Business Practice Manual for Reliability Requirements

Version ~~37~~39

Last Revised July 25, 2018

Approval History

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Revision History

Version	PRR	Date	Description
39			CCE3 changes
38	1086	9/7/2018	Update CSP intra-month offer submission
37	1063	7/25/2018	Plant-Level NQC
36	1057	6/26/2018	Minor changes - Update Exhibit A-3 section 6.1.3.5, replaced reference to reliability inbox with CIDI, added availability assessment hours for 2019
35	1030	05/01/2018	PRR 1030 – RSI 1B and RSI 2
34	1029	11/29/2017	Revise Availability Assessment Hours for 2018
33	986	07/01/2017	Update Availability Assessment Hours
32	973	5/08/2017	Update language around under construction units
31	951	2/06/2017	PRR 951 – Updating Acquired Resource section
30	888	10/26/2016	PRR 888 – Reliability Services
29	854	5/25/2016	As a result of appeal on PRR 854, foot-note has been removed.
28	881	12/29/2015	PRR 881 – CPM replacement (competitive solicitation process)
27	868	12/01/2015	PRR 868 Clarify ULR Submission Process and PRR 854 Local capacity counting clarification for Reliability Demand Response Resource (RDRR) and Proxy Demand Resource (PDR) resources
26	853	07/01/2015	PRR 853 – Update Exhibit A-2
25	839	04/01/2015	PRR 839 - Change the name of the application that manages resource adequacy capacity information.

Version	PRR	Date	Description
24	776	02/27/2015	PRR 776 - Section 8 outage management system integration: Update Reliability Requirements BPM to support the new outage management system integration and related policy decisions regarding the standard capacity product availability calculations.
23	803	02/10/2015	PRR 803: Annual standard capacity product grandfathering notification process update
22	802	01/15/2015	PRR 802: Automated Multiple Substitutions per Resource
21	787	01/01/2015	PRR 787 Use-Limited Resource Process Updates
20	786	11/14/2014	PRR 786 Flexible RA Capacity
19	743	08/01/2014	PRR 743 Annual SCP Grandfathering Notification Process
18	724	04/01/2014	PRR 724 Supporting the Resource Adequacy one-for-many manual substitution policy initiative.
17	693	10/9/2013	PRR 693 Update Section 4 “Resource Adequacy Capacity” to accurately reflect existing business processes related to the evaluation of RA/Supply Plans and add more granular details related to implementation of the approved Replacement Requirement for Scheduled Generation Outages initiative
16	678	7/3/2013	PRR 678 Update Reliability Requirement BPM for NQC request form, QC timeline, Interim Deliverability, Exhibit A-3 submittal dates, Import Allocation steps, Capacity Procurement Mechanism
15	606	11/23/2012	PRR 606 Addition of Replacement Requirements for Scheduled Outages
14	555	8/9/2012	PRR 555 Replace Transmission Reliability Margin
13	554	6/1/2012	PRR 554 Remove RDRP Language as entered in PRR 458
12	525	4/9/2012	PRR 525 Procedure for Exceptional Dispatch CPM Quantity Designation
11	487	12/2/2011	PRR 487 NRS-RA Generated Bids effective January 1, 2012, PRR 488 Clarity for Substitution timeline effective December 2, 2011
10	458	9/14/2011	PRR 458 Reliability Demand Response Product (RDRP), for Reliability Demand Response Resources (RDRR) – Tariff effective April 1, 2012
9	444	8/5/2011	PRR 444 Deliverability of RA Capacity on Interties

Version	PRR	Date	Description
			PRR 447 Annual LCR Process Schedule
8	439	6/9/2011	PRR 439 Resource Transitions
7	382/424	3/31/2011	PRR 382 Revisions for Implementation of Capacity Procurement Mechanism (CPM) PRR 424 Revisions for Risk of Retirement Capacity Procurement Mechanism (CPM)
6	315	12/28/2010	PRR 315 Additional text for Standard Capacity Product Phase II Enhancements
5	283	8/30/2010	PRR 283 Removal of the SCP calculation of non-availability charge below Pmin as required in FERC Order ER09-1064. PRR 294 Add Exhibit A-3: Import Capability Posting Step 10
4	222	7-28-10	PRR 222 Clarification of the conditions under which Resource Adequacy Resources may be considered for temporary or seasonal use-limited status.
3	89	1-1-10	PRR 89 New Section 8 for Standard Capacity Product New section to describe most aspects of Standard Capacity Product.
2	81	11-18-09	PRR 81 Updated Exhibit A-2 Submission dates for RA Plans and Supply Plans for 2010. PRR 90 Update Supply Plan Content rules. General clarification for the submission of RA Supply Plans.
1		3-27-09	Added Section 7.3.5 for Interim Capacity Procurement Mechanism (ICPM) General clarification modifications as needed Revisions to remove draft status for effective version 1 as of March 31, 2009

Table of Contents

1 Introduction

Welcome to the ISO *BPM for Reliability Requirements*. In this Introduction, you find the following information:

The purpose of ISO BPMs

What you can expect from this ISO BPM

Other ISO BPMs or documents that provide related or additional information

1.1 Purpose of California ISO Business Practice Manuals

The Business Practice Manuals (BPMs) developed by the ISO are intended to contain implementation detail, consistent with and supported by the ISO Tariff, including: instructions, rules, procedures, examples, and guidelines for the administration, operation, planning, and accounting requirements of ISO and the markets. Exhibit 1-1 lists ISO BPMs.

1.1.1 Exhibit 1-1: ISO BPMs

Title
BPM for Market Operations
BPM for Market Instruments
BPM for Settlements & Billing
BPM for Scheduling Coordinator Certification & Termination
BPM for Congestion Revenue Rights
BPM for Candidate CRR Holder Registration
BPM for Managing Full Network Model
BPM for Rules of Conduct Administration
BPM for Outage Management
BPM for Metering
BPM for Reliability Requirements
BPM for Credit Management
BPM for Compliance Monitoring
BPM for Definitions & Acronyms
BPM for BPM Change Management
BPM for Transmission Planning Process

1.2 Purpose of this Business Practice Manual

The *BPM for Reliability Requirements* covers the business processes associated with ISO Tariff provisions related to resource adequacy. This BPM covers:

- A summary and explanation of the various studies and reports utilized at the ISO to support resource adequacy
- The requirements for submittal of Resource Adequacy Plans and Supply Plans to the ISO in support of resource adequacy
- A description and requirements of the reserve sharing options for Load Serving Entities under the ISO Tariff
- A description of the ISO capacity procurement mechanism provisions to support resource adequacy

The provisions of this BPM are intended to be consistent with the ISO Tariff. If the provisions of this BPM nevertheless conflict with the ISO Tariff, the ISO is bound to operate in accordance with the ISO Tariff. Any provision of the ISO Tariff that may have been summarized or repeated in this BPM is only to aid understanding. Even though every effort will be made by the ISO to update the information contained in this BPM and to notify Market Participants of changes, it is the responsibility of each Market Participant to ensure that he or she is using the most recent version of this BPM and to comply with all applicable provisions of the ISO Tariff.

A reference in this BPM to the ISO Tariff, a given agreement, any other BPM or instrument, is intended to refer to the ISO Tariff, that agreement, BPM or instrument as modified, amended, supplemented or restated, unless expressly noted otherwise.

The captions and headings in this BPM are intended solely to facilitate reference and not to have any bearing on the meaning of any of the terms and conditions of this BPM.

1.3 References

The definition of acronyms and words beginning with capitalized letters are given in the *BPM for Definitions & Acronyms*.

Please note that the variable names used in the content provided in the BPM Configuration Guides are capitalized for ease of use and are not intended to become defined terms. A description of the variable names is provided in the relevant input or output tables associated with the subject Charge Code or Pre-calculation

Other reference information related to this BPM includes:

- Other ISO BPMs

- ISO Tariff (issued 2/9/06)
- ISO Tariff compliance filing (filed November 20, 2006)
- ISO Tariff compliance filing (filed December 20, 2006)
- ISO Tariff (March 22 filing)
- ISO Tariff compliance filing (filed June 18, 2007)
- Relevant Attachments
- BPM Configuration Guides

2 Overview

Welcome to the *Overview* section of the *BPM for Reliability Requirements*. In this section you will find the following information:

A list of the general objectives for resource adequacy at ISO

A description of the basic elements of a capacity-based resource adequacy program

An explanation of general factors used to assess needed resource levels to satisfy reliability requirements

High-level overview of annual and monthly resource adequacy reporting requirements

2.1 Objectives

Market economics and reliability are inextricably intertwined. Even markets that are otherwise competitive and robust may nevertheless fail if they do not provide sufficient incentives to ensure reliability. One of the keys to reliable grid operations is to ensure that Market Participants provide and have access to adequate resources.

The resource adequacy provisions of the ISO Tariff, working in conjunction with the resource adequacy requirements adopted by the California Public Utilities Commission ("CPUC") and other provisions of California law applicable to non-CPUC jurisdictional Load Serving Entities, are intended to establish a process that ensures the capacity procured under the state mandates is available when and where it is needed to reliably operate the power system. Resource adequacy requirements, along with a myriad of regulatory processes and requirements, including long-term procurement proceedings at the CPUC for its jurisdictional Load Serving Entities and the traditional procurement practices of non-CPUC jurisdictional Load Serving Entities, are intended to provide sufficient incentives for the development of new electric infrastructure investment and maintenance of necessary existing Generators. Together, these requirements and processes have reinforced, and, in some cases, renewed the "obligation to serve" by compelling Load Serving Entities to secure sufficient resources to meet their customers' demands. Through the resulting bilateral transactions in combination with other market opportunities, the goal of resource adequacy is to provide Generation owners and developers the opportunity to obtain sufficient revenue to compensate for their fixed costs and enable new projects to secure the financing needed for new construction.

ISO is charged under both California law and by FERC with the responsibility for the reliable operation of the transmission system under its Operational Control. Resource adequacy is a necessary element of reliable grid operations.

2.2 Basic Elements

In order to protect System Reliability, a resource adequacy program should include seven basic elements:

1) A procedure for forecasting system conditions relating to Demand, including the forecast peak Demand

2) A specified Reserve Margin – this is the amount of capacity over and above the predicted Demand that is necessary to provide adequate Operating Reserve and to account for Contingencies such as Generating Unit Outages and forecast error

3) Deliverability – this is a requirement based on Applicable Reliability Criteria that is designed to ensure that capacity needed to meet the Demand Forecast and the Reserve Margin is not constrained by transmission limitations when it is needed to serve Load. Local capacity requirements are also an important part of deliverability requirements.

4) Criteria for determining eligible resources and the amount of capacity able to satisfy the Reserve Margin

5) Plans developed by the LSEs that identify how they have met their resource adequacy requirements by assembling a portfolio of resources

6) Rules under which the resources identified in the plans are made available to the ISO Operator to balance Supply and Demand

7) A compliance program that ensures that LSEs comply with the resource adequacy program established by the Local Regulatory Authority and that precludes the LSE from inappropriately relying on the resource procurement practices of other Market Participants

These elements, establishing the basis for forecast, Reserve Margins and local requirements to satisfy Reliability Criteria, are consistent with general Good Utility Practice and ensure that resources are available when and where they are needed. They also provide necessary information to ensure that resources are accounted for and made available to the ISO consistent with the ISO Tariff, such that the ISO can employ the resources to provide the maximum reliability benefits and provide a generally equitable allocation of responsibility for resource adequacy among Market Participants.

2.3 Consideration in Determining Resource Margins to Satisfy Reliability Levels

Achieving reliability in the bulk electric system requires, among other things, that the amount of generating capacity exceeds customer Demand by some amount. That amount must be sufficient to account for:

- Planned maintenance
- Forced Outages of generating and transmission equipment
- Derates in the capability of Demand response and Generation resources
- System effects due to reasonably anticipated variations in weather
- Variations in customer Demands or Demand Forecast uncertainty due to variations in overall economic activity and other factors impacting power use
- Other system operating requirements

In areas where a large quantity of Generation may be energy-constrained or use-limited, achieving reliability may also require that the Energy available to the area is at least equal to the customer Demand and some reserve requirement during peak operating periods. Moreover, while ownership of Generating Units varies, sufficient capacity in conjunction with Demand response must be available to the electric system or its customers to provide an adequate resource supply.

Because of the reasonably long lead-time to construct new Generating Facilities, it is prudent to assess whether a region or sub-region has met its resource adequacy criterion or requirement over a period of two to three years or more into the future.

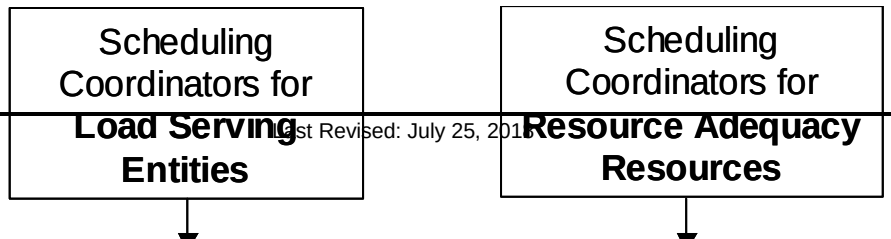
2.4 Annual and Monthly Reporting Requirements

Sections 40.2.2.4 and 40.2.3.4 of the ISO Tariff govern the obligation of Scheduling Coordinators for Load Serving Entities scheduling Demand in the ISO Control Area to submit annual and monthly Resource Adequacy Plans to the ISO. The format and schedule for Resource Adequacy Plan submittals is described in Section 3 of this BPM.

Section 40.4.7 of the ISO Tariff requires Scheduling Coordinators for Resource Adequacy Resources to submit annual and monthly Supply Plans confirming a resource's status as a Resource Adequacy Resource and its willingness to provide Resource Adequacy Capacity. The format and schedule for Supply Plan submittals is described in Section 4 of this BPM.

An overview of the annual and monthly reporting requirements is shown in Exhibit 2-1.

Exhibit 2-1: Annual and Monthly Reporting Requirements



3 Information Requirements

Welcome to the *Information Requirements* section of the *BPM for Reliability Requirements*. In this section you will find the following information:

A description of the applicability and process for Load Serving Entity election of Reserve Sharing LSE or Modified Reserve Sharing LSE status

A description of programmatic information to be provided by a Reserve Sharing LSE to the ISO

A description of programmatic information to be provided by a Modified Reserve Sharing LSE to the ISO

A description of programmatic information to be provided by LSEs subject to the ISO's default resource adequacy program

A description of the requirements for a Resource Adequacy Plan for a Metered Subsystem

The submittal requirements and validation process at the ISO for Resource Adequacy Plans

A description of the compliance issues at the ISO with Resource Adequacy Plans

3.1 Applicability and Election Process

3.1.1 Applicability and Scope of Exemptions

ISO Tariff Section 40.1

The resource adequacy related provisions of Section 40 of the ISO Tariff apply to all Load Serving Entities, except a Load Serving Entity or LSE that has a metered peak Demand of less than one (1) MW at any time during the twelve months preceding the last date on which the LSE can make the election regarding its reserve sharing status (i.e., Reserve Sharing LSE or Modified Reserve Sharing LSE).

In addition, California Public Utilities Code § 380, addressing resource adequacy requirements of LSEs under CPUC jurisdiction, also excludes from its definition of "load serving entity" certain "customer generation" or the Load it serves, if any of the following conditions are met: (i) it takes stand by service from the electrical corporation on a CPUC-approved rate schedule that provides for adequate backup planning and Operating Reserves for the standby customer class, (ii) it is not physically interconnected to the electric transmission or distribution grid, so that if the customer generation fails, backup electricity is not supplied from the electricity grid; or (iii) there is physical assurance that the Load served by the customer generation will be curtailed concurrently and commensurately with an outage of the customer generation. To be consistent with state law, the ISO Tariff at Section 40.1 incorporates Public Utilities Code § 380(j)(3), as it may change for time to time, to create an identical exemption.

Section 40 will apply to all LSEs that otherwise do not fit into one of the foregoing exemptions.

An LSE claiming an exemption shall do so by the date set forth in Exhibit A-1 or the next business day thereafter of each year for the upcoming Compliance Year via CIDI. CIDI shall be used by LSEs to make their election between Reserve Sharing LSE and Modified Reserve Sharing LSE status, as discussed below. Accordingly, no LSE can have Metered Demand greater than 1 MW at any time for the twelve months preceding the election date. If an LSE does not have historic data for Metered Demand covering the foregoing period, the exemption will be unavailable.

For purposes of Section 40, a Compliance Year shall be defined as the calendar year.

The ISO will respond to a request for exemption within five (5) business days after receipt of the exemption request. The ISO's response will be via CIDI to the individual submitting the exemption request on behalf of the LSE and, if the request for exemption is denied, the ISO will include reference to the Metered Demand data and the day of such peak metered Demand on which the denial is based. Should the exemption be rejected, the LSE must comply with ISO Section 40.

*3.1.2 **Election Process***

ISO Tariff Section 40.1.1

Except for exempt LSEs, each SC representing an LSE must inform the ISO on or before the date set forth in Exhibit A-1 via CIDIfor the upcoming Compliance Year whether the LSE elects to be classified as either a Reserve Sharing LSE or a Modified Reserve Sharing LSE.

An SC for a Load-Following MSS is not required to make an election because only the ISO Tariff sections relating to Local Capacity Area Resources (Section 40.3, et seq.), including the submission of an annual Resource Adequacy Plan (Section 40.2.4) apply to the Load-Following MSS.

The ISO may confirm with the CPUC, Local Regulatory Authority, or federal agency the accuracy of the election by the SC for any LSE under its respective jurisdiction. Further, if an SC fails to make a timely election, the ISO may, but is not required, to contact the CPUC, Local Regulatory Authority, or federal agency to ascertain the appropriate election. Should the ISO choose to inform the CPUC, Local Regulatory Authority, or federal agency of the SC's failure to make an election on behalf of an LSE under their respective jurisdiction, the ISO will provide the CPUC, Local Regulatory Authority, or federal agency a reasonable time not to exceed one week to provide the election information via CIDI. Absent an election by the SC for an LSE or by its regulatory authority, as described above, the LSE shall be deemed a Reserve Sharing LSE.

3.2 **Reserve Sharing LSE**

Scheduling Coordinators for Reserve Sharing LSEs must provide the ISO with the following programmatic information with regard to resource adequacy.

3.2.1 ***CPUC Load Serving Entity Electing Reserve Sharing LSE Status***

ISO Tariff Section 40.2.1.1

> For a CPUC Load Serving Entity that elects Reserve Sharing LSE status, a Scheduling Coordinator must provide all information or data to the ISO that is required by the CPUC and pursuant to the schedule adopted by the CPUC, except that the monthly Resource Adequacy Plans or the same information as required to be included in the monthly Resource Adequacy Plans, plus any other information in the ISO requires as identified in the Business Practice Manual, must be submitted to the ISO no less than 45 days in advance of the first day of the month covered by the plan, as provided in Section 40.2.1.1(e).

The general requirements, including filing templates, of the CPUC's resource adequacy program are discussed in its updated Filing Guide that can be found at:

http://www.cpuc.ca.gov/

Consistent with past resource adequacy decisions of the CPUC, the ISO Tariff presumes a capacity-based CPUC resource adequacy program that requires the basic elements outlined in BPM Section 2. Should the CPUC formally signal a shift from this approach, the ISO would re-evaluate ISO Tariff Section 40.2.1.1 to better conform to the new CPUC resource adequacy paradigm. However, until such time, the ISO has established basic default information requirements should the CPUC not otherwise require such information be communicated to the ISO under the current capacity-based resource adequacy paradigm.

These default provisions are as follows:

- If the CPUC fails to require its jurisdictional LSEs to provide the ISO with information on applicable Reserve Margins, then the Reserve Margin shall be no less than 15% of the applicable month's peak hour Demand as determined by the default forecast. (CASIO Tariff Sections 40.2.1.1, 40.2.2.1, and 40.2.2.3.)

- If the CPUC fails to require its jurisdictional LSEs to provide the ISO with information on applicable capacity counting criteria, the Qualifying Capacity criteria of ISO Tariff Section 40.8 shall apply.

- If the CPUC fails to require its jurisdictional LSEs to provide the ISO with information on annual and monthly Demand Forecasts, then the CPUC Load Serving Entity must provide the ISO with either the coincident monthly and annual peak Demand Forecasts produced by the California Energy Commission (CEC) or, if the CEC coincident peak Demand information is unavailable, the CPUC Load Serving Entity may elect to utilize a coincident monthly and annual peak Demand Forecast produced by the ISO. SCs must provide the

ISO with any information and data the ISO may request to develop or support Demand Forecasts required by the ISO Tariff. (ISO Tariff 40.2.2.3.) If the CPUC fails to require its jurisdictional LSEs to provide the ISO with annual and monthly Resource Adequacy Plans, or where there is a requirement to submit monthly Resource Adequacy Plans but the submission date is less than 45 days in advance of the first day of the month covered by the plan then the provisions of Section 40.2.2.4 shall apply.

*3.2.2 **Non-CPUC Load Serving Entity***

ISO Tariff Section 40.2.2

Each year by the election date regarding reserve sharing LSE status, an SC for a Non-CPUC LSE electing Reserve Sharing LSE status must provide the following resource adequacy related information to the ISO:

- The applicable Reserve Margin for each month of the year adopted by the Local Regulatory Authority
- A description of the criteria for determining qualifying resource types and the Qualifying Capacity from such resources and any modifications thereto as they are implemented from time to time

Such information shall be provided to the ISO via CIDI. There is no particular template that must be used. However, the information must be complete. In addition to this annual programmatic information, an SC for a Non-CPUC Load Serving Entity electing Reserve Sharing LSE status must provide other annual and monthly information.

- Demand Forecasts must be provided to the ISO separately for each Non-CPUC Load Serving Entity the SC represents. SCs must utilize the coincident annual monthly peak Demand Forecasts prepared by the CEC for each represented Non-CPUC Load Serving Entity. If the CEC coincident peak Demand information is unavailable for a particular Non-CPUC Load Serving Entity, the SC may utilize a coincident monthly peak Demand Forecast produced by the ISO for the Non-CPUC Load Serving Entity. Except where the Non-CPUC Load Serving Entity utilizes a monthly Demand Forecast produced by the ISO, the respective Demand Forecasts are due as part of, and must be included in, the annual or monthly Resource Adequacy Plans.

Annual and monthly Resource Adequacy Plans must be provided by SCs for Non-CPUC Load Serving Entities or a CPUC LSE electing reserve sharing LSE status ISO, as follows:

- Each annual Resource Adequacy Plan must be submitted to the ISO on a schedule and in the reporting format(s) as set forth in this Business Practice Manual. The annual Resource Adequacy Plan must, at a minimum, set forth the Local Capacity

Area Resources, if any, procured by the Load Serving Entity as described in Tariff Section 40.3.

- Each monthly Resource Adequacy Plan or the same information as required to be included in the monthly Resource Adequacy Plan, plus any other information the ISO requires as identified in this Business Practice Manual, must be submitted to the ISO at least 45 days in advance of the first day of the month covered by the plan, and in accordance with the schedule and in the reporting format(s) set forth in the Business Practice Manual. The monthly Resource Adequacy Plan must identify all resources, including Local Capacity Area Resources, the Load Serving Entity will rely upon to satisfy the applicable month's peak hour Demand of the Load Serving Entity as determined by the Demand Forecasts developed in accordance with Tariff Section 40.2.2.3 and applicable Reserve Margin. Resource Adequacy Plans must utilize the Net Qualifying Capacity requirements of Section 40.4.

- The Scheduling Coordinator for the Load Serving Entity may submit at any time from 45 days through 11 days in advance of the relevant month, a revision to its monthly Resource Adequacy Plan to correct an error in the plan. The ISO will not accept any revisions to a monthly Resource Adequacy Plan from 10 days in advance of the relevant month through the end of the month, unless the Scheduling Coordinator for the Load Serving Entity demonstrates good cause for the change and explains why it was not possible to submit the change earlier.

- In order to ensure that the ISO's outage replacement determination remains accurate, the Scheduling Coordinator for the Load Serving Entity that submits a revision to its monthly Resource Adequacy Plan to correct an error must include in the revision a MW amount of Resource Adequacy Capacity for each day of month that is no less than the MW amount of Resource Adequacy Capacity included in its original plan for each day of the month.

- In order to ensure that the amount of Resource Adequacy Capacity required to be included in the Load Serving Entity's Resource Adequacy Plan is operationally available to the ISO throughout the resource adequacy month, the Load Serving Entity that submits the monthly Resource Adequacy Plan is subject to the replacement requirement in Section 9.3.1.3.1.

Notwithstanding Tariff Section 40.2.2.4(b), for the resource adequacy month of January 2013, the monthly Resource Adequacy Plans or the same information as required to be included in the monthly Resource Adequacy Plans, plus any other information the ISO requires as identified in

the Business Practice Manual, shall be submitted to the ISO no later than November 20, 2012, which is 41 days in advance of the first day of the month. Notwithstanding Section 40.2.2.4(c), for the resource adequacy month of January 2013, the Scheduling Coordinator for the Load Serving Entity may submit at any time from 41 days through 11 days in advance of the relevant month, a revision to its monthly Resource Adequacy Plan to correct an error in the plan.

There are also default provisions applicable to Non-CPUC Load Serving Entities that elect Reserve Sharing LSE status. These default provisions are not coextensive with the default provisions applicable to CPUC Load Serving Entity because Section 40.2.2.3 relating to Demand Forecasts and Section 40.2.2.4 relating to Resource Adequacy Plans apply in the first instance to Non-CPUC Load Serving Entities to ensure reporting and programmatic consistency. The default provisions regarding Reserve Margin requirements and Qualifying Capacity criteria are, however, substantively equal to those applied to CPUC Load Serving Entities and similarly apply when the Local Regulatory Authority has not taken action. Therefore:

- If the Local Regulatory Authority or federal agency fails to adopt or require its jurisdictional LSEs to provide the ISO with information on applicable Reserve Margins, then Reserve Margin shall be no less than 15% of the applicable month's peak hour Demand as determined by the default forecast. (CASIO Tariff 40.2.2.1 and 40.2.2.3.)

- If the Local Regulatory Authority or federal agency fails to adopt or require its jurisdictional LSEs to provide the ISO with information on applicable capacity counting criteria, the Qualifying Capacity criteria of ISO Tariff 40.8 shall apply.

3.2.3 ISO Demand Forecast Methodology

When the CASIO must produce its own coincident peak annual and/or monthly Demand Forecast for a Load Serving Entity for resource adequacy purposes because such Demand Forecast is unavailable from the CEC, the ISO will nevertheless utilize, to the maximum extent possible, the methodology developed by the CEC in performing such coincident peak analyses.

3.3 Modified Reserve Sharing Load Serving Entity

ISO Tariff Section 40.2.3

Each year by the election date for reserve sharing status set for in Exhibit A-1, SCs for LSEs electing to be a Modified Reserve Sharing LSE must provide the following programmatic resource adequacy related information to ISO:

The applicable Reserve Margin for each month of the year adopted by the Local Regulatory Authority (Section 40.2.3.1.)

A description of the criteria for determining qualifying resource types and the Qualifying Capacity from such resources and any modifications thereto as they are implemented from time to time (Section 40.2.3.2.)

Such information shall be provided to the ISO via CIDI. There is no particular template that must be used. However, the information must be complete.

In addition to this annual programmatic information, an SC for a Load Serving Entity electing Modified Reserve Sharing LSE status must provide other annual and monthly information. The Demand Forecast requirements for Modified Reserve Sharing LSEs are different than those for Reserve Sharing LSEs in several respects.

A Modified Reserve Sharing LSE must provide the ISO annual and monthly Resource Adequacy Plans that set forth the following information:

- Each annual Resource Adequacy Plan must be submitted to the ISO on a schedule and in the reporting format(s) set forth in this Business Practice Manual. The annual Resource Adequacy Plan must, at a minimum, set forth the Local Capacity Area Resources, if any, procured by the Load Serving Entity as described in Tariff Section 40.3.

- Each monthly Resource Adequacy Plan or the same information as required to be included in the monthly Resource Adequacy Plan, plus any other information the ISO requires as identified in this Business Practice Manual, must be submitted to the ISO at least 45 days in advance of the first day of the month covered by the plan, and in accordance with the schedule and in the reporting format(s) set forth in the Business Practice Manual. The monthly Resource Adequacy Plan must identify all resources, including Local Capacity Area Resources, the Load Serving Entity will rely upon to satisfy the applicable month's peak hour Demand of the Load Serving Entity as determined by the Demand Forecasts developed in accordance with Tariff Section 40.2.2.3 and applicable Reserve Margin. Resource Adequacy Plans must utilize the Net Qualifying Capacity requirements of Tariff Section 40.4.

- The Scheduling Coordinator for the Load Serving Entity may submit at any time from 45 days through 11 days in advance of the relevant month, a revision to its monthly Resource Adequacy Plan to correct an error in the plan. The ISO will not accept any revisions to a monthly Resource Adequacy Plan from 10 days in advance of the relevant month through the end of the month, unless the Scheduling Coordinator for the Load Serving Entity demonstrates good cause for the change and explains why it was not possible to submit the change earlier.

- In order to ensure that the ISO's outage replacement determination remains accurate, the Scheduling Coordinator for the Load Serving Entity that submits a revision to its monthly Resource Adequacy Plan to correct an error must include in the revision a MW amount of Resource Adequacy Capacity for each day of month that is no less than the MW amount of Resource Adequacy Capacity included in its original plan for each day of the month.

- In order to ensure that the amount of Resource Adequacy Capacity required to be included in the Load Serving Entity's Resource Adequacy Plan is operationally available to the ISO throughout the resource adequacy month, the Load Serving Entity that submits the monthly Resource Adequacy Plan is subject to the replacement requirement in Section 9.3.1.3.1.

Notwithstanding Tariff Section 40.2.2.4(b), for the resource adequacy month of January 2013, the monthly Resource Adequacy Plans or the same information as required to be included in the monthly Resource Adequacy Plans, plus any other information the ISO requires as identified in the Business Practice Manual, shall be submitted to the ISO no later than November 20, 2012, which is 41 days in advance of the first day of the month. Notwithstanding Section 40.2.2.4(c), for the resource adequacy month of January 2013, the Scheduling Coordinator for the Load Serving Entity may submit at any time from 41 days through 11 days in advance of the relevant month, a revision to its monthly Resource Adequacy Plan to correct an error in the plan.Default provisions also apply as follows:

- If the Local Regulatory Authority or federal agency fails to adopt or require its jurisdictional LSEs to provide the ISO with information on applicable Reserve Margins, then Reserve Margin shall be no less than 15% of the applicable month's peak hour Demand as determined by the default forecast. (CASIO Tariff 40.2.3.1, and 40.2.3.3.)

- If the Local Regulatory Authority or federal agency fails to adopt or require its jurisdictional LSEs to provide the ISO with information on applicable capacity counting criteria, the Qualifying Capacity criteria of ISO Tariff 40.8 shall apply.

3.4 **Load-Following Metered Subsystem**

ISO Tariff Section 40.2.4

Although a Load-following MSS is not required to choose between one of the Reserve Sharing options, it is nevertheless subject to specific resource adequacy provisions.

A Scheduling Coordinator for a Load-following MSS must provide an annual Resource Adequacy Plan and Local Capacity Area Resource Template by the date set forth in Exhibit A-2 in each year

and in a format set by ISO. Instructions on how to complete the templates are located on the "Instructions" worksheet of the templates. The location of the templates is:

http://www.caiso.com/planning/Pages/ReliabilityRequirementsThe Resource Adequacy Plan should include all resources that the Load-following MSS intends to utilize to serve its Load throughout the upcoming Compliance Year. The Resource Adequacy Plan, however, must set forth the Local Capacity Area Resources, if any, procured by the Load-following MSS. In this regard, a Load-following MSS is subject to ISO Tariff Section 40.3, which assigns Local Capacity Area Resource obligations for purposes of determining the cost allocation of any ISO capacity procurement necessary to satisfy defined reliability criteria. This allocation relies on coincident peak Demand Forecasts produced by the CEC or, if such a CEC Demand Forecast is unavailable, a coincident peak Demand Forecast produced by the ISO. Accordingly, in order to accomplish this allocation equitably, the Load-following MSS must include in its annual Resource Adequacy Plan the Demand Forecast information provided by the CEC or the ISO, as appropriate.

4 Resource Adequacy Capacity

Welcome to the *ISO Resource Adequacy Capacity* section of the *BPM for Reliability Requirements*. In this section you will find the following information:

- A description of Resource Adequacy requirements that Scheduling Coordinators for Load Serving Entities must meet.
- A description of the Resource Adequacy Plans used for demonstrating that Scheduling Coordinators for Load Serving Entities meet requirements, including a description of the information contained in the RA and Supply Plans, validation processes, and timeline for submittals.
- A description of the Cross Validation that the ISO performs to ensure that the information contained in the Resource Adequacy Plan correctly matches corresponding Supply Plans.
- A description of Flex Capacity validation and Flex Capacity Deficiencies.
- A description of the final validation performed by the ISO before committing Resource Adequacy Capacity to ISO systems for the trade month.
- A description of information availability for market participants.

4.1 Requirements

The CAISO shall evaluate each annual and monthly RA Plan submitted by an SC on behalf of an LSE as follows:

Tariff Section 40.7.a.i Compliance Evaluation: Each LSE must satisfy its allocated MW responsibility for each designated TAC area in which it serves load by identifying all resources the LSE has procured to serve this load. This is an annual value that must be procured for each month of the year.

Tariff Section 40.7.a.ii Compliance Evaluation: Each LSE must satisfy its peak Demand and Reserve Margin requirements by identifying all resources the LSE has procured to serve load.

Tariff Section 40.10.5.3 CAISO Review: The ISO will perform three reviews of the RA Plans related to Flexible RA Capacity-- (i) to validate for a deficiency in an individual LSE plan if the LSE's local regulatory authority has not established its own flexible capacity requirements, (ii) to identify any discrepancy in the resources or capacity listed in an LSE plan and a resource plan, and evaluate the annual and monthly plans of all LSEs for a cumulative deficiency.

Tariff Section 40.7.b Compliance Evaluation: The ISO shall evaluate each annual and monthly Supply Plan submitted by an SC on behalf of an RA resource as follows:

Tariff Section 40.4.7 Compliance Evaluation (Information Requirement): This is an information requirement for SCs of RA resources. All Scheduling Coordinators for RA resources that an LSE uses in its RA Plan must submit valid Supply Plans to the ISO

Tariff Section 40.10.5.2 Information Requirement: This is an information requirement for SCs of flexible resources. All Scheduling Coordinators for flexible resources that an LSE uses in its RA Plan must submit valid Supply Plans to the ISO.

4.2 Reporting exemption for LSE:

A Load Serving Entity is not obligated to commit a type of RA capacity on a monthly Resource Adequacy Plan if it holds a monthly obligation of less than 1 MW for that type of RA capacity but is not exempt from committing any other type of RA capacity for that month for which it holds a monthly obligation of 1 MW or greater and is not exempt for any relevant cost allocation from a CPM designation made pursuant to Section 43A associated with a monthly RA capacity obligation of less than 1 MW.

4.3 Demonstrations of Resource Adequacy

A Scheduling Coordinator for a Load Serving Entities uses an RA Plan to demonstrate on an annual and monthly basis that it meets the requirements discussed in Section 4.1. A Scheduling Coordinator for an RA resource uses a Supply Plan to demonstrate that the ISO can rely on the resource for Resource Adequacy capacity.

4.3.1 Resource Adequacy Plans

In this section, you will find the following information:

- An explanation of the purpose of the Resource Adequacy Plan at ISO.
- The location of the template utilized for Resource Adequacy Plan submittal at ISO.
- A description of the compliance issues with Resource Adequacy Plans at ISO.

4.3.1.1 Purpose

Resource Adequacy Plans identify the specific resources that the LSE is relying on to satisfy its forecasted monthly Peak Demand and Reserve Margin as well as its local requirements for the relevant reporting period. The annual and monthly RA Plans must be submitted pursuant to the schedule set forth on the Reliability Requirements website.

4.3.1.2 Content

ISO Tariff Section 40.2.2.4

For Load Serving Entities that elect Reserve Sharing LSE status, the annual and monthly Resource Adequacy Plans must be submitted by the applicable SC to the ISO and must include all information and data mandated by the ISO. The ISO shall dictate the form of the template to be submitted to the ISO. All RA plans must be submitted through the ISO's CIRA (Customer Interface for Resource Adequacy) application in the production environment.

For all LSEs, Resource Adequacy Plans must meet the following standards:

Annual Resource Adequacy Plans

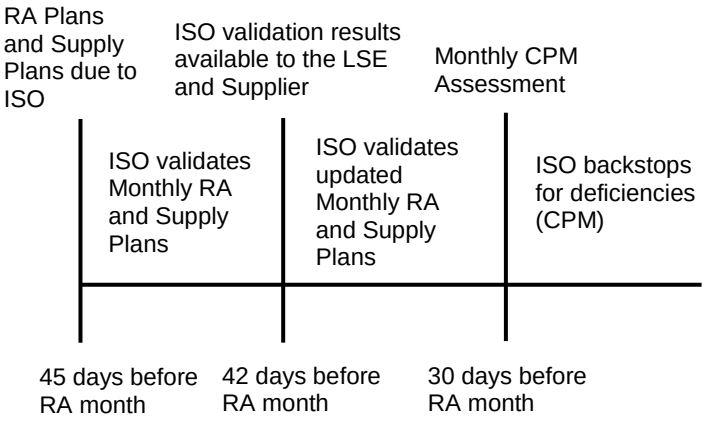
- Shall be submitted by the date set forth in Exhibit A-2 for each Load Serving Entity served by the Scheduling Coordinator.
- Shall identify the resources that the LSE is relying upon to serve its load and meet its Tariff obligations.
- LSEs are permitted to include resources under construction in their annual resource adequacy plans

- Shall identify the flexible RA capacity resources and categories of flexible capacity that the LSE is relying upon to meet its flexible capacity needs.
- Must not demonstrate RA in excess of the Net Qualifying Capacity of each Resource Adequacy resource.
- Shall identify whether local RA capacity is Listed Local or System capacity.
- For deficiencies in TAC Area Resource procurement, the ISO will provide notification to the SC for the LSE. The notification will advise the SC for the LSE that it has thirty (30) days to submit a revised Resource Adequacy Plan showing Local Capacity Area Resources or be subject to the potential cost implications of the deficiency detailed in ISO Tariff Section 40.
- Based on the RA data submitted by load serving entities the ISO identifies individual and collective capacity deficiencies in the several Local Capacity Areas. A deficiency occurs when the aggregate portfolio of Resource Adequacy Resources that has been procured, including RMR resources, fails to satisfy the adopted reliability criteria in a Local Capacity Area. The ISO Tariff provides an opportunity for LSEs to cure individual or collective deficiencies before the ISO may engage in any backstop procurement. Deficient LSEs may procure additional capacity from any resource with a local attribute in their TAC Area. However, to the extent that the aggregate LSE showings do not comprise the right mix of resources that meet the Local Capacity Requirement and ISO effectiveness criteria, a deficiency may exist that would cause the ISO to procure individual and/or collective backstop capacity.

Monthly Resource Adequacy Plans

- Shall be submitted to the ISO at least 45 days prior to the compliance month covered by the plan and in accordance with the submittal schedule for monthly Resource Adequacy Plans located on the Reliability Requirements website.

TIMELINE OF SUBMISSION AND VALIDATION



- Shall identify all the resources that the LSE procured to satisfy its peak forecasted monthly Demand and Reserve Margin for the relevant reporting period and must not demonstrate RA in excess of the Net Qualifying Capacity of each Resource Adequacy resource.
- Shall identify the flexible RA capacity resources and categories of flexible capacity that the LSE is relying upon to meet its flexible capacity needs.
- The Scheduling Coordinator for the Load Serving Entity may submit at any time from 45 days to 30 days prior to the RA Compliance month, a revision to its monthly Resource Adequacy Plan to correct an error in the plan. Unless good cause is shown, the ISO will not accept any revisions to a monthly Resource Adequacy Plan from 30 days prior to the RA Compliance month through the end of the month.
- The Scheduling Coordinator for the Load Serving Entity that submits a revision to its monthly Resource Adequacy Plan to correct an error must include in the revision a MW amount of Resource Adequacy Capacity for each day of the month that is no less than the MW amount of Resource Adequacy Capacity included in its original plan for each day of the month (Tariff Section 40.2.2.4).

