordinator behind a single point of interconnection ("POI") that participates in the CAISO markets as a single resource with a single market resource ID. Resource has the ability to charge and discharge from the grid.

NOTE: MWh & PMin required when Battery fuel type is selected

#### Storage:

Generating facilities that can store electricity for later injection into the Grid but shall not include the Interconnection Customer's Interconnection Facilities. Storage fuel types can be the following: *Solar, Water, Flywheel, Gravity via Rail, Molten Salt, Pumped Storage Hydro and Battery*. Resource **does not** have the ability to charge from the grid, it can only discharge.

#### NOTE: MWh & PMin required when Battery fuel type is selected

**Load**: Curtailable demand, including pumping load or aggregated participating load, can bid into the ISO market through a scheduling coordinator who also acts as the load serving entity for the underlying load. These participants could provide non-spinning reserve and provide demand reduction in the real time market.

**Custom LAP**: An aggregation of Load Pnodes created by the ISO based on a set of custom LDFs submitted by a Scheduling Coordinator, at which such Scheduling Coordinator may submit a single Bid and settle Demand consistent with the ISO Tariff rules, and for which the Scheduling Coordinator is required to submit to the ISO Meter Data for the nodal Load represented in such aggregation.

**SC Metered Entity**: A Generator, Eligible Customer, End-User, or Proxy Demand Resource that is not an ISO Metered Entity. Meter Maintenance: Calibration, Battery Replacement, Troubleshooting, etc.

Meter Replacement: Existing ISO Meter is replaced with a new meter.

**RIG Reconfiguration**: RIG configuration changes that require the ISO to split or add points to an existing real-time device. This also includes changing IP addresses of an existing real-time device.

# f. Max\_Gen (PMax) Adjustment Projects

Interconnection customers will need to have an executed Interconnection Agreement to increase the Max\_Gen within the Full Network Model and MasterFile.

Follow these steps below in order to increase the Max\_Gen for a model update.

- 1. Create NRI project(s) select Project Type of "Conventional" and add a description to what the projects is intending to do. For example: MAX\_GEN increase on the resource ID.
  - a. Note that the Resource Name will need to match what is currently listed in Masterfile. Add a differentiating factor at the name such as "Resource Name Capacity Increase".
  - b. The Exact MW value (section 3B in the Project Details Form) should be the incremental increase amount. The description field must state the total MW amount of the resource including the new Max\_Gen amount.
- 2. NRI Process Bucket Items Required:
  - a. Executed Interconnection Agreement (IA) *With the new increased value supported.*
  - b. Network Application Information
  - c. Site Information Sheet (SiteInfo)

If VER & changing physical facility that would alter the original Site info sheet.

- d. Topographical Map (TopoMap) If there are no changes in coordinates of turbines/panels, met stations, or corners then the same map from the original project submission could be used (everything must match between the site sheet and topo ma.
- e. Update the Schedule 1 within the PGA by contacting Regulatory Contracts.
- f. Generator Resource Data Template (GRDT) Effective date will need to be 3 days after the model production release date. \*If Scheduling Coordinator is not changing then the SC must update the Pmax via the MF UI once sync approval has been provided
- g. New Scheduling Coordinator Selection Letter (if changing SC)
- h. New Scheduling Coordinator Acceptance Letter (if changing SC)
- i. Control & Protection
- j. Control & Protection Inverter
- k. Point to Point Testing *Required if any changes will be made to meters or RIG.*I. PTO Sync Letter
  - Including the additional MW's.
- m. Request Sync within RIMS
- n. If Scheduling Coordinator is not changing then the SC must update the Pmax via the MF UI once sync approval has been provided
- o. Meter Site Verification Sheet (MSVS)
- p. Final Control & Protection
- q. PTO COD Letter Including the additional MW's.
- r. Request COD within RIMS
- s. COD Declaration Letter After receipt of NRI COD Approval
- t. Schedule MAX\_GEN test and new A/S testing if needed

# g. Authorized Point of Contact (POC)

The email addresses for Authorized POCs must be listed on the Project Details form in the field labeled "Authorized Point of Contact(s) Email Addresses." Multiple email addresses must be separated with a semi colon ";" Only Authorized Point of Contact(s) are approved to receive project FNM progress reports.

#### h. Resource Interconnection Management System guidelines

Potential or existing participating generator owners will be required to have user access to RIMS. The process to gain user access to RIMS is as follows:

 Establish a User Access Administrator (UAA) with the ISO Customer Service Department. If you are unsure whether a UAA has already been established with the ISO for your entity, please contact the ISO Client Relations Department at <u>UAARequests@caiso.com</u>.

If a UAA is not already established you may create one following the steps below.

- a. Go to <u>www.CAISO.com</u> and navigate to "Application Access" by selecting "PARTICIPATE" in the selection menu at the top of the webpage. Select the "User access administrator guide".
- b. Complete Steps 1 and 2 of the User Access Administrator Guide, "Designate a UAA" and "Complete the non-disclosure agreement".
- 2. Once your UAA has been established, complete steps 3-5 using the User Access Administrator Guide.

- a. Request application access
- b. Conform with information security standards
- c. Install and renew digital certificates
- 3. When a new request is successfully submitted through RIMS to create a Generation project code, the UAA will need to provision users who will need to access the specific project code.

# i. 3-Party App & Study Project Transition to NRI Module

Some 3-party queue projects may be eligible for NRI project creation once the following criteria is met within the App & Study (AS) RIMS project:

- Queue Date is Assigned
- GIA execution status is set to "Executed"
- Does not already exist in the RIMS NRI Module

When these conditions are met a project will automatically be created in the NRI module with the existing project code from the AS module if the Trial Operations date is <u>equal to or less</u> than 124 days.

When these conditions are met and the Trial Operations date is <u>greater</u> than 124 days the interconnection customer may reach out to <u>NRI@caiso.com</u> to have this project created in the NRI module.

Once the project has transitioned to the NRI module you will receive an email with further instructions.

Please note, once the project has transitioned over to the NRI process there are still required deliverables for the App & Study project those must be met in parallel through the RIMS App & Study process.

The interconnection customer must update the following sections in the transitioned NRI project within the RIMS Generation Module. The UAA listed for the project will need to provision access to users to update the required information.

- General Information
- SC Information
- Contact Info
- Resource Address & Phone Number
- Regulatory Contracts Contacts
- Confirm the implementation date is no earlier than 203 days from the bucket 1 due date and update if necessary

If any subsequent project codes need to be created for additional resources ID's for the related queue number this will be done through the RIMS registration process.

# j. File Naming Convention and Version Control Standards

Interconnection Customers should include their Internal ISO Project code and Project Name in the subject line of all emails sent to <u>NRI@caiso.com</u>.

All files submitted to NRI should be clearly labeled. Please use the New Resource Implementation Checklist's deliverables names in Column A "Document Title" of the spreadsheet along with your ISO project code and version number in the file name. Any file submitted with special characters in the file name will be rejected. These characters include:  $\sim, \#, \%, \&, @, *, \{,\}, :, ;, <, >, ?, /, \setminus, [, ], -, ",$ 

The Interconnection Customer has the responsibility to submit documents using the correct file naming convention standards. Below is an example of how a file shall be submitted to NRI through the RIMS UI. RIMS will allow file uploads up to 16MB.

#### File name guideline for submittal attachments

ISO Project Code: 20GEN1234 Document Title: SLD (Column A in NRI Checklist Spreadsheet) Version Number: VerX (X = Number) Example: 20GEN1234 SLD Ver1

Examples of Bad Document Titles 20GEN1234\_SLD\_Ver1 20GEN1234 SLD 3LD Ver1

For Non- RIMS UI project types: **Email Subject Line** Email subject lines must include the Project code and must be **isolated** from any other text or characters.

Example of good email subject lines:

20SCME1234 SQMD 20SCME1234 SLD

Examples of bad email subject lines:

20SCME1234: SQMD 20SCME1234\_SLD

## k. New Resource Implementation Checklist

The <u>New Resource Implementation Checklist</u> outlines all deliverables by Buckets and their corresponding approval dates.

