

Business Requirements Specification

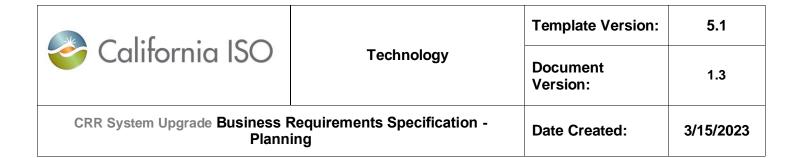
CRR System Upgrade

Document Version: 1.3

Current Version Date: 03/28/2023

Revision History

Date	Version	Description
04/26/2022	1.0	Creation of Document
8/10/2022	1.1	Added Phase 2 Requirements: BRQ00220, BRQ03630, BRQ05264,
		BRQ05786, BRQ06770, BRQ06871. Requirements are red-lined in BRS below.
		Note: These requirements will not be included in the initial go-live and will be included in subsequent phase 2.
11/11/2022	1.2	Updated the following BRQs:
11/11/2022	1.2	opuated the following BRQs.
		3440, 3460, 3480, 3630, 5262, 5786, 6770, 6871
		Added the following BRQs:
		2091, 2100, 2280, 2291, 2294, 3495, 3496, 3497, 3498, 3500, 3545, 3560, 3585, 3587, 3632, 3634, 5268, 5788, 6774, 6872, 6872-B, 6873, 6875
		Deleted Section 4.1, internal section only.
		Note: See redline for more information.



Date	Version	Description
3/28/2023	1.3	Updated the following BRQs:
		2020, 2040, 3634, 4120, 3660, 5262, 5268, 5786, 6774, 6875, and 3545 BRQ identifier corrected to 3560
		Deleted the following BRQs:
		3630, 3632, 5264, 6770, 6871, 6873, 5788



Technology

Template Version:	5.1
Document Version:	1.3

CRR System Upgrade Business Requirements Specification - Planning

Date Created: 3/15/2023

Table of Contents

1	Intro	duction	4
	1.1	Purpose	4
2	Inte	lectual Property Ownership	5
	2.1	Guidelines	5
	2.2	Acronyms and Definitions Table	6
3	Deta	ils of Business Need/Problem	7
	3.1	Description	7
4	Bus	ness Impacts	8
	4.1	Business Practice Manual (BPM)	8
	4.2	Other	9
5	Bus	ness Requirements	10
	5.1	Business Process: Manage Congestion Revenue Rights	10
	5.1.	Business Requirements – Posting CRR Calendar Schedule	10
	5.1.2	Business Requirements – Annual/Monthly CRR Allocation Process	11
	5.1.3	Business Requirements – Annual/Monthly Auction Process	58
	5.1.4	Business Requirements – Data Validation Against Settlements & CEC Data	69
	5.1.	5 Business Requirements – Daily/Ad Hoc Process	70
	5.1.6	Business Requirements – Merchant Transmission Markets Process	73
	5.1.	7 Business Requirements – Reporting	75
	5.1.8	Business Requirements – Conversion of TORs to MT-TOR CRRs	89
	5.1.9	9 Business Requirements – Integration	93
	5.1.	10 Business Requirements – Application Access	97
	5.2	Business Process: Market/Business Simulation	98
	5.2.	1 Business Requirements	98
6	Арр	endices	100
	6.1	Appendix 1 – Acronym Definition	100

	Technology	Template Version:	5.1
California ISO		Document Version:	1.3
CRR System Upgrade Business Requirements Specification - Planning		Date Created:	3/15/2023

1 Introduction

1.1 Purpose

The purpose of this document is to capture and record a description of what the Users and Business Stakeholders of the project wish to obtain, by providing high-level business requirements. This document establishes the basis for the agreement between the initiators and implementers of the project. The information in this document serves as input to determine the scope of projects and all Business Process Modeling and System Requirements Specifications efforts.

Business requirements are what must be delivered to provide value for the Users and Business Stakeholders. Systems, software, and processes are the ways (how) to deliver, satisfy or meet the business requirements (what).

The purpose of this project is to replace the existing Congestion Revenue Rights (CRR) application with a new application that adopts the latest technology stack that is aligned with CAISO's technology standards, consolidate all CRR related functions, minimize human errors, reduce processing time, eliminate manual workarounds, and position the system to be able to accommodate policy changes down the road.