4.3.1.3 Template

All Scheduling Coordinators for LSEs shall use the approved format and include the content for annual or monthly Resource Adequacy Plans in accordance with the template on the ISO Website. A Resource Adequacy Plan is only accepted by the ISO if it is submitted using the approved template. The template must not be modified in any manner, otherwise it will be rejected. This includes adding or removing columns or worksheets within the template. Instructions on how to complete the template are located in the Customer Interface for Resource Adequacy (CIRA) User Guide posted on the ISO website.

Monthly and annual Resource Adequacy Plan Templates can be found on the Reliability Requirements webpage as well as through CIRA, an ISO portal application.

The annual/monthly Resource Adequacy Plans must be submitted via the CIRA application.

Scheduling Coordinators for Load Serving Entities must provide the following information in its RA Plan:

- Scheduling Coordinator name and SCID
- Applicable trade month
- Contact information
- All Generating Units with a Net Qualifying Capacity value that are designated as Resource Adequacy Resources
- Amount of Resource Adequacy Capacity (in MW) for Local, System & Flexible RA product types
- Start and end date for when the resource is available during the applicable month
- All resources with an Effective Flexible Capacity value that are designated as Flexible Resource Adequacy Resources.
- The flexible capacity category for each designation of each Flexible Resource Adequacy Resource
- Physical resources must be shown for all days of the month
    - One resource ID must have one MW value for the month
- ITIE/TG resources may be shown for all days of the month or subset of days
    - One resource ID can have different MW values on different days of the month
    - These resources cannot be shown for a subset of hours in a compliance month

The template must include an affirmative representation by the SC submitting the Resource Adequacy Plan that the ISO is entitled to rely on the accuracy of the information provided in the Resource Adequacy Plan. The legal notification also describes the obligation on SCs to submit a true and accurate Resource Adequacy Plan.

4.3.1.4 **RA Plan Upload**

The SC of a RA Plan shall submit the plan through the Customer Interface for Resource Adequacy (CIRA) application. Upon upload of a RA Plan the CAISO shall perform validation. This validation includes, but is not limited to, a check for correct template, SCIDs, Resource IDs, date ranges, MW value to two decimal places, NQC, PMAX, LCR by TAC check, peak Demand and Reserve Margin. The ISO will accept a RA Plan only if it passes all validations and contains no errors. On submittal of the RA plan please indicate if the plan is late or any other information related to the plan through the comments box on plan upload page.

4.3.1.5 Failure to Provide Information

Failure to provide all information required under resource adequacy provisions of the ISO Tariff in a complete, accurate, and timely manner may subject a Market Participant to sanctions under the ISO Tariff in addition to any other penalties that may be imposed by applicable regulatory agencies.

A responsible company official who is knowledgeable of the facts submitted must submit the Resource Adequacy Plan.

Resource Adequacy Plans not submitted by the due dates specified on the Reliability Requirements website are subject to a penalty of $500 per day for each day that the plan is late (ISO Tariff § 37.6).

The process for the ISO to administer Sanctions can be found in the *BPM for Rules of Conduct Administration*.

4.3.2 ***Supply Plans***

In this section, you will find the following information:

- An explanation of the purpose of the Supply Plan at ISO
- The location of the template utilized for Supply Plan submittal at ISO
- A description of the compliance issues with Supply Plans at ISO

4.3.2.1**Purpose**

Supply Plans are an integral element in the Resource Adequacy process, as they represent the primary means of informing ISO of the capacity that is designated for Resource Adequacy purposes for a specified month. In addition, Supply Plans are used as a monthly verification and confirmation by Scheduling Coordinators for Resource Adequacy Capacity of the information contained in Resource Adequacy Plans submitted by Scheduling Coordinators for LSEs. The Supply Plan confirms that a Scheduling Coordinator is committed to scheduling and/or Bidding the Resource Adequacy Capacity that has been reported to ISO. The Supply Plan establishes the formal business commitment between the ISO and Resource Adequacy Resources by confirming the status of the resource as Resource Adequacy Resource.

4.3.2.2**Content**

All Scheduling Coordinators for Resource Adequacy Resources must submit Supply Plans that meet the following standards:

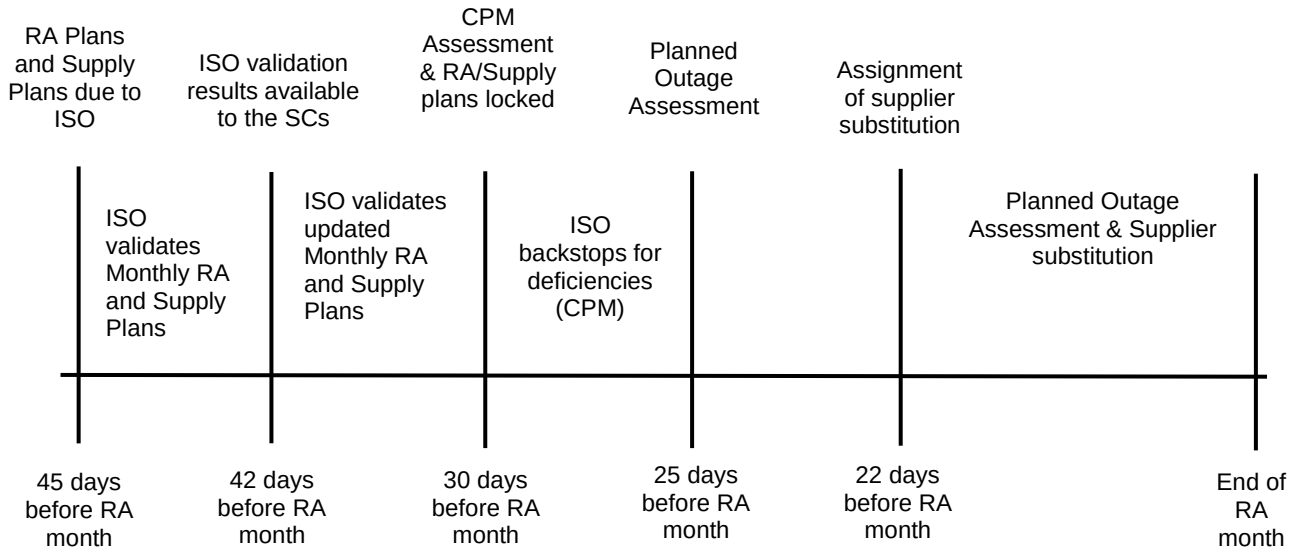
Annual Supply Plans

- Shall be submitted by the date set forth in Exhibit A-2.
- Shall be submitted by a responsible company official who is knowledgeable of the facts submitted in the Supply Plan.
- Shall reflect all commitments to provide Resource Adequacy Capacity and Flexible Resource Adequacy Capacity entered into as of the date the annual Supply Plan is due for all months of the following compliance year. Scheduling Coordinators should include in the annual Supply Plan all commitments to provide Resource Adequacy Capacity for all months of the following compliance year as of the date the annual Supply Plan is submitted.
- Shall reflect the maximum Resource Adequacy Capacity that each Resource Adequacy Resource is contractually committed or otherwise obligated to provide in each month.

Monthly Supply Plans

- Shall be submitted to the ISO at least 45 days prior to the compliance month (T-45) covered by the plan and in accordance with the submittal schedule for monthly Resource Adequacy Plans located on the Reliability Requirements website.
- Shall be submitted by a responsible company official who is knowledgeable of the facts submitted in the Supply Plan.

TIMELINE OF SUBMISSION AND VALIDATION



- Shall reflect all commitments to provide Resource Adequacy Capacity for local RA and System RA for the relevant month.
- Shall reflect all commitments to provide Flexible Resource Adequacy Capacity entered into for the relevant month.
- Shall identify the flexible capacity category for each designation of each Flexible Resource Adequacy Resource.
- Shall identify the LSE to which the specific resource and category of flexible capacity was committed.
- Shall reflect the maximum designated Resource Adequacy Capacity for each Resource Adequacy Resource. This capacity must be made available for the ISO on the days specified in the Supply Plan and will be subject to Availability Standards and Payment provisions in the ISO Tariff Section 40.9.
- The Scheduling Coordinator for the Load Serving Entity may submit at any time from 45 days to 30 days prior to the RA Compliance month, a revision to the monthly Supply Plan to correct an error in the plan. Unless good cause is shown, the ISO will not accept any revisions to a monthly Supply Plan from 10 days prior to the RA Compliance month

through the end of the compliance month.

- The Scheduling Coordinator for the resource that submits a revision to its monthly Supply Plan to correct an error must include in the revision a MW amount of Resource Adequacy Capacity for each day of month that is no less than the MW amount of Resource Adequacy Capacity included in its original plan for each day of the month.

4.3.2.3 Template

ISO Tariff Section 40.4.7

The approved format and content for a Supply Plan is provided in a template on the ISO Website. The submitted Supply Plans are only accepted by ISO if they are on the approved template. The template must not be modified in any manner, otherwise it will be rejected. This includes adding or removing columns or worksheets within the template.

Monthly and annual Supply Plan Templates can be found on the Reliability Requirements webpage as well as through the Customer Interface for Resource Adequacy (CIRA), an ISO portal application.

The annual/monthly Supply Plans must be submitted via the CIRA application.

A Scheduling Coordinator must provide a single, aggregated Supply Plan for all of the Resource Adequacy Resources that it represents under each Scheduling Coordinator ID (SCID). All resources and capacity amounts for the relevant trade month are included in the submitted Supply Plan.

The information that is to be provided in a Supply Plan includes:

- Scheduling Coordinator name and SCID
- Applicable trade month
- Contact information
- All Generating Units with a Net Qualifying Capacity value that are designated as Resource Adequacy Resources
- All Intertie Resources with an import allocation assignment that are designated as RA Resources
- Identification of the SCID of the LSE that has contracted the Resource Adequacy capacity
- If multiple LSEs have portions of a single unit's capacity, then that unit must have separate reporting for each LSE involved
- All Resources designated as Resource Adequacy Resources
- Amount of Resource Adequacy Capacity (in MW) for local, system and flexible RA product types

- Start and end dates for when the resource is available during the applicable month
- All resources with an Effective Flexible Capacity value that are designated as Flexible Resource Adequacy Resources.
- Amount of Flexible Resource Adequacy Capacity (in MW) for each resource
- The category of flexible capacity for each designation of each Flexible Resource Adequacy Resource
- Physical resources must be shown for all days of the month
    - One resource ID must have one MW value for the month
- ITIE/TG resources may be shown for all days of the month or subset of days
    - One resource ID can have different MW values on different days of the month
    - These resources cannot be shown for a subset of hours in a compliance month

The template shall also include an affirmative representation by the SC submitting the Supply Plan that the ISO is entitled to rely on the accuracy of the information provided in the Supply Plan to perform those functions set forth in ISO Tariff Section 40. This legal notification also describes the obligation on SCs to submit a true and accurate Supply Plan.

4.3.2.4 Supply Plan Upload

The SC of a Supply Plan shall submit the plan through the Customer Interface for Resource Adequacy (CIRA) application. Upon upload of a Supply Plan the CAISO shall perform a validation. This validation includes, but is not limited to, a check for correct template, resource IDs, contract IDs, date ranges, MW value to two decimal places, SCIDs, NQC, PMAX, and Import Allocation. The ISO will accept a Supply Plan only if it passes all validations and contains no errors. On submittal of the Supply plan please indicate if the plan is late or the plan is being submitted due to SC resource association change or any other information related to the plan through the comments box on the plan upload page.

4.3.2.5 Failure to Provide Information

Failure to provide all information required under resource adequacy provisions of the ISO Tariff in a complete, accurate and timely manner may subject a Market Participant to sanctions under the ISO Tariff and/or those imposed by other regulatory agencies.

A responsible company official who is knowledgeable of the facts submitted must submit the Supply Plan.

Supply Plans not submitted by the due dates specified on the Reliability Requirements website are subject to a penalty of $500 per day for each day that the plan is late pursuant to ISO Tariff Section 37.6. The process for the ISO to administer Sanctions can be found in the *BPM for Rules of Conduct Administration*.

4.3.3 ***RA and Supply Plan Status***

The validation status of the annual/monthly RA Plans and Supply Plans will be displayed through CIRA. The SC for the LSE or the RA Resource is responsible for checking the status by logging into CIRA. After submitting RA/Supply Plans, CIRA will display one of the following status messages:

- Validation in Progress: No action required. The ISO has received the RA or Supply Plan and is in the process of identifying mismatches between RA Plans and Supply Plans (Cross Validation) as well as other validating other Tariff requirements.
- Resubmittal Required: The SC must resubmit the plan as soon as possible and no later than 30 days prior to the start of the compliance month. The reason for this status can be due to a mismatch between RA and Supply plan or a RA deficiency on the RA plan.

4.4 Cross Validation

A Cross Validation between RA and Supply Plans, RA Resources, shall be performed following the completion of individual validations of RA and Supply Plans. The Cross Validation shall be performed to ensure that the information contained in the RA Plan correctly matches its corresponding Supply Plan. The CAISO will accept the records of an RA and Supply Plan only if it passes all validations and contains no errors. The Cross Validation does not consider the impact of outages. The Cross Validation includes, but is not limited to, the following information:

- All Resources in the RA Plan are present in the Supply Plan
- The RA Capacity present in the RA Plan is equal to or less than the RA capacity in the Supply Plan
- All flexible capacity resources in the RA Plan are present in the Supply Plan
- The Flexible RA Capacity identified for each category in the RA Plan is equal to or less than the Flexible RA Capacity present for each category in the Supply Plan
- The demonstration of Local Capacity Area Resources will be validated as follows: See Tariff section 40.7(a)

    1. Physical Local RA validation:

        i. The Local Capacity Area Resource sufficiency evaluation will be made without regard to capacity's identification as Listed Local RA Capacity. Any deficiencies resulting from this validation will be used if ISO decides to CPM.

    2. Listed Local RA validation:

        i. The Local Capacity Area Resource sufficiency evaluation will consider capacity to be a Local Capacity Area Resource only if it is also Listed Local RA Capacity. If LSE fails this validation check then ISO may notify the corresponding LRA

Examples of errors and warnings due to Cross Validation include, but are not limited to, the following:

- If a LSE claims MWs on its RA Plan that do not match the MWs on the Supply Plan, an error shall be displayed for the LSE causing the discrepancy

- If a LSE claims RA on its RA Plan and the resource is missing on the Supply Plan, an error shall be displayed for the LSE causing the discrepancy and the LSE cannot use the resource on its plan
- If a resource's RA Capacity is greater on the RA Plan than the Supply plan, an error shall be displayed for the LSE causing the discrepancy
- If a LSE RA Capacity is greater on the Supply Plan than the RA Plan, an error shall be displayed for the Supplier causing the discrepancy
- If a resource is absent on a RA Plan but present on a Supply Plan, an warning shall be displayed to the Supplier indicating the excess RA

In the case of a mismatch between a RA and Supply Plan, the responsibility shall be on the relevant SC for the LSE and/or RA Resource to submit a revised RA and/or Supply Plan correcting the deficiency at least thirty (30) days prior to the effective month of the RA and Supply Plan. If the ISO is not advised that the deficiency or mismatch is resolved as set forth herein, the ISO will use the information contained in the Supply Plan to set the obligations of Resource Adequacy Resources under Section 40 of the ISO Tariff and any resulting cost implications under Section 40 of the ISO Tariff. The ISO will communicate any deficiencies, or errors, on or before 42 days before the start of the compliance month.

Once RA capacity on the RA and Supply Plans pass individual validation and Cross Validation, the resources and associated capacity are established as Resource Adequacy Capacity for the duration indicated in the RA and Supply Plan.

4.5 LSE Local Capacity Requirement and Peak Demand and Reserve Margin Validation

After the Cross Validations, the CAISO will determine if LSEs have procured enough capacity pursuant to the following Tariff Sections:

Tariff Section 40.7.a.i: Each LSE will be responsible for a MW value for each TAC Area in which the LSE serves load. The LSE may meet its MW responsibility for each TAC area in which the LSE serves load by procurement of that MW quantity in any Local Capacity Area (LCA) in the TAC area.

Tariff Section 40.7.a.ii: The SC for an LSE shall identify all of the resources that the LSE relies upon to satisfy its peak forecasted monthly Demand and Reserve Margin for the relevant reporting period

4.6 Flexible Capacity Deficiencies

The ISO analyzes for flexible RA capacity deficiencies on a cumulative system-wide basis, at the Local Regulatory Authority level, and at the individual LSE level.

4.6.1 Deficiency Analysis

4.6.1.1 Cumulative System Analysis

ISO Tariff Section 40.10.5.3(c)

The ISO evaluates whether the flexible capacity shown by all Load Serving Entities in aggregate meets the cumulative ISO system flexible need. In performing this analysis, the ISO caps the flexible capacity in the Peak Ramping and Super-Peak Ramping categories at their respective total Peak Ramping and Super-Peak Ramping maximums calculated by the ISO. The example below demonstrates how this analysis is performed.

LRA	LSE	Cat 1 Showings	Cat 2 Showings	Cat 3 Showings	LSE Cat 1 Min	LSE Cat 2 Max	LSE Cat 3 Max
LRA_A	LSE1	100	50	10	100	20	5
LRA_A	LSE2	200	10	10	100	20	5
LRA_A	LSE3	100	0	10	100	20	5
LRA_B	LSE4	50	0	0	40	20	5
LRA_B	LSE5	50	40	0	40	20	5
LRA_C	LSE6	0	0	0	20	5	5
ISO Total Showings		500	100	30			
ISO Maximums			105	30			
Qualified Showings		500	100	30			
ISO Tariff 40.10.5.3(c)(2)(i) Evaluation							
ISO Total Flexible Need	505						
Qualified Showings	630						
Evaluation	125	(Long Total Flexible Need)					
ISO Tariff 40.10.5.3(c)(2)(ii) Evaluation							
ISO Base Ramping Need	400						
Qualified Showings	500						
Evaluation	100	(Long Base Ramping)					

Figure 1: Example of cumulative flexible capacity deficiency analysis.

In the example above, LSE6 did not designate any flexible capacity, yet the cumulative system still meets both flexible capacity requirements. LSE1, LSE2, and LSE5 each listed more Category 2 capacity than their individual Category 2 maximum allowance, yet all of that capacity is included in the total Flexible Capacity Need evaluation.

4.6.1.2 Local Regulatory Authority Analysis

ISO Tariff Section 40.10.5.6(a)(1)

If the ISO cumulative system flexible capacity needs are not met, the ISO will analyze for each LRA, whether the flexible capacity in the plans of the LSEs under the LRA's jurisdiction cumulatively meet the LRA's total flexible need and the LRA's Base Ramping need. In performing this analysis, the ISO caps the flexible capacity in the Peak Ramping and Super-Peak Ramping categories at their respective total LRA Peak Ramping and Super-Peak Ramping maximums. The example below demonstrates how this analysis is performed.

LRA	LSE	Cat 1 Showings	Cat 2 Showings	Cat 3 Showings	LSE Cat 1 Min	LSE Cat 2 Max	LSE Cat 3 Max
LRA_A	LSE1	100	50	10	100	20	5
LRA_A	LSE2	200	10	10	100	20	5
LRA_A	LSE3	100	0	10	100	20	5
LRA_B	LSE4	50	0	0	40	20	5
LRA_B	LSE5	50	40	0	40	20	5
LRA_C	LSE6	0	0	0	20	5	5
LRA_A Total Showings		400	60	30			
LRA_A Maximums			60	15			
LRA_A Qualified Showings		400	60	15			
LRA_B Total Showings		100	40	0			
LRA_B Maximums			40	10			
LRA_B Qualified Showings		100	40	0			
LRA_C Total Showings		0	0	0			
LRA_C Maximums			5	5			
LRA_C Qualified Showings		0	0	0			
ISO Tariff 43.8.8(a) Evaluation							
LRA_A							
LRA Total Flexible Need	360						
LRA Qualified Showings	475						
Evaluation	**115**	**(Long Total Flexible Need)**					
LRA Base Ramping Need	300						
LRA Qualified Showings	400						
Evaluation	**100**	**(Long Base Ramping)**					
LRA_B							
LRA Total Flexible Need	120						
LRA Qualified Showings	140						
Evaluation	**20**	**(Long Total Flexible Need)**					
LRA Base Ramping Need	80						
LRA Qualified Showings	100						
Evaluation	**20**	**(Long Base Ramping)**					
LRA_C							
LRA Total Flexible Need	25						
LRA Qualified Showings	0						
Evaluation	**-25**	**(Short Total Flexible Need)**					
LRA Base Ramping Need	20						
LRA Qualified Showings	0						
Evaluation	**-20**	**(Short Base Ramping)**					

Figure 2: Example of LRA flexible capacity deficiency analysis.

In the example above, LRA_A receives full credit for all of LSE1's Category 2 capacity even though the amount shown is greater than LSE1's individual Category 2 maximum. If the total ISO system was short of its flexible capacity needs, LSEs under the jurisdiction of LRA_A and LRA_B would not be allocated a portion of the possible CPM cost.

4.6.1.3 Individual Load Serving Entity Analysis

ISO Tariff Section 40.10.5.6(a)(2)

If the cumulative ISO system is short of its flexible needs, and an LRA is short of its flexible needs, the ISO will calculate the individual LSE deficiency for LSEs under the jurisdiction of the deficient LRA.

The ISO will provide the pertinent results of this calculation to the deficient LRA and the scheduling coordinator for each LSE of that LRA to show the risk of CPM designation and cost allocation, calculated using the ISO method.

This calculation will also be used to determine compliance with ISO Tariff Section 40.10.5.3 for LSEs under the jurisdiction of a Local Regulatory Authority that has not established a flexible need allocation methodology.

The example below demonstrates how this analysis is performed.

LRA	LSE	Cat 1 Showings	Cat 2 Showings	Cat 3 Showings	LSE Cat 1 Min	LSE Cat 2 Max	LSE Cat 3 Max
LRA_A	LSE1	100	50	10	100	20	5
LRA_A	LSE2	200	10	10	100	20	5
LRA_A	LSE3	100	0	10	100	20	5
LRA_B	LSE4	50	0	0	40	20	5
LRA_B	LSE5	50	40	0	40	20	5
LRA_C	LSE6	0	0	0	20	5	5
LSE1 Total Showings		100	50	10			
LSE1 Maximums			20	5			
LSE1 Qualified Showings		100	20	5			
LSE4 Total Showings		50	0	0			
LSE4 Maximums			20	5			
LSE4 Qualified Showings		50	0	0			
LSE5 Total Showings		50	40	0			
LSE5 Maximums			20	5			
LSE5 Qualified Showings		50	20	0			
ISO Tariff 43.8.8(b)(2) Evalution							
LSE1							
LSE Total Flexible Need	120						
LSE Qualified Showings	125						
Evalution	**5**	**(Long Total Flexible Need)**					
LSE Base Ramping Need	100						
LSE Qualified Showings	100						
Evaluation	**0**	**(Long Base Ramping Need)**					
LSE4							
LSE Total Flexible Need	60						
LSE Qualified Showings	50						
Evalution	**-10**	**(Short Total Flexible Need)**					
LSE Base Ramping Need	40						
LSE Qualified Showings	50						
Evaluation	**10**	**(Long Base Ramping Need)**					
LSE5							
LSE Total Flexible Need	60						
LSE Qualified Showings	70						
Evalution	**10**	**(Long Total Flexible Need)**					
LSE Base Ramping Need	40						
LSE Qualified Showings	50						
Evaluation	**10**	**(Long Base Ramping Need)**					

Figure 3: Example of individual LSE flexible capacity deficiency analysis.

In order to simplify the example above, the ISO only shows the analysis for LSE1, LSE4, and LSE5; in practice, all LSEs under the jurisdiction of LRAs that have not established a cost allocation methodology will be analyzed. LSE4 is short of its total flexible need because the ISO capped the Category 2 showings at the individual LSE's Category 2 maximum. Even though LSE4 meets its Base Ramping need, this LSE is 10 MW short for purposes of determining its CPM cost allocation. LSE1 and LSE5 meet their respective requirements.

4.6.2 ***Finding and Notification***

ISO Tariff Section 40.10.5.4, 40.10.5.5, and 40.10.5.6

For the LSEs under the jurisdiction of Local Regulatory Authorities that have not established a flexible need allocation methodology, if the ISO finds an individual LSE deficiency as described above, it will notify the Scheduling Coordinator for the LSE and its Local Regulatory Authority.

If the ISO's review finds a discrepancy between an LSE Flexible Capacity Plan and a Resource Flexible Capacity Plan, the ISO will notify the relevant scheduling coordinators of the mismatch.

If the ISO's evaluation of the Flexible RA Capacity Plans finds a cumulative deficiency, the ISO will notify each LRA that did not meet its allocable share of the ISO's Flexible Capacity Need, and the scheduling coordinator for each LSE that did not include sufficient flexible capacity to meet its allocable requirement.

The notice to the Scheduling Coordinator for the LSE will be provided in the CIRA tool. The notice to the Local Regulatory Authority will be provided via email.

The notice will include for each deficient LSE:

- The LSE Flexible Capacity shown per category
- The Category Minimum and Maximums applied
- The result of the total flexible needs analysis
- The result of the Base Ramping needs analysis

The notices will be sent at least 25 days in advance of the first day of the month covered by the plan.

4.6.3 Opportunity to Resolve Deficiency

ISO Tariff Sections 40.10.5.4, 40.10.5.5, and 40.10.5.6

LSEs under the jurisdiction of Local Regulatory Authorities that have established a flexible need allocation methodology may re-submit RA Plans to cure deficiencies identified by their Local Regulatory Authority. These LSEs may also choose to provide updated RA Plans in order to mitigate possible CPM cost allocation risk if they are individually deficient and believe that they are under the jurisdiction of a Local Regulatory Authority that is also deficient.

Any other LSE that receives an ISO notice of deficiency may provide, no less than 11 days prior to the first day of the month covered by the plan, an updated RA Plan demonstrating that it meets the flexible capacity needs in order to cure the deficiency and avoid possible CPM cost allocation.

Updated RA Plans shall be re-submitted using the CIRA tool.

The ISO CPM cost allocation methodology for flexible needs deficiencies is discussed in Section 11.

4.6.4 Final Opportunity to Resolve Deficiency

ISO Tariff Sections 43A.2.7.1 and 43.8.8(d)

After the annual RA demonstration or monthly RA demonstration cure period has expired, the ISO will evaluate whether there is a need for a Flexible Capacity CPM to address the cumulative deficiency. If the ISO determines that such need exists, it will issue a market notice as described in ISO Tariff Section 43A.2.7.1.

For an annual RA flexible deficiency CPM, after the CPM Market Notice is issued and no later than December 31, an LSE may demonstrate the procurement of additional Flexible RA Capacity consistent with the Market Notice. The ISO will reduce this LSE's CPM cost by the extent that the amount procured cures its individual deficiency.

For a monthly RA flexible deficiency CPM, after the release of the cumulative deficiency Market Notice and no less than five days prior to the compliance month, an LSE may demonstrate the procurement of additional Flexible RA Capacity consistent with the Market Notice. The ISO will reduce this LSE's CPM cost by the extent that the amount procured cures its individual deficiency.

An example of this CPM cost reduction is provided in Section 11.

4.7 Final Validation

The ISO performs a final validation to confirm that no RA Resource is committed above its Net Qualifying Capacity and promotes all RA Capacity including any CPM and Substitution Capacity into ISO market systems as final Resource Adequacy Capacity for the compliance month. RA Capacity information is available in CIRA and the information is updated anytime there is a substitution or CPM.

4.8 Bulletin Board

In order to make information available to Market Participants pertinent to the replacement requirement provisions in Section 9.3.1.3, the CAISO will:

1. Annually post on the Reliability Requirements Website a calendar of the timeline of due dates for each month of the following resource adequacy compliance year.

2. Provide the opportunity for Market Participants to post and view information on an electronic bulletin board about non-Resource Adequacy Capacity and Non-Designated RA Capacity that may be needed or available as RA Replacement Capacity in the bilateral market. Use of the bulletin board is voluntary and limited to use for informational purposes only.

To Access the ISO/ RTO Council (IRC) bulletin board please refer to the PJM link provided below.
http://pjm.com/markets-and-operations/etools/power-contracts-bulletin-board.aspx

5 Competitive Solicitation Process

Welcome to the ISO Competitive Solicitation Process (CSP) section of the BPM for Reliability Requirements. In this section you will find the following information:

Description of CSP, different types of CSP, timeline, validation rules for each CSP and CPM designation information.

5.1 CSP process summary

The ISO may procure and price backstop capacity designated under the capacity procurement mechanism (CPM) through a competitive solicitation process (CSP). This process will be set up to run annually, monthly, and intra-monthly to cover all potential CPM designations with the exception of a risk-of-retirement designation. Participation in a CSP is voluntary.

A risk-of-retirement designation will not go through a CSP and instead will be designated according to rules in tariff section 43A.2.6. A unit seeking a risk-of-retirement designation will submit an offer price subject to the CPM soft offer cap rules applicable to the other types of CPM designation.

Below is a list of CPM events covered under the CSPs:

Timeframe	CPM event covered in a CSP
Annual	• Insufficient cumulative local capacity in RA plans • Insufficient cumulative system capacity in RA plans • Insufficient cumulative flexible capacity in RA plans • Collective deficiency in local area
Monthly	• Insufficient cumulative local capacity in RA plans • Insufficient cumulative system capacity in RA plans • Insufficient cumulative flexible capacity in RA plans • Insufficient cumulative system capacity due to planned outages
Intra-monthly	• Significant event • Exceptional dispatch

The foundation of the CSP is based on the following three principles

1. Supplier to submit offers to the solicitation process
2. Mitigation rules
3. Determining which resource the ISO will offer a CPM designation

Offers	Mitigation	Designation
▪ Offer submission and validation ▪ Offer adjustment period ▪ Offer validation and finalization	▪ Soft offer cap price ▪ Justification process at FERC for higher price ▪ Offer set finalized before CPM need is known for certain	▪ CPM capacity need determined ▪ Capacity evaluated using designation criteria ▪ Resource offered CPM designation

Suppliers will submit offers into the CSPs according to a defined set of rules that outline the offer format, product definition, and other terms and conditions of offering into the CSP. Offer guidelines will vary based on the CPM event as different resource products are needed for different events. Offer rules are described in section.

The CSP will also have mitigation measures. First, the CSP will include a soft offer cap on all bids. There will be a single soft offer cap for all CSPs and types of CPMs. Second, the timeline forces suppliers to bid resource capacity into the CSP prior to the knowledge of whether and what type of CPM event may occur. Finally, any offers above the soft offer cap price must be cost-justified at FERC to recover up to a resource-specific cost of service rate.

There will be a set procedure for determining which resource to offer a CPM designation. The procedure will be based on the relative offers of capacity a CSP and transparent evaluation criteria. The designation procedure is described in section 5.

5.2 Different types of CSP

There are three offer periods for capacity to enter into a CSP. The initial offer periods will take place

1. Prior to the annual CPM process
2. Prior to the monthly CPM process, and
3. After the monthly RA processes closes and before the beginning of the RA month.

All offers must be submitted in the customer interface for resource adequacy (CIRA) during these initial periods, which is before the ISO knows whether a CPM designation will be needed. Once finalized, offers may only be released or reduced under the conditions described in the offer validation section. Finalized offers are binding and may not be removed from the CSP until released by the ISO after completion of the competitive solicitation process. All offers are assumed to be valid for either a 30-day or 60-day period depending on the CPM event type.

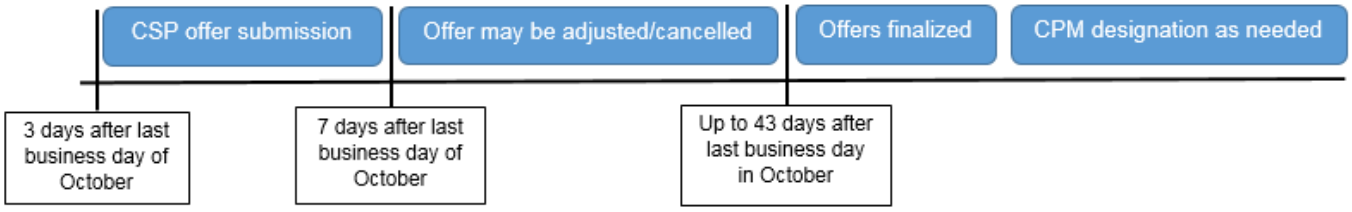
5.2.1 *Offer timeline and process*

During the initial offer period, the ISO will validate offers and give the supplier an opportunity to revise any non-conforming offers. After the initial offer period is closed, the suppliers will have a fixed number of days to either completely remove their offer, remove a portion of their offer, or lower their price. In the annual and monthly process the offer adjustment period will occur concurrent to the ISO determining whether there is a capacity shortage and allowing Load Serving Entities (LSEs) to cure any shortages through the annual/monthly RA process. At the end of this adjustment period all offers will be finalized and locked in for a set period of time as the ISO assesses the need for a CPM designation. After the determination of whether a CPM is needed the ISO will either release the offers or issue the resource a CPM designation.

5.2.1.1 *Annual CSP timeline and process*

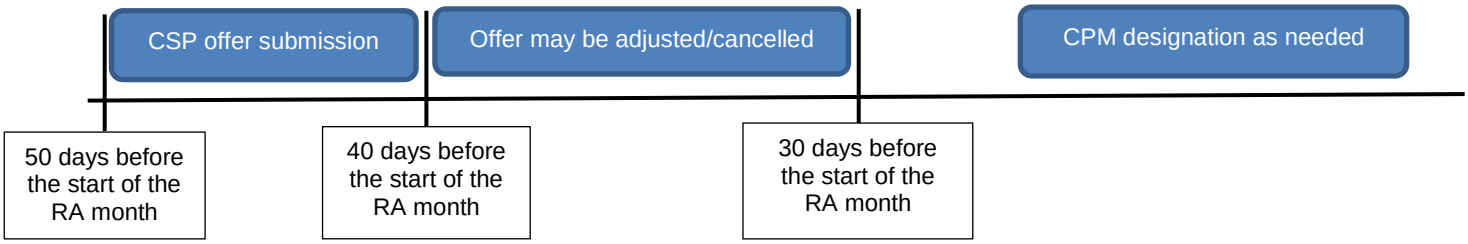
Figure 4 shows the timeline for the annual CSP. Initial offers for the annual CSP may be submitted up to 7 days after the last business day in October. An adjustment period will coincide with the cure period and during this time market participants will have the option to remove or lower the offer price of any previously offered capacity.

Offers into the CSP can be adjusted down in price or MW until 43 days after the last business day in October. At this point the ISO will re-validate that the offered capacity is not already shown on a supply plan and finalize the offer set. This finalized offer set cannot be removed until after the annual CSP process is complete; however, all offers will be released no later than the 5th business day of January.



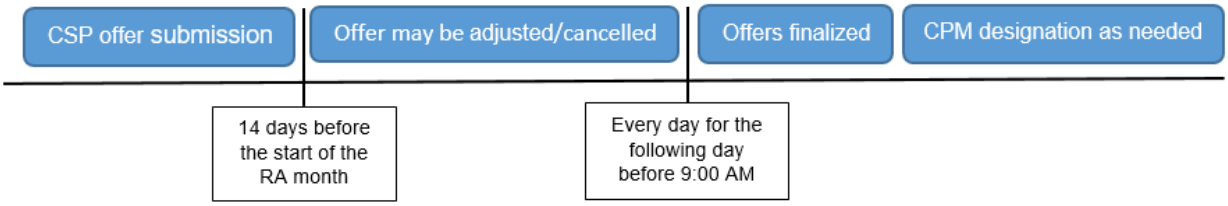
5.2.1.2 Monthly CSP timeline and process

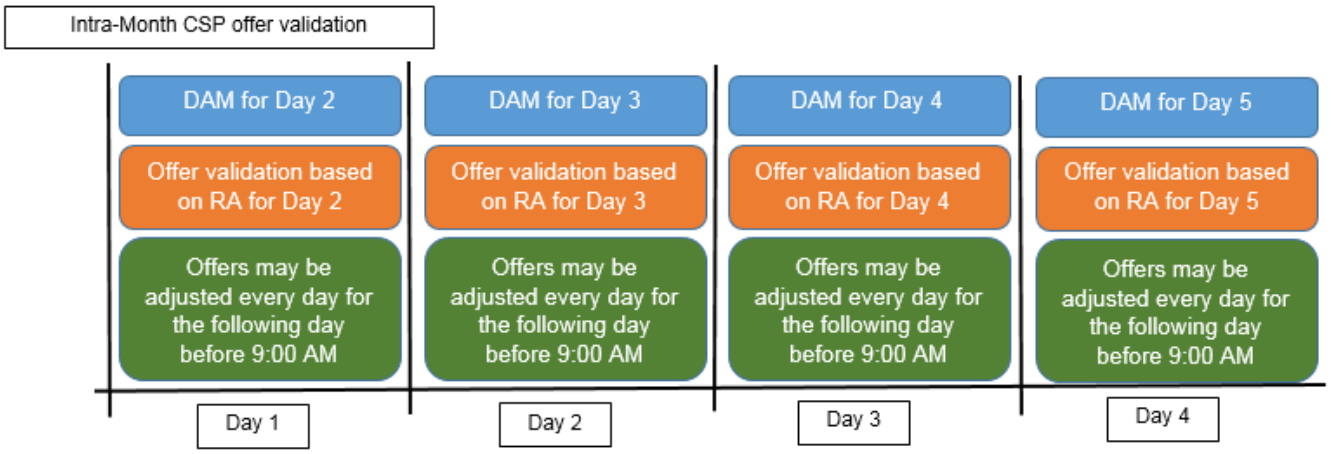
The monthly CSP offers may be submitted up to 40 days before the RA month. Offer prices may be adjusted down in price or MW until 30 days before the RA month. At this point the ISO will re-validate that offered capacity is not already shown on a supply plan and finalize the offer set. This finalized offer set will not be able to be removed until after the monthly CSP process is complete; however, all offers will be released no later than the 5th business day of the applicable RA month.



5.2.1.3 Intra-month CSP timeline and process

Intra-month offers may be offered up to 14 days prior to the RA month. Scheduling coordinators may remove these offers or lower the price at any time during the month before 9:00 AM for the following day. Any offers in the system during an intra-month CPM event will be locked through the assessment and designation period. The offers will expire on the last day of the RA month or when they are removed from the CSP.



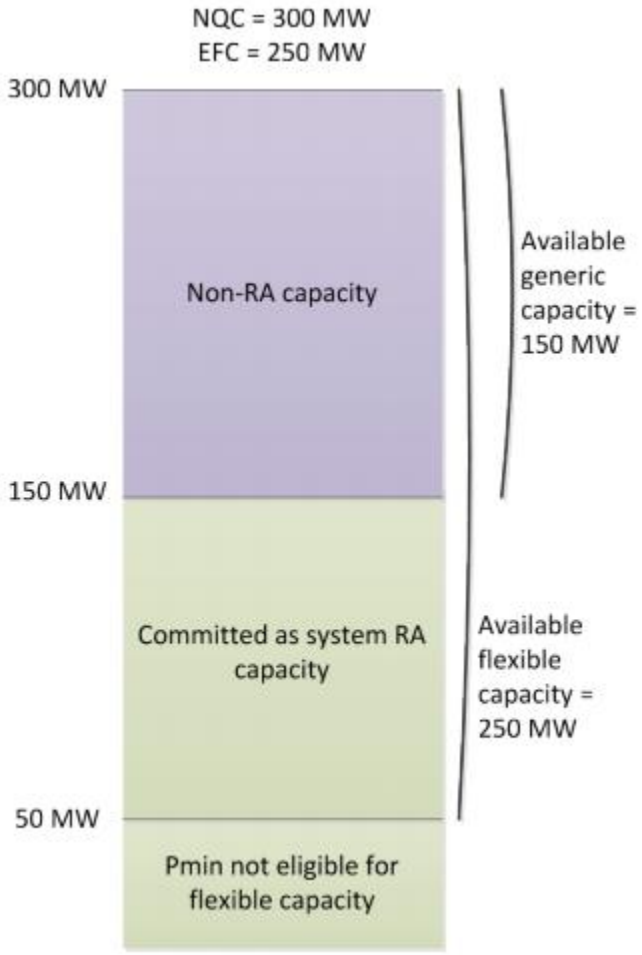


5.3 *CSP offer validation rules*

Scheduling coordinators must use the customer interface for resource adequacy (CIRA) application for CSP. Offer submission, adjustment and finalization will be through CIRA and scheduling coordinators will have access to this information through a user interface in CIRA. Scheduling coordinators may submit offers only during the offer submission window and may cancel/adjust the offers during the adjustment window.