# I. Quick Reference Email Subject Lines for Non-RIMS UI Project Types

Quick Reference Email Subject Lines to be sent to NRI@caiso.com		
Request for DERP Completion for [Project Name]DERP Completion Request20DERP1234DERP Completion Request		
20SCME1234 Pretesting Notification	Pretest Notification see Section 7.h	

# m. Quick Reference File Name Convention

Quick Reference File Name Conventions			
Bucket 1			
Interconnection Agreement	20GEN1234 IA Ver1.pdf		
Metering Scheme Overview	20GEN1234 MeteringOverview Ver1		
Communication Block Diagram	20GEN1234 CommBlock Ver1.pdf		
Three Line Drawing	20GEN1234 3LD Ver1.pdf		
Single Line Drawing	20GEN1234 SLD Ver1.pdf		
PE Stamp Attestation Letter	20GEN1234 Attestation Ver1		
Remote Intelligent Gateway Details Form	20GEN1234 RIGDetails Ver1.docx		
Topographical Map	20GEN1234 TopoMap Ver1.xlsx		
Met Sharing Agreement Contract	20GEN1234 TopoMap Contract Ver1.pdf		
Site Information Form	20GEN1234 SiteInfo Ver1.xlsx		
Generator Dynamic Model File	20GEN1234 DYNGEN Ver1.dyd		
Generator Positive Sequence Load Flow Data	20GEN1234 PSLF Ver1.epc		
Network Application Information	20GEN1234 NetAppInfo Ver1		
Bucket 2			
Meter Configuration Worksheet	20GEN1234 MeterConfig 1234567 Ver1.docx		
SQMD Meter Configuration Worksheet	20GEN1234 SQMD MeterConfig 0000000 Ver1.docx		
Bucket 3			
Final Generator Resource Data Template	20GEN1234 FinalGRDT Ver1.xlsx		
Final Generator Resource Data Template Explanation	20GEN1234 GRDT Explanation Ver1.xlsx		
Final Generator Resource Data Template Supporting Doc	20GEN1234 FinalGRDT Supporting Doc Ver1.xlsx		
Participating Intermittent Resource Letter of Intent	20GEN1234 PIRPLOI Ver1.docx		
Ca Energy Commission (CEC) – Pre-certification	20GEN1234 CECPreCert Ver1.pdf		
Control and Protection Documentation	20GEN1234 ControlProtection Ver1.pdf		
Control and Protection Inverter Report (Solar PV only)	20GEN1234 ControlProtection InverterReport Ver1.pdf		
Control Protection Inverter	20GEN1234 ControlProtectionInverter Ver1.xIsm		
(AC) Selection Letter	20GEN1234 SCAcceptance Ver1.pdf		
(SC) Selection Letter	20GEN1234 SCSelection Ver1.pdf		
(SC) Relinquish Letter	20GEN1234 SCSelection Relinquish Ver1.pdf		
24/7 Contact Information form	20GEN1234 24HourContact Ver1.xlsx		
CPS Subscribers Agreement for (Real-time device)	20GEN1234 CPSAgreement Ver1		
External Network Guidelines (ENG)	20GEN1234 ECNAgreement Ver1.pdf		
Meter Exemption Request	20GEN1234 MeterExemption Ver1		
Distribution Compensation Factor Supporting	20GEN1234 DCF Ver1		
Documentation			
Bucket 4			
Interconnection Approval Letter from (PTO)	20GEN1234 PTO Sync Approval Ver1.pdf		
Bucket 5			
Meter and Site Verification Sheet	20GEN1234 MSVS 1234567 Ver1		
Meter Calculation to Point Of Receipt Document	20GEN1234 PORCalc 1234567 Ver1		
Telemetry Exemption	20GEN1234 TelemetryExemption Ver1		
Final Control & Protection Report	20GEN1234 FinalControlProtection Report Ver1.pdf		
Bucket 6			

PTO Final COD Approval Letter	20GEN1234 PTO COD Approval Ver1
COD Declaration Letter	20GEN1234 CODDeclaration Ver1.pdf
COM Declaration Letter	20GEN1234 COM Declaration Ver1.pdf
COM Implementation Plan	20GEN1234 COMPlan Ver1

## New Resource Implementation Email Inbox

\*\*\*All documents will now be submitted through the RIMS User Interface (UI) \*\*\*

For DERP/WEIM SCME Projects: Interconnection Customers will submit the documentation to <u>NRI@caiso.com</u>. IC must include Internal ISO Project Number in the email subject line. Failure to do so will result in NRI rejecting the email document submission. Please do not submit documents for more than one project in a single email. All documents attached to an email must comply with NRI file naming conventions as described above.

# 3. ISO Bucket Dates

The bucket dates are not cutoff dates, but the final dates by which deliverables must be accepted by the ISO. This means that **submissions must be given a sufficient amount of time (no less than 10-15 business days)** to be reviewed and accepted. The generator owner should also give adequate time to resubmit corrected deliverables so that the ISO is able to review and comment on the resubmission.

Bucket items submitted after being previously accepted or conditionally accepted will be rereviewed by the business unit with updates notated within RIMS. Notify NRI that a new version has been submitted via email to <u>NRI@caiso.com</u>, explaining the specific changes that occurred.

Bucket 1 and Bucket 2 dates are now derived from the Customer Model Document Submission Deadline date posted on the <u>Full Network Model</u> (FNM) schedule. In order to be assigned to a Full Network Model, customers must have the required Bucket 1 items accepted by the FNM Document Submission Deadline date.

Bucket 3 -5 dates will continue to be derived from the projects estimated implementation/QF date. It is imperative to declare a **realistic** implementation date. If the implementation date is moved out in the calendar year, more time is given to submit your deliverables. For example, if the estimated implementation date is pushed out by one day, the Bucket 3-5 approval dates will be pushed out by one day.

Please note that if an interconnection customer does not enter into the NRI process far enough in advance from the planned implementation date, the ISO cannot ensure that the interconnection customer's resource ID will be in the market systems on the implementation/QF conversion date requested. This is important for generators with Realtime device installations. Please be sure to pay close attention to the FNM Submission deadline dates in conjunction to your implementation/QF conversion date when determining when to start your NRI project.

The ISO website has posted the dates of when a new production models will be released in the <u>Full Network Model</u> (FNM) schedules.

The definition of synchronization is commonly misunderstood to be back feeding to a transformer and this is not the same as the ISO term of production of energy to the grid. When the generator estimates a production of energy this is the synchronization date.

NOTE: All dates indicated in NRI Guide and Checklist should be considered as calendar days unless otherwise noted.

California ISO observes the following nine (9) designated holidays:

New Year's Day Martin Luther King's Birthday President's Day Memorial Day Independence Day Labor Day Thanksgiving Day after Thanksgiving Christmas Day

# 4. Qualifying Facility (QF) Conversion Path

# a. 3 Party QF Conversions Queue Position Number

3 party QF Conversions will need to fill out the IR form and submit to the email address below to obtain an App&Study Project ID and Queue Position Number. This Queue Position number will need to be placed in the project details form (section 3G) when creating the project in RIMS.



The IR form is located at this link:

http://www.caiso.com/Documents/InterconnectionRequestForm.docx (No need to fill out Appendix 1 referenced at the bottom of this form)

Send Form to RegulatoryContracts@caiso.com for processing. The App&Study Project ID and Queue Position Number will be assigned and viewable in the APP&STUDY module.

# b. Qualifying Facility (QF) Conversion Completion

Qualifying Facility (QF) conversion projects will not have an initial synchronization or COD. Upon completion of all ISO requirements, New Resource Implementation will notify all parties listed as points of contact via email that the project has completed the QF conversion.

Major milestones for achieving QF completion include:

- <u>Requesting QF Conversion</u> (no sooner than 10 calendar days from the date the request is submitted to the ISO)
- Validation of the ISO meter and the corresponding issuance of a Certificate of Compliance
- Applicable executed agreements, and functional telemetry (if applicable)
- Submit any Distribution Compensation Factor (DCF) Supporting Documentation

Please refer to the NRI checklist project columns Existing QF or QF Wind. If there is not an ISO Resource ID already modeled then the QF Conversion must follow the complete NRI process.

# c. Timing of Scheduling Coordinator (SC) changes and Meter Certification

Existing resources changing Scheduling Coordinators during the transition to become ISO Metered Entities (ISOMEs) must be cautious in the timing of the Scheduling Coordinator effective date. The effective date is agreed upon between the SC and the resource owner in the SC Selection and Acceptance in Bucket 3. Resources should not change SCs before receiving the ISO Certificate of Compliance (not to be mistaken with the ISO meter certification form), which is a prerequisite for meter validation and the issuance of the Certificate of Compliance. Changing a Scheduling Coordinator before the ISO Certificate of Compliance is issued may result in a loss of revenue due to a gap between the Scheduling Coordinator submitted meter data and the new ISO polled meter data.