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 4 of 108

California ISO	Technology	Template Version:	5.1
		Document Version:	1.3
CRR System Upgrade Business Requirements Specification - Planning		Date Created:	3/15/2023

2 Intellectual Property Ownership

Intellectual Property covers a broad array of information and materials, including written works, computer programs, software, business manuals, processes, symbols, logos and other work products. Determining ownership of Intellectual Property is very important in preserving the rights of the California ISO, and helps to avoid Intellectual Property infringement issues. In considering the business requirements or service requirements to be performed, the business owner of the project must determine Intellectual Property Ownership.

2.1 Guidelines

Intellectual Property ownership must be considered by all applicable stakeholders before the services are performed. The level of analysis is two-fold:

- One, the business owner must determine if the Intellectual Property necessary to perform the services is owned by the California ISO or whether it must be obtained from a third party. Once the California ISO has secured the proper Intellectual Property rights to perform the services (i.e., the Intellectual Property is owned by the California ISO or we have licensed it from a third party), the California ISO can undertake the next step.
- The second step in the analysis is to consider whether new Intellectual Property will be created because of the business requirements or service requirements to be performed, and how that Intellectual Property will be owned and protected by the California ISO.

In order to assist the business owner in the analysis previously described, refer to the California Intellectual Property Policy available at:

http://www.caiso.com/rules/Pages/LegalPoliciesNotices/Default.aspx, which provides a brief tutorial on what Intellectual Property is and how the California ISO can protect its Intellectual Property. Contact the Legal Department if you have any questions regarding Intellectual Property.

There are no impacts to intellectual property based on the requirements stated in this document.

	Technology	Template Version:	5.1
California ISO		Document Version:	1.3
CRR System Upgrade Business Requirements Specification - Planning		Date Created:	3/15/2023

2.2 Acronyms and Definitions Table

Note: Refer to **Appendix 1 – Acronym Definition** for more information.

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 6 of 108

California ISO	Technology	Template Version:	5.1
		Document Version:	1.3
CRR System Upgrade Business Requirements Specification - Planning		Date Created:	3/15/2023

3 Details of Business Need/Problem

3.1 Description

Congestion Revenue Rights (CRR) system replacement project scope is the roll-out of a:

- Brand new user-interface (UI) system with an updated new look-and-feel, to replace the existing legacy system implemented during the MRTU 2008 go-live and brought up to current ISO technology standards
- Set of application-programming interfaces (APIs) to enable integration between ISO and market participant systems

Overall, to support the following in one consolidated CRR external-facing system:

- Annual/Monthly Auction and Allocation market participant bid submission and results retrieval
- Load data submission by CRR LSEs, CEC
- Load migration data submission by CRR UDCs
- Secured "Congestion Revenue Rights Full Network Model" information access
- Private and public access of CRR market input and output information

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 7 of 108

California ISO	Technology	Template Version:	5.1
		Document Version:	1.3
CRR System Upgrade Business Requirements Specification - Planning		Date Created:	3/15/2023

4 Business Impacts

4.1 Business Practice Manual (BPM)

ВРМ	Description of Impact(s)	
Congestion Revenue Rights	 Enhancements made to the new CRR product. Automatic publishing of CRR market results. Automatic CRR notification. New CRR schedule calendar. New CRR FNM access. New CRR data submission and download interface UI/API. New CRR market results interface. Load Migration 	

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 8 of 108

California ISO	Technology	Template Version:	5.1
		Document Version:	1.3
CRR System Upgrade Business Requirements Specification - Planning		Date Created:	3/15/2023

4.2 Other

Impact:	Description: (optional)
Market Simulation	Yes
Market Participant Impact	Yes
External Training	Yes
Policy Initiative	No
Vendor	Yes

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 9 of 108

California ISO		Template Version:	5.1
	Technology	Document Version:	1.3
CRR System Upgrade Business F Plann	Date Created:	3/15/2023	

5 Business Requirements

The sections below describe the Business processes and the associated business requirements involved in the project. These may represent high-level functional, non-functional, reporting, and/or infrastructure requirements. These business requirements directly relate to the high-level scope items determined for the project.