5.3.1 *Offer structure*

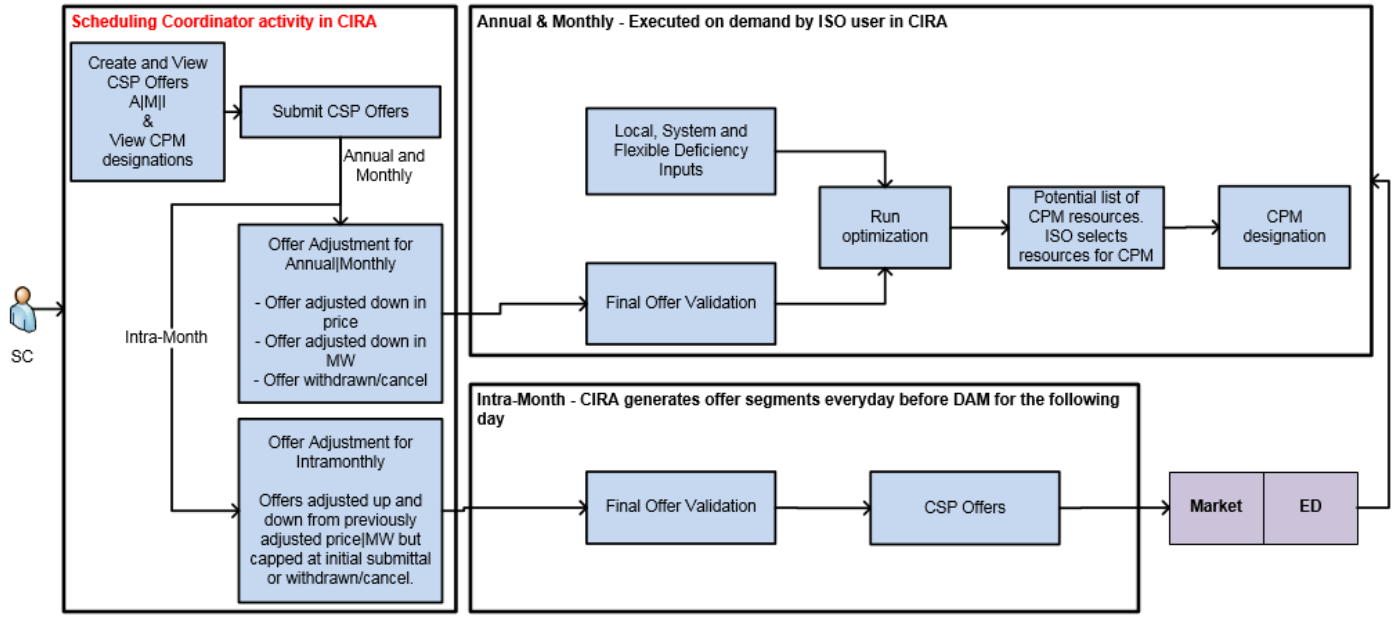
Below is an example of eligible capacity that can be offered in to CSP. The resource has 150 MW of RA on a supply plan. Therefore the remaining generic amount that may be offered in is 300 MW – 150 MW *(NQC – committed RA)*, which equals 150 MW. The resource has not committed any flexible RA, so may offer in the full EFC, which equals 250 MW.


NQC = 300 MW
EFC = 250 MW
300 MW
150 MW
50 MW
Non-RA capacity
Committed as system RA capacity
Pmin not eligible for flexible capacity
Available generic capacity = 150 MW
Available flexible capacity = 250 MW

5.3.2 *Offer lifecycle*

The CSP offer submission, adjustment, finalization and CPM designation process flow is as follows:

- Scheduling coordinators may submit offers for all CSPs through CIRA
  - After offer submission window closes no new offers may be submitted
- Offers may be adjusted or cancelled during the adjustment window
- After the adjustment period ISO will validate all offers to ensure the offers are non RA capacity
- If there is a CPM event then ISO will optimize the offers to pick a pool of resources that meet the need
- ISO may issue a CPM designation



*5.3.3 **Offer validation on submission***

The ISO will validate eligibility of offers by checking the following on offer submission -

1. Offered capacity has to be less than or equal to the resource's Net Qualifying Capacity (NQC) or Effective Flexible Capacity (EFC), as applicable for monthly, annual and intra-month CSP
2. Submitted offers must have a price ($/kW-month) and a capacity (in MW) amount per resource ID
3. Example of an offer for monthly/annual CSP
    a. Capacity MW can be Generic and/or Flexible.
    b. If offer has flexible MW then user must choose the flex category for the resource
        i. Cat 1 resource can be used in cat 1, 2 or 3
        ii. Cat 2 resource can be used in cat 2 or 3
        iii. Cat 3 resource can be used only in category 3

Offer example –
One resource can have two MW quantities and one price as shown below.

Resources	System MW	Flexible MW	Flex Category	Price
ResA	20	20	1	$2
ResB	30			$3
ResC		25	2	$5

4. Offers only on generic RA is allowed for intra-month CSP.
   Offer example -

Resources	System MW	Price
ResA	20	$2
ResB	30	$3
ResC	15	$5

5. Offer MW value (Generic and/or Flexible) has to be less than or equal to PMAX defined in Masterfile for the compliance month
6. For monthly and annual offer periods the offer MW value (Generic and/or Flexible) for ITIE/TG resources has to be less than or equal to the available (net) import capability on the branch group to which the resource is associated.

a. If the offer has both generic and flexible MWs then the max of (generic offer MW, flexible offer MW) is considered for the above check.

5.3.4 ***Offer adjustment***

1. For Annual CSP
    a. Offers that are submitted into the Annual CSP may be adjusted down in price or MW or withdrawn/canceled until 43 days after the last business day in October
    b. If an offer is withdrawn/canceled during the offer adjustment period, the SC must provide a reason for the cancelation
    c. After the offer adjustment period closes, offers are locked and any CPM granted as a result of an offer in place after close of the adjustment period may not be declined
    d. Any annual CPM is bounded by NQC

2. For Monthly
    a. Offers that are submitted into the Monthly CSP may be adjusted down in price or MW or withdrawn/canceled until 10 days before the RA month.
    b. If an offer is withdrawn/canceled during the offer adjustment period, the SC must provide a reason for the cancelation
    c. After the offer adjustment period closes, offers are locked and any CPM granted as a result of an offer in place after close of the adjustment period may not be declined
    d. Any monthly CPM is bounded by NQC

3. For Intra-Monthly
    a. Offers that are submitted in the Intra-monthly CSP may be modified up to 9:00 AM on the current day for the following trade day –
        i. adjusted up and down from previously adjusted price value but capped at initial submitted price
        ii. adjusted up and down from previously adjusted MW value but capped at initial submitted value
        iii. Withdrawn/canceled any time during the month
    b. If an offer is withdrawn/canceled during the offer adjustment period, the SC may provide a reason for the cancelation
    c. After the offer adjustment period closes for a trade day, offers for that trade day are locked and any CPM granted as a result of an offer in place after close of the adjustment period may not be declined
    d. Any ED CPM is bounded by PMAX

5.3.5 Offer finalization

1. Annual CSP
    a. In the annual CSP process, the ISO will validate that no offer overlaps with any capacity from that resource on a RA supply plan in any applicable month of the annual showing during offer finalization. As long as the resource has sufficient capacity between the relevant NQC or EFC and the amount shown on any RA plan, this capacity is eligible to participant in the annual CSP.

2. Monthly CSP
    a. In the monthly CSP process, the ISO will validate that no offer overlaps with any capacity from that resource on a RA supply plan or used as replacement or substitute capacity during offer finalization. There will be no look back to the annual monthly RA showing to verify that the resource was not on that plan as well.

3. Intra-monthly CSP
    a. In the intra-monthly CSP process, the ISO will validate that no offer overlaps with any capacity that is RA on the day the CPM designation would begin.

5.4 CSP offer optimization

5.4.1 Annual and Monthly CSP offer optimization

The purpose of the annual and monthly CSP optimization is to evaluate the capacity MW required to meet the annual and monthly CPM events described in section 5.1.

If an annual or monthly CPM event is triggered due to deficiency in RA showings or a collective deficiency in the RA showings then the CSP offers are optimized and a selection of resources is based on minimizing overall cost of meeting designation criteria performed by an optimization engine in CIRA.

If there is insufficient capacity offered in to the CSP then ISO will insert offers for non RA capacity at the soft offer cap plus a penalty price defined in master file.

Please refer tariff 43A.4.2. for more information on optimization.

5.4.2 Intra-Month CSP offer Optimization

The purpose of intra-month CSP optimization is to evaluate exceptional dispatch and significant event capacity MW that could meet the reliability need of the CPM event. If a reliability need is determined, the selection of resources is based on minimizing overall cost of meeting designation criteria, based on a merit order list initialized from the most recent market solution. The

optimization is not run through CIRA, as it is for annual and monthly, because of timing considerations and the process of minimizing overall cost requires consideration of resource constraints. The engine uses capacity offers from CIRA and energy and commitment cost bids from SIBR. In the absence of bids submitted by the scheduling coordinator for the appropriate interval, the engine will use default values for energy bids and commitment costs.

Modified bids used for optimization:

- Three part bids (start-up, minimum load, energy) are used, with modifications using the capacity offers -
    - Capacity cost curve is added to the incremental energy bid curve
    - The combined incremental cost curve is consolidated into two segments matching the capacity cost curve with each segment at the weighted average combined cost
    - Capacity cost for the capacity below PMIN is added to the minimum load cost

If the reliability need is considered after the day-ahead run, but before the real-time:

- The merit order list is initialized from the day-ahead market solution and produced for the interval with the reliability need.
- Otherwise in real-time:
    - The merit order list is initialized from the last fifteen minute market solution and produced for the interval with the reliability need.

Please refer tariff 43A.4.2.2 for more information on optimization.

5.5 *CPM designation*

Once a CPM designation is issued, the CPM resource, MW quantity, price and duration will be updated in CIRA. Any resource designated under the CPM will have all the responsibilities and must-offer requirements as RA resources of the same RA type and category. The exception to this rule is that the designated resource will have an individual availability incentive mechanism price. This price will be the price that the resource was paid by the ISO ($/kW-month) during CPM designation. *Please refer tariff 43.7 and 43.8 for more information on CPM payments and allocation*

If a resource with a CSP offer is designated for CPM then the SC cannot decline the CPM designation. If the CSP offer optimization result does not meet the minimum criteria needed for a CPM event designation, then the ISO will not offer a CPM designation to any of the resources with offers to the CSP. Instead the ISO will look towards capacity that was not offered into the CSP to assess this capacity against the minimum criteria. Under the circumstance where the ISO must use capacity that was not offered in to the CSP to meet the minimum criteria, the ISO will insert the soft offer cap for the purposes of the designation procedure. If ISO designates capacity from a resource that was not offered into the CSP, the supplier will have the option to request a unit-specific cost-based price to FERC or, in the case of an Exceptional Dispatch CPM, decline the CPM designation within 24 hours from the time of the designation and be paid under the supplemental revenues option. In the event there is no capacity from either offered or non-offered resource pools that meets the ISO's initial minimum criteria to satisfy the CPM need, the ISO will reassess and lower the minimum criteria. The ISO will then redo this step using the lowered minimum criteria.

Significant event CPM has an initial 30 day designation and can extend for another 60 days. It can be total of 90 days but SC can reject the extension after the initial 30 day period. If the CPM is rejected then ISO will rerun the CSP based on existing offers at that time. The resource that rejected the extension can offer in to the CSP but the offer price has to be lower than the CPM price granted during the initial 30 day period. If the resource accepts the extension then the price remains the same as the initial designation

Please refer to tariff 43A 3.5 for more information.

Exceptional dispatch CPM has an initial 30 or 60 day designation. Local CPM is always 60 days and system CPM is a 30 day designation. If the conditions continue the ISO may extend the designation by another 30 or 60 days depending on the initial designation.

6 Net Qualifying Capacity

Welcome to the ISO Net Qualifying Capacity section of the BPM for Reliability Requirements. In this section you will find the following information:

A description of the factors that are considered in calculating Net Qualifying Capacity (NQC) of Resource Adequacy Resources, including methodologies for determining the deliverability of resources within and without the ISO Control Area

A description of the Net Qualifying Capacity Report utilized by ISO to communicate NQC information to Market Participants

6.1 Calculation of Net Qualifying Capacity

6.1.1 Establishing Qualifying Capacity

The initial step in the process of determining NQC is for an SC for the resource to establish a Qualifying Capacity (QC) value. Under ISO Tariff Section 40.4.1, the ISO shall use the criteria provided by the CPUC, Local Regulatory Authority, or federal agency, to determine and verify, if necessary, the QC of the submitting resource.

The ISO recognizes the potential ambiguity in this approach where the resource is not owned or controlled by an LSE and/or has the same SC as the ultimate contracting LSE. Notwithstanding potential complications, where a resource has entered into a contract to provide Resource Adequacy Capacity to a particular Load Serving Entity, the resource should utilize the QC criteria adopted by the entity regulating that specific Load Serving Entity, i.e., CPUC or other Local Regulatory Authority. To the extent the resource is not under contract, but wishes to establish a QC value, it should select and report based on one or more potential criteria, i.e., CPUC and/or City of Anaheim. Further, to the extent a resource is listed by one of more Scheduling Coordinators in their Resource Adequacy Plans, which apply differing QC criteria, the ISO accepts the methodology that results in the highest QC value for the resource as long as the resulting NQC does not exceed the limitations described in 5.1.3.1 below.

Only if a Local Regulatory Authority has not adopted specific QC criteria will the default provisions of ISO Tariff Section 40.8 apply.

Based on the foregoing rules, the resource seeking to deem its capacity eligible for resource adequacy purposes submits the proposed QC value to the ISO through the submittal of a QC Template by the representative SC. The template may be found at:

http://www.caiso.com/Documents/2013NetQualifyingCapacityRequestForm.xls

Once the QC value is established, the ISO calculates a NQC value.

6.1.2 Changes to QC

Scheduling Coordinators may submit proposed changes to QC values for the LSEs that they represent. Sufficient documentation to justify the QC value adjustment must accompany the request.

The process for submitting changes is basically identical to that for an initial submittal. The representative SC submits the QC Template, but indicates that this is a change submittal, not an initial submittal, by describing the nature of the change in the submission cover letter.

For those resources that elect, or are required, to use the QC criteria adopted by the CPUC that are based on historic capabilities, such as wind or solar Generating Units, the ISO will utilize QC data provided by the CEC to the extent available.

Under Section 40.4.2, the NQC of a resource included in the ISO's annual NQC report cannot be reduced by the ISO for the RA Compliance Year for which the report was published. Accordingly, only changes that increase QC and the resource's accompanying NQC will be effective for inclusion in a monthly Supply Plan in the Compliance Year for which the change is made. The ISO must receive such increases in QC no later than the first business day of the month, two months prior to the compliance month for inclusion in the Supply Plan submitted for that compliance month. If received after that date, the QC change will not be effective until the following month's Supply Plan.

6.1.3 NQC Criteria

6.1.3.1 General Resource Requirements to Supply NQC

In addition to requiring that a resource be in compliance with the QC criteria established by the CPUC, other Local Regulatory Authority, or federal agency, ISO Tariff Section 40.4.3 outlines several additional requirements for a resource to supply NQC, including:

The resource must be available for testing or audit by the ISO for validation purposes for the next RA Compliance Year (calendar year January 1 through December 30).

The representative SC must provide any information requested by the ISO to support the submittal of the resource's QC or application of ISO adopted "performance criteria."

The resource must comply with bidding requirements of the ISO Tariff

The resource, through its representative SC, is subject to Sanctions as specified in the ISO Tariff. These sanctions may include those authorized under ISO Tariff Section 37 as well as any impact to the resource's settlement treatment as expressly set forth in Section 40.

NQC reflects QC reduced, as appropriate, for the following reasons:

If a testing program determines that a submitted resource is not capable of supplying the full QC amount, as described in Section 5.1.3.2 below. (ISO Tariff Section 40.4.4)

If application of resource performance criteria, once adopted by the ISO, indicates the resource cannot be counted at its full QC value, as described in Section 5.1.3.3 below. (ISO Tariff Section 40.4.5)

If deliverability studies indicate that a submitted resource cannot deliver its full QC amount, as described in Section 5.1.3.4 and Section 5.1.3.5 below. (ISO Tariff Section 40.4.6)

6.1.3.2 Testing

Integration of a NQC Testing program into existing ISO testing programs is currently in development. However, several elements have been identified. First, Generator Units cannot claim QC in excess of their final maximum power plant output or Pmax as approved in their Interconnection Agreement. This limitation is necessary to ensure consistency between resource counting protocols and the physical limits of the resource's output. Requests for QC beyond the approved Interconnection Agreement are studied and approved pursuant to an Interconnection Request under the existing LGIP process. In order to be considered for NQC determination, the value of Pmax must be determined by actual unit testing. In the event the generator has not established a Pmax value through testing, the generator may schedule a Self-Administered Pmax Test. This test is a 15-minute test which is scheduled by the generator owner and remotely validated by the ISO. Resources such as solar and wind generation which are subject to CPUC averaging are excluded from this requirement.

Any generator QC claims must be based on industry recognized electrical interconnection standards. For example, the ability to supply a minimum 0.90 lagging (boosting) to 0.95 leading (bucking) power factor at the claimed QC.

Any testing that is performed after publication of the NQC Report for a particular RA Compliance Year can operate only to increase, not reduce, the NQC of the resource during the RA Compliance Year covered by the published NQC report.

6.1.3.3 Performance Criteria

For the purpose of determining, developing or implementing such performance criteria, Scheduling Coordinators will need to provide any and all data requested by ISO. This includes, but is not limited to, NERC Generating Availability Data System data. All submitted data is subject to the confidentiality provisions of the ISO Tariff. The ISO will collaborate with the CPUC, Local

Regulatory Authorities, and federal agencies, to develop the performance criteria for Resource Adequacy Resources.

6.1.3.4 Deliverability to Aggregate of Load

ISO Tariff Section 40.4.6.1

Deliverability is an essential element of any resource adequacy assessment. LSE compliance with resource adequacy procurement obligations will be affected by the ability of their procured supplies to serve Load under peak conditions. Therefore, an effective deliverability study is essential in resource planning so that LSEs are able to 'count' their resources to determine if they are satisfying the required Reserve Margins. The deliverability of Generation to the aggregate of Load measures the capability of the transmission system given the dispatch of other proximate Generation resources to deliver power output from a particular Generator to Load in the ISO Control Area during peak Demand conditions. A resource whose output is not fully deliverable will have the capacity that it may offer for resource adequacy purposes reduced.

Consequently, ISO has developed a deliverability study to assess deliverability of Generation to serve Load in the ISO Control Area. This deliverability assessment of Generation to the aggregate of load is performed through both annual assessments to measure general system changes and for new Generating Facilities through the Large Generator Interconnection Procedure.

ISO performs Deliverability Assessments consistent with the timeline of Generator Interconnection Procedure (GIP). Table 1 outlines the studies to be done in each GIP study cycle:

Table 1: Deliverability Assessment

	Start	**End**
Cluster Phase I	June	October
Cluster Phase II	January	July
Annual Full Capacity Deliverability Option[1]	June	August

1. The annual full capacity deliverability option for Generating Facilities previously studied as Energy-Only Deliverability Status starts in 2012.

Pursuant to Section 6.5.2 of the Generator Interconnection Procedure (GIP), Appendix Y of the ISO Tariff, ISO will conduct a Deliverability Assessment in the Phase I study to determine:

- Preliminary Delivery Network Upgrades required to provide the Generating Facility with Full Capacity Deliverability Status.

- MW of deliverable generation capacity for the group of generators that contribute to the same transmission constraints if the highest cost Delivery Network Upgrade component were removed from the preliminary Delivery Network Upgrade plan.

The Interconnection Customer can choose to move forward into the Phase II study either confirming the same deliverability status as in Phase I or changing the deliverability status from Full Capacity to Energy Only. ISO will conduct a Deliverability Assessment in the Phase II study to update the Phase I Deliverability Assessment results.

Deliverability Assessment results will be included in the Phase I and Phase II Interconnection Study report for each generation project under GIP, and non-confidential portions of the study will be posted on the ISO website.

Starting in 2012, there is an annual Full Capacity Deliverability Option for Generating Facilities previously studied as Energy-Only Deliverability Status. The ISO will conduct an additional Deliverability Assessment to determine the deliverability of each Generating Facility requesting the Energy-Only to Full Capacity option based on the available transmission capability existing or relating to approved transmission upgrades, after allocating the transmission capability first to the Generating Facilities requesting Full Capacity in the Phase II study.

The deliverability analysis focuses on peak Demand conditions and covers a minimum five-year planning horizon in order to ensure that the deliverability analysis can be utilized in the development of Resource Adequacy Plans. While this study is conducted at peak Demand conditions and considers all Generation previously determined to be deliverable, it does not necessarily ensure that particular Generation will not experience congestion during other operating periods.

The deliverability methodology narrows the scope of the deliverability study to scenarios when there are anticipated capacity reserve shortages that are expected to occur during summer peak Load periods. During this time period, it is assumed that all available Generation is Dispatched to serve Load regardless of cost. It is also assumed that there is sufficient Generation being produced in the Load pockets. The deliverability study then looks at all of the reasonably expected scenarios created by the variation of Generation Dispatch and Contingencies, while focusing on finding constraints caused by limiting transmission facilities. Screening techniques are employed to decrease the number of fully solved AC power flow cases that need to be run to those that potentially limit the deliverability of generator capacity. The methodology is defined and consistently applied across the ISO Control Area and from one study to the next.

ISO uses the deliverability analysis embodied in its Interconnection procedures to ensure that new Generation does not degrade the deliverability of existing resources. This mechanism tends

to keep NQC ratings stable for a given existing resource. In this regard, a Generating Unit must operate or be capable of operating at the capacity level associated with its rated deliverability to retain its deliverability rights. To the extent a Generating Unit becomes incapable of operating at this level for any consecutive three-year period, the Generating Unit will lose its deliverability priority in an amount reflecting the loss of generating capability. The holder of the deliverability priority may retain its rights after the expiration of the three-year period if it can demonstrate that it is actively engaged in the construction of replacement generation to be connected at the bus associated with the deliverability priority. Under such circumstances, the Generating Unit developer and ISO will identify specific milestones to preserve the deliverability priority. The holder of the deliverability priority will retain only such rights that are commensurate with the size in megawatts of the replacement generation, not to exceed the amount associated with the prior Generating Unit's deliverability priority.

In a similar manner, the ISO planning process attempts to insure that a new Transmission project will not degrade the deliverability of existing resources.

To the extent the deliverability analysis shows that the Qualifying Capacity of a Generating Unit is not deliverable to the aggregate of Load under the conditions studied, the Qualifying Capacity of the Generating Unit is reduced on a MW basis for the capacity that is undeliverable

At the conclusion of a deliverability study, a particular Generating Facility is classified into one of four distinct categories:

Fully deliverable: 100% of the capacity of the resource can be counted as deliverable for resource adequacy purposes once all the required Delivery Network Upgrades are in service

Partially deliverable: a fractional amount of the capacity cited must be discounted before the required Delivery Network Upgrades are in service and/or due to deliverability problems

Interim Deliverable: An interim designation that allows an Interconnection Customer that has requested Full Capacity Deliverability Status or Partial Capacity Deliverability Status to obtain non-zero Net Qualifying Capacity, as determined annually by the CAISO pursuant to the provisions of the CAISO Tariff and the applicable Business Practice Manual, pending the in-service date of all the required Network Upgrades required for its requested Deliverability Status.

Non-deliverable: none of the cited capacity can be utilized for resource adequacy purposes

Detailed documentation explaining the deliverability study is contained in the *ISO Generator Deliverability Assessment Methodology On-Peak Deliverability Assessment Methodology for Resource Adequacy Purposes, Updated 4-10-2009*, http://www.caiso.com/23d7/23d7e41c14580.pdf

If the NQC of multiple generating units would be reduced based on deliverability due to the same constraint and those multiple units are considered by the resource owner as one generating plant, then the CAISO may establish a plant-level NQC provided the following conditions are met: (1)

the impacted units are under the control of the same scheduling coordinator; (2) the units are all connected to the same bus (have equal effectiveness factor to the binding constraint); and (3) the scheduling coordinator for the units indicates it wishes to have a plant-level NQC. The plant-level NQC will be the sum of the NQCs of the constituent units, as those individual NQCs have been adjusted based on deliverability considerations. If the individual units are no longer under the same scheduling coordinator, then the NQC will revert back to the unit-level NQC.

6.1.3.5 Deliverability of Imports

ISO Tariff Section 40.4.6.2, Available Import Capability Assignment Process

The deliverability study is also utilized to establish the total import capacity for each import path allocated to a Scheduling Coordinator for LSEs. As an input assumption, the deliverability study includes the amount of imports and Existing Transmission Contract related encumbrances utilizing the ISO Controlled Grid, as well as any increases in import capacity for particular import paths that were adopted in the Transmission Planning Process (TPP).

For import Resource Adequacy Capacity accounting purposes, import capability of the system is allocated by Intertie (by branch group for Compliance Year 2008 and beyond) in accordance with the detailed 13-step process included in Section 40.4.6.2.1 (Available Import Capability Assignment Process). Once import capability has been determined for each Intertie and assigned to Load Serving Entities and other Market Participants, that import capability can be transferred to other Market Participants during step 8 of the 13 step process, as well as after step 13 per section 40.4.6.2.2 of the Tariff. Any requests to register as an eligible participant for import capability transfers shall be reported via CIDI. To report a transfer of import capability the participant should submit the request to CIRA. . The schedule of ISO postings and the deadlines for performing submittals related to the 13 step process are set forth in Appendix A.

The ISO will issue a market notice which will disclose the date and time that requests will be accepted for each of the steps 10-13. Each of these steps must be completed sequentially (*e.g.*, step 10 must be completed before completing step 11). Any requests received prior to the date and time indicated in the market notice related to each step will not be honored.

In accordance with ISO Tariff Section 40.6.2.2.3, Other Import Capability Information Postings, the ISO will post the holder and their MW allocation of import capability on each branch group following the completion of Step 13 of Exhibit A-3 and all subsequent bilateral transfers thereafter. These bilateral transfers will be posted to the CAISO website on a monthly basis per Exhibit A-3 and will also be available in CIRA real time.

Maximum Import Capability

In the Available Import Capability Assignment Process, Step 1 is the Determination of Maximum Import Capability (MIC) on Interties into the ISO Balancing Authority Area. In 2011, the MIC methodology was revised to include an Expanded MIC methodology that provides a forward-looking, prospective MIC component designed to yield larger MIC values for specific interties and works in coordination with the ISO's transmission planning process (TPP).

The process starts in the TPP, where the ISO will first establish target Expanded MIC MW values for each intertie that will be sufficient to support RA deliverability for the MW amount of resources that will utilize each intertie for scheduling imports into the ISO BAA and that are included in the base case resource portfolio that will be used in the current TPP cycle for identifying policy-driven transmission additions and upgrades.[1] For interties where there are no external resources included in the base case portfolio, the ISO will assume that no additional MIC is needed beyond the historically-determined level, which is described below.

The ISO will post the target expanded MIC MW values on the ISO web site in conjunction with the TPP. The ISO will then conduct deliverability studies within the TPP to assess whether the transmission system can support the target expanded MIC MW values, For this assessment the deliverability studies will assume that previously approved transmission additions and upgrades are placed in service, and that new generating resources that were assumed in the base case resource portfolio and the unified planning assumptions for the current TPP cycle have achieved commercial operation. If the deliverability studies determine that the transmission system infrastructure with the assumptions stated above is not sufficient to support the target expanded MIC values on one or more interties that the external resources included in the base case portfolio need to utilize to import energy into the ISO BAA, the ISO will propose transmission additions or upgrades in accordance with the ISO tariff to support deliverability of the target expanded MIC quantities.

The methodology for Expanded MIC is described below, and is illustrated in the diagram in Figure 1. The ISO deliverability assessment process is also described in the *ISO On-Peak Deliverability Assessment Methodology for Resource Adequacy Purposes.*[2] In addition, the following report provides detailed information about this process: *Preliminary Deliverability Baseline Analysis Study Report*, Appendix 1: *Generation and Import Deliverability to the Aggregate of Load (Baseline) Study Methodology, Executive Summary, April 8, 2005.*[3]

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[1] For example, if the adopted policy mandate for identifying policy-driven transmission in the TPP is the state's 33 percent renewable portfolio standard, the ISO establishes the resource portfolio in collaboration with the CPUC, and this portfolio includes renewable resources that will be sufficient to meet the state mandate of 33% renewable energy on an annual basis by 2020.

[2] *ISO On-Peak Deliverability Assessment Methodology for Resource Adequacy Purposes, Updated April 10, 2009, http://www.caiso.com/23d7/23d7e41c14580.pdf*.

[3] See http://www.caiso.com/docs/2005/05/03/200505031708566410.pdf.

1. **MIC Baseline**. Under the Expanded MIC methodology, the historically-based MIC ("Historical MIC") methodology is used to establish a baseline set of values for each intertie.

   Specifically, the prior two years of historical import schedule data is examined during high load periods. The sample hours are selected by choosing two hours in each year, and on different days within the same year, with the highest total import level when peak load was at least 90% of the annual system peak load. The historically-based MIC values are then determined to be the scheduled net import values for each intertie plus the unused Existing Transmission Contract ("ETC") rights and Transmission Ownership Rights ("TOR"), averaged over the four selected historical hours.

   The initial Historical MIC methodology and assessment is described in the *Preliminary Deliverability Baseline Analysis Study Report*[5]*,* Appendix 2: *Initial CA ISO Import Level for the Deliverability of Imports Assessment*.

2. **Assess Remaining Import Capability (RIC) Relative to Target Expanded MIC Values Determined in the TPP**. For each intertie or a sum of interties electrically connected to a resource area identified in the TPP base case resource portfolio, the ISO will determine whether the RIC available (after Step 4 in ISO tariff section 40.4.6.2.1) is sufficient to achieve the target expanded MIC values that were derived in the TPP from the stated policy goals.
   a. **Sufficient**. If sufficient RIC exists in order to achieve the target expanded MIC values, the ISO will continue to use the historically-based MIC methodology for that intertie for the annual RA import allocation process.

   b. **Insufficient.** If there is not sufficient RIC to achieve the target expanded MIC values, the ISO will estimate the target expanded RIC based on the estimated Qualifying Capacity for each type of resource modeled in the base case resource portfolio that requires deliverability to the ISO grid.

3. **Target Expanded MIC**. The new target expanded MIC value, for each intertie or sum of interties electrically connected to an identified resource area, equals the sum of the following:
   a. The target expanded RIC;

   b. Applicable Existing Transmission Contract ("ETC") rights and Transmission Ownership Rights ("TOR") for the years of interest; and

   c. Pre-RA Import Commitments still under contract in the years of interest.

4. **Deliverability Study**. Once the new target expanded MIC has been established for the base case resource portfolio developed in the TPP, and during the same TPP cycle, the ISO will conduct a deliverability study for this intertie(s), in order to assure simultaneous deliverability of the base case resource portfolio under the assumptions identified above. Any transmission additions required in order to maintain deliverability of the base case portfolio resources may be approved as policy-driven transmission in the TPP under

tariff section 24.4.6.6. See Figure 1 TPP, Import Allocation, and GIP Overview Diagram below.

Figure 1 TPP, Import Allocation, and GIP Overview Diagram

5. **Multiple Interties to One Targeted Resource Area**. If more than one intertie electrically connects the area affected by the new Expanded MIC; then the split of the Expanded MIC should be done as follows:

   a) Pre-RA import commitments and available ETCs should be maintained on the same branch groups as historical data provides.

   b) The expanded target for RIC shall be split in a way that closely mimics actual flow split between the involved ties (electrically connected to this area).

   c) Once one of these ties reaches its TTC the allocation is stopped and the remaining capacity will be split between the remaining ties in the same fashion as in (b) above.

   d) The final split should be checked through deliverability assessment and further adjustments may be done in order to minimize the required new transmission to achieve the policy-driven goal.

6. **Publish Expanded MIC Values.** Once established, the appropriate Expanded MIC values will be published in the annual ISO transmission plan, including annual values up to 2020 to reflect the expected in-service dates of any needed transmission additions and upgrades.

6.1.3.6 Modeling Expanded MIC Values in GIP

Starting with the 2011/2012 TPP, the Expanded MIC values and associated TPP-identified transmission will be modeled in the GIP. These Expanded MIC values and elements will be modeled in lieu of, and only if they are higher than the previous historically established MIC values, in the Phase 1 and Phase 2 GIP deliverability studies for GIP clusters.

The results of the 2011/2012 TPP will likely lead to RA import quantities in the GIP Phase II cluster studies for clusters 3 and 4 that are larger, at least for some interties, than the import quantities assumed in the GIP Phase I studies for these clusters. In the event that this creates a need for additional transmission beyond what was identified in the Phase I studies, such additional network upgrades that come out of GIP Phase II studies due to the Expanded MIC values will be evaluated in the next TPP cycle, and may be approved in the TPP as policy-driven transmission additions or upgrades.

The timeline in Figure 2 below illustrates the linkages between the TPP and GIP

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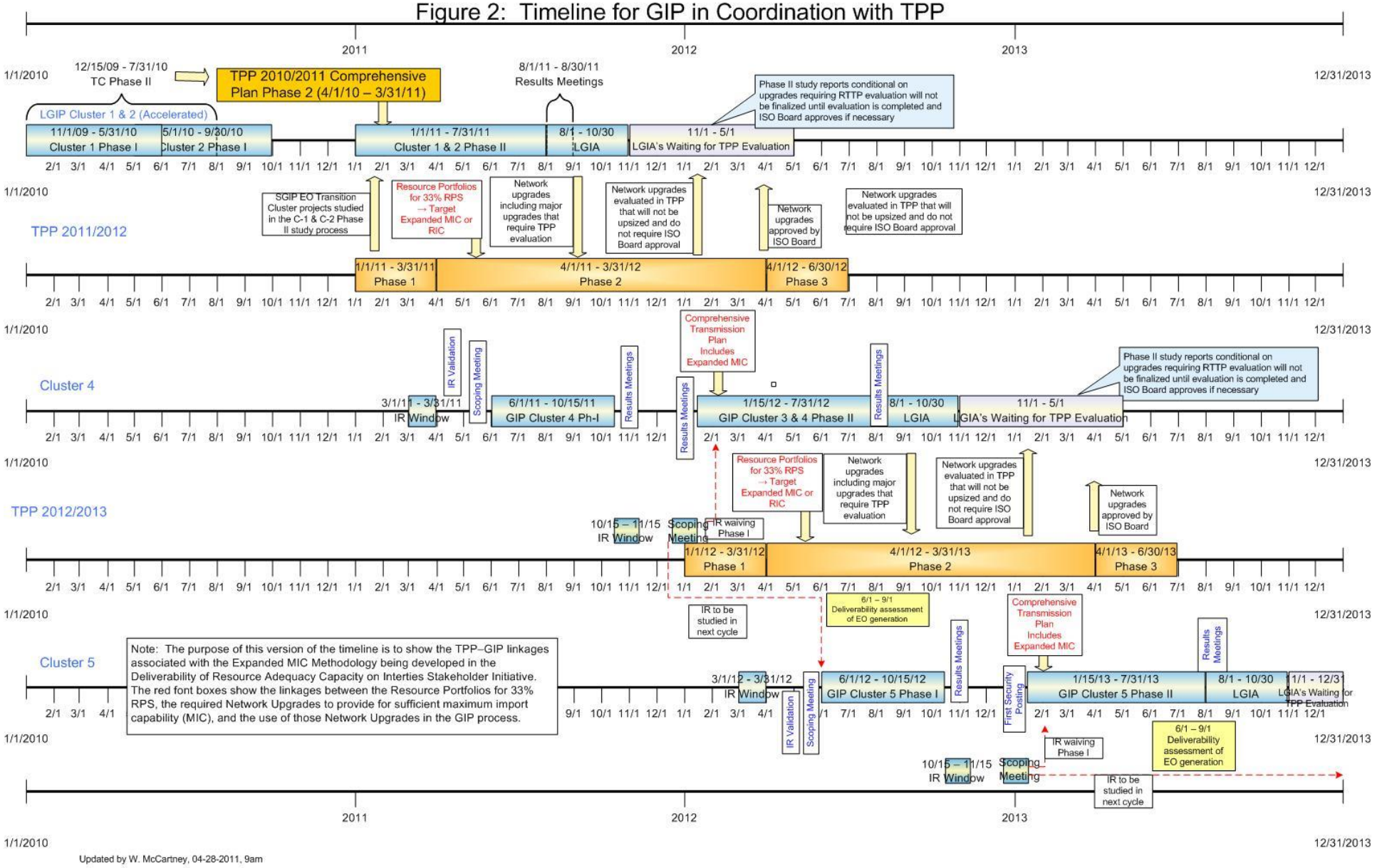
Figure 2: Timeline for GIP in Coordination with TPP



Deliverability of Resources Subject to Resource Transitions

The purpose of this section is to establish the Resource Adequacy ("RA") deliverability status of a resource when the resource transitions from outside to inside the ISO balancing authority area ("BAA") due to a change to the ISO BAA boundary. This section describes the conditions under which a resource may be eligible for this resource transitions process. Transitioning resources will be subject to ISO Tariff Section 40.4.3, General Qualifications For Supplying Net Qualifying Capacity, and other provisions applicable to internal resources.

Deliverability status will be established for a transitioning resource for the amount of capacity associated with historically demonstrated imports during the RA import delivery assessment hours. Resource transitions are limited to existing substation reconfigurations involving no retail load (other than generator auxiliary load) and small reconfigurations to existing transmission facilities as may be required in order to physically change the existing BAA boundary with the accord of all parties involved.

Resource transitions do not apply to large boundary changes that would move load into or out of the ISO BAA, or add significant amounts of transmission or generation infrastructure to the ISO BAA. These larger changes will be evaluated on a case-by-case basis. New generator interconnections are also outside the scope of this proposal and must proceed through the generator interconnection procedures (GIP).

Resource Transition Requirements

In order to qualify for consideration as a resource transition, the resource must conform to the following requirements:

1) **Eligibility for the resource transition process may be triggered solely by an existing substation reconfiguration at the BAA boundary**. Substation reconfigurations with a BAA boundary change can result from: (a) a change of ownership of buses or bays, (b) a change of BAA designations of buses or bays, or (c) the addition of buses or bays at that existing substation. Reconfigurations to existing transmission lines related to (a), (b), or (c) are allowed since they may be required in order to physically change the existing BAA boundary, as long as they have an insignificant effect on the system impedance and they effectively do not change the flow patterns from the existing ISO boundary towards the main ISO system. Such changes can be accomplished with concurrence from all involved parties, and are formalized in revisions to the ICAOA between the affected BAs.

2) **Resources affected by BAA boundary changes that involve load transferring in or out of the ISO BAA are not eligible for the resource transition process.** BAA boundary changes to the transmission configuration that add load (currently outside ISO control area) or remove load (currently inside ISO control area) are not eligible for a resource transition.

3) **The transitioning resource must have verifiable contribution to historical net import data used for determining RA import capability on**

the associated intertie. If the existing resource transitioning into the ISO control area desires deliverability beyond the historical level established as described above, it needs to apply for such additional deliverability by entering the GIP queue as a new interconnection.