If changing SC's prior to project completion please submit the following letters to SCRequests@caiso.com:

- SC Acceptance Letter (from the new SC)
- SC Selection Letter (from the Interconnection Customer)
- SC Relinquish Letter (from the current SC)
- The effective date is agreed upon between the SC and the resource owner in the SC Selection and Acceptance letters in Bucket 3.

The effective date of the SC change should be either the day of the ISO Certificate of Compliance or after.

# d. Regulatory Must-Take

Owners of Combined Heat and Power (CHP) resources who wish to receive RMTG scheduling priority in the markets must first register the RMT Max values maximum capacity eligible for RMTG scheduling after qualifying per tariff requirements. Effective December 11, 2012, CHP Resources became able to qualify a percentage of their capacity for RMTG scheduling priority up to PMax to support the resources' host industrial load requirements.

You can find additional information on the procedure at this link.

# e. Submitting Final Meter Documents

The final metering package (meter site verification sheet, and others if applicable) must be accepted before the resource owner can request a QF conversion date with the ISO. To ensure successful acceptance of meter document, review and abide by the BPM for Metering, not limited to Attachment C.

# f. Request for QF conversion to the ISO

Once all the Buckets 1 through 5 items are accepted, the resource owner shall request a QF conversion through the RIMS User Interface by selecting the green QF Conversion button. This button will turn green once all the Bucket 1-5 Items are accepted. The requested QF conversion date shall be no sooner than 10 calendar days from the date the request is submitted to the ISO through RIMS. The requested QF conversion date will represent the transition from Scheduling Coordinator submitted meter data to ISO submitted meter entity data. This request will trigger the ISO EDAS team to contact the associated Scheduling Coordinator involved and the ISO EDAS team.

**To submit a request for QF Conversion**: Select the "QF Complete" Request in RIMS User Interface



# g. QF Conversion Project Split

If a QF conversion that is keeping an existing Market Resource ID with a PPA that is expiring can create two projects In this scenario, the two projects will need to be created in RIMS to have the metering portion of the work completed prior to the real time device completion for the QF conversion. Please contact NRI for further instructions.

# 5. Bucket 1 -Full Network Model and Forecast Preparation

#### <u>The following deliverables are required to create an ISO market Resource ID and to be</u> <u>modeled in the Full Network Model (FNM).</u>

## **3-Party Interconnection Agreement**

Within the Queue Management process, if your project has an MMA in process or has not yet been approved this may result in a delay in the creation of the NRI project or the project being modeled in the FNM.

## **Real- Time Device and Metering Submittals**

Metering submissions are critical items that are required in Bucket 1 to assign Meter Device ID(s) and approve the installation of the ISO meter(s). Document requirements for metering can be found in the Metering Business Practice Manual (BPM) section 3.2.3.4.

# a. Single Line Drawings

A Single line drawings are required to be "Issued for Construction" (IFC) with a <u>valid</u> <u>Professional Engineer (PE) stamp</u>. Existing sites, such as a Qualifying Facility, need to submit As-Built drawings with a professional engineer stamp if redrawn from an original asbuilt drawing. These drawings will be used to model the resource in the ISO market and for the RIG database which is submitted to ISO Energy Management System (EMS). A <u>proper</u> single line is used for both Metering and real-time device submittal.

Document Title: SLD

File naming example: 20GEN1234 SLD Ver1

#### Common single line submission problems include:

- Submitting unnecessary drawings that don't apply to the requirements. For example, foundation cross sections, panel drawings, and lighting in the parking lot. The drawing package with these in the submission will be sent back.
- ISO specific metering location which does not depict the location of the meter on the generation bus or line.
- No title block with revision history.
- Missing labels on breakers and transformers. The labels will be the actual name in the ISO EMS.
- Not clearly stating connection point to the grid. Text on the drawing should show the nearest substation with bay location at switchyard/switch station, or line tap point with

pole number in each direction. This can also be submitted as a supplemental document.

- Non-Issued for Construction drawings. The ISO only reviews P.E. stamped construction drawings.
- Auxiliary load and load rating is not clearly defined.
- Capacitor bank left off of the drawings. The breaker labels, capacitor banks, and ratings need to be on the drawings.
- Please submit the Single Line Drawing and 3 Line Drawing in to NRI together using the RIMS UI. This helps the approval process for each document to make sure the data matches.

Single Line Drawing Requirements

## b. PE Stamp Attestation Letter

If a Scheduling Coordinator Metered Entity does not have a Local Regulatory Authority, or if their Local Regulatory Authority does not have any Metering standards set, then Scheduling Coordinator Metered Entities are required to meet California ISO Metering standards. CAISO requires Single Line drawings that are either "Issued for construction" or "As - Built". All the "Issued for Construction" drawings are required to be stamped by a Professional Engineer (PE).

In the absence of the Professional Engineer stamp, CAISO accepts an attestation letter. Stamp Attestation letter must be from the Electrical Engineer and it should state that the Single Line Drawing is the exact physical and electrical representation of the resource.

Document Title: Attestation

File naming example: 20GEN1234 Attestation Ver1

#### c. Interconnection Agreement

A current executed Two-Party Generator Interconnection Agreement (SGIA, LGIA, WDAT, Rule21 etc.) must be submitted to NRI. The Legal Entity listed on the Two-Party Generator Interconnection Agreement must match exactly the Legal Entity requesting a market participation agreement.

Note: If the resource is engaged in a Three-Party Agreement with ISO, this requirement does not apply.

Document Title: IA

File naming example: 20GEN1234 IA Ver1

#### Common Interconnection Agreement submission problems include:

• If the Legal Entity listed on the Two-Party Generator Interconnection Agreement does not match exactly the Legal Entity requesting a market participation agreement, the Interconnection Customer will need to submit the Two-Party agreement. An updated amendment which specifies change in Legal Entity, or legal documentation verifying the connection between the two legal entities, i.e., membership agreement, ownership agreement, etc., will be required. This can be sent in as supporting documentation to the IA.

File naming example: 20GEN1234 IA Supporting doc Ver1

 Missing Dates, signatures, current appendices, missing net capacity or point of interconnection and /or expiration date of agreement.

# d. Network Application Information

The Network Application information is required to assign projects a resource identifier. The type of information needed includes generating unit data, transformer data, generating unit interconnection facility data, breaker data, aux load, and reactive supportive devices. Please locate the NetAppInfo Template on our <u>website</u> (under Bucket 1) and submit to NRI through RIMS UI.

In addition to the information to be provided above, please include the following information:

- 1. Identify the specific bay or bank the project will connect to at the ISO controlled substation.
- 2 If connecting to a new PTO substation, the substation name needs to be specified.

#### Document Title: NetAppInfo

File naming example: 20GEN1234 NetAppInfo Ver1

## e. Three Line Drawings

Three line diagrams are required to be "Issued for Construction" (IFC) with a <u>valid</u> <u>Professional Engineer (PE) stamp</u>. Existing sites, such as a Qualifying Facility, need to send As-Built drawings with a professional engineer stamp if redrawn from an original as-built drawing. The drawings are reviewed for proper CT/PT ratios, polarity orientation, other devices which share the circuit, and for overall appropriateness to meter the site.

Note: The 3LD is not required if electing to participate as SCME.

Document Title: 3LD

File naming example: 20GEN1234 3LD Ver1

#### Common three line submission problems include:

- No polarity markings for the CTs on the three-line drawing. Show polarity marks on each phase. Polarity must point out to the grid connection, not toward the generator. Existing generators need to have accurate drawing of the polarity, add them if needed to the as-built drawing.
- Submission of excess documentation that is not listed in the NRI checklist as required will be deleted.
- Current, voltage, and power transformer ratios are missing. Provide them directly on the drawing. For existing generators, add the ratios directly on the drawing.
- Documentation that does not support required technical data on the drawings. Documentation should be the CT/PT nameplate data, factory testing or the factory order that can support the drawings.
- Not depicting the ISO primary and backup (if applicable) metering location on the generator bus or line.
- Title block with incorrect revision history. It is common for this not be updated, which results in confusion for reviewers.
- Please submit the Single Line Drawing and 3 Line Drawing in to NRI together through RIMS UI. This helps the approval process for each document to make sure the data matches.