5.1 Business Process: Manage Congestion Revenue Rights

5.1.1 Business Requirements – Posting CRR Calendar Schedule

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU- BRQ00220	Solution shall provide the capability for authorized CRR users to post approved CRR calendar schedule to CRR participants. Note: The CRR system publishing of the calendar to OASIS shall be automatic. Published once per year and ability to edit	Core Phase 2	- CRR - OASIS - Integration
	before publication.		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 10 of 108

California ISO		Template Version:	5.1
	Technology	Document Version:	1.3
CRR System Upgrade Business I Plann	Date Created:	3/15/2023	

5.1.2 Business Requirements – Annual/Monthly CRR Allocation Process

5.1.2.1 Automatic Notification to CRR Participants of Open Load Window

ID#	Business Feature	Requirem ent Type	Potential Application(s) Impacted
CRRSU- BRQ01520	Participants Notification of Open Load Submission Window for CRR Allocation Markets Solution shall have the capability to automatically and on-Demand (by authorized users) notify external CRR participants of open load submission window for each allocation market by utilizing the posted CRR calendar schedule and configurable number of lead business days.	Core Tariff 36.8.2	- CRR
	Note: • Refer to CRRSU-BRQ01540 for notification methods.		
CRRSU- BRQ01540	Automatic Notification Methods for External CRR Participants: External CRR participants' notification provided by Solution shall meet the architecture standard for external notifications and may include any combinations of the following (as selected by authorized users): • Message Log accessible by external CRR participants via API. • Message Log accessible by external CRR participants via UI. • Dedicated UI.	Core	- CRR

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 11 of 108

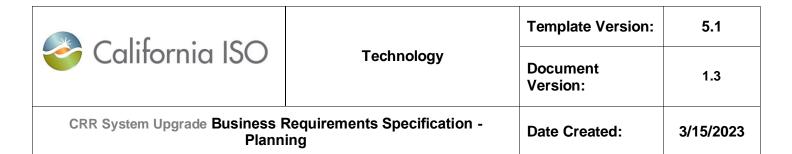
California ISO		Template Version:	5.1
	Technology	Document Version:	1.3
CRR System Upgrade Business I Plann	Date Created:	3/15/2023	

ID#	Business Feature	Potential Application(s) Impacted
	Web Services	

5.1.2.2 Prepare Set-Aside CRR Data

ID#	Business	Req. Type	Potential Applicati on(s) Impacted					
CRRS U- BRQ03 630	CRR Solu values (fo Int Ma all Tir Of		tion), with nsmission = annual riod start/e Off; each e amount (RR Auction is governed CRR Bu 1); if value is	the followir constraint (4 seasons nd effective interface m that was se n. nd by the ta usiness Pra	interfaces) or mose dates rust have st aside riff (see	e identifier onthly e an On or for the section anual (see	Core Phase 2 Tariff 36.8.4. 2.2	-Vendor Solution -OASIS - Integration
	Term	Interface Name	Market Start Date	Market End Date	TOU	Set- Aside for CRR Monthly Auction		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 12 of 108



ID#	Business	s Feature						Req. Type	Potential Applicati on(s) Impacted
	Monthl y	ADLANTO- SP_ITC	9/1/202 2	9/30/20 22	OI	FF	299.901		
	Monthl y	ADLANTO- SP_ITC	9/1/202 2	9/30/20 22	e e	Ŋ	447.742		
	Monthl y	ADLANTOVICT VL-SP_ITC	9/1/202 2	9/30/20	OI	FF	2,395.536		
	Monthl y	ADLANTOVICT VL-SP_ITC	9/1/202 2	9/30/20	9 0	Ŋ	_		
	Annual se		Market Start Date	Market End Date	TO U	Ş	Interface Set-Aside for CRR Annual Auction		
	Seaso nal			3/31/20 23	ON		299.598		
	Seaso nal	_		3/31/20 23	OF F		-		
	Seaso nal			6/30/20 23	ON		299.971		
	Seaso nal								
	Seaso nal			9/30/20 23	ON		299.96 4		

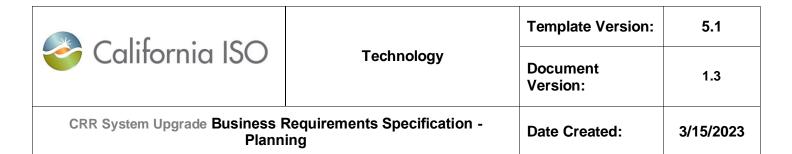
Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 13 of 108

California ISO		Template Version:	5.1
	Technology	Document Version:	1.3
CRR System Upgrade Business F	Date Created:	3/15/2023	

ID#	Busines	Business Feature							
	Seaso nal								
	Seaso nal	ADLANTO- SP_ITC	10/1/20 23	12/31/2 023	ON	299.952			
	Seaso nal								
CRRS U-		must be able to t of CRRR-BR	•	-aside per	the fol	lowing methods,	Core Phase	-CRR -OASIS	
BRQ03 632			Scheduled/Automatic Or On- demand				2		
	Triggeri	ng event	Based on the Post-model date; normally before the last tier of allocation window opens: Monthly market = before T2 Annual market = before T3			Initiated by an operator user, by specifying any monthly or annual market period	Tariff 36.8.4. 2.2		
	FULL market dataset * • Monthly market = contains the entire month's worth of set- aside • Annual market = contains the entire year's worth of set- aside, with the four								
	Any data	a ons/changes	quarter/seasons N/A FULL market dataset *						