Submission of Resource Transition Requests

The owner of a transitioning resource must submit a request to the ISO for the initial allocation of RA deliverability under Section 5.1.3.6 in conjunction with a pending or completed amendment to the ICAOA reflecting the boundary change. The resource owner must also provide supporting information regarding the physical configuration of the boundary change, the timing of the change and other documentation relevant to the boundary change. The ISO will not evaluate the request until the necessary amendment to the ICAOA has been executed.

In order for the BAA boundary change and the resource transition to be taken into account in the ISO's annual net qualifying capacity (NQC) process, either the transition must have already occurred by June 15 of the transition year, or the BAs involved in the boundary change must have executed the relevant revisions to their ICAOA by June 15 and that agreement must specify an implementation date prior to January 1 of the upcoming RA compliance year. If none of these requirements are met, the ISO will perform the RA Import Allocation without taking account of the boundary change and resource transition. Accordingly, a transitioning resource would have no transitioning deliverability for the upcoming RA year, and the RA import capacity on the associated intertie would not be reduced to reflect the resource transition. In such a case, if the transitioning resource wishes to obtain RA deliverability either for the remainder of the year in which the transition occurs or for the upcoming RA compliance year, it may do so only through a bilateral import capability transfer as detailed in ISO tariff section 40.4.6.2.2. See Section 5.1.3.6.6 for information on timing and bilateral import capability transfers.

Contract Requirements

In addition to the ICAOA amendment, transitioning resources must enter into an Interconnection Agreement, a Participating Generator Agreement (PGA), and a Metering Services Agreement (MSA) with the ISO in order to be considered in the NQC process in accordance with other provisions in this BPM. These contracts are required before the transition can be implemented and are a prerequisite to the ability of LSEs to count the transitioning resource in the month-ahead RA process as described below. However, the execution of these contracts is not required by the June 15 deadline for the transitioning resource to be given RA deliverability in this process if the resource is scheduled to transition after that date but before the beginning of the next RA compliance year; for that purpose the executed ICAOA revisions are sufficient.

Establishing Deliverability for Resource Transitions

Under the resource transition process, the ISO will perform an initial allocation of deliverability to the transitioning resource, which will then be subject to the Net Qualifying Capacity (NQC) tariff provisions in Section 40.4.6.1. Thus, transitioning resources will be subject to the ISO's annual deliverability study analysis and process for establishing the Net Qualifying Capacity for internal generation resources.

Eligible resources must demonstrate clear historical import deliveries during the RA import deliverability assessment hours. Two years of historical data, which the ISO will identify each year, must be provided by the owner of the transitioning resource. The historical data will be used in the assessment, consistent with the ISO's methodology for the RA import deliverability assessment. To determine the amount of the resource's capacity to which deliverability will be assigned, the ISO will conduct an assessment of historical deliveries based on (1) e-tags showing the resource as source of imports into the ISO and the resource's metered output data, or (2) if e-tags are not available or clear, the power purchase agreement (PPA) between the resource and an LSE serving load inside the ISO BAA and the resource's metered output data. The amount of energy delivered by the resource into the ISO grid during the deliverability hours used to establish RA import deliverability will determine the amount of the resource's capacity that qualifies for deliverability status under this proposal.

5.1.3.6

Adjustment to Intertie RA Capacity

For the first year after the resource transitions into the ISO BAA, the maximum RA import capacity on the associated intertie will be decreased by the same amount of deliverability given to the transitioned resources. In subsequent years a new maximum RA import capacity will be developed for the intertie based on the established MIC methodology.

Timing of Resource Transitions

Once a request is submitted, the timing of a resource transition depends on the date of the executed ICAOA and the date of the physical boundary change. The initial deliverability assessment for all transitioning resources is done once a year at the same time as the RA Import Allocations are given out for the next compliance year. Three illustrative resource transition scenarios are shown in Table 1 below.

- Table 1, Line 1: In order for the BAA boundary change and the resource transition to be taken into account in the ISO's annual NQC process and RA Import Allocation process, either the transition must have already occurred by June 15 of the transition year, or the BAs involved in the boundary change must have executed the relevant revisions to their ICAOA by June 15 and that agreement must specify an effective date prior to January 1 of the upcoming RA compliance year.

- Table 1, Lines 2, 3: If none of these requirements are met, the ISO will perform the RA Import Allocation without taking account of the boundary change and resource transition. This means that the transitioning resource would have no transitioning deliverability for the upcoming RA year, and the RA import capacity on the associated intertie would not be reduced to reflect the resource transition. In such a case, if the transitioning resource wishes to obtain a positive NQC value either for the remainder of the year in which the transition occurs or for the upcoming RA compliance year, it may do so by obtaining interim deliverability from imports through a bilateral import capability transfer as detailed in ISO tariff section 40.4.6.2.2.

Table 1 Illustrative Resource Transition Timing Scenarios

Table 1

Illustrative Resource Transition Timing Scenarios

No.	ICAOA Submitted to ISO	Physical Boundary Change Occurs	Possible Bilateral Transfer of RA Import Capacity	Eligible for NQC as Resource Transition	Historical Data Used
1	May 2011	Nov 2011	Nov-Dec 2011	2012	2009 & 2010
2	May 2011	Feb 2012	Feb-Dec 2012	2013	2010 & 2011
3	Sep 2011	Aug 2012	Aug-Dec 2012	2013	2010 & 2011

6.2 Net Qualifying Capacity Report

ISO Tariff Section 40.4.2

ISO produces a listing setting forth the NQC of all Participating Generators, other Generating Units and generating units under construction that request inclusion through their respective SCs. The values in this Net Qualifying Capacity (NQC) report are used by ISO for:

- Deliverability studies
- Local capacity studies
- Validation of LSE Resource Adequacy Plans
- Validation of Supply Plans

The NQC report is posted on reliability requirements website.
The posted NQC report is updated, if necessary, by the 20th of each month or first Business Day thereafter. However, the NQC report posted in June of each year as set forth in an ISO Market Notice is deemed the “annual” NQC report for purposes of Section 40.4.2 of the ISO Tariff. This annual NQC report, once posted, identifies the Net Qualifying Capacity of listed resources for the next RA Compliance Year. The CPUC utilizes this annual report NQC to establish Resource Adequacy for the entire following RA Compliance Year.

Subsequent changes to NQC by the ISO will not reduce the Net Qualifying Capacity of a resource listed in the annual Net Qualifying Capacity Report for purposes of the reporting obligations during the next RA Compliance Year. However, changes submitted to the ISO in QC that increase NQC at any time may be reflected in the NQC report and the additional capacity included in Resource Adequacy Plans of LSEs and the resource's Supply Plan. Changes in QC submitted to the ISO that decrease NQC due to the effects of unit aggregation or changes in QF status will be documented and incorporated into the next annual NQC report.

Any change proposed to be made to a Net Qualifying Capacity value specified in a prior annual Net Qualifying Capacity report shall be explained, and any test results or analyses underlying the change provided to the affected resource at least fifteen (15) calendar days prior to the posting on the ISO Website of the next annual NQC report.

The under construction list is updated once during the year on the reliability requirements website for the following trade year. The SC for the resource has to submit a request through CIDI to get the resource listed on the under construction list. All requests must be submitted before the final Annual NQC list is posted. Resources listed on the under construction list can only be used for Annual RA showings. SCs must submit a CIDI ticket to get the resource listed on the under construction tab. NQC values for resources listed on this tab are not final and are subject to change based on the status of transmission upgrades, Unit Capability at time of commercial operation, and declaration of commercial operation.

6.2.1 ***NQC values for New Resource Adequacy Capacity***

The purpose of this section is to define the conditions under which new Resource Adequacy Resources (or existing RA resources adding capacity) that are not yet in service may be included in the annual Net Qualifying Capacity Report. Inclusion in the annual NQC Report is required in order for the capacity to be properly validated in a Resource Adequacy Plan or a Supply Plan.

ISO Tariff Section 40.4.3(4) states that the ISO determines Net Qualifying Capacity based on "the criteria for Qualifying Capacity established by the CPUC, relevant Local Regulatory Authority, or federal agency and provided to the CAISO." Section 4.2 of CPUC Decision 09-06-028 (issued June 22, 2009) and Section 7 of CPUC Decision 13-06-024 (issued July 3, 2013) together establish a rule for CPUC-regulated LSEs that resources under construction at the time of the year-ahead filing may be shown as meeting year-ahead local RA obligations and the LSE must show replacement capacity in month-ahead RA showings for any months of the year where the resource is not yet operational.

To the extent an LSE purchased capacity that is under construction and the capacity fails to achieve commercial operation as planned, the resource will not be validated and its capacity will not be considered by the ISO in its assessment of month-ahead RA Resources needed to satisfy Reliability Criteria. This could result in the procurement of capacity by the ISO under the Capacity Procurement Mechanism, subject to applicable cost allocation rules.

6.3 Disputes

Any disputes as to ISO's determination of NQC are ultimately subject to ISO ADR Procedures. Timing is of the essence in submitting disputes as NQC values are used immediately and extensively with regard to maintaining system reliability.

7 Bidding and Scheduling Obligations

Welcome to the *Bidding and Scheduling Obligations* section of the *BPM for Reliability Requirements*. In this section you will find the following information:

- A description of the bidding and scheduling obligations for Resource Adequacy Capacity procured by a Reserve Sharing LSE
- A description of the bidding and scheduling obligations for the Resource Adequacy Capacity procured by a Modified Reserve Sharing LSE
- A description of the bidding and scheduling obligations for Resource Adequacy Capacity procured by a Load-following Metered Subsystem
- A description of the bidding and scheduling obligations for Flexible Resource Adequacy Capacity procured by Load Serving Entities

7.1 Resource Adequacy Capacity procured by Reserve Sharing LSEs

ISO Tariff Sections 40.6.1, 37.2.4

Scheduling Coordinators representing Resource Adequacy Capacity procured by Resource Sharing LSEs must make the Resource Adequacy Capacity listed in the Scheduling Coordinator's monthly Supply Plan available to the ISO in a manner consistent with the specific availability obligations of different types of resources according to the scheduling and bidding rules described in the following sections. In addition, ISO Tariff Section 37.2.4 prohibits the failure of a ~~provides for Sanctions in the event that a Market Participant does not place or keep a~~ Resource Adequacy Resource to remain online in a manner consistent with a DAM or RUC commitment or Real-Time Dispatch Instruction, whether through a submitted Bid or Default Energy Bid, unless a Outage prevents the Generating Unit from being available. ~~The *BPM for Rules of Conduct Administration* describes the process fir the ISO to administer Sanctions.~~ The following table provides a summary of the scheduling and bidding rules for RA Capacity.

7.1.1 Summary of Bidding Requirements for Resources Providing RA Capacity

Resource Type	Bidding Requirements			
	IFM	RUC	RTM	ISO Inserts Required Bids
Generating Units Including Pseudo Ties (other than Use-Limited Resources)	Economic Bids or Self-Schedules are to be submitted for all RA Capacity for all hours of the month the resource is ~~physically available~~not on outage (ISO Tariff 40.6.1).	$0/MW RUC Availability Bids are to be submitted for all RA Capacity for all hours of the month the resource is not on outage~~physically available~~ (ISO Tariff 40.6.1).	Economic Bids or Self-Schedules are to be submitted for any remaining RA Capacity from resources scheduled in IFM or RUC. Economic Bids or Self-Schedules are to be submitted for all RA Capacity from Short-Start and Medium-Start Units not scheduled in IFM (ISO Tariff 40.6.2~~, 40.6.3~~).	Yes (1)
Dynamic, Resource-Specific System Resources (other than Use-Limited Resources)	Same bidding requirement as above (ISO Tariff 40.6.1).	Same bidding requirement as above (ISO Tariff 40.6.1).	Same bidding requirement as above (ISO Tariff 40.6.2, ~~40.6.3,~~ 40.6.5.1).	Yes (1)
Dynamic, Non-Resource-Specific System Resources	Same bidding requirement as above (ISO Tariff 40.6.1).	Same bidding requirement as above (ISO Tariff 40.6.1).	Same bidding requirement as above (ISO Tariff 40.6.2~~, 40.6.3~~, 40.6.5.1).	Yes (1)

Non-Dynamic, Resource-Specific System Resources (i.e. unit-specific imports)	Same bidding requirement as above (ISO Tariff 40.6.1).	Same bidding requirement as above (ISO Tariff 40.6.1, 40.6.5).	Economic Bids or Self-Schedules are to be submitted for any remaining RA Capacity from resources scheduled in IFM or RUC. No RTM Bids or Self-Schedules are required for resources not scheduled in IFM or RUC (ISO Tariff 40.6.2~~, 40.6.3~~).	Yes (1)
Non-Dynamic , Non-Resource-Specific System Resources (i.e. non-unit-specific imports)	Economic Bids or Self-Schedules are to be submitted for all RA Capacity consistent with inter-temporal constraints such as multi-hour run blocks or contractual limitations (e.g. 6 X 16). (ISO Tariff 40.6.1, 40.6.8.1, 40.8.1.12.2). Economic Bids or Self-Schedules must be submitted under the Resource ID registered as an RA Resource on RA Supply Plan.	Same bidding requirement as above. (ISO Tariff 40.6.1, 40.6.5). RUC Availability Bids must be submitted under the Resource ID registered as an RA Resource on RA Supply Plan.	Economic Bids or Self-Schedules are to be submitted for any remaining RA Capacity from resources scheduled in IFM or RUC. No RTM Bids or Self-Schedules are required for resources not scheduled in IFM or RUC (ISO Tariff 40.6.2~~, 40.6.3~~).	The CAISO will submit a Generated Bid in the Day-Ahead Market for a non-Resource Specific System Resource in each RAAIM assessment hour, to the extent that the resource provides Resource Adequacy Capacity subject to the requirements of Sections 40.6.1 or 40.6.2 and does not submit an outage request or Bid for the entire amount of that Resource Adequacy Capacity

Use-Limited Resources	Economic Bids or Self-Schedules are to be submitted for all RA Capacity for all hours of the month the resource is not on outage (ISO Tariff 40.6.1, 40.6.1.1(d)).	Economic Bids or Self-Schedules are to be submitted for all RA Capacity for all hours of the month the resource is not on outage (ISO Tariff 40.6.1, 40.6.1.1(d)).	Economic Bids or Self-Schedules are to be submitted for any remaining RA Capacity from resources scheduled in IFM or RUC. Economic Bids or Self-Schedules are to be submitted for all RA Capacity from Short-Start Units not scheduled in IFM (ISO Tariff 40.6.2).	No
Hydro Units	Economic Bids or Self-Schedules are to be submitted for all available energy up to RA Capacity quantity (ISO Tariff 40.6.4.1).	No requirement to submit RUC Availability Bids but any bids submitted must be for $0. (ISO Tariff 40.6.4.2).	Economic Bids or Self-Schedules are to be submitted for all available energy, up to remaining RA Capacity (ISO Tariff 40.6.4.1).	No
Pumping Load	Economic Bids or Self-Schedules are to be submitted for all available energy up to RA Capacity quantity (ISO Tariff 40.6.4.1).	No requirement to submit RUC Availability Bids but any bids submitted must be for $0. (ISO Tariff 40.6.4.2).	Economic Bids or Self-Schedules are to be submitted for all available energy, up to remaining RA Capacity (ISO Tariff 40.6.4.1).	No
Non-Dispatchable Resources	Economic Bids or Self-Schedules are to be submitted for all available energy up to RA Capacity quantity (ISO Tariff 40.6.4.1).	No requirement to submit RUC Availability Bids but any bids submitted must be for $0. (ISO Tariff 40.6.4.2).	Economic Bids or Self-Schedules are to be submitted for all available energy, up to remaining RA Capacity (ISO Tariff 40.6.4.1). No RTM obligation for Long-Start or Extremely Long-Start units that are also Non-Dispatchable. (ISO Tariff, Section 40.6.2(c&d))	No
Conditionally-Available Resources	Economic Bids or Self-Schedules are to be submitted for all available energy up to RA Capacity quantity (ISO Tariff 40.6.4.1).	No requirement to submit RUC Availability Bids but any bids submitted must be for $0. (ISO Tariff 40.6.4.2).	Economic Bids or Self-Schedules are to be submitted for all available energy, up to remaining RA Capacity (ISO Tariff 40.6.4.1). No RTM obligation for Long-Start or Extremely Long-Start units that are also Conditionally-Available Resources. (ISO Tariff, Section 40.6.2(c&d))	No
~~Non-Hydro and Dispatchable~~	~~Economic Bids or Self-Schedules are to be submitted for all RA~~	~~$0/MW RUC Availability Bids are to be submitted for all RA capacity for all~~	~~Economic Bids or Self-Schedules are to be submitted for any~~	~~No (2)~~

~~Use-Limited Resources~~	~~Capacity for all hours unit is capable of operating consistent with the use-limitations described in unit's Use-Plan. RA Capacity from Eligible Intermittent Resources is not required to be offered into the DAM. (ISO Tariff 40.6.4.3.1, 40.6.4.3.4).~~	~~hours unit is capable of operating consistent with the use-limitations described in unit's Use-Plan. RA Capacity from Eligible Intermittent Resources is not required to be offered into the DAM. (ISO Tariff 40.6.4.3.1).~~	~~remaining RA Capacity from resources scheduled in IFM or RUC, consistent with the use-limitations described in unit's Use-Plan. Energy Bids or Self-Schedules are to be submitted for all RA Capacity from Short-Start Units not scheduled in IFM, consistent with the use-limitations described in unit's Use-Plan (ISO Tariff 40.6.2, 40.6.3, 40.6.4.3.1).~~	
~~Hydro, Pumping Load, and Non-Dispatchable Use-Limited Resources~~	~~Economic Bids or Self-Schedules are to be submitted for RA Capacity that the market participant expects to be available Plan (ISO Tariff 40.6.4.3.2).~~ ~~Participating load that is pumping load shall submit Economic Bids for Energy and/or a Submission to Self-Provide Ancillary Services in the Day-Ahead Market for its Resource Adequacy Capacity that is certified to provide Non-Spinning Reserve Ancillary Service~~	~~No RUC Availability Bids required but any such bids submitted must be $0/MW RUC Availability Bids (ISO Tariff 40.6.4.3.2).~~	~~Economic Bids or Self-Schedules are to be submitted for RA Capacity that the market participant expects to be available (ISO Tariff 40.6.4.3.2).~~ ~~Participating load that is pumping load shall submit Economic Bids in the Real-Time Market for its Non-Spinning Reserve Capacity that receives an Ancillary Service Award in the Day-Ahead Market~~	~~No (2)~~
Reliability must take generation (RMT)	Economic Bids or Self-Schedules are to be submitted for all RA Capacity for all hours of the month the resource is not on outage ~~physically available~~ (ISO Tariff 40.6.1).	No RUC Availability Bids required but any such bids submitted must be $0/MW RUC Availability Bids (ISO Tariff 40.6.4.3.2).	Economic Bids or Self-Schedules are to be submitted for any remaining RA Capacity from resources scheduled in IFM or RUC. Economic Bids or Self-Schedules are to be submitted for all RA Capacity from Short-Start Units not scheduled in IFM (ISO Tariff 40.6.2~~, 40.6.3~~).	No (2)

~~Eligible intermittent resource~~ Variable Energy Resource (~~EIR~~VER)	Any ~~Eligible Intermittent Resource that provides Resource Adequacy Capacity~~ VER may, but is not required to, submit Bids in the Day-Ahead Market. ~~40.6.4.3.4~~(ISO Tariff, 40.6.4.1)	No RUC Availability Bids required but any such bids submitted must be $0/MW RUC Availability Bids (ISO Tariff 40.6.1).~~No RUC Availability Bids required.~~	Must be available consistent with the resources forecast for RA Capacity.	No (2)
Distributed Energy Resources (Single resource Type)	Economic Bids or Self-Schedules are to be submitted for all RA Capacity for all hours of the month the resource is not on outage~~physically available~~.	$0/MW RUC Availability Bids are to be submitted for all RA Capacity for all hours of the month the resource is not on outage~~physically available~~.	Economic Bids or Self-Schedules are to be submitted for any remaining RA Capacity from resources scheduled in IFM or RUC. Economic Bids or Self-Schedules are to be submitted for all RA Capacity from Short-Start Units not scheduled in IFM.	Yes (1)
Distributed Energy Resources	Same as resources type for grid connected resource	Same as resources type for grid connected resource	Same as resources type for grid connected resource	Same as resource type for grid connected resource
Non-generator resource (Non-REM)	Economic Bids or Self-Schedules are to be submitted for all RA Capacity for all hours of the month the resource is not on outage~~physically available~~.	$0/MW RUC Availability Bids are to be submitted for all RA Capacity for all hours of the month the resource is not on outage~~physically available~~.	Economic Bids or Self-Schedules are to be submitted for any remaining RA Capacity from resources scheduled in IFM or RUC. Economic Bids or Self-Schedules are to be submitted for all RA Capacity not scheduled in IFM.	~~Yes~~ No (1)
Non-generator resource (REM)	Economic Bids or Self-Schedules are to be submitted for all RA Capacity for regulation for all hours of the month the resource is not on outage~~physically available~~.	$0/MW RUC Availability Bids are to be submitted for all RA Capacity for all hours of the month the resource is not on outage~~physically available~~.	Economic Bids or Self-Schedules are to be submitted for any remaining RA Capacity from resources scheduled in IFM or RUC. Economic Bids or Self-Schedules are to be submitted for all RA Capacity not scheduled in IFM.	~~Yes~~ No (1)

Proxy Demand Resource	Economic Bids or Self-Schedules are to be submitted for RA Capacity that the market participant expects to be available per supply plan.	$0/MW RUC Availability Bids are to be submitted for all short and medium start RA Capacity for all hours of the month the resource is not on outage~~physically available~~. No RUC Availability Bids required for long-start RA Capacity.	Economic Bids or Self-Schedules are to be submitted for any remaining RA Capacity from resources scheduled in IFM or RUC. Economic Bids or Self-Schedules are to be submitted for all RA Capacity from Short-Start Units not scheduled in IFM.	No (2)

Notes in table:

(1) ISO will insert Economic Bids and RUC Availability Bids into DAM and RTM if required amounts of RA Capacity are not offered into these markets.

(2) ISO will not insert bids for these resources in the event that required amounts of RA capacity are not offered into the respective markets. An exception is that the ISO will insert Economic bids into the IFM and/or RTM in the event that there is a RUC Availability Bid or RUC Schedule for a resource without a corresponding Economic Bid or Self-Schedule.

(3) RAAIM assessment hours are as follows:

2017 System and Local Resource Adequacy Availability Assessment Hours

Summer – April 1 through October 31

Availability Assessment Hours: 1pm – 6pm (HE14 – HE18)[4]

Winter – November 1 through March 31

Availability Assessment Hours: 4pm – 9pm (HE17 – HE21)

2017 Flexible Resource Adequacy Availability Assessment Hours and must offer obligation hours

Flexible RA Capacity Type	Category Designation	Required Bidding Hours	Required Bidding Days
January – April **October – December**			
Base Ramping	Category 1	05:00am to 10:00pm (HE6-HE22)	All days

[4] The CAISO will file a petition to exempt certain demand response resources from the application of the summer Availability Assessment Hours for a limited time. If FERC accepts the CAISO's petition, these hours will not apply to affected demand response resources.

Peak Ramping	Category 2	3:00pm to 8:00pm (HE16-HE20)	All days
Super-Peak Ramping	Category 3	3:00pm to 8:00pm (HE16-HE20)	Non-Holiday Weekdays*
May – September			
Base Ramping	Category 1	05:00am to 10:00pm (HE6-HE22)	All days
Peak Ramping	Category 2	12:00pm to 5:00pm (HE13-HE17)	All days
Super-Peak Ramping	Category 3	12:00pm to 5:00pm (HE13-HE17)	Non-Holiday Weekdays*

2018 System and Local Resource Adequacy Availability Assessment Hours

Analysis employed for 2019 going forward: Top 5% of load hours using average hourly load

Summer – April 1 through October 31

Availability Assessment Hours: 4pm – 9pm (HE17 – HE21)

Winter – November 1 through March 31

Availability Assessment Hours: 4pm – 9pm (HE17 – HE21)

2018 Flexible Resource Adequacy Availability Assessment Hours and must offer obligation hours

Flexible RA Capacity Type	Category Designation	Required Bidding Hours	Required Bidding Days
January – April **October – December**			
Base Ramping	Category 1	05:00am to 10:00pm (HE6-HE22)	All days
Peak Ramping	Category 2	2:00pm to 7:00pm (HE15-HE19)	All days
Super-Peak Ramping	Category 3	2:00pm to 7:00pm (HE15-HE19)	Non-Holiday Weekdays*
May – September			

Base Ramping	Category 1	05:00am to 10:00pm (HE6-HE22)	All days
Peak Ramping	Category 2	3:00pm to 8:00pm (HE16-HE20)	All days
Super-Peak Ramping	Category 3	3:00pm to 8:00pm (HE16-HE20)	Non-Holiday Weekdays*

2019 System and Local Resource Adequacy Availability Assessment Hours

Analysis employed for 2019 going forward: Top 5% of load hours using average hourly load

Summer – April 1 through October 31

Availability Assessment Hours: 4pm – 9pm (HE17 – HE21)

Winter – November 1 through March 31

Availability Assessment Hours: 4pm – 9pm (HE17 – HE21)

2019 Flexible Resource Adequacy Availability Assessment Hours and must offer obligation hours

Flexible RA Capacity Type	Category Designation	Required Bidding Hours	Required Bidding Days
January – April **October – December**			
Base Ramping	Category 1	05:00am to 10:00pm (HE6-HE22)	All days
Peak Ramping	Category 2	2:00pm to 7:00pm (HE15-HE19)	All days
Super-Peak Ramping	Category 3	2:00pm to 7:00pm (HE15-HE19)	Non-Holiday Weekdays*
May – September			
Base Ramping	Category 1	05:00am to 10:00pm (HE6-HE22)	All days
Peak Ramping	Category 2	3:00pm to 8:00pm (HE16-HE20)	All days
Super-Peak Ramping	Category 3	3:00pm to 8:00pm (HE16-HE20)	Non-Holiday Weekdays*

*Non-Holiday Weekdays are any day of the week from Monday through Friday that is not a FERC holiday

7.1.2 ***Day-Ahead Market***

ISO Tariff Sections 40.6.1, 40.6.4, 40.6.5

Scheduling Coordinators representing Resource Adequacy Capacity must make that capacity available as follows:

1) Absent an applicable exception for particular resource types noted below, Scheduling Coordinators for Resource Adequacy Resources not on Outage must Self-Schedule or submit Economic Bids for all Resource Adequacy Capacity into the IFM and RUC for all hours ~~that the resource is physically available, unless an Outage affecting Resource Adequacy Capacity has been reported to the ISO., with the exception of capacity from Use-Limited Resourc.es[5]. [Add in exceptions for episodic resources and anyone else—need to also define a process for qualifying as such] Scheduling Coordinator must Self-Schedule or submit Economic Bids for Use-Limited Resources consistent with the resource's specific availability obligations, as described in 6.1.3.3.~~

2) Inter-temporal constraints, such as Minimum Run times must not be more restrictive than those specified in the Master File or as otherwise required by Good Utility Practice.

3) Scheduling Coordinators for Resource Adequacy Resources that do not submit Self-Schedules and instead submit Economic Bids reflecting all their Resource Adequacy Capacity are subject to ISO optimization for that capacity in the DAM.

4) Hydro Units, Pumping Load, Non-Dispatchable Resources, and Conditionally-Available Resources must submit Economic Bids or Self-Schedules to the DAM all RA Capacity for all hours of the month for all available energy up to RA Capacity quantity. Such resource are not required to submit RUC Availability Bids but any bids submitted must be for $0.

[5] Generating Unit and Resource-Specific System Resource Outages making RA –Capacity unavailable should be reported to the ISO through the ~~SLIC system~~Outage Management System.

5) VERs may, but are not required to submit Economic Bids or Self-Schedules to the DAM. VERs are not required to submit RUC Availability Bids but any bids submitted must be for $0.

6) Proxy Demand Resources (PDRs) must submit Economic Bids or Self-Schedules to the DAM for RA Capacity expected to be available per the PDR's supply plan. Short-Start and Medium-Start PDRs must submit RUC Availability bids for hours where the resource is not on Outage. RUC Availability Bids are not required for Long-Start PDRs.

~~3)~~

~~4) Resource Adequacy Resources must participate in RUC in addition to the IFM. Non-Hydro and Dispatchable Use-Limited Resources must participate to the extent that capacity is available consistent with the use-limitations described in unit's Use-Plan. Hydro, Pumping Load, and Non-Dispatchable Use-Limited Resources are not required to participate in RUC..~~

~~5)~~7) Resource Adequacy Capacity selected in RUC is not eligible to receive a RUC Availability Payment. Resource Adequacy Capacity subject to RUC is optimized at a zero dollar RUC Availability Bid.

~~6)~~8) In the IFM, the multi-hour block constraints for System Resources that are not capable of submitting a Dynamic Schedule are honored in the optimization. Multi-hour block System Resources that are Resource Adequacy Resources and not able to submit a Dynamic Schedule must be capable of hourly selection by the ISO in RUC if they are not fully committed in the IFM.

If selected in RUC, a System Resource must be dispatchable for those hours in the HASP and Real-Time Market, as applicable. For System Resources with a call-option that expires prior to the completion of the IFM, such System Resources must have an ELS Resource flag registered in the Master File. The Extremely Long-Start Commitment process is described in more detail in the Market Operations BPM.

~~The ISO will automatically submit Energy Bids (i.e., a Generated Bid) and RUC Capacity Bids into the DAM for Resource Adequacy Capacity from Generating Units and Resource-Specific System Resources if they are not submitted by the applicable Scheduling Coordinator and an Outage affecting the Resource Adequacy Capacity is not reported in SLIC. The calculation of Generated Bids is described in the BPM for Market Instruments. As the~~The ISO does not automatically submit bids for the following resource types so Scheduling Coordinators for such resource types must ~~Non-Resource-Specific System~~

~~Resources and Use-Limited Resources, Scheduling Coordinators must actively submit all required Energy Bids or Self-Schedules into the DAM for these resources:~~

7.1.3 ***Real-Time Market***

ISO Tariff Sections 40.6.2, ~~40.6.4, 40.6.3,~~ 40.6.5.1, 40.6.7

Resource Adequacy Resources that are committed by ISO in the IFM or RUC for Resource Adequacy Capacity or have Self-Schedules for part of their Resource Adequacy Capacity must remain available to ISO for their full amount of RA Capacity through the RTM. Resource Adequacy Capacity from Short-Start or Medium-Start Units that were not scheduled in the IFM or committed in RUC, including Dynamic System Resources that meet the definition of Short Start Unit, are required to be bid or self-scheduled in the HASP or RTM, subject to any limitations for use-limited resources. Resource Adequacy capacity from System Resources is not required to be offered in the RTM if not scheduled in the DAM.

To the extent Resource Adequacy Resource Capacity is not scheduled for Energy or as RUC capacity in the DAM, such capacity may also be offered or bid in the Real-Time Market to support a Self-Scheduled export in HASP that would have an equal priority as the ISO Forecast of ISO Demand.

Long-Start Units not scheduled in the IFM or committed in RUC for any hour are released from any further obligation to submit Self-Schedules or Bids for the relevant Operating Day. Scheduling Coordinators for Long-Start Units are not precluded from self-committing the unit after DAM and submitting a Self-Schedule for export in HASP, unless precluded by terms of its contract or other restrictions.

Long Start Units that are committed by the ISO in the IFM or RUC for part of their Resource Adequacy Capacity or submit a Self-Schedule in the IFM for part of their Resource Adequacy Capacity must remain available to ISO through the RTM for the full amount of their Resource Adequacy Capacity. Economic Bids or Self-Schedules must be submitted for any remaining capacity not scheduled in the DAM.

The ISO determines if all dispatchable Resource Adequacy Capacity from Short-Start or Medium-Start Units, not otherwise selected in DAM or RUC, is reflected in a Bid into the RTM and automatically inserts a Generated Bid in the RTM for any remaining dispatchable Resource Adequacy Capacity for which the ISO has not received notification of an Outage. As the ISO does not automatically submit bids for Use-Limited Resources, Scheduling

Coordinators must actively submit all required Energy Bids or Self-Schedules into the RTM for these resources.

From an availability perspective, a Dynamic System Resource that supplies Resource Adequacy Capacity will be treated ~~either as a Short Start Unit under Section 40.6.3 or as a Long Start Unit under Section 40.6.7 depending~~under section 40.6.2 based on the Dynamic System Resource's registered physical operating characteristics.

Hydro Units, Pumping Load, Non-Dispatchable Resources, and Conditionally-Available Resources must submit Economic Bids or Self-Schedules to the RTM all RA Capacity for all hours of the month for all available energy up to RA Capacity quantity. Provided, however, that Long-Start or Extremely Long-Start units that are also Conditionally-Available Resources or Non-Dispatchable Resources need not submit bids to the RTM if not scheduled in the DAM or RUC.

7.1.3.1 ~~Bid Requirements for Use-Limited Resources~~Generated Bids

The ISO will automatically submit Energy Bids (i.e., a Generated Bid) and RUC Capacity Bids into the DAM for Resource Adequacy Capacity from Generating Units and Resource-Specific System Resources if they are not submitted by the applicable Scheduling Coordinator and an Outage affecting the Resource Adequacy Capacity is not reported in SLIC. The calculation of Generated Bids is described in the BPM for Market Instruments. The ISO does not automatically submit bids for the following resource types so Scheduling Coordinators for such resource types must actively submit all required Energy Bids or Self-Schedules into the DAM for these resources:

- Hydro Units.
- Pumping Load.
- Non-Dispatchable Resources.
- Conditionally-Available Resources.
- Use-Limited Resources.
- Reliability Must Take Generation.
- Variable Energy Resources.
- Non-generator Resources (irrespective of REM status).
- Proxy Demand Resources.

~~*7.1.3.1*~~

~~ISO Tariff Sections 40.6.4.3.1 and 40.6.4.3.2~~

~~The following points outline the Bidding requirements for specific types of Use-Limited Resources.~~

~~Non-Hydro and Dispatchable Use-Limited Resources must submit an Economic Bid or Self-Schedule for their Resource Adequacy Capacity in the IFM and RUC for all hours the Use-Limited Resource is physically capable of operating in accordance with its operating criteria, including environmental or other regulatory requirements. Non-Hydro and Dispatchable Use-Limited Resources may also provide a daily Energy limit as part of their IFM offer to enable ISO to schedule them for the period in which they are capable of providing the Energy.~~

~~Hydro resources, Pumping Load and Non-Dispatchable Use-Limited Resources6 must submit Self-Schedules or Bids in the IFM for their expected Energy deliveries or their revised expected Energy, as applicable, in HASP. Such resources also revise their Self-Schedules or submit additional Bids in HASP based on the most current information available regarding expected Energy deliveries. Hydro resources, Pumping Load and Non-Dispatchable Use-Limited Resources are not subject to commitment in the RUC process. ISO retains discretion as to whether a particular resource is considered a Non-Dispatchable Use-Limited Resource based on an annual review.~~

7.1.4 ***Partial Resource Adequacy Resources***

ISO Tariff Section 40.6.6

A Partial Resource Adequacy Resource has a portion of its capacity that is not committed to meet a resource adequacy obligation in the ISO Control Area. Only that output of the resource that is designated by a Scheduling Coordinator as Resource Adequacy Capacity in its monthly or annual Supply Plan has an availability obligation to ISO.

Exports supported by non-Resource Adequacy Capacity from a Partial Resource Adequacy Resource that becomes unavailable or unusable shall be considered as an export of non-Resource Adequacy Capacity based on the pro-rata allocation of derated capacity from the Partial Resource Adequacy Resource as follows:

Resource Adequacy Capacity – [(Resource Adequacy Capacity/Pmax Capacity of Resource Adequacy Resource) x MW Derate or Outage]; or

[6] ~~Non-Dispatchable Use-Limited Resources include Regulatory Must-Run Generation and Regulatory Must-Take Generation.~~

[1- (Resource Adequacy Capacity/Pmax Capacity of Resource Adequacy Resource)] x De-rated Pmax]

7.1.5 ***Liquidated Damages Contracts***

ISO Tariff Section 40.6.9

Resource Adequacy Capacity represented by a firm liquidated damages contract be Self-Scheduled or Bid in the IFM consistent with the terms of the contract. Firm liquidated damages contracts are those transactions utilizing or consistent with Service Schedule C of the Western Systems Power Pool Agreement or the Firm Liquidated Damages product of the Edison Electric Institute pro forma agreement, or any other similar firm Energy contract that does not require the seller to source the Energy from a particular unit and specifies a delivery point internal to the ISO Control Area.

7.1.6 ***Exports***

ISO Tariff Section 40.6.10

Resource Adequacy Capacity may be utilized to serve as an Export Bid. An Export Bid may be submitted into the ISO Markets and be cleared by the Energy being provided by Resource Adequacy Capacity.

7.1.6.1 ***Curtailment of Exports in Emergency Situations***

ISO Tariff Section 40.6.11

At its sole discretion, ISO may curtail exports that are being unambiguously sourced from Resource Adequacy Resource capacity to prevent or alleviate a System Emergency that would otherwise result in the need to curtail ISO firm load. Such exports that are sourced by Resource Adequacy Resource capacity are considered firm exports and as a result will not count as operating reserves for the ISO. As a result, ISO shall procure and maintain sufficient operating reserves without consideration of the firm exports regardless if the exports are being sourced by Resource Adequacy or non-Resource Adequacy Resource capacity. In the event such an export is curtailed, the ISO will compensate the Scheduling Coordinator of the curtailed export at the applicable HASP LMP if the curtailment is performed during the HASP or at the Real-Time LMP associated with the export if the curtailment occurs at within Real-Time Operating Hour.

7.1.7 ***Participating Loads***

ISO Tariff Section 40.6.12

Participating Load, which has been confirmed by an SC in its Supply Plan, will be dispatched in accordance with the rules and requirements established by the Local Regulatory Authority of the LSE that procured the Resource Adequacy Capacity.

7.2 Resource Adequacy Capacity procured by Modified Reserve Sharing LSEs

7.2.1 Day-Ahead Market Scheduling & Bid Requirements

ISO Tariff Section 40.5.1

Scheduling Coordinators acting on behalf of only Modified Reserve Sharing LSEs serving Load within the ISO Control Area must perform the following functions with respect to Day-Ahead Markets:

Submit into IFM, a Self-Schedule or Bid equal to 115% of the hourly Demand Forecasts for each Modified Reserve Sharing LSE it represents for each Trading Hour for the next Trading Day. The resources included in a Self-Schedule and/or Bid in each Trading Hour to satisfy 115% of the Modified Reserve Sharing LSEs hourly Demand Forecasts are deemed Resource Adequacy Resources and:

- Shall be those resources listed in the Modified Reserve Sharing LSEs monthly Resource Adequacy Plan; subject to the rules for substitution of resources (see Section 8.7).

- Shall include all Local Capacity Area Resources listed in the Modified Reserve Sharing LSEs annual Resource Adequacy Plan, if any, except to the extent the Local Capacity Area Resources, if any, are unavailable due to any Outages or reductions in capacity reported to ISO

- A Local Capacity Area Resource that does not fully submit a Bid or Self-Schedule for all of its Resource Adequacy Capacity is subject to ISO's optimization for the remainder of its capacity, which must be Bid into DAM, however, to the extent the Generating Unit providing Local Capacity Area Resource capacity constitutes a Use-Limited Resource, the applicable provisions governing Use-Limited Resources apply

- If the Resource Adequacy Resource submits a Bid for Ancillary Service(s), the Energy Bid associated with the Resource Adequacy Resource and the bid for Ancillary Service will be optimized by the ISO to determine if energy should be schedule or ancillary service should be awarded. However, pursuant to an entities right to self-provide, to the extent the Local Capacity Area Resource self-provides Ancillary Services and local constraints result in a solution in the MPM-RRD that involves Load reduction, then Self-Provided Ancillary Service from the Local Capacity Area Resource is converted into Ancillary Service Bids based on the submitted Energy Bid associated with the Ancillary Services.