Three Line Drawing Requirements

# f. Communication Block Diagram

Communication block diagram is required for the EDAS group. This document must be specific and include all communication protocols used, types of cabling or fiber optic cabling, etc. The document should depict devices having backup power and show that they meet the power requirements of the BPM for Direct Telemetry section 9.3.

#### Document Title: CommBlock

File naming example: 20GEN1234 CommBlock Ver1

Common communication block diagram submission problems include:

- The ISO only needs to see the all the physical devices. Logical network connection will only confuse the intent of the document.
- Lines that connect all the devices together need to have cabling medium and protocols used over those connections.
- No revision control in the drawing legend.
- Changing the block diagram drawing layout after multiple comments are made on the initial drawing submission.
- Not appropriately naming all communication devices that make up the network.

# g. Site Information Form

Site Information Form must be completely filled out before submitted to NRI. For plant location, the Eligible Intermittent Resource must use latitude and Longitude expressed in degrees/decimals using WGS84 geodetic datum only. When filling out location of meteorological stations ensure to provide the meteorological station equipment information in the site information sheet including detail on the sensors, make and model, that are used to gather the meteorological measurements. Supplemental information may be required if the information provided on the information sheet is insufficient to generate a forecast. If the solar resource will be sharing meteorological data with another resource, then contracts between the host plant and the shared plant will be required. NOTE: Once the resource ID is assigned, it can viewed in the RIMS UI or found in the FNM progress report sent by NRI.

#### Document Title: Site Info

File naming example: 20GEN1234 SiteInfo Ver1

#### Common site footprint submission problems include:

- Incomplete/missing information.
- Incorrect GPS coordinate types.

# h. Topographical Map

The topographical map is submitted for **renewable resources only**. This is a topographical plot plan map that depicts all the boundaries of the site and the topology of the land for forecasting purposes. The map must identify all meteorological stations and turbine/panel location by latitude and longitude and should be in degrees/decimals using WGS84 geodetic datum only. See the <u>Tariff Appendix Q</u> for more information about this requirement. For wind resources the purpose of this document is for our engineers to utilize the locations of turbines and the topology of the land to determine the designated turbines that will be used for forecasting purposes. A wind resource will need to illustrate the location and height for each wind turbine within a wind park.

#### Document Title: TopoMap

#### File naming example for Met Sharing Contract: 20GEN1234 TopoMap Contract Ver1

#### Common topographical map submission problems include:

- Not submitting a topographical map that shows elevations lines.
- Meteorological (MET) station towers are not identified on the drawing.
- MET stations are not numbered. The number is used in the ISO EMS database.
- Missing GPS coordinates on the topographical map or missing a submitted document that states the coordinates.

# *i. Met Sharing Contract*

If a solar resource is sharing a met station, then a sharing agreement document must be submitted along with the site sheet and topo map in Bucket 1.

The sharing agreement should state that the resources that are sharing met data, specifying the host resource ID and shared resource ID with signatures from both resources. It should also include the location and model/make of the met station being shared.

In order for resources to be approved to share they must meet the requirements specified in section 3.2.1.4 of Appendix Q. CAISO will perform an analysis of data from the resource to ensure 3.2.1.4c is met. Prior to approving the bucket 1 documents we ask that irradiance data from both sites is sent to <u>STFVERonboarding@caiso.com</u> for a preliminary analysis. Data should include thirty days of five minute average irradiance data. If this preliminary analysis returns satisfactory results then the bucket 1 items will be given a preliminary acceptance.

There will be a follow-up analysis performed once CAISO is receiving generation data. This further analysis looks at the linear relationship between the irradiance from the shared met station and the generation of the sharing resource. If the R2 for that relationship is sufficiently high, the resources are sufficiently similar and can share. If the relationship is not shown to be sufficiently high, then the sharing resource will require a new meteorological station to be installed.

#### Document Title: Contract

File naming example: 20GEN1234 TopoMap Contract Ver1

# j. Remote Intelligent Gateway Details Form

<u>Remote Intelligent Gateway Details form</u> is required to be filled out so the project can enter into the ISO EMS process of building the site's database. The RIG Details form has the IP address that is required for a project to be submitted into the Energy Management System (EMS) build schedule.

There is three communication paths to the ISO real-time system for resources that require to install a real-time data RTU/Real-time device. Establishing a communication path with the following:

- 1) AT&T and the Energy Communication Network (ECN) service. This option will require a Real-time device or configuration. Orders are placed with AT&T.
- 2) ANIRA. AT&T ECN with ISP VPN for the "last mile". Orders are placed with AT&T.

AT&T Contact	<b>Contact Information</b>	
Account Manager: Jennifer	925-451-0017	
Ravazza	jm7929@att.com	
Client Solutions Executive:	201-851-2077	
Magdi Omar	mo2747@att.com	

3) Public ISP. Internet Service Provider (ISP) with any provider that can allocate a **static** Internet Protocol (IP) address. This option will require a Real-time device or configuration.

In all cases, the resource owner **will need** to renew and physically install the ISO encryption certificate every three years.

#### Document Title: RIGDetails

File naming example: 20GEN1234 RIGDetails Ver1

#### RIG Detail form common submission problems include:

- Submitting in wrong file formatting (should be .docx not .pdf)
- Sending an email with the TCP addresses in the body of the email.
- Calling the ISO and giving someone a message of the TCP addresses.
- The ISO doesn't want firewall/router translated IP addressing.

## k. Generator Dynamic Model File

This file is required for all new generators that enter the ISO markets. It is used to model the generator dynamic attributes and how they affect the connection at the grid.

#### Document Title: **DYNGEN**

File naming example: 20GEN1234 DYNGEN Ver1

#### I. Generator Positive Sequence Load Flow Data

Interconnection Customer must submit PSLF data to the ISO for modeling of a particular project. EPC may be provided in place of a PSLF. Additionally, the ISO does **not** accept PSSE files in place of a PSLF.

#### Document Title: PSLF or EPCL

File naming example: 20GEN1234 PSLF Ver1

#### m. Non-Bucket Item

#### **RIG Initial Spreadsheet**

This spreadsheet is provided by ISO Energy Data Acquisition Specialist (EDAS) group. The points list provided are required in order to participate in the ISO market. The points list will be built into the ISO market systems as shown in the spreadsheet, if there is any errors in scaling, naming or the list of point in general then the interconnection customer must email any error to EDAS@caiso.com

#### Common submission problems include:

- Changing or renaming ISO point names and their attributes. There is an area to the right of the ISO points to put other integration information.
- Once EDAS group sends the initial spreadsheet no response needed from the interconnection customer.

# 6. Bucket 2 - Regulatory Contracts and Model Testing

Bucket 2 is the time to get the regulatory contracts started, submit the necessary information for ISO forecasting (Eligible Intermittent Resources only).

## a. Regulatory Contracts

The Meter agreements and Participating Generator agreements are auto-populated from the information submitted to NRI through the project details form and reviewed by Regulatory Contracts prior to the execution process. It is the responsibility of the customer to include the correct contact information, people who are authorized agents for the entity holding the agreement, in the NRI Project Details Form at project creation. If any changes or updates need to be made, the project details will need to be updated through the RIMS UI. Incorrect information will delay the process.

All other agreement types, not yet auto-populated through Regulatory Contracts ISO webpage, are located under Pro forma agreements and associated documentation.

Helpful Tips:

- Full Legal Name of Company/Entity and Legal Address of Company/Entity must match what is currently listed on the Secretary of State Business License (information will be checked and verified in State Business License Database).
- For the meter agreements, meter access for third parties, which is anyone other than the agreement holder i.e.; ABC Solar, LLC or Scheduling Coordinator (SC), must be included in the information request sheet that is submitted to Regulatory contracts.
- Please check with your SC to see if they use any third party companies and also check to see if any parent company legal name needs to be listed.
- If the project is going to be sold, please inform RegulatoryContracts@caiso.com. This
  is important, even if the legal entity name does not change. Regulatory Contracts will
  need documentation to support the change of ownership in order for the new owners
  to have proper access and authorization to project details.
  Link for Assignment/Change of ownership: CAISO Assignment Instructions

Please email RegulatoryContracts@caiso.com if you need assistance.