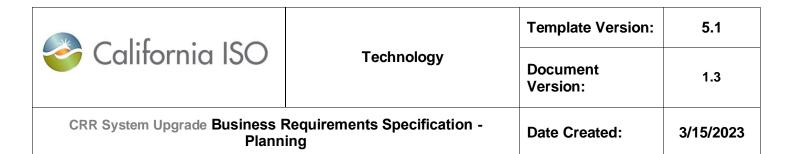
Copyright 2023 California ISO

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 14 of 108



ID#	Business Feature				Req. Type	Potential Applicati on(s) Impacted
	after the initial publication					
	(new,update,delete)					
	Example publication timel calendar): The monthly Sep 2 calendar date Aug					
	August 12 , 2022	August 15, 2022	August 1 2022	16,		
	Sep Post Tier 1 Results by 5P		Sep Tier Opens 1			
			Sep Tier Closes 5			
	The annual 2023 s date Oct 12, 2022		published	on calendar		
	October 12, 2022	October 13, 2022	October 2022	14,		
		Nov Post Tier 1 Results by	Nov Pos Aside	t Set-		
		5P	Nov Tier MEQ	2		
	Post 2023 Set- Aside Values					

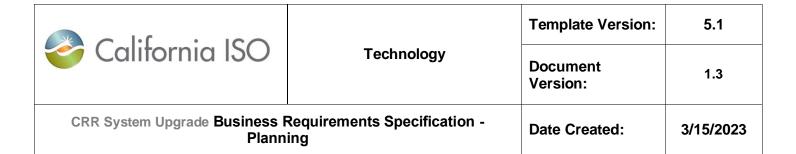
Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 15 of 108



ID#	Busines	ss Feature					Req. Type	Potential Applicati on(s) Impacted
		Post 2023 Tier 3-SEQ			23 Tic ens 1			
CRRS U- BRQ03 634	aside re following	Interface Name = trans Market start/end date allocation market perio Time of Use = On or C Off value Set Aside Value = the monthly or annual CR This process is 36.8.4.2.2) and section 10.5.1) Must publish if rounded-up to	ed to the smission = annual od start/e off; each amount R Auction G governed CRR B ; value is	constrair (4 seaso end effecti interface that was s n. ed by the usiness P	at internation of the contraction of the contractio	rface identifier monthly tes have an On or ide for the see section	Busine ss Proces s Core Phase 2 Tariff 36.8.4. 2.2	- CAISO.co m OASIS
	_	v set-aside:						
	Mark et Term Interface Name Mark et U Start End Date Interface Set-Aside for CRR Monthly Auction							
	Mont hly	ADLANTO-SP_ITC	9/1/2 022	9/30/2 022	OF F	299.901		

Copyright 2023 California ISO

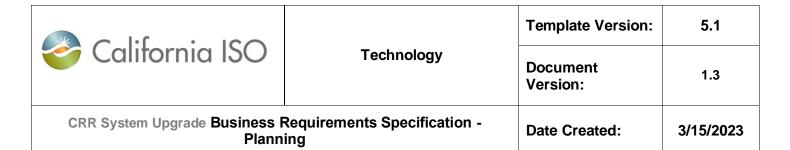
Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 16 of 108



ID#	Busines	Business Feature						Potential Applicati on(s) Impacted
	Mont hly	ADLANTO-SP_IT	C 9/1/2 022	9/30/2	ON	447.742		
	Mont hly	ADLANTOVICTV SP_ITC	L- 9/1/2 022	9/30/2	OF F	2,395.536		
		ADLANTOVICTV SP_ITC	L- 9/1/2 022	9/30/2	ON	-		
	Annual s	set-aside:						
	Marke t Term	Interface Name	Market Start Date	Market End Date	TO U	Interface Set-Aside for CRR Annual Auction		
	Seaso	ADLANTO- SP_ITC	1/1/202 3	3/31/20 23	ON	299.598		
	Seaso	ADLANTO- SP_ITC	1/1/202 3	3/31/20 23	OF F	-		
	Seaso nal	ADLANTO- SP_ITC	4/1/202 3	6/30/20 23	ON	299.971		
	Seaso							
	Seaso nal	ADLANTO- SP_ITC	7/1/202 3	9/30/20 23	ON	299.964		
	Seaso nal							