- Resource Adequacy Resources must participate in RUC to the extent that the resource has not submitted a Self-Schedule or already committed to provide Energy

or capacity in IFM. Resource Adequacy Resources are required to offer into RUC and are considered based on a zero dollar RUC Availability Bid.

- Resource Adequacy Capacity selected in RUC is not eligible to receive a RUC Availability Payment

- Resource Adequacy Resources of Modified Reserve Sharing LSEs that do not clear in IFM or are not committed in RUC have no further offer requirements in HASP or Real-Time, except under System Emergencies

- Resource Adequacy Resources committed by ISO must maintain that commitment through Real-Time. In the event of a forced Outage on a Resource Adequacy Resource committed in DAM to provide Energy, the Scheduling Coordinator for the Modified Reserve Sharing LSE has up to the next HASP Bidding opportunity, plus one hour, to replace the lesser of:

- The committed resource suffering the forced Outage
- The quantity of Energy committed in the Day-Ahead Market or 107% of the hourly forecast Load

7.2.2 ***Demand Forecasts***

ISO Tariff Section 40.2.3.3

Scheduling Coordinators who submit Demand Bids on behalf of Modified Reserve Sharing LSEs must submit Demand Forecasts reflecting two time frames as follows:

As part of its monthly Resource Adequacy Plan, the SC must submit a Demand Forecast reflecting the non-coincident peak hour Demand to be served by each Modified Reserve Sharing LSE for the relevant month, measured in megawatts. This Demand Forecast, plus the applicable Reserve Margin of 15% of the Demand Forecast, establishes the Scheduling Coordinator's monthly Resource Adequacy Plan demonstration for each Modified Reserve Sharing LSE for the relevant month.

Submit hourly Demand Forecasts for each Trading Hour of the next Trading Day for each Modified Reserve Sharing LSE represented. These forecasts must be submitted by (date to be determined by ISO at a later time) in a format specified on the ISO Website at:

URL will be supplied by ISO at a later date

7.2.2.1 ***Accuracy of Demand Forecasts***

ISO Tariff Section 40.5.2

On a monthly basis, ISO reviews meter data to evaluate the accuracy or quality of the hourly Day-Ahead Demand Forecasts submitted by the Scheduling Coordinator on behalf of Modified Reserve Sharing LSEs. Based on its review, if ISO determines that one or more Demand Forecasts materially under-forecast the Load of the Modified Reserve

Sharing LSEs for whom the Scheduling Coordinator schedules, after accounting for weather adjustments, ISO notifies the Scheduling Coordinator of the deficiency and cooperates with the Scheduling Coordinator and Modified Reserve Sharing LSE(s) to revise their Demand Forecast protocols or criteria.

If the material deficiency persists for three consecutive months with respect to the monthly Demand Forecast or ten hourly occurrences over a minimum of two non-consecutive week days within a month, ISO may:

Inform state authorities including, but not necessarily limited to, the Legislature, identifying the Modified Reserve Sharing LSE(s) represented by the Scheduling Coordinator

Assign to the Scheduling Coordinator responsibility for all Tier 1 RUC charges as specified in the ISO Tariff to address the uncertainty caused by the Scheduling Coordinator's deficient hourly Demand Forecasts until the deficiency is adequately addressed

7.2.3 ***System Emergencies***

ISO Tariff Section 40.5.3

Scheduling Coordinators for MSS Operators that elect the Modified Reserve Sharing LSE option must make resources available to ISO during a System Emergency in accordance with the provisions of their Metered Subsystem Agreement.

Scheduling Coordinators for all other Modified Reserve Sharing LSEs (non-MSS operators) that receive a warning or emergency notice of an actual or imminent System Emergency from the ISO must make available to the ISO all resources that have:

1. Have not submitted a Self-Schedule or Economic Bid in IFM;
2. Are physically capable of operating without violation of any applicable law, and
3. Are listed in the LSE's Modified Reserve Sharing monthly Resource Adequacy Plan

7.2.4 ***Failure to Meet Obligations***

ISO Tariff Section 40.5.4

The following consequences apply to Scheduling Coordinators for Modified Reserve Sharing LSEs who fail to meet their obligations:

If the Scheduling Coordinator for the Modified Reserve Sharing LSE fails to submit a Self-Schedule or submit Bids equal to 115% of its hourly Demand Forecasts for each Trading Hour for the next Trading Day in IFM and RUC, the Scheduling Coordinator is charged a capacity surcharge of three times the price of the relevant Day-Ahead Hourly LAP LMP in the amount of the shortfall. To the extent that the Scheduling Coordinator for the Modified Reserve Sharing LSE schedules imports on one or more Scheduling Points in an

aggregate megawatt amount greater than its aggregate import deliverability allocation, the quantity of megawatts in excess of its import deliverability allocation do not count toward satisfying the Modified Reserve Sharing LSEs scheduling obligation, unless it clears the Day-Ahead Market.

If the Scheduling Coordinator for the Modified Reserve Sharing LSE cannot fulfill its obligations, the Scheduling Coordinator for the Modified Reserve Sharing LSE is charged a capacity surcharge of two times the average of the six Settlement Interval LAP prices for the hour in the amount of the shortfall. Energy scheduled in HASP is not net against, or be used as a credit to correct, any failure to fulfill the Day-Ahead IFM hourly scheduling and RUC obligation.

Any Energy surcharge received by ISO is allocated to Scheduling Coordinators representing other Load Serving Entities in proportion to metered Demand during the relevant Trading Hour(s)

7.3 Resource Adequacy Capacity procured by Load-Following Metered Subsystems

ISO Tariff Section 40.2.4

A Load-Following MSS is not required to elect either the Reserve Sharing or Modified Reserve Sharing options. Nor is it subject to any resource availability obligations specific to the Reserve Sharing or Modified Reserve Sharing options. It is nevertheless required to provide an annual Resource Adequacy Plan as discussed in Sections 3.3 through 3.5 of this Business Practice Manual.

7.4 Flexible Resource Adequacy Capacity

7.4.1 Flexible Resource Adequacy Capacity Procured by LSEs

ISO Tariff Section 40.10.6

Each Scheduling Coordinator for a resource providing Flexible Resource Adequacy Capacity must make the Flexible Resource Adequacy Capacity listed in the monthly Supply Plan available to the ISO in a manner consistent with the specific availability obligations of the Flexible Capacity Category in which the resource is providing the flexible capacity, according to the scheduling and bidding rules described in the following sections.

7.4.2 Summary of Flexible Capacity Category Must Offer Obligation and Required Bidding Hours

Please refer to section 7.1.1 for flexible capacity must offer obligation hours.

7.4.3 ***Summary of Bidding Requirements***

ISO Tariff Section 40.10.6

The following table summarizes the must-offer obligation for each Flexible Capacity Category.

The ISO will insert bids for RA capacity for which the resource did not submit bids, but will not insert bids into the day-ahead market or the real-time market for Flexible RA Capacity for which the resource did not submit bids,

Table 1: Summary of Bidding Requirements for Flexible RA Capacity Resources

Resource Type	Bidding Requirements			
	IFM	RUC	RTM	ISO Inserts Required Bids
Short Start or Medium Start Generating Units (other than Use-Limited Resources)	▪ Submit Economic Bids for Energy for the full Flexible RA Capacity MW. ▪ Submit Economic Bids for Ancillary Services that are not flagged as Contingency only for the full Flexible RA Capacity MW certified to provide Ancillary Services. ▪ Where Economic Bids are required, resource must submit in at least the required hours for the resource's committed Flexible RA Capacity categories. *ISO Tariff Sections 40.10.6.1(a) & 40.10.6.1(f)(1)*	▪ Participation of all available flexible RA capacity resources is required. ▪ ISO will optimize using $0/MW-hour RUC Availability Bids for all Flexible RA Capacity that is not reflected in an IFM Schedule in only the required hours for the resource's committed Flexible RA Capacity categories. *ISO Tariff Sections 40.10.6.1(a) & 40.10.6.1(f)(1)*	All Flexible RA Capacity MW that does not have an IFM Schedule or a RUC Schedule for a given Trading Hour must submit to the RTM for that Trading hour: (a) Energy Bids for the full amount of the Flexible RA Capacity MW, including capacity for which it has submitted Ancillary Services Bids or Submissions to Self-Provide Ancillary Services; and (b) Ancillary Services Bids and Submissions to Self-Provide Ancillary Services for the full amount of the available Ancillary Service-certified Resource	IFM: No RUC: Optimized at $0/MW-hour RTM: No

			Adequacy Capacity and for each Ancillary Service for which the resource is certified, including capacity for which it has submitted Energy Bids. *ISO Tariff Sections 40.10.6.1(f)(1)~~,~~ ~~40.6.3,~~ and 40.6.2.*	
Long Start Generating Resources (other than Use-Limited Resources)	Same as above.	Same as above.	Long Start Units not committed in the Day-Ahead Market or RUC will be released from any further obligation to submit Bids for the relevant Operating Day. Scheduling Coordinators for Long Start Units are not precluded from self-committing the unit after the Day-Ahead Market and submitting a Self-Schedule for Wheeling-Out in the RTM, unless precluded by terms of their contracts. *ISO Tariff Sections 40.10.6.1(f)(2) and 40.6.7.*	IFM: No RUC: Optimized at $0/MW-hour RTM: No
Extremely Long-Start Resources (other than Use-Limited Resources)	Same as above.	Same as above.	Once committed by Day Ahead Market under ELC process, it will be subject to section 40.10.6 for RTM availability.	IFM: No RUC: Optimized at $0/MW-hour RTM: No
Use-Limited Resources	Same as above, consistent with its use-limitations. *ISO Tariff Section 40.10.6.1(e)*	Same as above, consistent with its use-limitations.	Consistent with its use limitations: ▪ Submit Economic Bids for Energy for the full Flexible RA Capacity MW.	IFM: No RUC: Optimized at $0/MW-hour RTM: No

		ISO Tariff Section 40.10.6.1(e)	▪ Where Economic Bids are required, resource must submit bids for the Trading Hours that it is capable of being economically dispatched. *ISO Tariff Sections 40.10.6.1(e)*	
Non-Generator Resources	For resources not flagged as regulation energy management: ▪ Submit Economic Bids for Energy (includes positive and negative generation) for the full Flexible RA Capacity MW. ▪ Submit Economic Bids for Ancillary Services that are not flagged as Contingency Only for the full Flexible RA Capacity MW certified to provide Ancillary Services. ▪ Where Economic Bids are required, resource must submit in at least the required hours for the resource's committed Flexible RA Capacity categories. For resources flagged as regulation energy managem ent: ▪ Submit Economic Bids for regulation up and down that are not flagged as Contingency Only for the full Flexible RA Capacity MW certified to provide Ancillary Services.	ISO will optimize using $0/MW-hour RUC Availability Bids for all Flexible RA Capacity that is not reflected in an IFM Schedule in only the required hours for the resource's committed Flexible RA Capacity categories. *ISO Tariff Sections 40.10.6.1(a) & 40.10.6.1(f)(1)*	▪ Must submit Bids for Regulation Up and Regulation Down from 05:00 to 22:00 seven days a week. ▪ Shall not submit Bids for Energy or other Ancillary Services.	IFM: No RUC: Optimized usng $0/MW-hour RTM: No

7.4.4 ***Availability Requirement***

ISO Tariff Section 40.10.6.1(b)

During the period of the applicable must-offer obligation, a Flexible RA Capacity Resource must be operationally available except for limitations specified in the Master File, legal or regulatory prohibitions or as otherwise required by this CAISO Tariff or by Good Utility Practice.

7.4.5 ***Participation in RUC***

ISO Tariff Section 40.10.6.1(d)

ISO will optimize flexible capacity participating in RUC using $0/MW-hour for all Flexible RA Capacity that is not reflected in an IFM Schedule in only the required hours for the resource's committed Flexible RA Capacity categories.

In determining the amount of capacity that will be optimized in RUC at $0/MW-hour, the ISO will assume maximum overlap of RA Capacity and Flexible RA Capacity on the given hour. For example, a resource with 100 MW of RA Capacity and 150 MW of Category 1 Flexible RA Capacity that is awarded an IFM Schedule of 100 MW in HE13 will automatically be optimized in RUC using $0/MW-hour for the additional 50 MW of Category 1 Flexible RA Capacity.

7.4.6 ***Failure to Bid***

ISO Tariff Section 40.10.6.2

If the Scheduling Coordinator for a resource supplying Flexible RA Capacity fails to submit bids as required in ISO Tariff Section 40.10.6, the ISO will not insert Generated Bids for any Flexible RA Capacity for which the resource did not submit bids.

If the SC fails to submit bids and the resource subsequently receives an Exception Dispatch instruction, the instruction shall not be an Exception Dispatch CPM designation under ISO Tariff Section 43.2.5.

8 Local Capacity and Reliability Procurement Provisions

Welcome to the *Local Capacity and Reliability Procurement Provisions* section of the *BPM for Reliability Requirements*. In this section you will find the following information:

A description of the technical study conducted by the ISO to determine the minimum amount of capacity that must be available within Local Capacity Areas.

A description of the allocation methodology for assigning cost responsibility for potential ISO capacity procurement.

A description of the conditions under which the ISO will engage in procurement of capacity.

A description of the authority and instruments the ISO will utilize in evoking the capacity procurement mechanism..

8.1 Local Capacity Technical Study

ISO Tariff Section 40.3.1, ISO Technical Study

ISO, on an annual basis, publishes a technical study that determines the minimum amount of Local Capacity Area Resources that must be available to ISO within each Local Capacity Area identified in the study. ISO collaborates with the CPUC, LRAs within the ISO Control Area, and other Market Participants as applicable to establish the parameters, assumptions, and other criteria to be utilized in the technical study. The objective of the Local Capacity Area Resources Study is to specifically identify areas within the ISO Controlled Grid that have local reliability problems and to determine the generation capacity in MW that is required to mitigate these problems.

The Local Capacity Technical Study will be conducted in accordance with the schedule set forth in Exhibit A. This schedule ensures both the required collaboration in the determination of study parameters and assumptions as well as consideration by the CPUC and other Local Regulatory Authorities prior to annual procurement cycles.

The ISO is responsible for maintaining the integrity of the interconnected transmission grid in a manner consistent with prevailing Applicable Reliability Criteria (ARC), primarily consisting of reliability standards established by NERC and WECC.[7] While the ISO develops and promulgates the ACR, in consultation with its Participating Transmission Owners ("PTOs") and other market participants, as specified in ISO Transmission Control Agreement Section 5.1.5, the collaborative Local Capacity Technical Study process also examines the appropriate application of such ACR. Moreover, the collaborative Local

[7] Applicable Reliability Criteria under the ISO Tariff are "[t]he reliability standards established by NERC, WECC, and Local Reliability Criteria as amended from time to time, including any requirements of the NRC." (ISO Tariff, Appendix A, Master Definitions Supplement.) Local Reliability Criteria under the ISO Tariff are "Reliability Criteria unique to the transmission systems of each of the PTOs established at the later of: (1) ISO Operations Date, or (2) the date upon which a New Participating TO places its facilities under the control of the ISO." (*Id.*) Finally, Reliability Criteria under the ISO Tariff are "[p]re-established criteria that are to be followed in order to maintain desired performance of the ISO Controlled Grid under contingency or steady state conditions." (*Id.*)

Capacity Technical Study process provides the CPUC and other Local Regulatory Authorities with the opportunity to address the appropriate level of service reliability to end-use customers for whom their respective resource adequacy rules apply, as well as the roles of energy efficiency, demand response, and new generation technologies in assuring resource adequacy. In this regard, the CPUC, other Local Regulatory Authorities, and other Market Participants can offer non-generation capacity options to meet the ACR. However, non-generation capacity options chosen to meet the ACR, such as automatic load shedding schemes or operating procedures implementing manual load shedding options, must be operationally feasible, as determined by the ISO as grid operator.
Greater detail on the Local Capacity Technical Study Criteria, Methodology and Assumptions can be found in the latest LCR Manual at:

http://www.ISO.com/18a3/18a3d40d1d990.html

Greater detail on the latest Local Capacity Technical Study Reports on LCR needs can be found at:

http://www.ISO.com/1c44/1c44b8e0380a0.html

8.2 Allocation of Local Capacity Area Resource Obligations

ISO Tariff Sections 40.3.2 and 40.3.3

The ISO will allocate responsibility for the needed Local Capacity Area Resources identified in the Local Capacity Technical Study. This allocation of responsibility does not obligate any Load Serving Entity to procure capacity. Rather, the allocation is used to determine the cost responsibility associated with any necessary ISO reliability procurement to satisfy ACR. The allocation will be performed as follows:

The ISO will first assign each Load Serving Entity a MW responsibility for each Transmission Access Charge Area (TAC Area) in which the Load Serving Entity serves load. Even if more than one Local Capacity Area exists in a TAC Area, the LSE's obligation can be demonstrated by including in its annual Resource Adequacy Plan sufficient Resource Adequacy Resources in any Local Capacity Area in the TAC Area.

Example: Two Local Capacity Areas (1 and 2) exist in a TAC Area. LSE A has an assigned obligation of 100 MW in the TAC Area. LSE A can purchase 100 MW of Local Capacity Area Resources in Local Capacity Area 1 and still be deemed to have satisfied its assigned obligation.

The precise MW quantity will be calculated by aggregating the MW requirements in all Local Capacity Areas within a TAC Area and assigning that amount to each LSE by each

LSE's proportionate coincident share, on a gross Load basis, of the previous annual peak in the TAC Area.

Example: Three LSEs serve load in a TAC Area with a proportionate share of last year's annual peak Demand in that TAC Area of – LSE 1 50%, LSE 2 40%, and LSE 3 10%. The TAC Area has three Local Capacity Areas with Local Capacity Area Resource requirements of 100 MW, 75 MW and 25 MW, respectively. The aggregate Local Capacity Area Resource requirement for the TAC Area of 200 MW will be divided among the LSEs as follows:

- LSE 1 100 MW (200 MW x .5)
- LSE 2 80 MW (200 MW x .4)
- LSE 3 20 MW (200 MW x .1)

8.2.1 ***Allocation to CPUC Load Serving Entities***

After the ISO has determined each LSE's particular assigned responsibility for Local Capacity Area Resources, the ISO aggregates the obligations of CPUC Load Serving Entities to obtain a collective obligation for LSEs under the CPUC's jurisdiction. This collective obligation will be communicated to the CPUC. In determining any prospective cost responsibility for reliability procurement by the ISO to be assigned to CPUC Load Serving Entities, the ISO will apply the allocation methodology, if any, adopted by the CPUC. This allows the CPUC flexibility to allocate the collective responsibility under a methodology other than historic contribution to the TAC Area's coincident peak.

However, to the extent the CPUC's adopted methodology does not fully allocate the collective responsibility assigned to CPUC Load Serving Entities, the ISO will allocate any difference to all SCs for CPUC Load Serving Entities in accordance with each LSE's proportionate load share ration in the TAC Area at the ISO coincident peak based on the CEC Load Forecast.

8.2.2 ***Allocation to Non-CPUC Load Serving Entities***

SCs for Non-CPUC Load Serving Entities will be informed of their obligation based on each represented LSE's proportionate load share ration in the TAC Area at the ISO coincident peak based on the CEC Load Forecast.

8.2.3 Conditions under which ISO will Engage in Reliability Procurement

ISO Tariff Sections 43.2.1, 43.2.2

The ISO will engage in procurement of Local Capacity Area Resources only where the portfolio of all Local Capacity Area Resources presented by all LSEs, after taking into account any Generating Units under Reliability Must-Run contracts, if any, and other Resource Adequacy Resources, whether or not such Resource Adequacy Resources are located in the applicable Local Capacity Area, demonstrate that the ISO is unable to comply with Applicable Reliability Criteria in that Local Capacity Area[8]. In addition to the foregoing, the ISO will forego reliability procurement until further considering any supplemental procurement by LSEs, as may be permitted by the CPUC or Local Regulatory Authority, provided to the ISO within 30 days of the date the ISO informed Market Participants that a Local Capacity Area Resource deficiency exists.

This aggregate deficiency prompting ISO reliability procurement can occur in two basic circumstances. First, capacity available to the ISO may be insufficient where one or more LSEs fail to demonstrate Local Capacity Area Resources equivalent to their assigned responsibility and the deficiencies lead to an aggregate capacity deficiency in a Local Capacity Area even after taking into account other resources as noted above. Second, even where all LSEs have met their assigned responsibility so that sufficient MW are available, and after taking into account other resources, the portfolio may nevertheless fail

[8] Tariff Section 40.3.1.1, requires the CAISO, in performing the Local Capacity Technical Study, to apply the following reliability criterion:

Time Allowed for Manual Adjustment: This is the amount of time required for the Operator to take all actions necessary to prepare the system for the next Contingency. The time should not be more than thirty (30) minutes.

The CAISO Planning Standards also impose this manual readjustment requirement. As a parameter of the Local Capacity Technical Study, the CAISO must assume that as the system operator the CAISO will have sufficient time to: (1) make an informed assessment of system conditions after a contingency has occurred; (2) identify available resources and make prudent decisions about the most effective system redispatch; (3) manually readjust the system within safe operating limits after a first contingency to be prepared for the next contingency; and (4) allow sufficient time for resources to ramp and respond according to the operator's redispatch instructions. This all must be accomplished within 30 minutes.

Local capacity resources can meet this requirement by either (1) responding with sufficient speed, allowing the operator the necessary time to assess and redispatch resources to effectively reposition the system within 30 minutes after the first contingency, or (2) have sufficient energy available for frequent dispatch on a pre-contingency basis to ensure the operator can meet minimum online commitment constraints or reposition the system within 30 minutes after the first contingency occurs. Accordingly, when evaluating resources that satisfy the requirements of the CAISO Local Capacity Technical Study, the CAISO assumes that local capacity resources need to be available in no longer than 20 minutes so the CAISO and demand response providers have a reasonable opportunity to perform their respective and necessary tasks and enable the CAISO to reposition the system within the 30 minutes in accordance with applicable reliability criteria.

to permit compliance with necessary reliability criteria because a particular unit or units needed to resolve specific contingencies were not selected.

8.2.4 ***Factors Considered in Selecting Reliability Capacity Procured***

If needed, the ISO will procure Local Capacity Area Resources based on the effectiveness of the capacity at meeting Applicable Reliability Criteria in the Local Capacity Area and the costs associated with the capacity.

8.2.5 ***Local Capacity Area Evaluation and Procurement Reports***

The ISO will publish two reports related to ISO procurement of Local Capacity Area Resources.

First, Resource Adequacy Evaluation Reports, where the ISO determines the Local Capacity Area Resources specified in the annual Resource Adequacy Plans of all Scheduling Coordinators fail to permit or ensure compliance with Applicable Reliability Criteria in one or more Local Capacity Areas as discussed above and triggers the circumstances in which the ISO may engage in reliability procurement of Local Capacity Area Resources, the ISO publishes a report on the ISO Website that identifies the deficient Local Capacity Area(s), the basis of the deficiency, and one or more resources that are known to resolve the deficiency. The purpose of this report is to allow LSEs to provide supplemental Local Capacity Area Resources, as permitted by the CPUC or Local Regulatory Authority.

Greater detail on the latest Resource Adequacy Evaluation Reports can be found at:

http://www.ISO.com/232d/232ddd7d45320.html

Second, Reliability Backstop Capacity Reports, where the ISO publishes a report on the ISO Website, which shows the Local Capacity Area Resources procured under Section 40.3.4, the megawatts of capacity procured, the duration procurement, the reason(s) for the procurement, and all payments in dollars, itemized for each Local Capacity Area. The ISO will provide a market notice of the availability of the report.

9 Resource Adequacy Substitution

Welcome to the Resource Adequacy substitution section of the BPM for Reliability Requirements. In this section you will find the following information:

Overview of RA substitution, different types of substitution, compatible bus methodology, validation rules for substitutions, nature of work attributes and outage exemptions, acquired contracts and release of substitutions.

9.1 Overview of RA substitution

RA resources are expected to be available during the entire month. The substitution rule provides opportunities for RA resources to take maintenance outages under specific conditions when there is advance notice of the outage. Resources also experience forced outages, when advance notice is not possible. The availability incentive mechanism is designed to provide resources with incentives to undertake actions to reduce the occurrences of forced outages in a month. In order to allow resources to manage their availability incentive risk, the ISO has developed substitution rules that allow capacity from resources to "substitute" for RA capacity which has experienced a planned/forced outage. A resource on an outage has the option to provide substitute RA capacity to mitigate any potential impact to the original RA resource's availability incentive calculation. Substitution mechanism allows the supplier of Resource Adequacy Capacity that is tied to a specific generating resource the ability to substitute that capacity in the event the Resource Adequacy resource is on an Outage.

There are three types of Resource Adequacy Capacity – Local, System and Flexible. Local and System RA are commonly known as generic RA capacity type while Flexible is known as Flexible RA Capacity type. The substitution capacity is further categorized as Day Ahead or Real Time Substitution depending on the timeline of submission. An RA resource on outage has the option to provide substitute RA capacity to mitigate any potential impact to the original RA resource's availability incentive calculation.

*9.1.1 **Different types of substitution***

RA Capacity Type	Is substitution required for RA on Forced Outage to avoid potential RAAIM?	Is substitution required for RA on Planned Outage to avoid potential RAAIM?
Generic RA	Yes	Yes
Generic CPM	Yes	Yes
Flexible RA	Yes	NA
Flexible CPM	Yes	NA

Note: Generic RA is either system or local RA.

9.2 Planned Outage Substitution

In this section, you will find the following information:

- An explanation of the process for Planned Outage Substitution of Scheduled Generation Outages

The ISO performs the system RA Reliability Margin verification to ensure that the total available RA Capacity (combination of local and system RA resources) is equal to or greater than the ISO system RA Reliability Margin. If the system RA Reliability Margin is not met the CAISO shall determine which RA resources are causing the capacity shortage due to scheduled maintenance outages. Based on this assessment there is a potential for a Planned Outage Substitution Obligation assignment to suppliers. For outages identified in this assessment, Suppliers must provide substitution, cancel the planned outage, reschedule to another day, or be assessed under RAAIM.

All RA substitution capacity provided by the supplier becomes RA Capacity and is subject to all RA Capacity obligations including the must-offer obligation specified in Tariff Section 40.6 and Availability Standards and Payment provisions specified in Tariff Section 40.9. RA Substitute Capacity must be operationally available to the CAISO. Capacity on, or scheduled to be on, a Forced Outage, Approved Maintenance Outage, or de-rate, is not operationally available and shall not qualify to be RA Substitute Capacity for the duration of the period that it is unavailable.

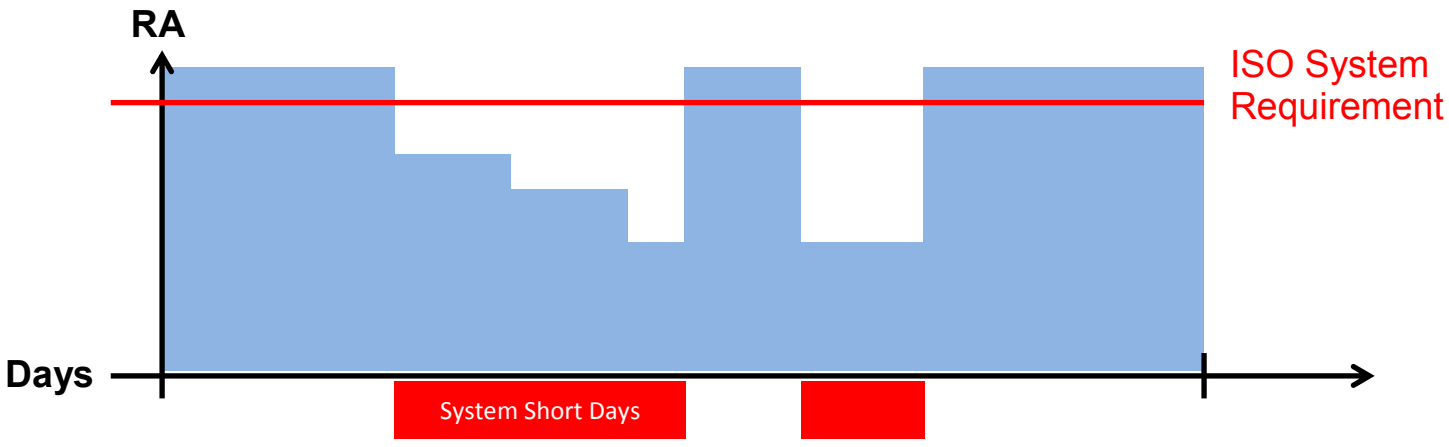
*9.2.1 **Planned Outage Assessment***

No later than twenty two (22) days before the start of the compliance month the ISO performs an outage assessment and analyzes the impact of Maintenance Outages on RA

resources to determine resource availability for the purposes of Tariff Section 40.9.3.6 requirements. The results of the outage impact assessment are available in CIRA twenty two (22) days before the start of the compliance month. Planned Outages on all RA Capacity will be evaluated and planned outages irrespective of nature of work will be considered for evaluation. The analysis will run every day in CIRA starting from 22 days before the start of the month till the end of the month. Suppliers will have the ability to view the daily analysis in CIRA.

ISO verifies that the total available RA Capacity is greater than the ISO system RA Reliability Margin. If the total available RA Capacity is less than the ISO System RA Reliability Margin a Substitution obligation will be issued to the Outages causing the RA shortage. For purposes of determining a Supplier Planned Outage Substitution Obligation (POSO), the ISO will only evaluate outages on days of the compliance month where the total operational RA capacity is less than the ISO system RA Reliability Margin. This validation verifies that there is enough RA resources including the impact of Maintenance outages and approved supplier substitution capacity to meet the system needs.

On system short days (total RA < system requirement) the ISO will determine which resources must provide RA Substitute Capacity to be excluded from the RAAIM calculation based on the reverse order of the dates on which the resources submitted the outage requests to the ISO. The ISO will first request the resource providing RA Capacity with the most-recently-requested outage for that day to provide RA Substitute Capacity and then will continue to assign substitution opportunities until the ISO has sufficient operational RA Capacity to meet the system RA requirement for that particular day, assuming that all resources that are assigned a RA Substitute Capacity obligation actually provide RA Substitute Capacity for that day.



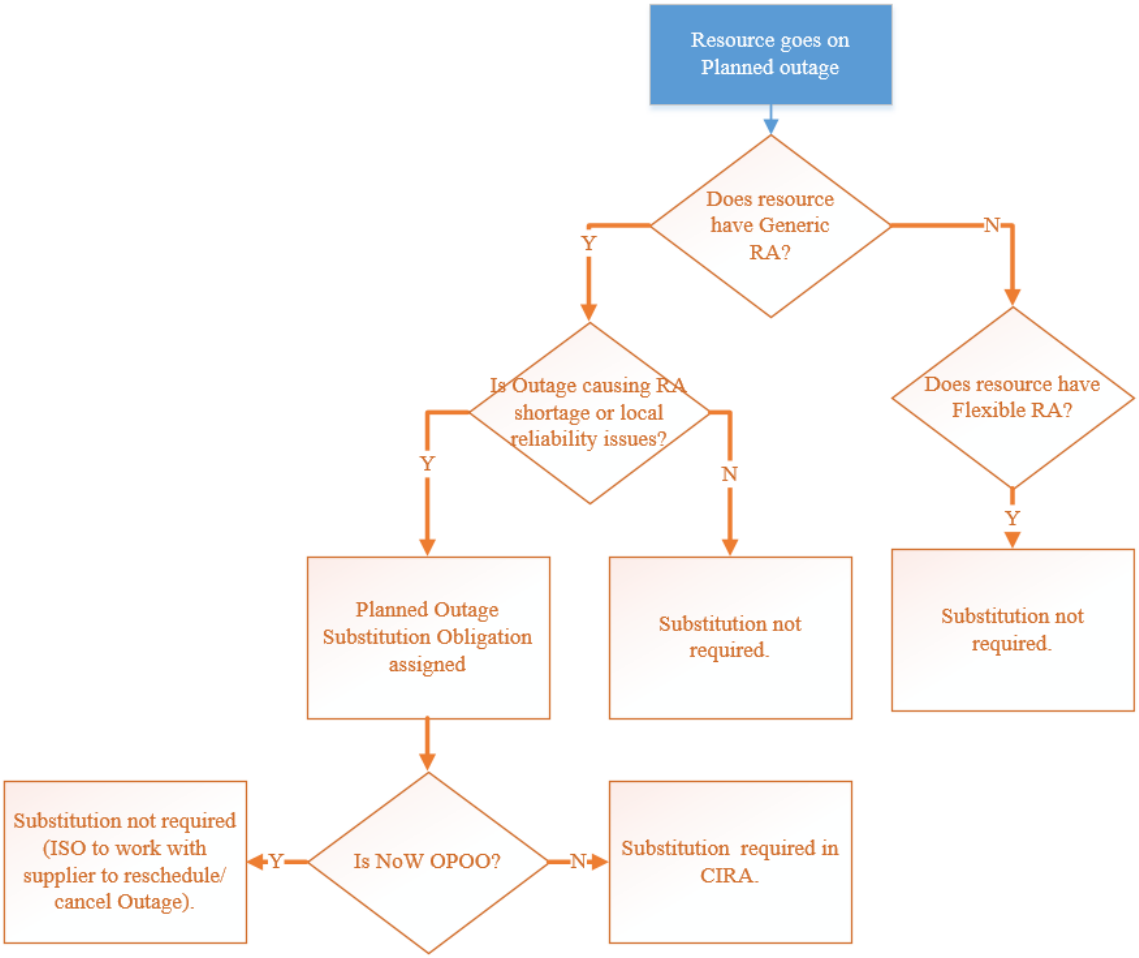
ISO will continue this Outage assessment till the end of the compliance month. The ISO will treat any request to extend the scheduled duration of an outage or increase the MW amount of capacity on outage as a new outage request and will assign a new priority date based on when the request to change the outage or derates was submitted to the ISO.

9.2.2 ***Nature of Work Attributes for Planned Outages***

Outage Type	Nature of Work/Opportunity Status	Is substitution required?
Planned	Ambient Due to Temperature	Y
Planned	Ambient Not Due to Temperature	Y
Planned	Ambient due to Fuel insufficiency	Y
Planned	AVR/Exciter	Y
Planned	Environmental Restrictions	Y
Planned	Short term use limit reached	Y
Planned	Annual use limit reached	Y
Planned	Monthly use limit reached	Y
Planned	Other use limit reached	Y
Planned	ICCP	Y
Planned	Metering/Telemetry	Y
Planned	New Generator Test Energy	Y
Planned	Plant Maintenance	Y
Planned	Plant Trouble	Y
Planned	Power System Stabilizer (PSS)	Y
Planned	Ramp Rate	Y
Planned	RTU/RIG	Y
Planned	Transitional Limitation	Y
Planned	Transmission Induced	Y
Planned	Technical Limitations not in Market Model	Y
Planned	Unit Supporting Startup	Y
Planned	Unit Testing	Y
Planned	Annual Use Limit Reached	Y
Planned	Monthly Use Limit Reached	Y
Planned	Other Use Limit Reached	Y

Planned Planned	Off Peak Opportunity RIMS testing	N Y
Planned	RIMS Outage	Y

9.2.3 ***Planned Outage Substitution Process and validation rules***



9.2.3.1**Time frame for submitting unit substitutions**

The Outage assessment runs every day and the results are available in CIRA. It is the responsibility of the SC for a resource to provide sufficient substitution capacity to satisfy the Planned Outage Substitution Obligation assignment to avoid RAAIM penalties. The substitution has to be provided 8 calendar days before the day that Substitution is required. All substitutions must be submitted by the SC in CIRA.

Example: Outage on resource A is from 10/1 to 10/31 and the Outage was submitted to ISO on 9/20. On 9/21, ISO outage assessment considers this outage and identifies an RA deficiency on 10/10 because of this outage and assigns POSO to resource A. Supplier has to provide substitute capacity for trade day 10/10 before 10/03.

9.2.3.2 Validation rules for Planned Outage Substitution

The following provides an overview of validation rules for Planned Outage Substitution:

1. Only non-RA capacity can be used for substituting a RA resource on outage. ISO calculates non-RA at a daily granularity per resource
    a. Eligible non RA capacity for gen type resource is calculated at daily granularity as follows:
        i. NON_RA = Min (NQC, minimum availability for that day) – (RA MW).
            1. *Note - Minimum availability is resource availability from OMS across all outages (forced and planned)*
2. Total substitute capacity (per day) should be less than or equal to the eligible non-RA capacity of the resource
3. Only resources internal to ISO BAA (gen type) can be used as substitutes
4. SCs must specify generic substitution MW and/or CPM substitution MW for the substituting resources in case the resource on outage has RA and/or CPM designation within the same substitution request.
5. Total substitute capacity entered by user = generic substitution MW + generic CPM substitution MW
6. Total Substitute capacity per day <= original resource RA
7. A resource can be used in multiple substitution requests as long as the resource has eligible non RA capacity
8. Real time substitutions are not allowed for planned outages
9. All third party SC resources that are used in a substitution request must be approved by the third party SC before the substitution cut off deadline specified in 9.2.31.

9.2.3.3 Cancellations

If an outage is cancelled, the ISO does not consider the Outage during the outage assessment.

9.3 Forced Outage Substitution

9.3.1 Compatible Bus Methodology

Tariff Section 40.9.3.6.1

ISO will pre-qualify resources to serve as substitute capacity for Listed Local RA capacity if the substitute capacity is located at the same bus as the resource on outage or is located at a compatible bus to the resource on outage.

The ISO will annually conduct a process to assess the eligibility of resources to pre-qualify as RA Substitute Capacity for Listed Local RA capacity. The ISO will pre-qualify a resource to provide RA Substitute Capacity that is located at the same bus as or a "compatible bus" to, other Local Capacity RA resources located in the same Local Area.

Basis: The ISO will determine the electrical equivalence of generators based upon whether the RA substitution will have reliability impacts for expected operating conditions.

Timeline: The ISO will run a study yearly. The results of the study will be published by March 1, 2016, with the second study published by December 21, 2016, and by December 21 for every following operating year.

Assumptions / Rules:

- The ISO will use the LCR cases used to define RA requirements as a starting point. The cases will be tuned to reflect various expected operating scenarios
- A 2% shift factor used by the market will be used to determine generators' viability as substitution RA capacity
- Known major transmission outages will be included and studied as additional expected operating scenarios.

Methodology:

1. LCR for LCR.
   To ensure consistency with the RA LCR process a potential substitute capacity must be within the same LCR zone as the RA unit it is trying to substitute.
2. Bringing on the substitute resource should alleviate grid reliability issues that would otherwise be aggravated by the loss of capacity from the resource on a forced outage
3. Bringing on the substitute resource should not significantly aggravate congestion that would otherwise be alleviated or not affected by retaining the capacity from the resource on a forced outage.