## b. Meter Configuration Worksheet

The purpose of the ISO Meter Configuration Worksheet is to allow the Energy Data Acquisition System (EDAS) group to set-up the meter configuration in MV90 and communicate with the meter. Please note that the Site Owner is responsible for the accuracy of the information on this form.

#### Document Title: MeterConfig [Meter Device ID]

File naming example: 20GEN1234 MeterConfig 1234567 Ver1

SQMD Plans:

The purpose of the SQMD plan template is to allow the EDAS group to verify the physical metering standards and resource algorithms. Please note that the Site Owner is responsible for the accuracy of the information on this form.

#### Document Title: SQMD MeterConfig

File naming example: 20GEN1234 SQMD MeterConfig 0000000 Ver1

Review Procedure 5750 for process details regarding SQMD - Settlement Quality Meter Data (SQMD) Plan – Submission & Approval Process.

When submitting the SQMD plan through RIMS include the seven zeros shown above in the file naming example in the file naming convention.

\*\*When the resource has more than one meter, please use the "SQMD plan template Additional devices form". Both SQMD Plan Template and SQMD plan Template additional devices form can be combined into a single PDF file and submitted to NRI or can be submitted separately.

#### Additional Metering Devices Form

If the documents are submitted separated, please use the below file name convention for SQMD plan Template additional devices form.

File naming example:

20SCMEXXXX SQMD MeterConfig Additional Metering Devices Form 0000000 VerX

# 7. Bucket 3 - Market Preparation

These items are the most critical to reach the desired market date with the ISO. The Bucket 3 deliverables need careful consideration and planning. All the bucket 3 items are required and shall be accepted 30 days in advance of initial sync/implementation of the resource.

# a. Final Generator Resource Data Template & Supporting Explanation

The final Generator Resource Data Template (GRDT) is typically reviewed by the Scheduling Coordinator. The final GRDT is needed for populating the ISO Master File.

NOTE: The Max\_Gen must be equal to or less than the net output to the grid listed on the PGA Schedule 1.

#### Document Title: FinalGRDT

File naming example: 20GEN1234 FinalGRDT Ver1

#### Document Title: GRDT Supporting Docs

File naming example: 20GEN1234 FinalGRDT Supporting Doc Ver1

# b. GRDT Explanation

The final GRDT should be accompanied with a supporting explanation that include details about how the resource's design capabilities were calculated. The CAISO may request additional supporting materials, such as test results, manufacturer recommendations, historical data, resource operating procedures, engineering studies, etc., with citations to specific page numbers or section numbers to allow the ISO to validate that the values reflect the design capabilities of the resource.

Section 4.6.4 of the tariff requires resource information submitted to master file to "be an accurate reflection of the design capabilities of the resource and its constituent equipment when operating at maximum sustainable performance over Minimum Run Time, recognizing that resource performance may degrade over time." The design capability refers to how the resource and its equipment was designed to operate under normal conditions, subject to whatever performance degradation the resource has experienced over its lifespan.

#### Document Title: GRDT Explanation

File naming example: 20GEN1234 GRDT Explanation Ver1

# c. Participating Intermittent Resource Letter of Intent

For more information about the PIR Letter of Intent please see section A.13 of <u>the BPM for</u> <u>Market Operations appendices</u>.

Document Title: PIRPLOI Example: 20GEN1234 PIRPLOI Ver1

# d. California Energy Commission (CEC) – Pre-certification

Participation in PIR requires <u>CEC Pre-Certification for Renewable Portfolio</u>. PIR Certification will require a minimum evaluation period consisting of 60 days with good quality data after the project has achieved Commercial Operation Date (COD) or Commercial Operations for Market (COM) and have been setup in ISO systems as an Eligible Intermittent Resource (EIR). Projects that have a Phased implementation schedule in their Generator Interconnection Agreement must be pre-approved by the ISO to begin the PIR evaluation prior to 100 percent of the resource being commercial. A request for PIR Certification must be submitted by the generator owner and accepted by the ISO during the planning stage (prior to project design or contract execution) in order for the PIR Certification evaluation to occur prior to 100% of project capacity achieving COD. The ISO will review and approve such requests on a case-by-case basis and will require the phasing proposal 1) to align with the interconnection documents. For the CEC Pre-Certification please visit <u>California Renewable Energy Overview and Programs</u>

#### Document Title: CECPreCert

File naming example: 20GEN1234 CECPreCert Ver1

# e. Control and Protection Documentation

This documentation is only required for Interconnection Customers connecting directly to the ISO controlled grid, if the net export to the ISO controlled grid is 10 MW or greater, or when a generator has gone through the ISO Application and Study queue process.

#### **Control Protection**

As a minimum, the following documentation must be submitted: (1) a one-line diagram showing relaying, metering, CTs, and PTs; (2) a three line diagram, (3) circuit breaker trip and close control circuits (typically DC) for all circuit breakers, (4) a bill of material for all protective relays, (5) a complete list of relay settings for all protective relays, including selected CT and PT ratios, trip equations, and frequency set points if used. After the relay settings have been reviewed and accepted by the ISO, the Generator may have the protective relays programmed and tested. The IC must submit copies of the relay certified Test Reports. Note: the ISO recommends that the relay settings be submitted and reviewed by the ISO prior to having the relays programmed and tested.

The Generator should note that the ISO does not have access to proprietary software such as SEL Accelerator, etc. The best way to submit relay settings is to provide the information on the sample setting sheets that are included with the relay operating manual. These can then be submitted in a PDF format. The Relay ID field must match the relay name used on the single line diagram. Also, it is generally best to submit one relay setting per PDF file.

Note: If a file size is too large to submit in one file you may break up submission into multiple files. For example: 20GEN1234 ControlProtection 1 of 3 Ver1, 20GEN1234 ControlProtection 2 of 3 Ver1, 20GEN1234 ControlProtection 3 of 3 Ver1.

#### Document Title: ControlProtection

File naming example: 20GEN1234 ControlProtection Ver1

#### **Control Protection Inverter**

Inverter based generation: In addition to the above requirements, all Generators and storage facilities using inverters (e.g. solar PV, wind turbines, etc.) must submit documentation that the inverters have been programmed with protection codes (if used) that are in compliance with the most recent version of NERC Standard PRC-024. If off nominal frequency protection is used, it must be in compliance with the Western Variance in the most recent version of NERC Standard PRC Standard PRC-024.

# When submitting the Inverter Report use the Generating Facility Data - Attachment A to Appendix 1 template located on the ISO Interconnection request page.

The inverter report should also contain the following information: (1) an explanation of whether momentary cessation or reactive current injection (Q priority) is used. If momentary cessation is used, the inverter report must contain the voltage settings at which the inverter will enter cessation, and the time it takes to return back to normal (P priority) mode following clearance of the disturbance. If reactive current injection is used, the report must include the voltage settings at which the inverter will enter this mode, the time the inverter takes to return to normal (P priority) mode following the clearance of the disturbance, and also the K factor that is used. The CAISO prefers reactive current injection with K factor equal to 2. Note that the most recent pro forma generation interconnection agreements (GIAs) no longer permit momentary cessation. (2) The inverter report should indicate whether the anti-islanding is activated (3) the inverter report should contain the ramp rate of the inverter during start up and shut down. (4) The inverter report should include the model number of the inverters to be installed at the project site.

#### Document Title: ControlProtectionInverter

File naming example:20GEN1234 ControlProtectionInverter Ver1

#### Control Protection Inverter Report

In addition to the above requirements, all Generators and storage facilities using inverters (e.g. solar PV, wind turbines, etc.) must submit documentation that the inverters have been programmed with protection codes (if used), and LGIA requirements to be in compliance with the most recent version of NERC Standard PRC-024 and FERC recommendations. When submitting the Inverter Report use the file name below, separate from the Control Protection files.

#### Document Title: ControlProtection InverterReport

File naming example:18GEN1234 ControlProtection InverterReport Ver1

# f. Scheduling Coordinator (SC) Selection and Acceptance

The scheduling coordinator association letters should be submitted using RIMS UI at <u>least</u> 14 business days prior to the effective date in order to be processed. The SC letters are used for the SC association and the effective dates in each letter shall match.