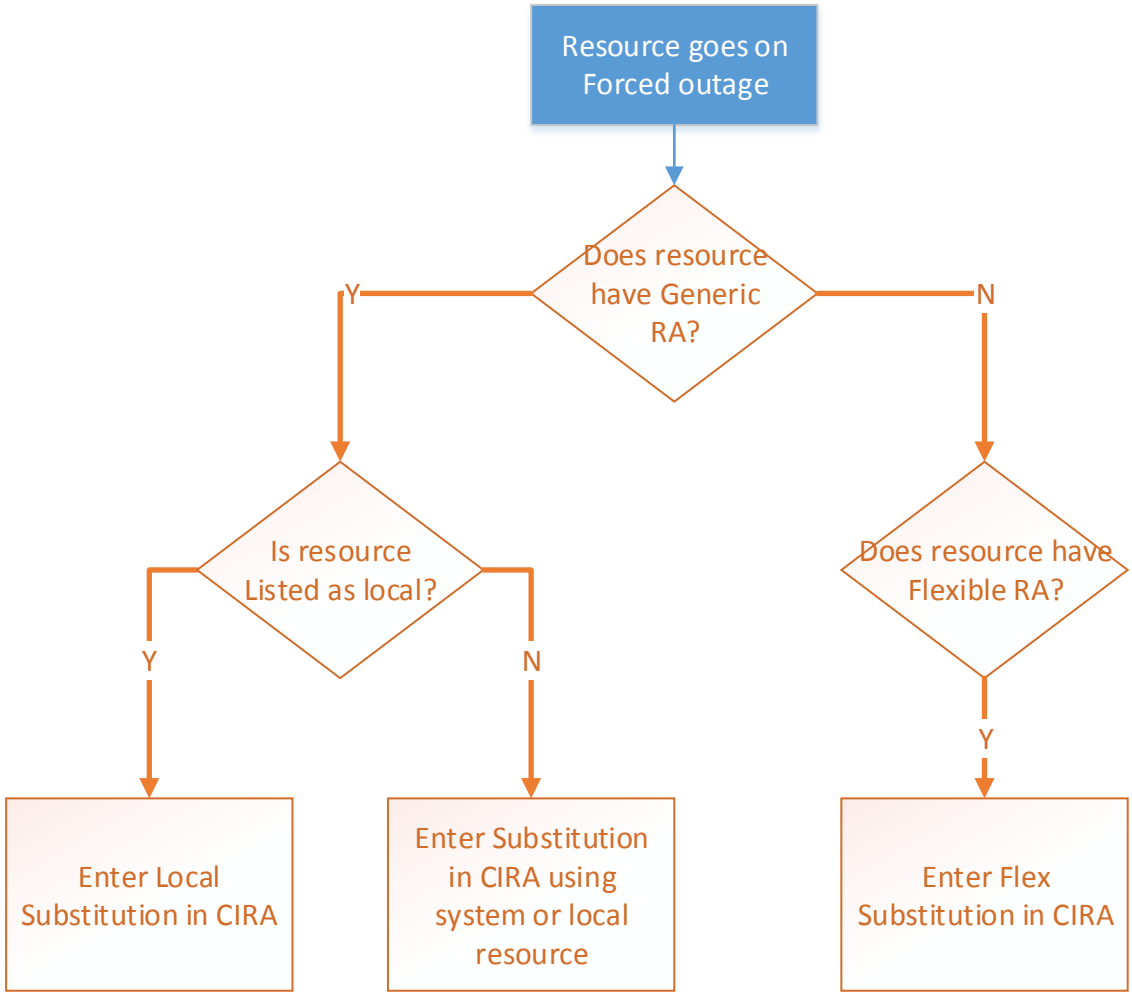
To implement these rules the CAISO will study each market resource uniquely. For each market resource CAISO will run contingency analysis on a series of tuned cases corresponding to the resources' LCR zone which reflects various expected operating conditions. For each contingency that shows post-contingency loading of above 80%[9] on a CAISO controlled transmission element shift factor analysis will be run. The generation shift factor for the referenced constraint will be calculated for all generators within that LCR zone. Following the computation the following condition must be met $Ref\ Unit\ Shift\ Factor\ -Substitution\ Unit\ Shift\ Factor\ \leq 0.02$. If the following condition is met for every contingency then the substituting unit will be considered a suitable RA substitute.

9.3.2 Substitution process and validation rules

The Resource Adequacy Availability Incentive mechanism (RAAIM) defines a standard for evaluating performance of RA resources and creates performance incentives and non-availability charges for RA resources. In order to allow resources to manage their availability incentive risk, the ISO has developed substitution rules that allow capacity from resources to "substitute" for RA capacity which is on outage. A resource on a forced outage has the option to provide substitute RA capacity to mitigate any potential impact to the original RA resource's availability incentive calculation. Substitutions may be requested in the day-ahead market (DAM) and real-time market (RTM) through the customer interface for resource adequacy application (CIRA) on ISO market participant portal. CIRA is a secure server based web application and a digital certificate is required to access the tool.

RA Substitute Capacity must be operationally available to the CAISO. Capacity on, or scheduled to be on, a Forced Outage, Approved Maintenance Outage, or de-rate, is not operationally available and shall not qualify to be RA Substitute Capacity for the duration of the period that it is unavailable.

[9] 80% post-contingency loading was deemed appropriate as the additional 20% margin should account for any unexpected flows or operating contingency not captured in the scenarios studied.


Resource goes on Forced outage
Does resource have Generic RA?
Y
N
Is resource Listed as local?
Y
N
Does resource have Flexible RA?
Y
Enter Local Substitution in CIRA
Enter Substitution in CIRA using system or local resource
Enter Flex Substitution in CIRA

9.3.3 Nature of Work Attributes for Forced Outages

The table below describes which nature of work attribute for an outage requires RA substitution.

Outage Type	Nature of Work/Opportunity Status	Is substitution required?
Forced	Ambient Due to Temperature	Y
Forced	Ambient Not Due to Temperature	N
Forced	Ambient due to Fuel insufficiency	Y
Forced	AVR/Exciter	N
Forced	Environmental Restrictions	N
Forced	Short term use limit reached	N
Forced	Annual use limit reached	N*
Forced	Monthly use limit reached	N*
Forced	Other use limit reached	N*
Forced	ICCP	N
Forced	Metering/Telemetry	Y
Forced	New Generator Test Energy	Y
Forced	Plant Maintenance	Y
Forced	Plant Trouble	Y
Forced	Power System Stabilizer (PSS)	Y
Forced	Ramp Rate	Y
Forced	RTU/RIG	N
Forced	Transitional Limitation	N
Forced	Transmission Induced	N
Forced	Technical Limitations not in Market Model	N
Forced	Unit Supporting Startup	N
Forced	Unit Testing	N
Forced	Off Peak Opportunity	N
Forced	Short Notice Opportunity	N
Forced	RIMS testing	Y
Forced	RIMS Outage	Y

Note:

a. Monthly nature of work will exempt the resource from RAAIM for the rest of the month.
b. Annual nature of work will get a RAAIM exemption for the RA month where the outage was submitted. If shown as RA for the following month then the resource is not exempt from RAAIM and has to provide substitution to avoid potential RAAIM penalty.
c. Other nature of work will get a RAAIM exemption for the RA month where the outage was submitted. If shown as RA for the following month then the resource is not exempt from RAAIM and has to provide substitution to avoid potential RAAIM penalty.

9.3.4 Time frame for submitting unit substitutions

All day ahead unit substitutions must be submitted and approved before 8:00 AM on the current day for the following day.

Example: A substitution request for trade date of 3/15 has to be submitted and approved by 8:00 AM on 3/14. Substitution requests containing third party resources must be approved by the third party SC in CIRA before 8:00 AM

All real time substitutions must be submitted and approved at least 90 minutes before the start of the substitution and the substitution has to start at the top of a trading hour and must end no earlier than 23:59:59 of the following day.

Example: The real-time substitution request is submitted at 15:00 hours on 3/14 for a substitution start date time no earlier than 17:00 Hours for 3/14 and has to continue until 23:59:59, 3/15.

All substitution requests must be submitted through CIRA and users cannot update the submitted substitution requests after the substitution cut off time. All third party approvals must be submitted prior to the defined cut off time for the substitution request.

9.3.5 Validation rules

9.3.5.1 Generic RA substitution validation rules

The following provides an overview of validation rules for real time and day ahead:1. Only non-RA capacity can be used for substituting a RA resource on outage. ISO calculates non-RA at a daily granularity per resource

a. At daily granularity for “GEN, ITIES and TG
b. Eligible non RA capacity for gen type resource,
    i. NON_RA = Min (NQC, minimum availability for that day) – (RA MW).

1. *Note - Minimum availability is resource availability from OMS across all outages (forced and planned*

c. Eligible non RA capacity for ITIE/TG resources is calculated based on the SC for the substitute resource, NON_RA = Current net import capability on a branch group – approved generic substitution MW on the branch group – approved generic CPM substitution MW on the branch group – generic CPM MW on the branch group – Total RA on the branch group.

2. Total substitute capacity (per day) should be less than or equal to the eligible non-RA capacity of the resource

3. SCs must specify local substitution MW, system substitution MW, and/or CPM substitution MW for the substituting resources in case the resource on outage has local and/or system RA and/or CPM designation within the same substitution request.

4. Total substitute capacity entered by user = local substitution MW + system substitution MW + CPM substitution MW

5. Total Substitute capacity per day <= original resource RA

6. Non RA resource can be used in multiple substitution requests as long as the resource has eligible non RA capacity

7. For real time local substitutions SCs must select a non-RA resource from the prequalified list provided by CAISO

8. Real time substitutions have a minimum commitment. The substitution must last for the submittal day plus the next calendar day. The minimum commitment will not apply if the RA resource is not on outage for next calendar day. 9. Minimum commitment for day ahead substitutions is 24 hours. The start time is always 00:00:00 and end time is 23:59:59

10. All third party SC resources that are used in a substitution request must be approved by the third party SC before the substitution cut off for both day ahead and real time

The following link provides several additional validation rules for real time and day ahead substitutions.

http://www.caiso.com/Documents/SubstitutionRulesMatrix-Generic-FlexibleResourceAdequacy.xlsx

Note: Non-Local External resource can be an ITIE resource or TG resource or Dynamic resource. Non-Local Internal resource is a CAISO system resource.

9.3.1.1 Flexible RA substitution validation rules

The following provides an overview of validation rules for real time and day ahead:

1. Total Flexible RA MW for resources is calculated at a daily granularity for GEN and TG. Example: Res A shown as 100 MW in cat 1, 20 MW in cat 2 for a day. Final RA from supply plan is 120 MW and category is 1 for the day.
2. Total Flexible RA <= EFC.
3. Flexible RA MW = ((flexible supply plan RA + approved flexible substitute capacity + approved flex CPM substitute capacity (for forced outages) + approved flex CPM substitute capacity (for planned outages) + flexible CPM capacity) - (Total flexible substitute capacity MW transferred + Total flexible CPM substitute capacity MW transferred for forced outages + Total flexible CPM substitute capacity MW transferred for planned outages))
4. Eligible Flexible Non-RA MW for substituting resource at a daily granularity = Min (EFC, minimum Availability for that day) – Flexible RA MW (Flexible RA MW is defined above). *Note - Minimum availability is resource availability from OMS across all outages (forced and planned)*
5. Within a flexible substitution request each flexible substitute resource shall be used only in one category for the period of the flexible substitution
6. Determining category obligation for overlapping flex substitutions
    a. Example: If unit is used in category 2 for one flex substitution then the resource can only be used in category 2 or 1 for another flexible substitution that overlaps in time. If the resource is used in category 1 then the resource takes on category 1 obligation for the overlapping date range. A resource used in multiple categories on showings, substitution, CPM will end up taking the highest quality category for the overlapping time period.
    b. Note: In this scenario the category is updated for the resource which can change the Flexible RA MW duration based on category definition.
    c. Res A is a flexible substitute resource. SC submits flexible substitution request 1 followed by flexible substitution request 2 and substitution request 3.

Res A	Day 1	Day 2	Day 3	Day 4	Day 5
Sub 1	2	2			
Sub 2		1	1		
Sub 3			1	1	1
Obligation	2	1	1	1	1

SC releases Sub 2

Res A	Day 1	Day 2	Day 3	Day 4	Day 5
Sub 1	2	2			
~~Sub 2~~		~~1~~	~~1~~	-	
Sub 3			1	1	1
Obligation	2	2	1	1	1

7. Total flexible substitute capacity (per day) should be less than or equal to the eligible flexible non-RA capacity of the resource
8. SCs must specify flexible substitution MW and/or flexible CPM substitution MW for the substituting resources in case the resource on outage has RA and/or CPM designation within the same substitution request.
9. Total flexible substitute capacity entered by user = flexible substitution MW + flexible CPM substitution MW
10. Total flexible substitute capacity per day <= original resource RA
11. Non RA resource can be used in multiple substitution requests as long as the resource has eligible non RA capacity
12. Real time substitutions have a minimum commitment. The substitution must last for the submittal day plus the next calendar day. The minimum commitment will not apply if the RA resource is not on outage for next calendar day.
13. Minimum commitment for day ahead substitutions is 24 hours. The start time is always 00:00:00 and end time is 23:59:59
14. All third party SC resources that are used in a substitution request must be approved by the third party SC before the substitution cut off for both day ahead and real time

The following link provides several additional validation rules for real time and day ahead substitutions:

http://www.caiso.com/Documents/SubstitutionRulesMatrix-Generic-FlexibleResourceAdequacy.xlsx

9.3.1.2 **Transfer of RA obligation**

If the RA resource on an outage provides substitute capacity, the obligation on the resource on outage will transfer to the substitute resource up to the MW amount provided. The must offer obligation and assessment is transferred to the substitute capacity and the

original resource's capacity is not assessed under the availability incentive mechanism for each day substitute capacity is provided.

A non-Resource Adequacy Resource that the ISO approves to substitute for Resource Adequacy Capacity becomes a Resource Adequacy Resource for the duration of the substitution. The substituting resource must meet and comply with all applicable Resource Adequacy requirements set forth ISO Tariff Section 40, including the Ancillary Services and must-offer obligation for Resource Adequacy Resources and bidding requirements.

9.4 Release of substitute resource for RA substitution

If a RA resource an outage provides substitute capacity for the expected duration of the outage but the initial resource returns earlier from the outage or de-rate, the resource providing substitution can be released from RA capacity obligations and the original RA resource will pick up the RA capacity obligation. The release of substitute resource is not automatic depending on the outage. One of the SCs has to request for the release of a resource through CIRA and the other has to confirm the request.

1. Release functionality provides maximum flexibility to SC to manage their substitute resource

2. An SC for a committed substitute resource or the SC that submitted the substitution request can request to end the substitution period early depending on the forced outage. If the resource belongs to a third party SC then the SC for the substitute resource has to approve the release in CIRA

3. If requested prior to 8:00 a.m., the requested end date shall not be sooner than 23:59:59 of the request day

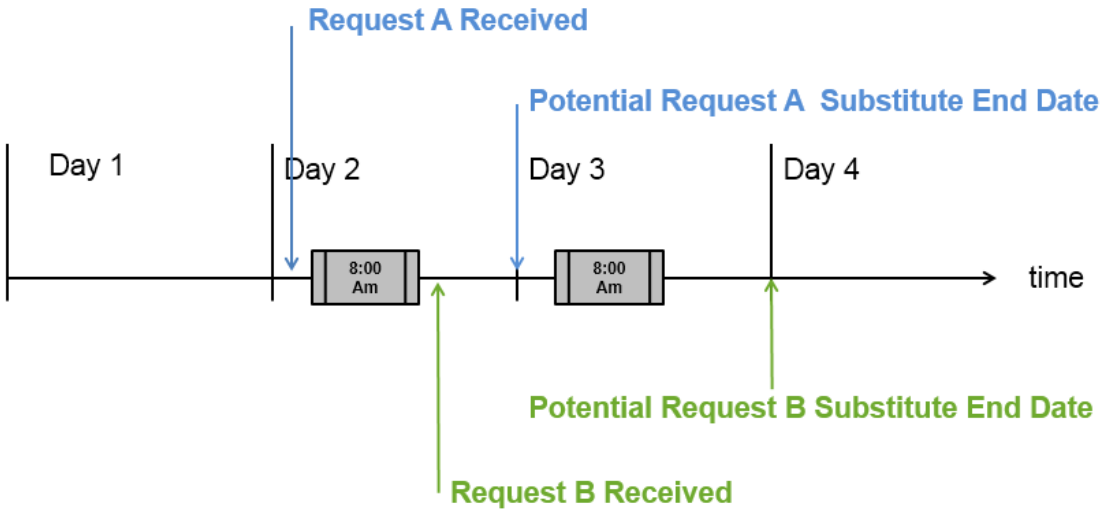
4. If requested after 8:00 a.m., the requested end date shall not be sooner than 23:59:59 of the day after the request day

5. The request and SC approvals must be in place before 8:00 AM

6. The SC may request to release each substitute resource within a substitution request. This will act to modify the original substitution request. Release can be performed only at the resource level

7. All release requests must be submitted through CIRA. Once the substitute resource is released the non RA resource may be used for another substitution

8. Release feature can only be used for substitution requests that have commenced



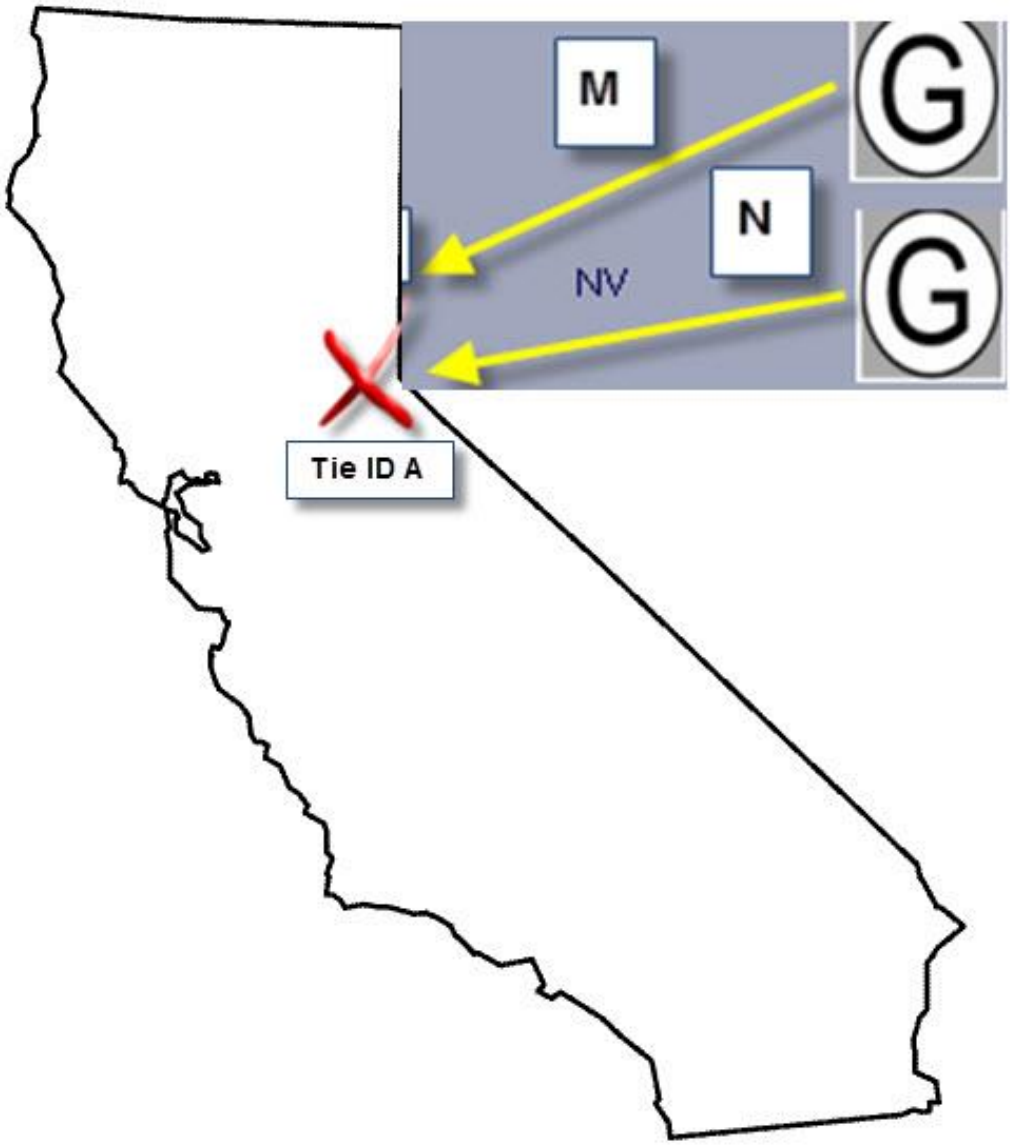
In the above graphic if the release request A for a substitute resource is submitted and approved by the SC before 8:00 AM then the substitute resource will be released by 23:59:59 of the request day. If the request comes in after 8:00 AM then the substitute resource will be released by 23:59:59 of the following day.

9.5 Out-of-Service Transmission Path

A non-Resource-Specific System Resource cannot submit Economic Bids or Self-Schedules in the IFM when the transmission path at the Scheduling Point is completely out-of-service (i.e., transmission path rating is 0 MW). Scheduling Coordinators for non-Resource-Specific System Resources with Resource Adequacy Capacity may submit the Availability Assessment Hours in a month where the transmission path at the Scheduling Point is out-of-service as described in Tariff Section 30.8 using the OMS application. The process to submit hours for out-of-service transmission path will be described in ISO Operating Procedure No. 3210.

There are two requirements applicable to reporting outages for NRS-RA resources and transmission outages at an inter-tie. Reports of all outages that begin on or after January 1, 2012 will be reported in accordance with the requirement in the below.

9.5.1 *Outage Reporting Scenarios for NRS-RA Resources*



The above diagram illustrates three generators that comprise a single NRS-RA resource.

The examples use the following assumptions:

- M has a Pmax of 2,000 MW, and an RA obligation of 250 MW
- N has a Pmax of 1,000 MW, and an RA obligation of 500 MW
- Tie ID A refers to a single Intertie

The process for reporting NRS-RA resource and transmission outages at an intertie after January 1, 2012 is as follows:

Case:	Intertie Status:	Resource Status:	Bid Value:	Outage:	Impact:
1	Available	Available	250 MW (M), 500 MW (N)	None	None
2a	Derated	Available	250 MW (M), 500 MW (N)	None (* ISO knows Intertie is out)	None
2b	Fully Derated (Open Tie)	Available	ISO does not require a bid to be submitted	None (* ISO knows Intertie is out)	None
3	Available	Out (assume Resource N is out)	250 MW (M)	Resource tie ID outage (A) – submitted within OMS	Unit substitution required. If it is a maintenance outage then substitution not required

9.6 **Outage Correction Process**

For events where a Scheduling Coordinator submitted a Forced Outage or an Ambient Derate Due to Temperature Outage for a resource but subsequently discovered that the correct category for reporting the outage was “Ambient Outage not due to temperature”, the ISO has an Outage Correction Process. The CIRA tool has functionality that allows an SC to submit a request to correct the reported outage category. The ISO will accept outage correction requests only within five (5) business days after the SC reported the outage in the outage management system. Outage correction requests received after five (5) business days after the outage was reported in the outage management system will be rejected. The ISO will process the request in CIRA. Refer to CIRA tool user guide.

9.7 Acquired Resources

ISO Tariff Section 40.9.2.1

9.7.1 Exempting RA Resources

Acquired Resources are exempt from the generic availability incentive mechanism under the following conditions:

- Capacity must be under a resource specific power supply contract that existed prior to June 28, 2009, AND
- The scheduling coordinator for the capacity must specifically seek an exemption each year and demonstrate to the ISO that the resource's RA contract:
    - Includes penalties for non-performance, or
    - Does not have a reopener clause due to regulatory changes.

This demonstration must be done in advance of the annual RA showing deadline in accordance with the BPM. If any capacity on a resource is approved by the ISO as exempt under the acquired resource conditions, the full capacity on the resource shall be exempt from the availability incentive mechanism. These requirements will ensure both that resources are not double-penalized for non-performance and that all resources have an incentive to perform.

9.7.2 Notification of change in Acquired Resources

All Scheduling Coordinators representing generators with an existing Resource Adequacy contract that was executed prior to June 28, 2009 and that met the criteria set forth in ISO Tariff Appendix J, Section 40.9.2(2) were permitted to apply by October 30, 2009 to exempt their unit's Resource Adequacy Capacity from resource adequacy non-availability charges and Availability Incentive Payments.

If acquired contracts have been re-assigned, undergone novation or amendment, or terminated at any time between initial submission and current year, the Scheduling Coordinator representing the generator with the existing Resource Adequacy contract must promptly notify the ISO to continue the exemption for the remainder of the trade year. Scheduling Coordinators must submit required information as a CIDI ticket. If the generator owner seeks to continue the Acquired Resource status of the contract for the following trade year, then the Scheduling Coordinator for the generator must submit a confirmation to the CAISO that the information in the existing affidavit is still accurate and the Acquired Resource continues to meet the eligibility criteria in Tariff Section 40.9.2.1(a) or an affidavit executed by an executive officer or member of senior management of the generator owner or of the Scheduling Coordinator itself, who is authorized to bind the company legally and financially, and sworn under oath or affirmation that the contract

meets the criteria in Tariff Section 40.9.2.1 continue to be exempt from the RAAIM non-availability charges and availability incentive payments. A Scheduling Coordinator may submit one affidavit for multiple generating resources qualifying for Acquired Resources status provided the affidavit clearly specifies the resources and contracts to which the affidavit pertains. The confirmation or affidavit must identify the acquired contract ID(s) and associated resource ID(s) which must be submitted through CIDI.

Scheduling Coordinators must notify the ISO of any change in Acquired Resources status. SCs must notify the ISO if any new resource interconnecting to the grid that meet the conditions defined in the above section through CIDI. The notification for new resources interconnecting the grid is important so that the ISO can exempt the resource from the availability incentive mechanism.

10 Effective Flexible Capacity (EFC)

ISO Tariff Sections 40.10.3 & 40.10.4

Each year, the ISO prepares an Effective Flexible Capacity (EFC) list that identifies the MW quantity of flexible capacity that the resource qualifies to provide. Resources must have an EFC value in order to be eligible to provide Flexible RA Capacity. This list of EFC values depends in part on the NQC numbers developed during the annual NQC process, and therefore is developed and released after the Draft NQC list. The EFC list identifies resources, EFC values, and a non-binding determination of the Flexible Capacity Category with the highest qualifications for which the resource qualifies to provide Flexible Capacity for each resource for the next RA Compliance Year.

This section of the BPM discusses the following topics:

- Effective flexible capacity process and timeline
- Effective Flexible Capacity calculation methodology
- Description of flexible capacity categories

10.1 Process and Timeline

The EFC values calculated in the annual EFC process depend in part on values prepared in the annual NQC process. The figure below shows how the two processes relate; specifically, it shows which portions of the process depend on another. These processes are performed in the June to September timeframe.

Figure 4: Illustration of the interplay between the annual NQC & EFC processes.

10.1.1 ***Draft EFC List***

After the draft NQC list is produced, the ISO uses those values as part of its calculation to develop the draft EFC list.

The ISO publishes a draft EFC list and allows market participants to provide comments or corrections to the list by September 1.

Only two types of corrections will be evaluated, (1) if the resource was not included on the list but the scheduling coordinator for the resource seeks to have it added, or (2) if the scheduling coordinator for the resource seeks to change the EFC value identified on the draft EFC list. These types of correction requests will be evaluated as follows:

1. If the scheduling coordinator for a resource that was not included on the draft list seeks to have the resource included on the list.

    a. the scheduling coordinator must demonstrate that the resource meets the criteria in ISO Tariff Section 10.10.4.1 or is capable of meeting the criteria.

    b. the scheduling coordinator must provide documentation to enable the CAISO to determine the resource EFC pursuant to ISO Tariff Section 40.10.4.1.

2. If the scheduling coordinator for a resource included on the draft list seeks to change the EFC value.

    a. the scheduling coordinator must provide documentation to enable the CAISO to determine the resource EFC pursuant to ISO Tariff Section 40.10.4.1.

Corrections to the Draft EFC List along with any required documentation must be submitted to CIDI prior to September 1.

If the scheduling coordinator submits a correction to the Draft EFC List, the ISO will notify the scheduling coordinator whether the change was accepted at least 15 days prior to posting the Final EFC List.

10.1.2 Final EFC List

After the ISO receives and processes all requested changes to the draft EFC list, the ISO will post on the Reliability Requirements webpage the final EFC list. Any disputes to the ISO's determination of EFC values are subject to the ISO ADR Procedure.

10.1.3 Updating Final EFC List

The posted final EFC list will be used for the following calendar year.

The scheduling coordinator for a resource may request to change an EFC value or add an EFC value to be posted on the final EFC list only in two circumstances:

1. If the resource's NQC or PMax increases or decreases during the calendar year, and that value is changed in the Master File, the Scheduling Coordinator for the resource may request that the Effective Flexible Capacity value be recalculated to account for the change.

2. If a resource identified as under construction on the final EFC list, or other new resource, achieves commercial operation during the calendar year, the Scheduling Coordinator for the resource may request that the CAISO calculate and add its EFC value and the Flexible Capacity Categories for which the resource qualifies to the final EFC list.

If one of these circumstances applies, the scheduling coordinator for the resource must submit a request to CIDI including the following information:

- The resource market ID
- An explanation of the reason for the change
- A proposed qualified category:
    - Base Ramping
    - Peak Ramping
    - Super-Peak Ramping
- Any information required to support the determination of the qualified category, including monthly use limitations for start-ups and operating hours.

10.2 Ineligible Resources

ISO Tariff Section 40.10.4.1

Intertie resources and imports, other than Pseudo-Ties and Dynamic Scheduled resources, are not eligible to provide Flexible RA Capacity.

10.3 Flexible Capacity Categories

ISO Tariff Section 40.10.3.1

10.3.1 Overview

There are three different types of Flexible RA Capacity, Base Ramping, Peak Ramping, and Super-Peak Ramping. A resource qualifies to provide Flexible RA Capacity in each Flexible Capacity Category for which it meets the qualifications set forth in ISO Tariff Sections 40.10.3.2, 40.10.3.3, and 40.10.3.4.

	Base Ramping[10]	Peak Ramping[11]	Super-Peak Ramping[12]
Capable of DAM and RTM Economic Bidding	5:00 a.m. – 10 p.m.	Five hour block determined seasonally[13]	Five hour block determined seasonally[14]
Energy Requirement	Minimum 6 hours at EFC	Minimum 3 hours at EFC	Minimum 3 hours at EFC
Daily Availability	7 days per week, all days per month	7 days per week, all days per month	All non-holiday weekdays per month
Daily Start-Up Capability	The resource must be able to provide the minimum of (i) two Start-Ups per day for every day of the month or sixty Start-Ups per month, or (ii) the number of Start-Ups allowed by its operational limits, including minimum up and minimum down time	At least one start per day	At least one start per day
Other Limitations	No monthly or annual limitations on number of starts or energy limits	No monthly or annual limitations on number of starts or energy	Must be capable of responding to at least 5 dispatches per month

[10] For a complete list of Base Ramping qualifications, please refer to ISO Tariff Section 40.10.3.2

[11] For a complete list of Peak Ramping qualifications, please refer to ISO Tariff Section 40.10.3.3

[12] For a complete list of Super-Peak Ramping qualifications, please refer to ISO Tariff Section 40.10.3.4

[13] Five-hour block defined in Section 7

[14] Five-hour block defined in Section 7

	that translate to less than the daily requirements	limits that translate to less than the daily requirements	during the five-hour period of the must offer obligation

10.3.2 ***Qualifying for Multiple Categories***

A resource that meets the qualifications of the Flexible Capacity Category for Base Ramping resources also qualifies as a Peak Ramping resource.

A resource that meets the qualifications of the Flexible Capacity Category for Base Ramping resources or Peak Ramping resources also qualifies as a Super-Peak Ramping resource

10.3.3 ***Use-Limited Resources***

Use-limited resources may be qualified as Base Ramping, Peak Ramping, or Super Peak Ramping if they meet the qualifications of that category of Flexible RA Capacity. For a complete list of the qualifications, please review ISO Tariff Sections 40.10.3.2 through 40.10.3.4.

10.3.4 ***Combining Use-Limited Resources***

If the resource is a Use-Limited Resource that individually does not meet the requirements of being a Base Ramping Resource, it may be combined with another resource so that the combination of the two resources meet the applicable criteria. The Flexible RA Capacity amount for the combined resource must be less than or equal to the lowest of the component EFC values.

A Scheduling Coordinator for the two Use-Limited Resources may request to combine the resources by completing the ***Flexible Capacity Category ULR Combination Request*** template on the Reliability Requirements webpage and submit it to CIDI. Requests to combine Use-Limited Resources must be received by September 1 and validated by the ISO in order to be used on a supply plan for the following trade year. The requesting party must be the SC for both resources it wishes to combine. The SC must provide the ISO all information required to prove that the combination meet the minimum operational and availability requirements in ISO Tariff Section 40.10.3.2(a) and is capable of providing the higher level of service. The ISO will notify the Scheduling Coordinator whether the request has been approved or denied prior to publishing the final EFC list.

Once a Use-Limited Resource is combined with a single other Use-Limited Resource, it may not be combined with any other Use-Limited Resource during the same period.

The SC for the combined Use-Limited Resource is responsible for committing the resource to the ISO in a manner consistent with the rules set forth in ISO Tariff Section 40.10.3.2(b). If a Use-Limited resource is used in combination with another, the SC shall not commit the resource in total for more flexible RA capacity than the minimum of each of the combined resource's EFC values. If a Use-Limited resource is not used on an RA/Supply Plan as a combination resource, the SC shall not commit the resource in a flexible capacity category that it does not individually qualify.

For purposes of validating the completeness and accuracy of monthly resource flexible RA capacity plans that include use-limited resource combinations, the ISO will consider the following scenarios invalid:

1. When two Peak Ramping resources are combined to form a Base ramping resource, if one resource in the combination is shown as a Base Ramping resource and the other resource is not shown as a Base Ramping resource.

2. When two Peak Ramping resources are combined to form a Base ramping resource, if both resources in the combination are shown as Base Ramping resources but the total Base Ramping flexible capacity shown on the two resources sum to more than the minimum EFC value of the two resources.

3. When two Super Peak Ramping resources are combined to form a Peak ramping resource, if one resource in the combination is shown as a Peak Ramping resource and the other resource is not shown as a Peak Ramping Resource.

4. When two Super Peak Ramping resources are combined to form a Peak ramping resource, if both resources in the combination are shown as Peak Ramping resources but the total Peak Ramping flexible capacity shown on the two resources sum to more than the minimum EFC value of the two resources.

For example, consider the following two resources:

Individual Qualifications		
Resource	***EFC***	***Qualified Categories***
RES_A	100	Peak, Super-Peak
RES_B	110	Peak, Super-Peak

If a scheduling coordinator combines the two resources as outlined in this section, the combined resources, if used in combination on a monthly plan, will have the following qualifications:

Combined Qualifications		
Resource	***EFC***	***Qualified Categories***
RES_A	100	Base
RES_B		

The following examples demonstrate the ISO's determination of validity.

Example Supply Plan 1

Resource	MW	Category	Valid (Y/N)
RES_A	90	Peak	Y
RES_A	10	Peak	Y

Example Supply Plan 2

Resource	MW	Category	Valid (Y/N)
RES_A	90	Peak	Y
RES_A	10	Peak	Y
RES_B	100	Peak	Y

Example Supply Plan 3

Resource	MW	Category	Valid (Y/N)
RES_A	70	Base	Y
RES_A	10	Base	Y
RES_B	20	Base	Y

Example Supply Plan 4

Resource	MW	Category	Valid (Y/N)
RES_A	70	Peak	Y
RES_A	10	Peak	Y
RES_B	20	Base	N

Example Supply Plan 5

Resource	MW	Category	Valid (Y/N)
RES_A	70	Base	N

RES_A	10	Base	N
RES_B	30	Base	N

Scheduling Coordinators who submit a resource flexible RA capacity plan that includes an invalid use-limited resource combination may be subject to the Rules of Conduct including monetary penalty pursuant to ISO Tariff Section 37.6.1.

10.3.5 ***Establishing Minimum Qualified Flexible Capacity Category***

ISO Tariff Sections 40.10.3 and 40.10.3.5

The ISO uses master file information to assess the minimum qualified flexible capacity category. All non-use-limited resources will qualify to supply base flexible capacity if certain criteria are met. For all use-limited resources, the ISO will use to the resource's daily start limitation, minimum run time, and minimum down time to determine if the resource maximum qualified flexible capacity category.

The ISO uses the following criteria to determine the minimum qualified flexible capacity category for each resource:

	ULR Status	If	And	Then Cat
1	Non-ULR			Base Ramping
2	ULR	Max Starts/mths>=60		Base Ramping
3	ULR	Max Starts/mths>=30	Min run time=>12	Base Ramping
4	ULR	30<Max Starts/mths<60	Min run time<12	Peak Ramping
5	ULR	Other		Super-Peak Ramping

To the extent that the ISO has sufficient data to verify that a use-limit resource is able to provide base flexible capacity, the ISO will deem it eligible in the respective category. Master file data may not provide sufficient information to verify that the use-limited resource meets the minimum availability requirements established in the tariff. In these instances, the ISO will produce an initial minimum qualified flexible capacity category not greater than the peak-flexible capacity category. All non-generator resources listed as regulation energy management resources in the Master File will be limited to providing

category 3 flexible capacity. Use-limited resources that are eligible to provide a higher quality flexible capacity category than is identified on the draft effective flexible capacity list may provide supplemental information to the ISO demonstrating that the specific use limitation of the resource allows it to qualify to provide the higher quality flexible capacity category. All requests and supplemental materials must be provided to the ISO prior to the release of the final effective flexible capacity list. All use-limited resource minimum flexible capacity categorization determinations may be subject to additional verification that it is able to meet the minimum availability requirements upon receipt of the resource's use plan.

11 Flexible Capacity Needs Assessment

ISO Tariff Section 40.10.1

The ISO, on an annual basis, publishes a Flexible Capacity Needs Assessment that determines the minimum amount of Flexible Resource Adequacy Capacity must be available to ISO as well as the system-wide minimum and maximum Flexible Resource Adequacy Capacity needed in each of the categories identified in tariff section 40.10.3.2(4). The ISO collaborates with the CPUC, local regulatory authorities within the ISO balancing authority area, and market participants, as applicable, to establish the parameters, assumptions, and other criteria to be utilized in the technical study. The objective of the Flexible Capacity Needs Assessment is to specifically identify the largest forecasted three-hour net load ramps within a given month for the upcoming year and determine each local regulatory authority's MW contribution to this ramp.

The Flexible Capacity Needs Assessment will be conducted in accordance with the schedule set forth in Exhibit-A. This schedule ensures review and input by stakeholders on the determination of study parameters and assumptions as well as consideration by the CPUC and other local regulatory authorities prior to annual procurement cycles.

Each year, the ISO will provide the study methodology and assumptions in a white paper as part of the annual stakeholder process and post it to the ISO website. During this process, the ISO will have a stakeholder meeting to discuss the methodology and assumptions, as well as stakeholder comments.

The ISO is responsible for maintaining the integrity of the interconnected transmission grid in a manner consistent with prevailing Applicable Reliability Criteria (ARC), primarily consisting of reliability standards established by NERC and WECC.[15] The collaborative Flexible Capacity Needs Assessment process provides the CPUC and other local regulatory authorities with the opportunity to address the appropriate level of service reliability to end-use customers for whom their respective resource adequacy rules apply.

Greater detail on the Flexible Capacity Needs Assessment study criteria, methodology and assumptions can be found at:

[15] Applicable Reliability Criteria under the ISO Tariff are "[t]he reliability standards established by NERC, WECC, and Local Reliability Criteria as amended from time to time, including any requirements of the NRC." (ISO Tariff, Appendix A, Master Definitions Supplement.) Local Reliability Criteria under the ISO Tariff are "Reliability Criteria unique to the transmission systems of each of the PTOs established at the later of: (1) ISO Operations Date, or (2) the date upon which a New Participating TO places its facilities under the control of the ISO." (*Id.*) Finally, Reliability Criteria under the ISO Tariff are "[p]re-established criteria that are to be followed in order to maintain desired performance of the ISO Controlled Grid under contingency or steady state conditions." (*Id.*)

http://www.caiso.com/informed/Pages/StakeholderProcesses/FlexibleCapacityNeedsTechnicalStudyProcess

Greater detail on the latest Flexible Capacity Needs Assessment can be found at:

http://www.caiso.com/Documents/Final_2014_FlexCapacityNeedsAssessment.pdf

12 Procurement Mechanisms and Instruments

12.1 Reliability Must-Run Contract

ISO Tariff Section 41.1-4, Procurement of Reliability Must-Run Generation by the ISO provide authority to designate and contract with the generation units required to maintain the reliability of the ISO Controlled Grid as described below.

An RMR Contract is a contract entered into by ISO and a Generator that gives ISO the right to call on Generating Units to:

Provide Energy, other than Energy associated with Ancillary Services, as required to meet local reliability needs or manage congestion for non-competitive constraints when merit order bids are not available to address such needs or constraints;

Provide Black Start or Voltage Support as required to meet local reliability needs;

Provide Ancillary Services to meet operating criteria associated with Potrero Power Plant; and

Provide Ancillary Services during 'insufficient' Market conditions as defined in Tariff Section 41.5.3 and Section 4.1(c) of the RMR Contract to ensure the reliability of the ISO Controlled Grid.

12.2 Designation as a Reliability Must-Run Unit

ISO Tariff Section 41.2

ISO has the right at any time to designate a specific Generating Unit as an RMR Unit. This designation must be based on a technical analysis or study of the ISO Controlled Grid and subject to existing power purchase contracts. These studies and evaluations are carried out on an annual basis or as needed and are based on historic patterns of the operations of the ISO Controlled Grid and ISO forecast requirements for maintaining reliability of the ISO Controlled Grid in the next year. Following the completion of the study, ISO determines:

Which Generating Units it requires to continue as RMR Units

Which Generating Units it no longer requires to be RMR Units

Which Generating Units it requires to become RMR Units

A designated unit is obligated to provide ISO with its proposed rates for RMR Generation for negotiation purposes. All revised or new contracts for the Reliability Must-Run Units are subject to approval by FERC or other applicable local regulatory authority as described below.

ISO and the Generator meet and agree on terms and conditions of a proposed contract for each RMR Unit. Direct stakeholders, such as the CPUC, California Electricity

Oversight Board and the affected LSE or Responsible Utility, will be provided with an opportunity to review and provide feedback on the proposed contract prior to submittal for authorization by the applicable regulatory authority. Such authorization is required to enable the Generator to provide reliability services and receive payment.

The ISO expects that Generating Units owned by Local Publicly Owned Electric Utilities will be operated in such a way as to maintain the safe and reliable operation of the interconnected Transmission system comprising the ISO Control Area. As such, the ISO does not designate these Generating Units as RMR Generating Units unless the Local Publicly Owned Electric Utility demonstrates that a Generating Unit may not operate as needed to maintain local reliability in the absence of an RMR Contract.

ISO reviews the terms of the applicable agreements and any proposals submitted in response to requests to ensure that it is procuring RMR Generation from the cheapest available source while maintaining system reliability. ISO provides notice in accordance with the applicable RMR Contract to extend those agreements that are required in the next contract year.

12.3 RMR References

Chapter 6 of the *BPM for Market Operations* describes the *Day-Ahead Market Processes* including details regarding the determination of RMR Dispatches in Section 6.5, and the treatment of RMR Units for Uneconomic Adjustments and RUC in sections 6.6 and 6.7, respectively.

Chapter 7 of the *BPM for Market Operations* describes the Real-Time Processes including details regarding the determination RMR Dispatches in sections 7.4 and 7.11, and the treatment of RMR Units for Bids submitted in the Hour-Ahead Scheduling Process (HASP) in Section 7.5.

Chapter 26 of the *BPM for Billing and Settlements* describes the settlement rules applicable to RMR Units.

12.4 Other Contract to Ensure Reliability Criteria

ISO Tariff Section 42.1.5 authorizes the ISO to take steps it considers necessary, including the negotiation of contracts through a process other than competitive solicitations, where it concludes it may be unable to comply with Applicable Reliability Criteria. This Section underlies the ISO's traditional "out of market" authority and will be used, to the extent necessary, to allow the ISO to procure necessary capacity should individual Load Serving Entities fail to satisfy applicable capacity requirements that jeopardize the ISO's ability to comply with Applicable Reliability Criteria.

The ISO currently does not have a standard instrument to obtain capacity pursuant to ISO Tariff Section 42.1.5. However, once the ISO and the Generator meet and agree on terms and conditions of a proposed contract, the proposed contract will mostly likely be submitted to FERC for authorization by the Generator to enable the Generator to provide the ISO with access to the capacity and receive payment.

The allocation of costs associated with a Section 42.1.5 contract shall be recovered from Load Serving Entities in accordance with ISO Section 42.1.8.

12.5 Capacity Procurement Mechanism

ISO Tariff Sections, 43.1 and 43.2

The ISO shall have the authority to designate Eligible Capacity to provide CPM Capacity services under the CPM to address the following circumstances, as discussed in greater detail in Section 43:

(i) Insufficient Local Capacity Area Resources in an annual or monthly Resource Adequacy Plan;

(ii) Collective deficiency in Local Capacity Area Resources;

(iii) Insufficient Resource Adequacy Resources in an LSE's annual or monthly Resource Adequacy Plan;

(iv) A CPM Significant Event;

(v) A reliability or operational need for an Exceptional Dispatch CPM; and

(vi) Capacity at risk of retirement within the current RA Compliance Year that will be needed for reliability by the end of the calendar year following the current RA Compliance Year.

Eligible Capacity is the capacity of Generating Units, System Units, System Resources or Participating Load that is not already under a contract to be a Resource Adequacy Resource, is not under an RMR Contract, and is not currently designated as CPM Capacity. Eligible Capacity must be capable of effectively resolving a procurement shortfall or reliability concern.

12.6 Scheduling Coordinator Failure to Demonstrate Sufficient Local Capacity Area Resources

Annual Resource Adequacy Plan

ISO Tariff Sections 43.2.1.1, and 43.3.1

Scheduling Coordinators for LSEs are required to submit annual Resource Adequacy Plans for each LSE. Those annual Resource Adequacy plans must, at a minimum, set forth the Local Capacity Area Resources, if any, procured by the LSE as described in ISO Tariff Section 40.3. Where a Scheduling Coordinator fails to demonstrate in an annual Resource Adequacy Plan procurement of each LSE's share of Local Capacity Area Resources, as determined in ISO Tariff Section 40.3.2 for each month of the following Resource Adequacy Compliance Year, the ISO shall have the authority under ISO Tariff Section 43.2.1.1 to designate CPM Capacity; however, the ISO cannot designate CPM Capacity under that ISO Tariff Section until after the Scheduling Coordinator has had the opportunity to cure the deficiency set forth in ISO Tariff Section 40.7. CPM Capacity designated under ISO Tariff Section 43.2.1.1 shall have a minimum commitment term of one (1) month and a maximum commitment term of one (1) year, based on the period(s) of overall shortage as reflected in the annual Resource Adequacy Plans that have been submitted. The term of the designation cannot extend into a subsequent Resource Adequacy Compliance Year.

Monthly Resource Adequacy Plan

ISO Tariff Sections 43.2.1.2 and 43.3.2

Scheduling Coordinators for LSEs are required to submit monthly Resource Adequacy Plans for each LSE. Those monthly Resource Adequacy plans should identify all resources, including Local Capacity Area Resources; the LSE will rely upon to satisfy the applicable month's peak hour Demand of the LSE as determined by the Demand Forecasts developed in accordance with ISO Tariff Section 40.2.2.3 and the applicable Reserve Margin. Where a Scheduling Coordinator fails to demonstrate in a monthly Resource Adequacy Plan procurement of each LSE's share of Local Capacity Area Resources, as determined in ISO Tariff Section 40.3.2 for the reported month, the ISO shall have the authority to designate CPM Capacity; provided, however, that the ISO shall not designate CPM Capacity under ISO Tariff Section 43.2.1.2 until after the Scheduling Coordinator has had the opportunity to cure the deficiency as set forth in ISO Tariff Section 40.7. CPM Capacity designated under Section 43.2.1.2 shall have a minimum commitment term of one (1) month. The term of the designation cannot extend into a subsequent Resource Adequacy Compliance Year.

Collective Deficiency in Local Capacity Area Resources

ISO Tariff Sections 43.2.2, 43.2.2.1 and 43.2.3

The ISO has the authority under ISO Tariff Section 43.2.2 to designate CPM Capacity where the Local Capacity Area Resources specified in the annual Resource Adequacy Plans of all applicable Scheduling Coordinators fail to ensure compliance in one or more Local Capacity Areas with the Local Capacity Technical Study criteria provided in ISO Tariff Section 40.3.1.1, regardless of whether such resources satisfy, for the deficient Local Capacity Area, the minimum amount of Local Capacity Area Resources identified in the Local Capacity Technical Study (referred to hereinafter as a "collective deficiency.") Any designation of capacity under ISO Tariff Section 43.2.2 can occur only after the opportunity to cure under ISO Tariff Section 43.2.2.1 has been exhausted.

The ISO needs all annual Resource Adequacy Plans reflecting the Local Capacity Area Resources procured by LSEs to be submitted no later than October 1 of each year. The ISO will review all such annual Resource Adequacy Plans received by that date, and in particular, the showings of the Local Capacity Area Resources that have been procured, to determine whether any collective deficiency exists. If, after reviewing the Local Capacity Area Resource showings, the ISO determines that potentially a need for CPM Capacity exists due to a collective deficiency, the ISO will issue a Market Notice pursuant to ISO Tariff Section 43.2.2.1., identifying the deficient Local Capacity Area and the quantity of capacity that would permit the deficient Local Capacity Area to comply with the Local Capacity Technical Study criteria provided in Section 40.3.1.1. Where only specific resources are effective to resolve the Reliability Criteria deficiency, the ISO will provide the identity of such resources. No later than 30 days before the beginning of the Resource Adequacy Compliance Year, any Scheduling Coordinator may submit a revised annual Resource Adequacy Plan demonstrating procurement of additional Local Capacity Area Resources consistent with the Market Notice issued under ISO Tariff Section 43.2.2.1. Any Scheduling Coordinator that provides such additional Local Capacity Area Resources consistent with the Market Notice under ISO Tariff Section 43.2.2.1 shall have its share of any CPM procurement costs allocated under ISO Section 43.8.3 reduced on a proportionate basis. If the full quantity of capacity required to cure the collective deficiency is not reported to the ISO under revised annual Resource Adequacy Plans in accordance with ISO Tariff Section 43.2.2.1, the ISO may designate CPM Capacity sufficient to alleviate the deficiency. CPM Capacity designated under Section 43.2.2 shall have a minimum commitment term of one (1) month and a maximum commitment term of one year, based on the period(s) of overall shortage as reflected in the annual Resource Adequacy Plans that have been submitted. The term of the designation cannot extend into a subsequent Resource Adequacy Compliance Year.

Scheduling Coordinator Failure to Demonstrate Sufficient Resource Adequacy Resources to Meet Annual and Monthly Demand and Reserve Margin Requirements.

ISO Tariff Sections 43.2.3 and 43.3.4

The ISO has the authority under ISO Tariff Section 43.2.3 to designate CPM Capacity where a Scheduling Coordinator fails to demonstrate in an annual or monthly Resource Adequacy Plan procurement by an LSE of sufficient Resource Adequacy Resources to comply with each LSE's annual and monthly Demand and Reserve Margin requirements under ISO Tariff Section 40. However, the ISO cannot designate CPM Capacity under ISO Tariff Section 43.2.3 as follows: (1) until after the Scheduling Coordinator has had the opportunity to cure the deficiency as set forth in ISO Tariff Section 40.7, and (2) unless there is an overall net deficiency in meeting the total annual or monthly Demand and Reserve Margin requirements, whichever is applicable, after taking into account all LSE demonstrations in their applicable or monthly Resource Adequacy Plans. CPM Capacity designated under Section 43.2.3 shall: (a) have a minimum commitment term of one (1) month and a maximum commitment term equal to the maximum annual procurement period established by the Local Reliability Authority based on the period of the deficiency reflected in the annual Resource Adequacy Plan or (b) have a commitment term of one (1) month if the deficiency is in the monthly Resource Adequacy Plan. The term of the designation cannot extend into a subsequent Resource Adequacy Compliance Year.

CPM Significant Events

ISO Tariff Sections 43.2.4 and 43.3.5

Under ISO Tariff Section 43.2.4, the ISO has the authority to designate CPM Capacity to provide service on a prospective basis following a CPM Significant Event, to the extent necessary to maintain compliance with Reliability Criteria and taking into account the expected duration of the CPM Significant Event. An "CPM Significant Event" is defined as:

> A substantial event, or a combination of events, that is determined by the ISO to either result in a material difference from what was assumed in the resource adequacy program for purposes of determining the Resource Adequacy Capacity requirements, or produce a material change in system conditions or in ISO Controlled Grid operations, that causes, or threatens to cause, a failure to meet Reliability Criteria absent the recurring use of a non-Resource Adequacy Resource(s) on a prospective basis.

Examples of "CPM Significant Events" include, but are not limited to, the following:

1. Loss of a facility, for any cause, that affects its capability, including but not limited to:
   a. Loss of a local RA resource after annual LSE RA showing,

b. Lack of RA resources causing a shortage of capacity to meet required operating reserves (accumulated total, including ongoing scheduled and forced outages) after monthly LSE RA showing, or
c. Loss of a facility, ISO Controlled or not, that affects the deliverability of RA, Reliability Must-Run Contract ("RMR") or other resource available to the ISO, or affects the operation of the grid;

2. Grid study error, forecast changes, incorrect assumptions, bad data, or modeling inaccuracies, including, but not limited to:
   a. An official change in the adopted Load forecast by the CEC after it has been used in RA showings by LSEs,
   b. Error in load distribution factors,
   c. Voltage or reactive resource modeling errors or resource changes,
   d. Errors relative to deliverability of RA resources to load, or
   e. Changes in non-ISO Controlled Grid affecting previous assumptions;
3. Changes in applicable NERC or WECC reliability criteria or operating policies affecting the ISO;
4. Insufficiency of RA units in RUC resulting in recurring use of non-RA units;
5. RUC and any subsequent Hour-Ahead Scheduling Procedure ("HASP") or real time run of the Security Constrained Unit Commitment ("SCUC") cannot converge by themselves with only RA units and requires manual addition by the ISO of non-RA units; or
6. Change in federal or state law or regulation; court action; or imposition of environmental restrictions that affect the operation of resources

Section 43.3.5 of the ISO Tariff reflects a three-step process for CPM Significant Event Designations. Under the first step, the ISO will identify whether there is an event (or events) that constitutes a CPM Significant Event. If the answer to that question is "yes," the ISO may procure CPM Capacity pursuant to ISO Tariff Section 43.2.4. Any CPM Capacity designated under ISO Tariff Section 43.2.4 will have an initial term of thirty (30) days.

Under the second step, if the ISO determines that the CPM Significant Event is likely to extend beyond the thirty (30) day designation period, the ISO may extend the CPM Capacity designation for another sixty (60) days. During this additional sixty (60) day period, the ISO would provide Market Participants with an opportunity to provide alternative solutions to meet the ISO's operational and reliability needs in response to the

CPM Significant Event, rather than rely on the ISO's designation of capacity under the CPM.

Under the third step, the ISO would conduct an assessment of any proposed solutions to determine whether they totally or partially would mitigate the need for ongoing CPM Capacity. If acceptable to the ISO in accordance with Good Utility Practice, the ISO will consider and implement such alternative solutions provided by Market Participants in a timely manner, but no sooner than the day after the end of the 90-day designation period. If Market Participants do not submit any alternatives to the designation of CPM capacity that are fully effective in addressing the deficiencies in Reliability Criteria resulting from CPM Significant Event, the ISO will extend the term of the designation under Section 43.2.4 for what the ISO expects the duration of the CPM Significant Event to be. If the solutions offered by Market Participants are only partially effective in addressing the ISO's operational and reliability needs resulting from the CPM Significant Event, the ISO will extend the designation under ISO Tariff Section 43.2.4 for what it expects the duration of the CPM Significant Event to be, but only as to the amount of CPM Capacity necessary to satisfy the ISO's operational and reliability needs after taking into account the effective capacity provided by the alternative solution. If the ISO determines that there is a reasonable alternative solution that fully resolves the ISO's operational and reliability needs, the ISO will not extend the CPM Significant Event designation under ISO Tariff Section 43.2.4.

Exceptional Dispatch CPM

ISO Tariff Sections 43.2.5 and 43.3.6.

Exceptional Dispatch CPM Capacity designated under Section 43.2.5 shall have a term of thirty (30) days. If the ISO determines that the circumstances that led to the Exceptional Dispatch are likely to extend beyond the initial thirty (30) day period, the ISO shall issue an Exceptional Dispatch CPM or other CPM designation for an additional thirty (30) days. For eligible resources that have submitted intra-month CSP offers, the ISO shall designate as CPM Capacity to provide service on a prospective basis the eligible capacity of a resource that responds to an Exceptional Dispatch if the Exception Dispatch is issued pursuant to Section 34.9.1, subsections (6), (9) or (10) of Section 34.9.2, or Section 34.9.3, unless the Exceptional Dispatch directs the curtailment or shut down or the resource. The term of an Exceptional Dispatch CPM are 30-days beginning as of the day of the eligible Exceptional Dispatch.

The following capacity is not eligible to receive an Exceptional Dispatch CPM designation:

(1) RA Capacity, RMR Capacity, and CPM Capacity; and

(2) Capacity of a resource to that declined CPM designation and elected to receive supplemental revenues.

If a resource does not have any self-schedule, market-based commitment, or RA, RMR or CPM Capacity and receives an Exceptional Dispatch CPM designation for an Exceptional Dispatch eligible for a CPM designation, the ISO shall designate as CPM Capacity the greater of the resource's PMin or the amount of capacity specified by the Exceptional Dispatch.

If a resource is a Partial Resource Adequacy Resource, has a CPM Designation of less than its entire capacity, has a Self-Schedule or has a market based commitment, or has already received an Exceptional Dispatch CPM designation, the ISO shall designate as CPM Capacity the amount by which the Exceptional Dispatch exceeded the greater of –

(1) The capacity that the resources must make available to the ISO as the result of an RA Capacity or CPM Capacity obligation; if any; or

(2) The sum of any Self-Schedule and any market-based commitment or dispatch of the resource.

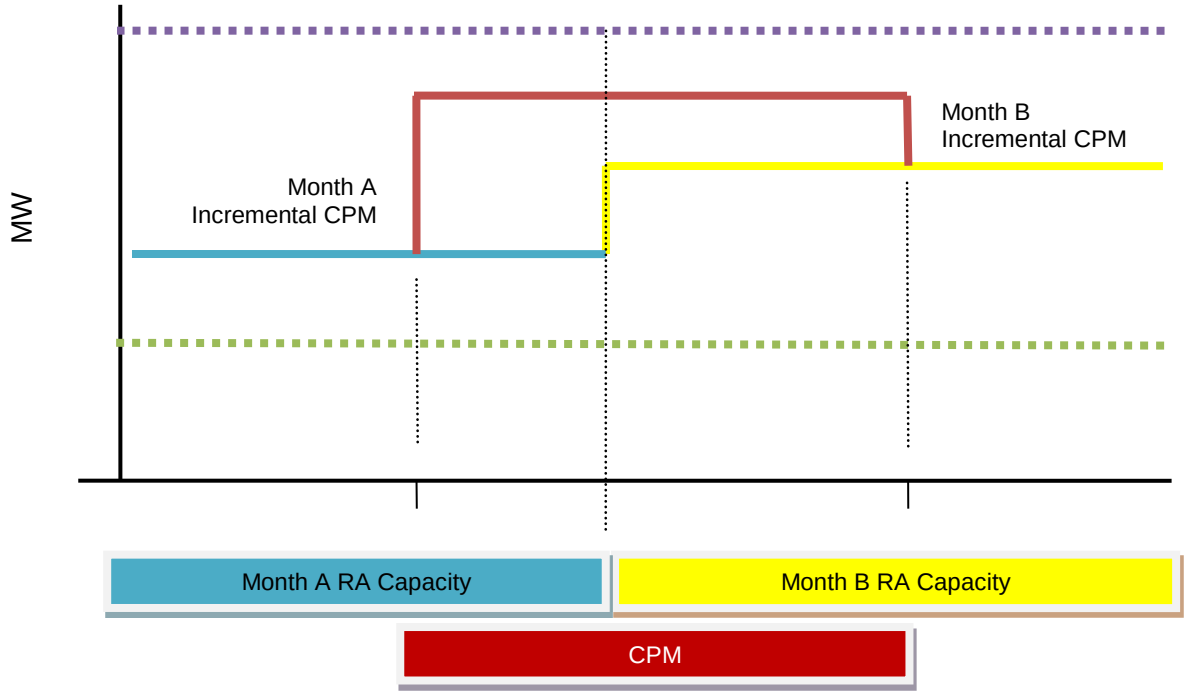
If the ISO, during the term of an resource's Exceptional Dispatch CPM designation, issues an Exceptional Dispatch to the resource that requires Energy in excess of the sum of the resource's CPM Capacity and RA Capacity, the ISO will increase the capacity designated as Exceptional Dispatch CPM Capacity for the entire term of the Exceptional Dispatch CPM Designation by the amount equal to the difference between the Exceptional Dispatch and the sum of the resource's CPM Capacity or RA Capacity. Any incremental Exceptional Dispatch issued within any 30-day CPM term does not result in a new 30-day term.

If a resource has an RA Capacity or CPM Capacity obligation that pre-existed the resource's Exceptional Dispatch CPM Designation and, during the term of the resource's Exceptional Dispatch CPM designation, the amount of the resource's RA Capacity or CPM Capacity is reduced, the ISO will increase the CPM designation by the amount, if any, necessary to ensure that the sum of Exceptional Dispatch CPM designation quantity and any remaining RA Capacity is not less than PMin. If capacity that receives an Exceptional Dispatch CPM Designation becomes RA Capacity or receives a monthly CPM designation or Significant Event Designation or receives an RMR Contract as of a certain date, then the Exceptional Dispatch CPM designation shall be reduced by the amount of the new RA Capacity, CPM Significant Event designation, or RMR Contract from that date through the rest of the 30-day term.

12.6.1 Examples of different CPM scenarios:

Tariff Section 43.2.5.2.4 Change is RA, RMA or CPM Status

Example of CPM with Increasing RA



Example CPM with increasing monthly RA amounts

Pmax: Limit of CPM

NQC: Not used in CPM

Pmin: RA is above Pmin

Month A:

CPM Dispatch Level: Total output of facility including CPM dispatch

Incremental CPM Month A: CPM Dispatch Level – ∑ (Month A RA, or other Contracts)

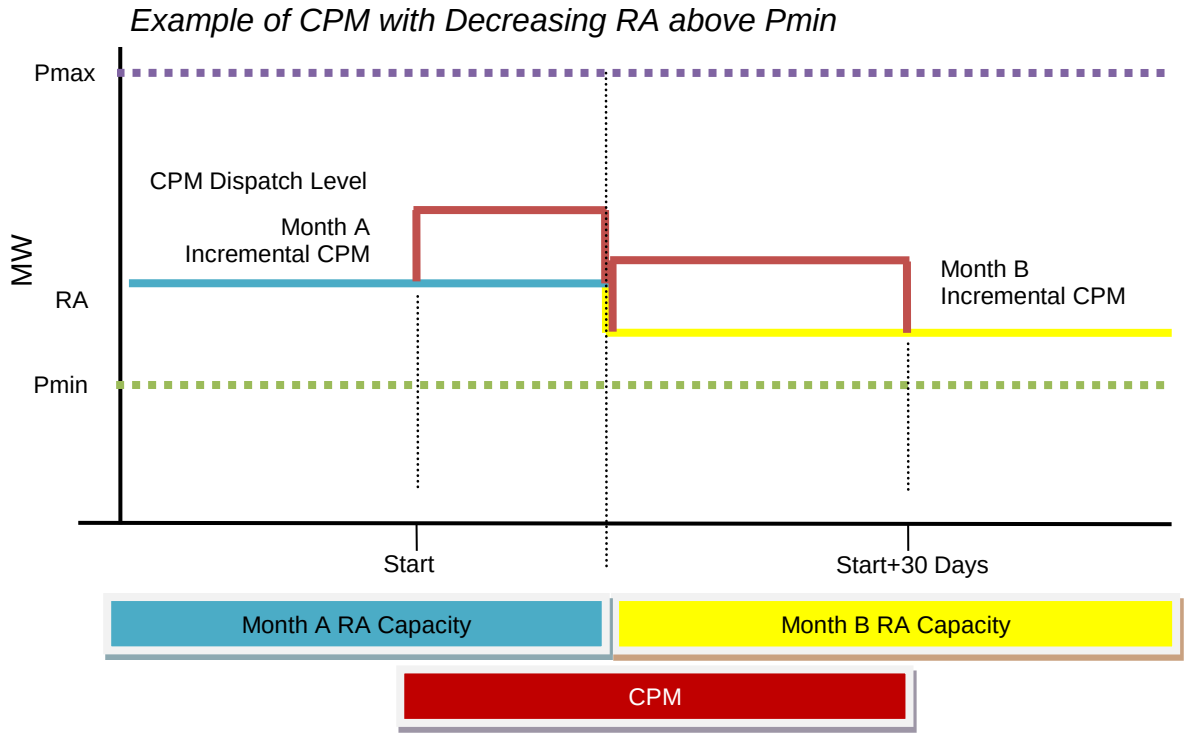
Month A CPM Days: End of Month Date – Start of CPM Date

Month B: Increasing monthly RA

Incremental CPM Month B: CPM Dispatch Level – ∑ (Month B RA, or other Contracts)

Month B CPM Days: 30 – Month A Days

Tariff Section 43.2.5.2.4 Change is RA, RMA or CPM Stutus



Example of CPM with Decreasing RA above Pmin

Pmax: Limit of CPM

NQC: Not used in CPM

Pmin: RA is above Pmin

Month A:

CPM Dispatch Level:

Incremental CPM Month A: CPM Dispatch Level – ∑ (Month A RA, or other Contracts)

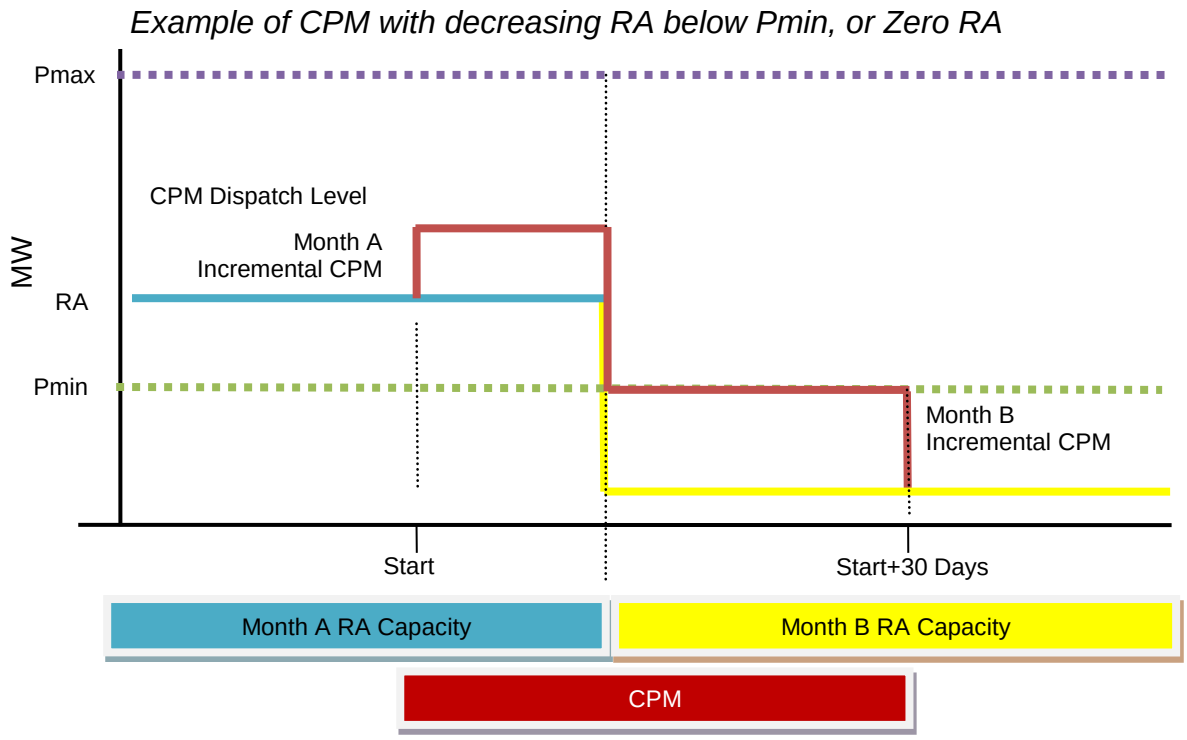
Month A CPM Days: End of Month Date – Start of CPM Date

Month B: Decreasing RA above Pmin

Incremental CPM Month B: same Incremental CPM as from Month A

Month B CPM Days: 30 – Month A CPM Days

Tariff Section 43.2.5.2.4 Change is RA, RMA or CPM Stutus



Example of CPM with decreasing RA below Pmin, or Zero RA

Pmax: Limit of CPM

NQC: Not used in CPM

Pmin: RA is below Pmin

Month A:

CPM Dispatch Level:

Incremental CPM Month A: CPM Dispatch Level – ∑ (Month A RA, or other Contracts)

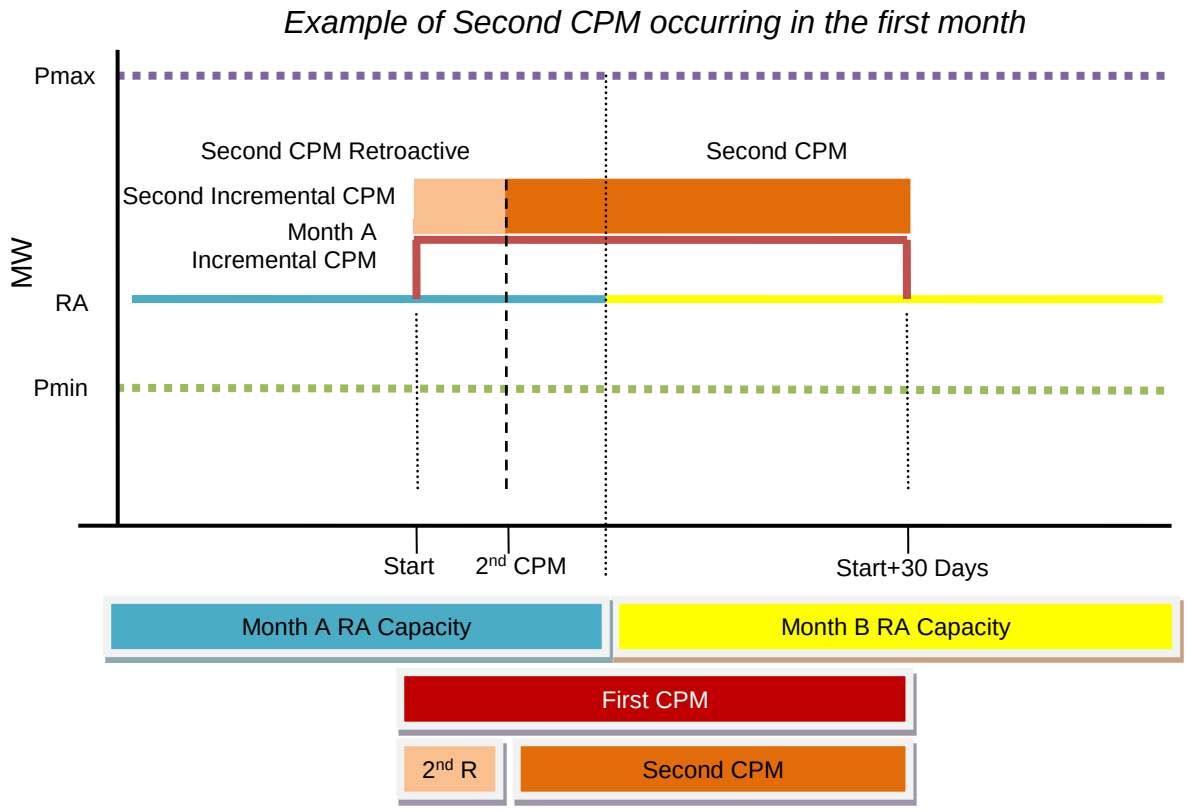
Month A CPM Days: End of Month Date – Start of CPM Date

Month B: Decreasing RA below Pmin, or Zero RA

Incremental CPM Month B: Pmin – ∑ (Month B RA, or other Contracts)

Month B CPM Days: 30 – Month A CPM Days

Tariff Section 43.2.5.2.3 Subsequent Exceptional Dispatch



Example of Second CPM occurring in the first month

Pmax: Limit of CPM

NQC: Not used in CPM

Pmin: RA is above Pmin

Month A:

First CPM all the same rules apply

Second CPM Month A Incremental CPM: Second CPM Dispatch Level – ∑ (Any Existing CPM, Month A RA, or other Contracts)

Second CPM Month A Retroactive Days: Date Second CPM was called – First CPM Start Date

Second CPM Month A Days: End of first CPM Date – Date Second CPM was called

Month B:

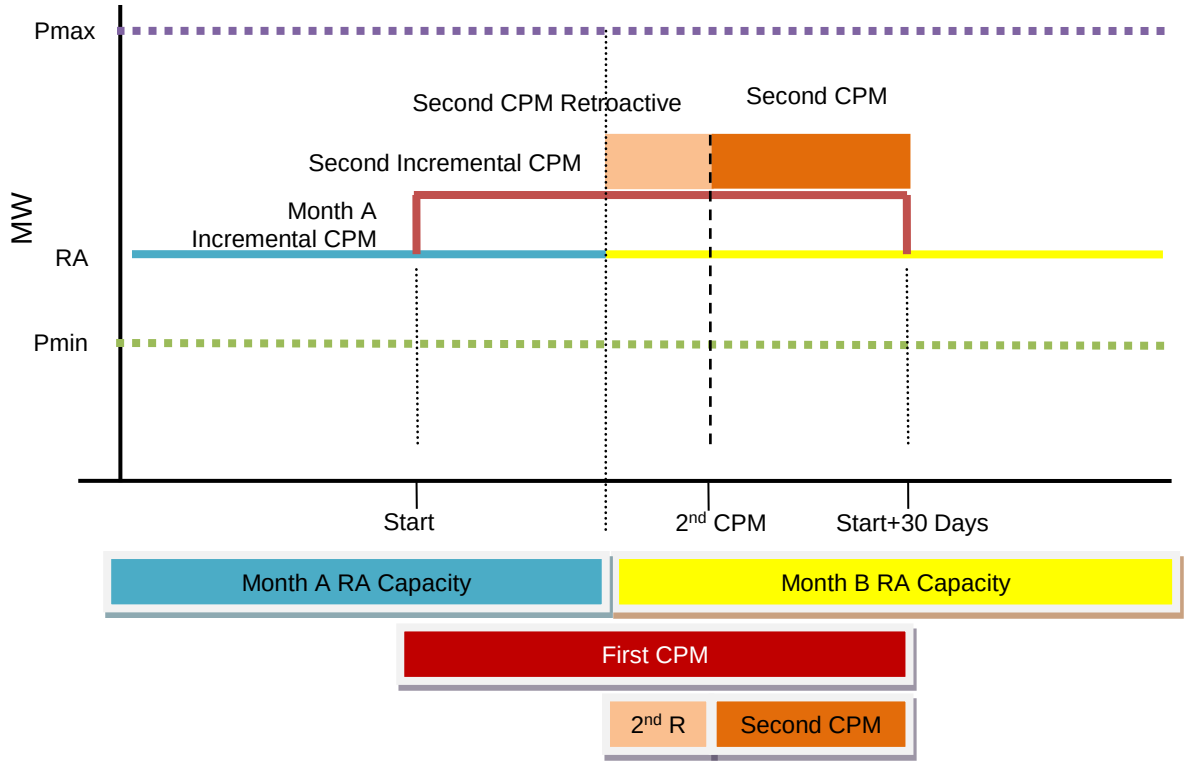
First CPM all the same rules apply, all three cases above establish Month B CPM Level

Second CPM Month B Incremental CPM: To determine the Second CPM Dispatch Level follow the same rules as the first CPM Dispatch level – ∑ (Any Existing CPM, Month A RA, or other Contracts)

Second CPM Month B Days: End of First CPM Date – First of Month B

Tariff Section 43.2.5.2.3 Subsequent Exceptional Dispatch

Example of Second CPM occurring in the second month



Pmax: Limit of CPM

NQC: Not used in CPM

Pmin: RA is above Pmin

Month A:

First CPM all the same rules apply

No Second CPM

Month B:

First CPM all the same rules apply, all three cases above establish Month B CPM Level

Second CPM Month B Incremental CPM: Second CPM Dispatch Level – ∑ (Any Existing CPM, Month A RA, or other Contracts)

Second CPM Month B Retroactive Days: Date Second CPM dispatch – First of work day of month B

Second CPM Month B Days: End of first CPM Date – Date Second CPM dispatch

Selection of Eligible Capacity under the CPM Generally

ISO Tariff Section 43.3

In accordance with Good Utility Practice, the ISO shall make designations of Eligible Capacity as CPM Capacity under ISO Tariff Section 43.1 based on the following criteria:

(1) The effectiveness of the Eligible Capacity at meeting the designation criteria specified in Section 43.2;

(2) The capacity costs associated with the Eligible Capacity;

(3) The quantity of a resource's available Eligible Capacity, based on a resource's PMin, relative to the remaining amount of capacity needed; and

(4) The operating characteristics of the resource, such as dispatch ability, Ramp Rate, and load following capability;

(5) Whether the resource is subject to restrictions as a Use-Limited Resource; and

(6) For designations under Section 43.2.3, the effectiveness of the Eligible Capacity in meeting local and/or zonal constraints or other ISO system needs.

In making this determination, the ISO will attempt to designate lower cost resources that have specified a capacity price before designating resources that have not specified a capacity price, taking into account factors (1), (3), (4), (5), and (6) of this Section concerning the relative effectiveness of the resource and the resource's PMin. If after applying these criteria, two or more resources that are eligible for designation equally satisfy these criteria, the ISO shall utilize a random selection method to determine the designation between those resources.

The ISO does not have to designate the full capability of a resource; however, the ISO may designate an amount of CPM Capacity from a resource that exceeds the amount of capacity identified to ensure compliance with the Reliability Criteria set forth in ISO Tariff Section 40.3 due to the PMin or other operational requirements/limits of a resource that has available capacity to provide CPM service. The ISO will not designate the capacity of a resource for an amount of capacity that is less than the resource's PMin.

Quantity of Capacity included in an Exceptional Dispatch CPM Designation

ISO Tariff Sections 43.2.5.2.2, 43.2.5.2.3, and 43.2.5.2.4

Exceptional Dispatch of Partial RA, Partial CPM Unit, or Market Committed Resource:

If a resource is a Partial Resource Adequacy Resource, has an CPM designation of less than its entire capacity, has a Self Schedule or has a market based commitment, or has already received an Exceptional Dispatch CPM designation under Section 43.2.5, the ISO shall designate as CPM Capacity the amount by which the Exceptional Dispatch exceeded the greater of –

(1) The capacity that the resources must make available to the ISO as the result of an RA Capacity or CPM Capacity obligation; if any; and

(2) The sum of any Self-Schedule and any market-based commitment or dispatch of the resource.

Subsequent Exceptional Dispatch:

If the ISO, during the term of a resource's Exceptional Dispatch CPM designation, issues an Exceptional Dispatch to the resource that requires Energy in excess of the sum of the resource's CPM Capacity and RA Capacity, the ISO will increase the capacity designated as Exceptional Dispatch CPM Capacity by the amount equal to the difference between the Exceptional Dispatch and the sum of the resource's CPM Capacity or RA Capacity. The increase will be effective for the remainder of the term of the Exceptional Dispatch CPM Designation and retroactively to the beginning of the 30-day term or the first day of the month in which the increase occurs, whichever is later. Any incremental Exceptional Dispatch issued within any 30-day CPM term does not result in a new 30-day term.

Change in RA, RMR or CPM Status:

If a resource has an RA, RMR or CPM Capacity obligation that pre-existed the resource's Exceptional Dispatch CPM designation and, during the term of the resource's Exceptional Dispatch CPM designation, the amount of the resource's RA, RMR or CPM Capacity is reduced, the ISO will increase the CPM designation by the amount, if any, necessary to ensure that the sum of Exceptional Dispatch CPM designation quantity and any remaining RA Capacity is not less than PMin. If capacity that receives an Exceptional Dispatch CPM designation becomes RA Capacity or receives a monthly CPM designation or Significant Event designation or receives an RMR Contract as of a certain date, then the Exceptional Dispatch CPM designation shall be reduced by the amount of the new RA Capacity, CPM Significant Event designation, or RMR Contract from that date through the rest of the 30-day term.