The effective date black out range are the dates that the scheduling coordinator association CANNOT be effective. Black out dates are from Tuesday to Thursday the week of model production deployment. The effective dates must be after the assigned DB Model implementation date. These dates can be found in the <u>Full Network Model Schedule</u>. Regulatory contracts must be completed prior to submission. The Final GRDT and Final GRDT Explanation must be accepted before SC Letters are reviewed.

#### Document Title: SCSelection

File naming example: 20GEN1234 SCSelection Ver1

Document Title: **SCAcceptance** 

File naming example: 20GEN1234 SCAcceptance Ver1

Templates for these letters can be found here

#### Common problems are:

- Scheduling Coordinator Selection and Acceptance letters' effective dates do not match.
- Scheduling Coordinator letters are submitted too close to the synchronization date of the generator. <u>The process takes 7 business days to complete and cannot be</u> <u>expedited.</u>
- Letter is not on official letterhead.
- Final GRDT and Regulatory Contracts must be completed prior to SC Letters being accepted.
- The ISO requires that resources provide the EIA data to the ISO prior to the SC Association process being completed.

# g. Balancing Authority Extreme Weather Template

The Extreme Weather template is available for entities that are **Generator Owners for physical**, **NERC-registered**, **BES generation** to submit their generator's cold weather attributes.

Generator Owners shall have their Scheduling Coordinator provide the requested data via CIDI ticket once the resource SC association is effective.

Data can be provided using the Balancing Authority Extreme Weather Template posted on the CAISO website under Market & Operations > Network and Resource and Modeling > Resource Data Submission section.

Please ensure submissions include the resource ID in the template for processing.

# These data changes must be submitted before approval of commercial operation for new resources and as soon as practicable for existing resources.

The California ISO's operating procedures are available on the <u>Operating Procedures</u> <u>webpage</u>, including 3140, TOP-003 TOP – BA Data Request and Specification Guidelines, and 3140A, TOP-003 TOP – BA Data Request and Specifications for Data Provision. Please submit a CIDI ticket if you have any questions or concerns.

# h. 24/7 Contact Information form

The 24 Hour Contact form must be completed prior to completing the Telemetry point-to-point testing, this form is located <u>here</u> under the Direct Telemetry Standards section. This form is located under Standard documents. Please submit to NRI through the RIMS UI. The IC will need to provide the following contacts: RT24Hour, Primary, Alternate and Certificate contact. The RT24Hour contact must be available 24/7 and have access to or be able to obtain real-time information on the output or status of the resource(s) being monitored by the real-time device. If there is a telemetry failure, this contact may be required to report specified changes in the output of the resource(s) until the problem is resolved. Additional contacts desired would have the ability to troubleshoot telemetry related issues or coordinate telemetry related work (e.g. SCADA specialist, plant manager).

#### Document Title: 24HourContact

File naming example: 20GEN1234 24HourContact Ver1

# i. Device Certificate Request Form for Telemetry

Email to <u>ServiceDesk@caiso.com</u> with the Certificate Signing Request (CSR) file. Allow 10 business days to complete the request. This is a required form for completing the combined telemetry point to point and meter testing. This document is not required to be uploaded into RIMS.

# j. Telemetry and/or Metering Pretesting Email Notification

Email notification from interconnection customer to <u>EDAS@caiso.com</u> stating site has witnessed and approved of the telemetry and Metering pretesting. This must be completed prior to scheduling the final telemetry testing with the ISO. The electrical contractor and telemetry engineering company should perform the pretesting.

Email Subject Line example: 20GEN1234 RIG Pretesting Notification

# k. Telemetry and Meter ISO Testing Scheduled

Required before synchronization is granted by the ISO.

**STEP 1**: The IC should reach out to <u>EDAS@caiso.com</u> to perform a communications check to the real-time device and meters at the site.

**STEP 2:** Once ISO has verified communications the Interconnection Customer will submit request through the <u>Fieldwork Support Request form</u> to schedule the Point to Point testing.

Common problems of Telemetry Point Testing Scheduling are:

• Not preparing for the ISO final point to point testing. All ISO required points should be tested to a Distributive Network Protocol (DNP) Master and should confirm that the real-time device is sending the correct values. The values should match the scaling that is in the Telemetry spreadsheet.

# I. CPS Subscribers Agreement for Real-Time devices

ISO issues digital certificates for use in real-time devices according to the practices described in the Certification Practice Statement for Basic Assurance Certification Authority (CPS). This document can be found <u>here</u>.

Submit this document in .pdf format.

#### Document Title: CPSAgreement

File naming example: 20GEN1234 CPSAgreement Ver1

# m. External Network Guidelines Agreement

This document is required to be signed by the Interconnection Customer to open the EMS communication path to the telemetry before point to point testing will begin. The document should be signed before a meter is configured in EDAS. This document can be found <u>here</u>.

Submit this document in .pdf format and will be named ECN Agreement.

Document Title: ECNAgreement

File naming example: 20GEN1234 ECNAgreement Ver1

# n. Qualified Reporting Entity Service Agreement

For renewable resources to receive Renewable Energy Credits (RECs), the Generator Owner must enlist the services of a Qualified Reporting Entity (QRE) to submit meter data to WECC on their behalf. If the Generator Owner chooses the ISO to act as their QRE, they must first have a QRE service agreement (QRESA) in place with the ISO. Please note, the ISO can only submit meter data for production occurring on or after the effective date of the QRESA.

To initiate a Qualified Reporting Entity Service Agreement (QRESA) submit a Qualified Reporting Entity Service Request Form to EDAS@caiso.com. This form can be located here, under the Options for Participating generators section of the website. The ISO will review the request form for accuracy against the resource Meter Service Agreement (MSAISOME). The MSAISOME must therefore have been executed prior to submittal of the QRE request form. Entities can submit Qualified Reporting Entity Service Agreement request form prior to obtaining Commercial Operation approval.

# o. Distribution Compensation Factor Supporting Documentation

If an ISO Metered Entity is connected to a Utility Distribution Company's (UDC)/Distribution Provider Distribution System, an approved Distribution Compensation Factor (DCF) must be determined and must be programmed into the meter to reflect the point of delivery at the ISO Controlled Grid. WDAT or any letter of agreement of DCF from appropriate UDC/Distribution Company/ Interconnection entity must be submitted to NRI through the RIMS UI prior to programming the ISO Meter with a DCF.

Document Title: DCF

File naming example: 20GEN1234 DCF Ver1

# p. Meter Exemption Request

If a generator resource ISO revenue meter is metering the low side of the transformer, a meter exemption request shall be submitted for approval and emailed to <u>EDAS@caiso.com</u> with the file naming convention listed below. This document can be found <u>here</u>.

Meter Exemption Request Email Subject Line: 20GEN1234 [Complete Project Name] Meter Exemption Request

#### Document Title: MeterExemption

File naming example: 20GEN1234 MeterExemption Ver1



# 8. Bucket 4 – Trial Operations Approval

## a. Getting To Synchronization

At this point Buckets 1 through 4 items are accepted and the metering and telemetry point to point testing must be completed. The testing will include a preliminary validation of the meter data. A final validation of metering and telemetry data will be completed after synchronization using generation data.

Note: The Point to Point test will include a preliminary validation of the meter data. A final validation of metering and telemetry data will be completed after synchronization using generation data.

# b. Interconnection Approval Letter from Participating Transmission Owner (PTO) or Distribution Owner

This letter is required from the PTO granting permission to sync and test the generator. This letter can be used for COD as long as there is clear direction in the letter stating there is no limitation to the connection and generator.

Note: If the letter is a final permission to operate letter as well the letter must be submitted again with the request for COD.

The letter must include:

- ISO Resource ID or NRI project code.
- MW values permitted to be put on the grid for testing.
- All transmission upgrades are completed, if applicable.
- All testing and pre-parallel inspection is completed.

#### Document Title: PTO Sync Approval

Example: 20GEN1234 PTO Sync Approval Ver1

# c. Interconnection Customer Request for Initial Synchronization

The Interconnection Customer submits a request to sync through the RIMS UI to generate test energy out to the grid. This should not be confused with parallel and back feeding the transformer(s). In the RIMS UI, the IC can select the Sync Request button once it has turn green. The Sync Button will turn green once all the Bucket 1-4 items have been accepted. This action will alert all ISO Business Units to prepare for the resource for Synchronize to grid for test energy. When ISO receives this request, the ISO has 10 business days to process the request.