12.6.2 ***Procedure for Exceptional Dispatch CPM Quantity Designation***

Overview

Exceptional Dispatch CPM designations occur either in the post day-ahead time frame or in real-time during the trading day. In the post-day ahead time frame, which is a 12 hour period occurring up to 6 hours in advance of the next trading day, the ISO's tools are not always capable of identifying and committing a "final" quantity as there are many variables the ISO relies upon that may change during that time frame.[16] Real-time Exceptional Dispatch CPM designations will commit or dispatch the resource, depending upon start-up requirements and previous schedules and awards, to an actual megawatt quantity. This procedure describes the steps the ISO will follow to determine quantity for Exceptional Dispatch CPM designations.

Post-day Ahead Designations

If the ISO determines that an Exceptional Dispatch CPM designation is required,[17] the ISO will identify whether the reliability need requires a non-system or system commitment. A non-system Exceptional Dispatch CPM commitment will be for reliability concerns where resolution depends on a resource(s) in a specific location, including a local reliability area, zone or region. A system Exceptional Dispatch CPM commitment will be for a reliability need where resolution does not require a resource to be at specific location; for example, the loss of a major transmission path, or a forced outage at a large generating unit, that jeopardizes the ISO's ability to meet operating reserve requirements but not local voltage or stability and therefore the resource can be anywhere in the system. The selection of the resource will follow the requirements of the ISO Tariff.[18] For non-system Exceptional Dispatch CPM designations, the operations engineer will provide the shift supervisor with recommendations of the specific resource that is needed for the next day, and the shift supervisor will select the resource for designation. The ISO will dispatch the selected resource at its P-Min or other output level not to exceed the amount of capacity needed to address the reliability need. All capacity required to meet the reliability need will receive a CPM designation, whether or not energy is dispatched from that capacity, as determined based on the ISO's best engineering or operational assessment available at that time.

[16] The post-day ahead window begins at 6:00 p.m. on the day before the Trading Day and ends at 6:00 a.m. on the Trading Day,

[17] There are no resources designated with Resource Adequacy Capacity, substituted Resource Adequacy Capacity, RMR capacity or Capacity Procurement Mechanism capacity available to meet the reliability need.

[18] See Tariff Sections 34.9, 43.2.5.1, and 43.4.

Following an Exceptional Dispatch CPM commitment made after the day-ahead market results are published (and in concert with established practices), the ISO will perform a day-ahead reliability assessment that analyzes the power flow capabilities of the solution, the capacity margin required at peak, and any adverse operating conditions that cannot be modeled (fires, storms, possible fuel curtailments, or similar contingencies) and validates that commitment requirements for operating procedures are met. This power flow analysis will be based on an N-1 contingency analysis to ensure the system can operate reliably with one element out of service.

The day-ahead reliability assessment study process to calculate a capacity value for CPM dispatches will include development of a power flow model that simulates peak hour day-ahead system conditions. The model will represent outages and generation bid awards for the peak hour during the next day. The day-ahead model building process utilizes results from Residual Unit Commitment (RUC) which considers the ISO forecast of ISO demand and awards with no virtual bids. All single contingencies are simulated in the PG&E, SCE, and SDG&E areas and mitigation is developed for any observed constraint.[19] As part of the day-ahead reliability assessment, the ISO will also perform a system capacity margin analysis. This analysis will be completed for the peak hour, and evaluate the day-ahead schedules and awards and compare them to actual performance and data for the current trading day. System Operations will then calculate the current day's peak-hour load versus the next day's peak-hour load, interchange, unit contingent imports, dynamic imports, operating reserve, and risk to the ISO forecast of ISO demand and internal generation capacity. This system capacity analysis defines the forecasted system capacity difference between the two days. This difference, along with the previous day's system capacity margin[20] and consideration of the resources coming on line or going off line on outage, provides important information about the potential accuracy of the forecasted system capacity margin.

The ISO will complete an additional current day reliability assessment between midnight and 0600 of the trading day if there is updated information that could change the assumptions from those used in the day-ahead reliability assessment, examples include but are not limited to following: changes in load forecast, forced generation or transmission outages; transmission de-rates due to forced outages in external systems; topology changes due to real time switching (system reconfiguration); and localized fuel supply limitations. The ISO will update its commitment if required, as a result of the current day reliability assessment. The ISO may increase the capacity initially designated in an Exceptional Dispatch CPM or commit an additional resource through Exceptional Dispatch

[19] All credible contingencies include single contingencies and multiple contingencies. Single contingencies (N-1) are defined in accordance to NERC TPL-002-0b Category B conditions. Multiple contingencies are defined in accordance to NERC TPL-003-0a Category C conditions. In addition, WECC-FAC-011 mentions multiple contingencies and required guidelines for regional requirement

[20] System capacity margin is the amount of generation kept on line due to potential load forecast errors.

CPM (e.g., such a designation will occur if Eligible Capacity is required to meet reliability requirements). This increase or new commitment is typically made by 0800 of the trading day. The ISO may not decrease the CPM quantity previously designated as a result of this updated analysis.

If the post-day ahead reliability assessment shows that no additional capacity is required to meet reliability requirements, then no incremental Exceptional Dispatch CPM capacity is needed, and the resource will be compensated based on the initial amount of capacity designated. If the post-day ahead reliability assessment shows that additional capacity is required to mitigate the reliability issue, the ISO will notify the resource's scheduling coordinator by 0800 of the trading day following the initial Exceptional Dispatch CPM designation that incremental Exceptional Dispatch CPM capacity is needed. In this situation, the ISO will treat the initial and incremental designation of Exceptional Dispatch CPM capacity as a single designation and will compensate the resource based on the sum of the initial amount of capacity dispatched and the incremental Exceptional Dispatch CPM capacity quantity. Once the ISO determines that issuing a CPM designation is necessary to address a reliability need, the quantity of the CPM designation will be the full amount of capacity relied upon to address the reliability need.

On subsequent days, if the ISO determines that additional Exceptional Dispatch CPM capacity is required, the ISO treats the designation as a subsequent Exceptional Dispatch under ISO Tariff Section 43.2.5.2.3. If additional Eligible Capacity is required for a Non-System Reliability need, then the term of the designation shall be in accordance with ISO Tariff Section 43.3.6. The ISO will notify the scheduling coordinator for the resource of the subsequent designation.

Under Section 43.2.5 a resource that has elected to receive supplemental revenues is not eligible to receive an Exceptional Dispatch CPM designation

Real-time

In real-time, the ISO may issue an Exceptional Dispatch CPM when the ISO must take immediate action to respond to an imminent or threatened system emergency.

If the ISO issues an Exceptional Dispatch to a resource for capacity that is not already Resource Adequacy capacity, substituted Resource Adequacy capacity or CPM capacity in real-time to mitigate a System/non-System event, this dispatch is based on commitment tools, Operating Procedure(s), operator judgment, or/and engineering studies. Accordingly, the dispatch will be for the actual amount of capacity required and such amount will be the designated CPM quantity, unless the commitment tools, Operating Procedure(s), operator judgment and/or engineering studies indicate that additional capacity over and above the capacity which had been dispatched is required to meet the reliability need, in which case the additional dispatch level will become the new CPM.

Under Section 43.2.5 a resource that has elected to receive supplemental revenues is not eligible to receive an Exceptional Dispatch CPM designation.

Other Provisions

The Exceptional Dispatch CPM designation for non-system needs will be for 60-days and 30-days for system needs. Following an Exceptional Dispatch CPM designation, the ISO will publish the CPM reports consistent with the ISO Tariff.

12.6.3 ***Procedure for Exceptional Dispatch CPM Quantity Designation for Reactive Power Support***

Overview

Reactive power support is the reactive power required pre- and post-contingency to support the MW transfer needed to maintain transmission voltage in a local area. A voltage concern giving rise to the need for reactive power support could occur either in the post-day ahead timeframe or in real time. In the post-day ahead time frame, which is a 12 hour period occurring up to 6 hours in advance of the next trading day, the ISO's tools are not always capable of identifying and committing a "final" quantity as there are many variables the ISO relies upon that may change during that time frame.[21] Real-time Exceptional Dispatch CPM designations will commit or dispatch the resource, depending upon start-up requirements and previous schedules and awards, to an actual megawatt quantity. This procedure describes the steps the ISO will follow to determine quantity for Exceptional Dispatch CPM designations to address a reliability need requiring reactive power support.

Post-Day Ahead Designations

In the event the ISO issues an Exceptional Dispatch CPM for reactive power, the designation will be for an Exceptional Dispatch CPM Non-System Reliability Need, as defined in the ISO Tariff. In order to address a voltage concern underlying the need for reactive power support, the resource deployed must be at a specific location. This designation would not occur to units that have been awarded a schedule in the IFM or a RUC, unless Eligible Capacity in excess of the available Resource Adequacy Capacity for that unit is required to provide reactive power support. The selection of the resource will follow the requirements of the ISO Tariff. Based on information provided by the real time operations engineer, the Shift Supervisor will determine which resource will be committed

[21] The post-day ahead window begins at 6:00 p.m. on the day before the Trading Day and ends at 6:00 a.m. on the Trading Day,

considering operating characteristics including effectiveness of the resource to meet the reactive power need, start-up time, start-up and minimum load cost.

Following identification of the voltage concern, the ISO will conduct an analysis and identify the MW amount and location of the unit commitments and any additional capacity needed to ensure that Reactive Power Support in the local area is reliable and adequate. The ISO will then issue an Exceptional Dispatch CPM for reactive power for the identified MW amount.

The analysis includes simulation of expected system conditions in the time frame of interest using a power flow model and/or other appropriate in-house tools. All credible contingencies are studied and system performance is monitored for any potential voltage concerns.[22] Mitigation options are developed to alleviate the identified voltage concerns. The results of these studies provide the operations engineer with enough information about the system after a contingency has occurred to determine the amount of reactive power that is needed if there is a voltage problem or the amount of real power needed if there is also a thermal overload problem.

On subsequent days, if the ISO determines that additional Exceptional Dispatch CPM capacity is required for reactive power support, the ISO treats the dispatch as a subsequent Exceptional Dispatch under ISO Tariff Section 43.2.5.2.3. The ISO will notify the scheduling coordinator for the resource of the subsequent dispatch.

Real-time

In real-time, the ISO may issue an Exceptional Dispatch CPM when the ISO must take immediate action to respond to an imminent or threatened system emergency.

If the ISO issues an Exceptional Dispatch to a resource for capacity that is not already Resource Adequacy capacity, substituted Resource Adequacy capacity or CPM capacity in real-time to obtain needed reactive power support, this dispatch is based on commitment tools, Operating Procedure or/and engineering studies. Accordingly, the dispatch will be for the actual amount of capacity required and such amount will be the designated CPM quantity.

Other Provisions

The Exceptional Dispatch CPM designation for reactive power support to address an Exceptional Dispatch CPM Non-System Reliability Need, as defined in the Tariff, will be for 60-days. Following an Exceptional Dispatch CPM designation for reactive power support, the ISO will publish the CPM reports consistent with the ISO Tariff.

[22] All credible contingencies include single contingencies and multiple contingencies. Single contingencies (N-1) are defined in accordance to NERC TPL-002-0b Category B conditions. Multiple contingencies are defined in accordance to NERC TPL-003-0a Category C conditions. In addition, WECC-FAC-011 mentions multiple contingencies and required guidelines for regional requirement

Selection of Eligible Capacity or Exceptional Dispatch CPM Designations

ISO Tariff Section 34.9.

In accordance with good utility practice the ISO shall make designations of Eligible Capacity for an Exceptional Dispatch CPM based on the following additional criteria:

1) the effectiveness of the Eligible Capacity at meeting the designation criteria specified in Section 43.2;
2) the capacity costs associated with the Eligible Capacity;
3) the quantity of a resource's available Eligible Capacity, based on a resource's PMin, relative to the remaining amount of capacity needed;
4) the operating characteristics of the resource, such as dispatch ability, Ramp Rate, and load-following capability; and
5) Whether the resource is subject to restrictions as a Use-Limited Resource.

The goal of the ISO will be to issue Exceptional Dispatches on a least cost basis. Imbalance Energy delivered or consumed pursuant to the various types of Exceptional Dispatch is settled according to the provisions in Section 11.5.6.

ISO operators shall consider the effectiveness of the resource along with Start-Up Costs and Minimum Load costs when issuing Exceptional Dispatches to commit a resource to operate at Minimum Load. When issuing Exceptional Dispatches for Energy, the ISO shall also consider Energy Bids if available. The goal of the ISO will be to issue Exceptional Dispatches on a least cost basis. ISO Operators shall also consider the factors set forth in Section 5.4.

12.6.4 ***Capacity at Risk of Retirement Needed for Reliability***

ISO Tariff Section 43.2.6

This BPM Section describes the requirements that capacity must meet in order for the ISO to issue a risk of retirement CPM designation. The five tariff requirements are as follows:

(1) the resource was not contracted as RA Capacity nor listed as RA Capacity in any LSE's annual Resource Adequacy Plan during the current RA Compliance Year;

(2) the ISO did not identify any deficiency, individual or collective, in an LSE's annual Resource Adequacy Plan for the current RA Compliance Year that resulted in a CPM designation for the resource in the current RA Compliance Year;

(3) ISO technical assessments project that the resource will be needed for reliability purposes, either for its locational or operational characteristics, by the end of the calendar year following the current RA Compliance Year;

(4) no new generation is projected by the ISO to be in operation by the start of the subsequent RA Compliance Year that will meet the identified reliability need; and

(5) the resource owner submits to the ISO and DMM, at least 180 days prior to terminating the resource's PGA or removing the resource from PGA Schedule 1, a request for a CPM designation under this Section 43.2.6 and the affidavit of an executive officer of the company who has the legal authority to bind such entity, with the supporting information and documentation discussed in the BPM for Reliability Requirements, that attests that it will be uneconomic for the resource to remain in service in the current RA Compliance Year and that the decision to retire is definite unless CPM procurement occurs.

For the third and fourth requirements, the ISO uses a diverse set of tools and follows a multi-step process whereby the generating facility is studied for its impact on local and system reliability, operational flexibility, given the best available information regarding grid conditions for year 2 and the assumed availability in year 2 of RA resources procured for year 1 (including other known generator retirements) and any new generation that will achieve commercial operation to meet year 2 needs.

1. This analysis consists of one or more of the following studies -- power flow, voltage stability, transient stability, reactive margin studies, and production simulation. The analysis will evaluate the adverse effects on the transmission system as well as operational flexibility requirements.

2. This analysis considers the characteristics of the individual resources in the fleet and will be able to highlight resources that are needed for locational and system reliability or have non-generic resource flexibility required to operate the integrated grid and have not been secured through the procurement process.

Under the fifth requirement, the executive officer's affidavit must be accompanied with supporting information and documentation including, but not limited to, the following:

1. The expected PGA termination date for the resource(s). This date must be a least 180 days after submission of the request for a risk of retirement CPM designation.

2. A description of power purchase agreements and capacity contracts currently in effect (if any), including the term length, volume and pricing provisions.

3. A description of the term, length, volume, and pricing provisions of existing fuel supply contracts.

4. Any analyses the resource owner performed, or had performed, to determine whether it is economic/uneconomic for the resource to remain in service during the current year including supporting documents.

5. Any document(s) confirming the formal decision of the Board of Directors, officers, or management of the resource owner, as appropriate, that the resource will be retired unless CPM procurement occurs.

During its review of the request for risk of retirement CPM designation, the ISO may request that the resource owner submit additional information and documentation pertinent to its request, as needed by the ISO to perform its technical assessment.

The information provided by the resource owner may also be reviewed by the ISO's Department of Market Monitoring. If the Department of Market Monitoring suspects that the resource's submission involves false information or market manipulation, then it may refer the suspected market violations to FERC's Office of Enforcement. A CPM designation by the ISO may occur irrespective of any potential review or action DMM may take regarding the resource's submission.

Within 30 days of receipt of the resource owner's notice pursuant to ISO Tariff Section 43.2.6, the ISO shall inform the generation owner, or its designated agent, whether the retirement of the generating unit would adversely affect the reliability of the transmission system.

If all of the five requirements of ISO Tariff Section 43.2.6, are met, before the ISO issues the CPM designation, the ISO must prepare a report that explains the basis and need for the risk of retirement CPM designation, and post that report on the ISO's website. The posting must allow no less than seven days for stakeholders to review and submit comments and no less than 30 days for an LSE to procure capacity from the resource as an alternative to proceeding with the CPM designation.

Once this process is completed, unless the resource has otherwise entered into an arrangement through the bilateral market that relieves its projected revenue insufficiency in the upcoming RA Compliance Year, the ISO may issue the CPM designation to the resource at risk of retirement. The resource owner may accept the CPM designation, or decline it and proceed with retirement of the resource subject to the applicable notice and termination requirements

A CPM designation for risk of retirement will have a minimum commitment term of one month and a maximum commitment term of one year and may not extend into the following compliance year. The CPM designation will be rescinded for any month in the current year during which the resource is procured by an LSE to provide RA capacity.

12.6.4.1 Obligations of a Resource Designated under the CPM.

Availability Obligations.

ISO Tariff Section 43.5.1

Capacity from resources designated under the CPM shall be subject to all of the availability, dispatch, testing, reporting, verification and any other applicable requirements imposed under ISO Tariff Sections 40.6 *et seq.* on Resource Adequacy Resources identified in Resource Adequacy Plans. For example, CPM Capacity designated under the CPM must meet all applicable Day-Ahead and Real-Time availability requirements. Also in accordance with those requirements, Generating Units designated under the CPM that meet the definition of Short Start Units shall have the obligation to meet the additional availability requirements of ISO Tariff Section ~~40.6.3~~40.6.2~~, and Generating Units designated under the CPM that meet the definition of Long Start Units will have the rights and obligations specified in ISO Tariff Section 40.6.7.1~~.

Except for Use Limited resources if the ISO has not received an Economic Bid or a Self-Schedule for CPM Capacity, the ISO shall utilize a *Generated* Bid in accordance with the procedures specified in ISO Tariff Section 40.6.8.

In addition to submitting Energy Bids, resources designated under the CPM must also submit Ancillary Service Bids (or Self-Provided Ancillary Services) for all of their CPM Capacity for each Ancillary Service for which the resource is certified to provide. That will allow the ISO to optimize between the Energy Bid and the Ancillary Service Bid.

Obligation to Provide Capacity and Termination

ISO Tariff Section 43.5.2

The decision to accept a CPM designation shall be voluntary for the Scheduling Coordinator for any resource. If the Scheduling Coordinator for a resource accepts a CPM designation, it shall be obligated to perform for the full quantity and full period of the designation with respect to the amount of CPM Capacity for which it has accepted a CPM designation. If a Participating Generator's or Participating Load's Eligible Capacity is designated under the CPM after the Participating Generator or Participating Load has filed notice to terminate its Participating Generator Agreement or Participating Load Agreement or withdraw the Eligible Capacity from its Participating Generator Agreement or Participating Load Agreement, and the Scheduling Coordinator for the resource agrees to provide service under the CPM, then the Scheduling Coordinator shall enter into a new Participating Generator Agreement or Participating Load Agreement, as applicable, with the ISO.

12.6.4.2 Reports for CPM Designation Pursuant to Tariff Sections 43.2.1, 43.2.2, 43.2.3 and 43.2.4

ISO Section 43.6

The ISO will publish several reports and notices in connection with the CPM. These reports and notices are set forth below.

CPM Designation Market Notice

ISO Tariff Section 43.6.1

The ISO will issue a Market Notice within two (2) Business Days of a CPM designation. The Market Notice will include a preliminary description of what caused the CPM designation, the name of the resource(s) procured, the preliminary expected duration of the CPM designation, the initial designation period, and an indication that a designation report is being prepared in accordance with ISO Tariff Section 43.6.2.

Designation of a Resource under the CPM.

ISO Tariff Section 43.6.2

The ISO shall post a designation report to the ISO Website and provide a Market Notice of the availability of the report within the earlier of thirty (30) days of procuring a resource under the CPM or ten (10) days after the end of the month. The designation report shall include the following information:

(1) A description of the reason for the designation (*e.g.,* LSE procurement shortfall, Local Capacity Area Resource effectiveness deficiency, or CPM Significant Event), and an explanation of why it was necessary for the ISO to utilize the CPM authority to designate capacity);

(2) The ISO will report the following information for all backstop designations:

  (a) the resource name;

  (b) the amount of CPM Capacity designated (MW),

  (c) an explanation of why that amount of CPM Capacity was designated,

  (d) the date CPM Capacity was designated,

  (e) the duration of the designation; and

  (f) the price for the CPM procurement; and

(3) If the reason for the designation is a CPM Significant Event, the ISO will also include the following:

  (a) a discussion of the event or events that have occurred, why the ISO has procured CPM Capacity, and how much has been procured;

(b) an assessment of the expected duration of the CPM Significant Event;

(c) the duration of the initial designation (thirty (30) days); and

(d) a statement as to whether the initial designation has been extended (such that the backstop procurement is now for more than thirty (30) days), and, if it has been extended, the length of the extension.

Non-Market Commitments and Repeated Market Commitments of Non-Resource Adequacy Capacity.

ISO Tariff Section 43.6.3

Within ten (10) calendar days after the end of each month, the ISO will post a report to the ISO Website that identifies for the prior month:

(1) Any non-market commitments of non-Resource Adequacy Capacity; and

(2) All market commitments of non-Resource Adequacy Capacity.

The ISO will provide a Market Notice of the availability of this report. The report will not include commitments of RMR Generation capacity, Resource Adequacy Capacity or designated CPM Capacity. The report will include the following information:

(a) The name of the resource;

(b) The IOU Service Area and Local Capacity Area (if applicable);

(c) The maximum capacity committed in response to the event (MW);

(d) How capacity was procured (for example, by RUC or Exceptional Dispatch);

(e) The reason capacity was committed; and

(f) Information as to whether or not all Resource Adequacy Resources and previously-designated CPM Capacity were used first and, if not, why they were not.

CPM Cost Information Transparency

The ISO will post cost information associated with capacity procured, in accordance to the ISO's capacity procurement mechanism, in its monthly capacity procurement mechanism reports, which includes the applicable tariff price for CPM capacity.

Reports for CPM Designation Pursuant to Tariff Section 43.1.5

ISO Tariff Section 34.9.4

Beginning on May 15, 2009, and on the fifteenth of each subsequent two-month period, the ISO will file with FERC and post on the ISO Website, a report that identifies the frequency, volume, costs, causes and degree of mitigation of Exceptional Dispatches. The first report will cover the first fifteen days of transactions. The subsequent reports will cover sixty days of transactions.

12.6.5 Payments to Resources Designated Under the CPM

See BPM – CG CC 7891 Monthly CPM Settlement at https://bpmcm.caiso.com/Pages/SnBBPMDetails.aspx?BPM=Settlements and Billing

12.7 Scheduling Coordinator Failure to Demonstrate Sufficient Flexible RA Capacity

ISO Tariff Section 43.3

12.7.1 Cumulative Deficiency in Flexible RA Capacity

ISO Tariff Sections 40.10.5.3(c) & 43.4.3

Where the ISO finds a cumulative deficiency in Flexible RA Capacity as described in Section 4, it may designate a Flexible Capacity CPM. In the event the CAISO determines that a CPM designation must be issued to resolve a collective deficiency of system RA Capacity under Section 43.2.3 and that Flexible Capacity CPM designation must be issued to resolve a cumulative deficiency of Flexible RA Capacity under Section 43.2.7 for annual or monthly plans covering the same or overlapping time periods, the CAISO will apply the criteria in ISO Tariff Section 43.4 and endeavor to designate capacity that will be effective in resolving both underlying reliability needs –

(1) If the MW amount of the simultaneous or overlapping designation is sufficient to resolve both underlying reliability needs, no further designation of CPM Capacity or CPM Flexible Capacity will be issued.

(2) If the MW amount of the simultaneous or overlapping designation is not sufficient to resolve both underlying reliability needs, the ISO may designate additional CPM Capacity or CPM Flexible Capacity to cover the remaining deficiency.

12.7.2 CPM Cost Allocation for Flexible RA Capacity Deficiencies

If a total flexible needs deficiency is found, the ISO may choose to issue a CPM and allocate the costs of that CPM to all deficient LSEs under the jurisdiction of all deficient Local Regulatory Authorities. The specific manner in which the cost allocation is calculated depends on the amount of CPM capacity procured, the ratio of the deficiencies of the deficient LRAs compared to each other, the ratio of the deficiencies of the LSEs under the jurisdiction of a deficient LRA compared to each other within that LRA, and in some cases the specific LSE cost allocation methodology communicated to the ISO by the Local Regulatory Authority.

12.7.2.1 Local Regulatory Authority Cost Allocation Method

ISO Tariff Section 43.8.8(c)

A Local Regulatory Authority may choose to identify its own LSE flexible CPM cost allocation methodology applicable to its jurisdiction Load Serving Entities. The ISO must receive advanced notice of this methodology in order to promptly complete its CPM process. Any LRA that chooses to identify its own LSE CPM cost allocation methodology must provide this methodology to the ISO no later than the last business day in October prior to the compliance year; the ISO will use this CPM cost allocation methodology for the entire compliance year. If the ISO does not receive an LRA cost allocation methodology by this time, the ISO will use its own cost allocation methodology outlined in the ISO Tariff for the entire compliance year.

A Local Regulatory Authority choosing to provide their own CPM cost allocation methodology must provide a methodology that results in the total MW deficiency of its jurisdictional entities being allocated. Where the methodology does not allocate the total MW deficiency of its jurisdictional entities, the ISO will allocate the remaining deficiency pursuant to ISO Tariff Section 43.8.8(b)(2).

12.7.2.2 ISO Cost Allocation Method

ISO Tariff Section 43.8.8(b)(2)

Where a Local Regulatory Authority has not provided its own CPM cost allocation methodology that allocates all of its jurisdictional Load Serving Entity deficiencies, the ISO will allocate the cost of the CPM proportionally to deficient LSEs in deficient LRAs. Where there are multiple Local Regulatory Authorities that are deficient, the ISO will first find each deficient LRA's proportion of the total deficiency, then find each deficient LSE's proportion by comparing it to other deficient LSEs within the deficient LRA; the LSE's proportion of

the total CPM cost will be the LRA deficiency proportion multiplied by the LSE's deficiency proportion.

$$LSE\ Cost\ Allocation\ (\%) = \left(\frac{LSE's\ LRA\ deficiency\ MW}{Total\ deficiency\ MW\ of\ all\ deficient\ LRAs}\right) \times \left(\frac{LSE's\ deficiency\ MW}{Total\ deficiency\ MW\ of\ all\ deficient\ LSEs\ under\ LSE's\ LRA}\right)$$

	Cumulative CAISO Analysis	Local Regulatory Authority Analysis			Individual Load Serving Entity Analysis					
LRA	CAISO	LRA_A	LRA_B	LRA_C	LRA_A			LRA_B		LRA_C
LSE					LSE1	LSE2	LSE3	LSE4	LSE5	LSE6
Showings Analysis										
Base Ramping Showings	500.00	400.00	100.00	0.00	100.00	200.00	100.00	50.00	50.00	0.00
Base Ramping Minimum	650.00	550.00	80.00	20.00	100.00	300.00	150.00	40.00	40.00	20.00
Qualified Base Ramping	500.00	400.00	100.00	0.00	100.00	200.00	100.00	50.00	50.00	0.00
Peak Ramping Showings	100.00	60.00	40.00	0.00	50.00	10.00	0.00	0.00	40.00	0.00
Peak Ramping Maximum	105.00	60.00	40.00	5.00	20.00	20.00	20.00	20.00	20.00	5.00
Qualified Peak Ramping	100.00	60.00	40.00	0.00	20.00	10.00	0.00	0.00	20.00	0.00
Super-Peak Ramping Showings	30.00	30.00	0.00	0.00	10.00	10.00	10.00	0.00	0.00	0.00
Super-Peak Ramping Maximum	30.00	15.00	10.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Qualified Super-Peak Ramping	30.00	15.00	0.00	0.00	5.00	5.00	5.00	0.00	0.00	0.00
Needs Assessment										
Total Showings	630.00	490.00	140.00	0.00	160.00	220.00	110.00	50.00	90.00	0.00
Qualified Total Showings	630.00	475.00	140.00	0.00	125.00	215.00	105.00	50.00	70.00	0.00
Total Need	755.00	610.00	120.00	25.00	120.00	320.00	170.00	60.00	60.00	25.00
Total Needs Assessment	(125.00)	(135.00)	20.00	(25.00)	5.00	(105.00)	(65.00)	(10.00)	10.00	(25.00)
Base Ramping Assessment	(150.00)	(150.00)	20.00	(20.00)	0.00	(100.00)	(50.00)	10.00	10.00	(20.00)
CPM Cost Allocation (CAISO Method)										
Flexible Capacity Deficiency	(150.00)	(150.00)	0.00	(25.00)	0.00	(105.00)	(65.00)	(10.00)	0.00	(25.00)
Flexible Capacity CPM (MW)	150									
CPM Cost Allocation (%)		85.71%	0.00%	14.29%	0.00%	52.94%	32.77%	0.00%	0.00%	14.29%

Figure 5: Example of ISO Cost Allocation Methodology

In the example above, there is a cumulative deficiency in the ISO system's total flexible needs of 150 MW (Flexible Capacity Deficiency). Assuming the ISO issues a flexible capacity CPM for 150 MW, 85.71% of the costs will be allocated to deficient LSEs under LRA_A and 14.29% of the costs will be allocated to deficient LSEs under LRA_C. To find the specific LSE cost allocation percentage for LSE2, the ISO compares LSE2's deficiency of 105 MW to the total deficiencies under LRA_A (170 MW) then multiples that by the LSE's LRA deficiency proportion; which calculates that LSE2 will receive 61.76% of LRA_A's 85.71%, or 52.94% of the total CPM cost. The other LSEs are calculated using the same method.

If for example, LRA_A provides the ISO with a different allocation methodology under ISO Tariff Section 43.8.8(c), the total amount of allocated to its jurisdictional entities will still equal 85.71% of the flexible CPM cost.

12.7.2.3 Reduction of Cost Allocation

ISO Tariff Section 43.8.8(d)

To the extent that an LSE procures additional Flexible RA Capacity as part of a final opportunity to resolve deficiency, as discussed in ISO Tariff Section 43.2.7.1, the ISO will reduce this LSE's CPM cost to the extent that the amount procured cures its individual deficiency.

In the example below, LSE2 had an individual deficiency of 105 MW and was allocated 52.94% of the total CPM cost with the ISO procuring 150 MW of CPM capacity. If LSE2 procures an additional 50 MW of Flexible RA Capacity, the ISO will credit LSE2 and LRA_A with 50 MW, reduce its CPM procurement by 50 MW, and recalculate each LRA and individual LSE CPM cost allocation. As shown below, the ISO will now only procure 100 MW of CPM capacity, and allocate 36.67% of the lower CPM cost to LSE2, 43.33% of the lower CPM cost to LSE3, and 20% of the lower CPM cost to LSE6. LSE2 can completely avoid CPM cost allocation by procuring its entire 105 MW of deficiency.

	Cumulative CAISO Analysis	Local Regulatory Authority Analysis			Individual Load Serving Entity Analysis					
LRA	CAISO	LRA_A	LRA_B	LRA_C	LRA_A			LRA_B		LRA_C
LSE					LSE1	LSE2	LSE3	LSE4	LSE5	LSE6
Total Needs Assessment	(125.00)	(135.00)	20.00	(25.00)	5.00	(105.00)	(65.00)	(10.00)	10.00	(25.00)
Base Ramping Assessment	(150.00)	(150.00)	20.00	(20.00)	0.00	(100.00)	(50.00)	10.00	10.00	(20.00)
CPM Cost Allocation (CAISO Method)										
Flexible Capacity Deficiency	(150.00)	(150.00)	0.00	(25.00)	0.00	(105.00)	(65.00)	(10.00)	0.00	(25.00)
Flexible Capacity CPM (MW)	150									
CPM Cost Allocation (%)		85.71%	0.00%	14.29%	0.00%	52.94%	32.77%	0.00%	0.00%	14.29%
Additional LSE Procurement	***50***	***50***	***0***	***0***	***0***	***50***	***0***	***0***	***0***	***0***
Flexible Capacity Deficiency	(100.00)	(100.00)	0.00	(25.00)	0.00	(55.00)	(65.00)	(10.00)	0.00	(25.00)
Flexible Capacity CPM (MW)	100									
CPM Cost Allocation (%)		80.00%	0.00%	20.00%	0.00%	36.67%	43.33%	0.00%	0.00%	20.00%

Figure 6: Example of ISO Cost Allocation Methodology after additional procurement provided.

13 Attachment A: Reliability Requirements Information Submittal Timelines

Exhibit A-1: Summary of Resource Adequacy Information Submittal Timelines

Exhibit A-1 represents a summary of the submittal dates for resource adequacy information.

Item	Submittal Date	Frequency
Deliverability Study	January April July October	Quarterly or as dictated by Good Utility Practice
Local Capacity Process	See Exhibit A-4	Annual
Local Regulatory Authority submits Qualifying Capacity Criteria & Qualifying Capacity Calculation results to ISO	Due June 1	Annual
Net Qualifying Capacity draft list posting	Second week in August	Annual
Effective Flexible Capacity draft list posting	Second week in August	Annual
Scheduling Coordinator Corrections to draft NQC list	Due 3 weeks after posting of draft NQC list	Annual
Scheduling Coordinator Corrections to Draft EFC List	September 1	Annual
Final NQC List Posting	TBD	Annual
Final EFC List Posting	TBD	Annual
SC requests changes to Final NQC List (Changes include addition of new resources that are COD/COM). Requests must be submitted in CIRA.	Prior to the first of the month 2 months prior to the target compliance month.	Monthly
ISO updates final NQC list	15th of each month	Monthly

Item	Submittal Date	Frequency
Scheduling Coordinator requests changes to final EFC list	Prior to the first of the month 2 months prior to the target compliance month.	Monthly
ISO updates final EFC list	15th of each month	Monthly
RMR Designation	TBD	Annual
LSE Reserve Sharing Election	September 20th	Annual
Import Allocation Process Steps 1 – 13 and beyond	See Exhibit A-3	See Exhibit A-3

Exhibit A-2: Resource Adequacy Plans and Supply Plans Submittal Dates

Exhibit A-2 provides the submittal dates for Resource Adequacy Plans, Programmatic Information, monthly Demand Forecasts and Supply Plans

Annual Information	**Submittal Date**
Annual Resource Adequacy Plans, Programmatic Information and Supply Plans	The last business day of October
Monthly Information: **Resource Adequacy Plans, Demand Forecasts and Supply Plans**	
Trade Month	**Submittal Date**
All	As posted on the Reliability Requirements website.

Exhibit A-3: Import Capability Posting and Submittal Dates

Exhibit A-3 provides the posting and submittal dates related to the Available Import Capability Process. Only those steps of the Available Import Capability Process that have postings or submittals are shown in the exhibit.

Item	Posting Date	Submittal Date	Frequency
Market Notice requesting Import Commitment Data and contact person		1st week in June	Annual
LSE to submit Data requested		2 weeks after previous Market Notice	Annual
Step 1: Posting of Maximum Import Capability on Interties	1st of July or next business day if 1st falls on a weekend		Annual
Step 6: Posting of Assigned and Unassigned Capability	9th of July or next business day if 9th falls on a weekend		
Step 7: Notification of LSE Assignment Information	9th of July or next business day if 9th falls on a weekend		Annual
Step 8: Transfer of Import Capability		18th of July, or next business day if 18th falls on a weekend	Annual
Step 9: Request to assign Remaining Import Capability		19th of July, or next business day if 19th falls on a weekend	Annual
Step 10: ISO Notification of Initial Remaining Import Capability Assignments and Unassigned Capability	26th of July, or next business day if 26th falls on a weekend. The ISO will begin accepting requests for		Annual

Item	Posting Date	Submittal Date	Frequency
	Step 11 at the date and time indicated in the market notice published after Step 10.		
Step 11: Secondary request to assign Remaining Import Capability		1st of August, or next business day if 1st falls on a weekend. The ISO will begin accepting requests for Step 11 at the date and time indicated in the market notice published after Step 10.	Annual
Step 12: Posting of Assigned and Unassigned aggregate Import Capability	8th of August or next business day if 8th falls on a weekend. The ISO will begin accepting requests for Step 13 at the date and time indicated in the market notice published after Step 12.		Annual
Step 13: Requests for Unassigned Available Import Capability		9th of August, or next business day if 9th falls on a weekend. The ISO will begin accepting requests for Step 13 at the date and time indicated in the market notice	Annual

Item	Posting Date	Submittal Date	Frequency
		published after Step 12.	
Step 13: Publish list of Unassigned Available Import Capability	5th day of September, or next business day if 5th falls on a weekend		Annual
Registration for Bilateral Import Capability Transfers		Anytime	One time
Reporting Bilateral Import Capability Transfers occurring outside of Step 8		Anytime. To be counted on an RA Plan, must be submitted on or before the 20th of the Month, two months prior to the Compliance Month (ie: 9/20/2008 to count on Nov 2008 RA Plan)	Upon transfer of Import Capability
Posting of Eligible Import Capability Trading Parties	5th day of each month, or next business day if 5th falls on a weekend		Monthly
Posting of Import Capability Transfers	Within 20th day of each month or next business day if 20th falls on a weekend. Transaction summary available in CIRA real time.		Monthly
Posting of Import Allocation usage on Annual RA Plans	15 business days after		Annual

Item	Posting Date	Submittal Date	Frequency
	Annual RA Plans are due		

Exhibit A-4: Local Capacity Process Schedule

Task	Entity	Date
Publishes Draft Study Manual	ISO	October
Stakeholder Meeting	ISO/All	October – November
Publishes Final Study Manual	ISO	End of November – 1st Week December
Base Case Development	PTO	December
Receive Base Cases	PTO/ISO	1st Week January
Publish Base Cases	ISO	Mid-January
Comments on Base Cases	All	Late January
Complete Draft Study	ISO	1st Week March
Stakeholder Meeting Draft Study Results	ISO/All	2nd Week March
Propose New Operating Procedures	All	Late March
Review and Validate New Operating Procedures and Publish Revised Study	ISO	Early April
Stakeholder Meeting on Revised Study	ISO/All	2nd Week in April
Receive Comments on Study	All	3rd Week in April
Publish Final Study Report	ISO	1st Week in May; No later than end of June
Draft LSE Local Allocations	LSEs	(sum of next year's TAC local resource needs / sum of current year's TAC local resource needs) x current year LSEs local allocation for its load in that TAC
Updated CEC load forecast	CEC	No later than end of June
Final local allocations	ISO/LRA	2nd-3rd week of July
Final procurement showing	LSEs	The last business day of October
Market Notice and Report with individual and potential collective deficiencies	ISO	Twenty-one (21) Calendar days after the Final Procurement Showing

Additional procurement showings	LSEs	Thirty (30) Calendar days after the date the Market Notice is issued.
ISO backstop (as needed)	ISO	As needed, following the expiration of the thirty (30) calendar day period for an LSE to show additional procurement has been made to correct an RA deficiency.

Exhibit A-6: Flexible Capacity Needs Assessment Schedule

Task	Entity	Date
Receive CEC load forecast used for Transmission Planning Process expansion plan	CEC	Early January
Submit updated RPS build-out data to the ISO using template on ISO website.	Scheduling Coordinator for LSEs	Early January
Publish annual Flexible Capacity Needs assumptions paper	ISO	Late January
Stakeholder meeting to discuss assumptions, stakeholder comments, and posting of comments with ISO response	ISO/All	Early February
Draft Flexible Capacity Needs Assessment completed, including draft allocations to LRAs and minimum and maximums for each flexible capacity category, and draft adjustment factor.	ISO	Early March
Flexible Capacity Needs Assessment stakeholder meeting	ISO/All	Mid-March
Publish draft final Flexible Capacity Needs Assessment, draft allocations to LRAs and minimum and maximums for each flexible capacity category including draft final allocations to LRAs and minimum and maximums for each	ISO	Late March

flexible capacity category, and draft adjustment factor.		
ISO stakeholder meeting to discuss draft final Flexible Capacity Needs Assessment	ISO/All	Early April
Final Flexible Capacity Needs study posted	ISO	1st Week in May; No later than end of June