<u>All Bucket 1 through 4 requirements must be received and accepted, including the</u> <u>Participating Transmission Owner Sync Approval letter, before this request shall be</u> <u>processed to all internal business units.</u>

To submit a request for Initial Sync: Select the "Sync" Request in the RIMS User Interface



# d. Test Energy Schedule

Once the sync request has been fully processed and approved, NRI will send the Interconnection Customer a Test Energy Schedule template to be populated and will be provided to the Scheduling Coordinator. Please refer to the <u>CAISO operating procedure 5320</u> <u>Resource Trial Operations and Test Energy Process</u>.

# 9. Bucket 5 – Trial Operations

# a. ISO Internal Approval Process for Synchronization

Below is the internal ISO process of granting initial sync after the Interconnection Customer submits sync request (Section 8.a) after all bucket items have been met. If all bucket items have been accepted the ISO sync approval process will commence from the request in

Section 8.a. Upon ISO approval, NRI will send the Interconnection Customer an email approving the resource for Initial Synchronization allowing a resource to commence Trial Operations.

- **NRI** reviews all resources requesting sync and checks that the Scheduling Coordinator association is complete and review of the Sync Approval Letter. If the SC letters are not submitted at bucket 3 date (no more than 30 calendar days), or the initial sync date maybe be delayed.
- **EDAS group** confirms that all communications to the real-time device and meter are functioning properly. This includes MET stations if required at the generator site. EDAS reviews all resources requesting sync
- **Operational Engineering** will confirm that all grid contingencies will insure grid reliability once trial operations commences. OE only reviews ISO grid connected resource >10MW. Operational Engineering does not approve distribution connected resources.
- **Operations Readiness** has an independent internal check list for required real-time information for resources connected to the ISO control grid.
- Queue Management will confirm all 3-Party LGIA/SGIA requirements for sync have been completed by the Interconnection Customer and PTO. The ISO will reconfirm the PTO letter with the PTO prior to the ISO granting initial sync.

Once all the above business units have confirmed that the resource can start trial operations an email will be sent to the point of contact that trial operations can commence. If any of the above mentioned internal process checks are not completed or confirmed, initial sync will be delayed until corrections have been made.

# b. Meter Site Verification Sheet

ISO Meter and Site Verification Sheet (MSVS) is an auditable document by the ISO internal audit group. This form is used for reportable tariff violations to the ISO governing bodies. The ISO Authorized Inspector must complete an ISO approved MSVS in relation to each set of Metering Facilities that it inspects. The ISO Authorized Inspector provides the most recent test results documenting instrument calibration results by serial number and the traceable link to the National Institute for Science and Technology (NIST). The ISO Authorized Inspector also conducts a site verification and either performs or witnesses the performance of accuracy tests for the Metering Facility installations. Details of these verification steps can be found in the BPM for Metering in Attachment C.

With the MSVS form, all parties are required to sign via DocuSign. This includes the meter installer, meter programmer, ISO Meter Inspector, and Site Owner. The email addresses listed on the MSVS form must be accurate in order to complete the DocuSign signature process. After the signature process is complete the MSVS form will be routed back to the ISO for the certificate of compliance process.

Go to <u>www.docusign.com</u> and click on Login In to create your account. The DocuSign log in email address must match the email address listed on the MSVS form. This account can be used for all future DocuSign signatures.

#### Document Title: MSVS [Meter Device ID]

File naming example: 20GEN1234 MSVS 1234567 Ver1

#### ISO MSVS will be rejected for these common problems:

• Wrong or missing meter device ID

- Street address does not match the PTO initial sync and COD letters.
- Site name is not the same as the PGA and MSA site name.
- Wrong or missing Resource ID. Spacing and underscores are important and must match the PGA, MSA, and GRDT documents.
- Load/Generation Profile and Interval Data Recorder Information. This is a critical part for validating the meter for issuing the ISO Meter Validation Certificate. The certificate is required to declare the generator as commercially operational or COD.
- Display constants does not mathematically line up with the above bullet item. This is a critical piece in the validation process.
- IP address missing or wrong. If the ISO metering systems cannot connect with the IP address on the form and the conclusion is a wrong number, a new form will need to be submitted and will also suspend meter testing until a correct form is resubmitted.

The ISO encourages the generator owner to critically review this document before submission. If this document is rejected, a resubmission is required and can delay the testing and validation of the meter.

\*\*\*Must be ISO accepted 5 business days before COD/QF completion \*\*\*

## c. Point Of Receipt Metering Calculation Document

Metering Calculation Point of Receipt (POR) document, when applicable, describes the transformer and the line loss calculation from the point of metering to the ISO Point of Receipt. It provides test validation that is reviewed and either accepted or commented by an ISO meter engineer. This form is only required for generation projects directly connected to the ISO control grid, those generation projects that have been through the ISO Application and Study process

Document Title: **PORCalc [Meter Device ID]** (See above File Naming Convention and Version Control Standards)

File naming example: 20GEN1234 PORCalc 1234567 Ver1

\*\*\*Must be ISO accepted 5 business days before COD/QF completion\*\*\*

# Meter Certification Documents (<u>Must Be Accepted Before</u> Request for Commercial Operations)

# d. Telemetry Exemption

Telemetry exemption request form is to be used to request a temporary exemption from the ISO Telemetry requirements.

#### Document Title: TelemetryExemption

File naming example: 20GEN1234 TelemetryExemption Ver1

# e. 24 Hour Notice for Initial Sync

The Interconnection Customer's Scheduling Coordinator must contact the ISO Outage Management 24 hours in advance of initial sync and immediately before synchronization for approval. ISO Outage can be reached **Monday through Friday 7:30am to 5:30pm PST** at

#### Ops Planning North:

Ops-North-Outage@caiso.com Phone number: 916-351-2206

#### Ops Planning South:

Ops-South-Outage@caiso.com Phone number: 916-351-2215

# f. Contacting the ISO Real-Time Desk

The Interconnection Customer's Scheduling Coordinator shall contact the ISO Real Time Generation desk at **916-351-2488** for initial and all subsequent synchronization and testing. **Real-time desk can fully or partially curtail trial operations at any time**.

## g. Final Control & Protection Report

This documentation is only required for Interconnection Customers connecting directly to the ISO control grid or when a generator has gone through the ISO Application and Study queue process.

**Please Note**: <u>**Only**</u> submit the Certified Test Reports associated with the relay settings submitted in Bucket 3.

Note: If file size is too large to submit in one file you may break up submission into multiple files. For example: 20GEN1234 ControlProtection 1 of 3 Ver1, 20GEN1234 ControlProtection 2 of 3 Ver1, 20GEN1234 ControlProtection 3 of 3 Ver1

#### Document Title: FinalControlProtection Report

File naming example: 20GEN1234 FinalControlProtection Report Ver1

# **10.** Bucket 6 – Commercial Operation

For participating in ISO market's see the relative BPM's and/or Tariff appendices as needed for further instruction on participation.

## **Requesting and Declaring a Commercial Operational Date**

## a. Meter Certificate of Compliance

The ISO will issue a signed Certificate of Compliance once the metering is validated with live generation data and all documentation has been accepted. This certificate must be issued prior to declaring the resource commercial.

# b. Participating Transmission Owner (PTO) Final Approval Letter

This letter is required to be issued from the PTO before declaring commercial operation date with the ISO. This letter should clearly state that the PTO has given permission to commence commercial operation at a specific MW capacity.

The letter should also include:

- All Contracts are executed
- ISO Resource ID
- MW declared COD
- All transmission upgrades are completed, if applicable.
- All testing and pre-parallel inspection is completed.
- Verification that ISO Queue Management GIA requirements are satisfied or completed, if applicable.

#### Document Title: PTO COD Approval

File naming example: 20GEN1234 PTO COD Approval Ver1

# c. DERP Distribution Owner Final Approval Letter

This letter should include the following:

- All contracts are executed
- ISO Resource ID
- Project name
- Legal entity
- Verification that Concurrence Letter requirements are satisfied or completed, if applicable.
- All transmission upgrades are completed, if applicable.
- All testing and pre-parallel inspection is completed.
- Permission to operate in full capacity at \_\_\_\_\_MW
- Desired Commercial Operation Date (Effective Date)
- Signed/ Dated by Distribution Owner

Document Title: DO Final Approval

# d. Interconnection Customer Request for COD or COM

Once all the Bucket 1 through 5 items have been accepted the Interconnection Customer shall submit a request for Commercial Operation for Date (COD) or Commercial Operations for Market (COM) through the RIMS UI at least 10 business days before the desired date. At this time the COD or COM Request buttons will turn green for the IC to select. This will alert all internal ISO Business units to prepare for Commercial Operations. Once all ISO Business units have reviewed and provided approval (at least 10 business day), the ISO will confirm by email with a date that the Interconnection Customer can declare COD. An alternative date may be granted based on the ISO internal approval process.

**To submit a request for COD or COM**: Select the "COD" or "COM" Request in the RIMS User Interface

General Project Information					
SYNC	СОМ	COD			

# e. Generator Interconnection Agreement Exhibit E Declaration Letter

After completing trial operations and with approval from NRI, Interconnection Customers with a 3-Party Large Generator Interconnection Agreement (LGIA) shall submit the GIA Exhibit 'E' COD letter with the desired Commercial Operation Date on or after the date of the date in the approval email sent from NRI. This COD Declaration letter can up submitted to NRI through the RIMS UI.

# f. COD Declaration Letter (SGIA)

After completing trial operations and with approval from NRI, interconnection customers with a <u>connecting to the distribution grid</u> (SGIA) shall submit the COD Letter template located on the NRI <u>website</u> under Bucket 6 with the desired Commercial Operation Date on or after the date of the date in the approval email sent from NRI. This COD Declaration letter must be submitted to NRI through the RIMS UI.

#### Example: 20GEN1234 CODDeclaration Letter Ver1

## g. Phased COM Implementation Plan

The interconnection customer will submit the Phased Implementation Plan to ISO for review and acceptance. If a hybrid resource, COM plan must also include the fuel type of the resource MW in commercial operation and testing. This document can be found on the NRI website under Bucket 6.

Document Title: COM Plan

Example: 20GEN1234 COMPlan Ver1

## h. COM Declaration Letter

After completing trial operations and receiving the approval of the completion of COM (based on section 10.c) from NRI, the Interconnection customer shall submit the COM Declaration letter through the RIMS UI with the desired effective date Commercial Operation for Market on or after the date of the email from NRI. This document can be found on the NRI website under Bucket 6.

Document Title: COM Declaration

Example: 20GEN1234 COM Declaration Ver1

# i. Pathways to Commercial Operation

Depending on which path you are taking to get to COD. Please see the following roadmaps to finish your project in the NRI Process:

#### **COD** Final Steps Partial COM Final Steps Full Build-out of the Resource Partial COM with Concurrent Trial Operation **1. Interconnection Customer Commercial** 1. Interconnection Customer COD Request **Operation for Markets Process Request** Interconnection Customer shall submit a request for Commercial Operation for Date (COD) through the The commercial operation for markets process is RIMS UI at least 10 business days before the designed for projects with a phased implementation desired date. Once all ISO Business units have plan and to grant projects' partial commercial operation reviewed and provided approval (at least 10 for market participation. This is needed to allow the business day), the ISO will confirm by email with a project to continue to operate in the market while also date that the Interconnection Customer can declare participating in trial operations with test energy for COD. An alternative date may be granted based on remaining megawatt capacity. the ISO internal approval process. Interconnection Customer shall submit a request for 2. Metering and Telemetry Certificate of Commercial Operations for Market (COM) through the Compliance RIMS UI at least 10 business days before the desired date. The interconnection customer will also submit the Once all bucket items are completed and COD Phased Implementation Plan to the ISO using the RIMS notification has been provided the ISO will begin the UI for review and approval. Once all ISO Business units Certificate of Compliance. The ISO must issue a have reviewed and provided approval (at least 10 signed Certificate of Compliance once the metering business day), the ISO will confirm by email with a date and telemetry is validated and with live generation that the Interconnection Customer can declare COM by data and all documentation has been accepted. uploading the COM Declaration Letter through the This certificate must be issued prior to completion of RIMS UI. commercial operations. Interconnection customer will submit test energy 3. Participating Transmission Owner schedules (see Bucket 5) until the project reaches COD (PTO) Final Approval Letter and trial operations cease. This letter is required to be issued from the PTO before declaring commercial operation date with the ISO. This letter should clearly state that the PTO has given permission to commence commercial operation at a specific MW capacity. 2. Metering and Telemetry Certificate of Compliance The letter should also include: Once all bucket items are completed and COM All Contracts are executed notification has been provided the ISO will begin the Resource ID Certificate of Compliance. The ISO must issue a signed MW declared COD Certificate of Compliance once the metering and All transmission upgrades are completed, if telemetry is validated and with live generation data and applicable. all documentation has been accepted. All testing and pre-parallel inspection is completed. 3. Participating Transmission Owner (PTO) **Final Approval Letter** This letter is required to be issued from the PTO before declaring commercial operation for markets date with the ISO. This letter should clearly state that the PTO has given permission to commence commercial operation at a specific MW capacity. A final PTO letter may not be required if the initial sync approval letter has already granted testing and commercial operation.

Full Build-out of the Resource	Partial COM with Concurrent Trial Operation
Full Build-out of the Resource <b>4. Generator Interconnection Agreement</b> Exhibit E Letter (LGIA)After completing trial operations and with approval from NRI, interconnection customers with a 3-Party Large Generator Interconnection Agreement (LGIA) shall submit the GIA Exhibit 'E' COD letter with the desired Commercial Operation Date on or after the date of the date in the approval email sent from NRI. This COD Declaration letter must up submitted to NRI through the RIMS UI. Please send this letter 1 day prior to the COD date. The Exhibit E letter must also include the following: <ul><li>Resource ID</li><li>MW declared COD</li></ul> After completing trial operations and with approval from NRI, interconnection customers with a connecting to the distribution grid (SGIA) shall submit the COD Letter template located on the NRI website under Bucket 6 with the desired Commercial Operation Date on or after the date of the date in the approval email sent from NRI. This COD Declaration letter must up submitted to NRI through the RIMS UI. Please send this letter 1 day prior to the COD date.	<ul> <li>Partial COM with Concurrent Trial Operation</li> <li>The letter should also include: <ul> <li>All Contracts are executed</li> <li>Resource ID</li> <li>MW declared COD</li> <li>All transmission upgrades are completed, if applicable.</li> <li>All testing and pre-parallel inspection is completed.</li> </ul> </li> <li>4. Increasing Commercial Energy <ul> <li>Each time the IC increases the amount of COM megawatts, the Interconnection Customer shall:</li> <li>IC contact the Scheduling Coordinator to submit outages according to ISO Operating Procedure 5320.</li> <li>Submit COM Declaration letter to NRI through RIMS UI, no more than two business days before, stating the requested COM date for the additional capacity.</li> <li>The COM Letter shall state the incremental increase of the COM megawatts.</li> <li>If any changes, please upload a revised COM Implementation Plan through RIMS UI.</li> <li>The IC shall contact the Scheduling Coordinator to adjust the outage card that controls the MW availability by using ISO Operating Procedure 5320.</li> </ul> </li> </ul>
	NRI will then send an email confirming the COM megawatt increase to the IC. If there are additional COM increases continue with these steps up until the final phase increase. To complete the final phase increase to declare Commercial Operation for Date (COD) the IC will upload COD Declaration letter located under Bucket 6 in this guide.

5. Interconnection Customer COD Notification (SGIA) Upon declaring full capacity, the interconnection customer shall submit the COD Letter template located on the NRI website under Bucket 6 with the desired Commercial Operation Date on or after the date of the date in the approval email sent from NRI. This COD Declaration letter must be submitted to NRI through the RIMS UI. Please send this letter 1 day prior to the COD date
6. Generator Interconnection Agreement Exhibit E Letter (LGIA) Upon declaring full capacity, 3-Party interconnection customer shall submit the GIA Exhibit 'E' COD letter with the desired Commercial Operation Date on or after the date of the date in the approval email sent from NRI. This COD Declaration letter must be submitted to NRI through the RIMS UI. Please send this letter 1 day prior to the COD date. The Exhibit E, letter must also include the following:
<ul> <li>Resource ID</li> <li>MW declared COD</li> </ul>