Copyright 2023 California ISO

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 17 of 108



ID#	Business Feature					Req. Type	Potential Applicati on(s) Impacted	
	Seaso nal	ADLANTO- SP_ITC	10/1/20 23	12/31/2 023	ON	299.952		
	Seaso nal							
	 Publication timeline: Initial publication Monthly – once a month, before monthly T2 market opens Annual – once a year, before annual T3 market opens Post Initial publication; Data corrections may be published post its first publication, as needed/applicable On either publication, OASIS must provide the latest updated data per market effective period, no historical record changes need to be preserved. Publication of the publication of the latest updated data per market effective period, no historical record changes need to be preserved. 							
	Report must include this disclaimer statement: "Interface Set-Aside for CRR Monthly Auction" is the amount that was set aside for the annual CRR Auction. This process is governed by the tariff (see section 36.8.4.2.2) and CRR Business Practice Manual (see section 10.5.1)"							
	Note: Currently, this report is published on the public site www.caiso.com (Market & Operations/Market Processes/Congestion Revenue Rights/Current Processes page) and will transition to the OASIS site for going forward report publications. Examples:							
			uments/Se	eptember2()22Se	tAsideValues.XL		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 18 of 108

California ISO		Template Version:	5.1
	Technology	Document Version:	1.3
CRR System Upgrade Business Requirements Specification - Planning		Date Created:	3/15/2023

5.1.2.3 Historical & Forecasted Demand Data

5.1.2.3.1 Data Submission

ID#	Business Featu	re	Requirement Type	Potential Application(s) Impacted
CRRSU- BRQ01680	Submission: Solution shall ha authorized extern their hourly fored data into the sys Note: This also load data CAISO T receive the	olution shall have the capability for uthorized external participants to submit leir hourly forecast and historical load ata into the system.		- CRR - Integration
CRRSU- BRQ01720	Forecast & Historical Load Data Format: The external participants submitted hourly forecast and historical load data shall include the following data elements: Data Element Description Participant unique alpha identification, SCID		Core 36.8.2.1 Tariff 36.8.2.2.1 Tariff	- CRR - Integration
	Sink Name	Sink node name (typically DLAP).		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 19 of 108

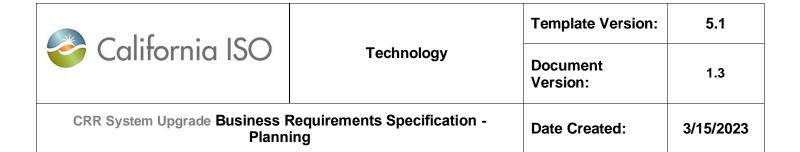
		Template Version:	5.1
California ISO	Technology	Document Version:	1.3
CRR System Upgrade Business I Plann		Date Created:	3/15/2023

ID#	Business Featu	ıre	Requirement Type	Potential Application(s) Impacted
	HF Flag	Historical or Forecast flag		
	Date			
	Hour Ending			
	Data Type	Final Load, Gross Load, Gross Generation, Pump Load		
	MW	MW amount		
	Note: • This also applies to OBAALSE load data types of EXP and METER.			
		CRRSU-BRQ03220 for E load data submission.		

5.1.2.3.2 Data Validation against Settlements & CEC Data

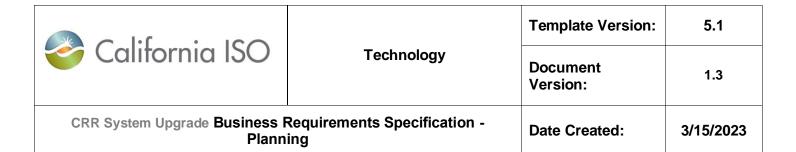
ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU- BRQ01780	CEC Load Data Submission: Solution shall have the capability for authorized CEC external participant to submit their CEC load data into the system.	Core	- CRR - AIM

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 20 of 108



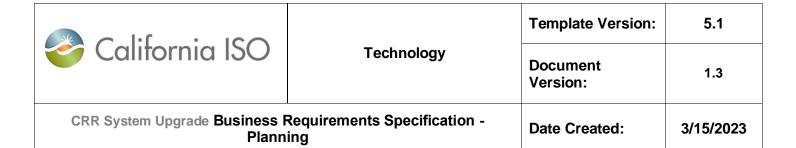
ID#	Business Featur	re		Requirement Type	Potential Application(s) Impacted
CRRSU- BRQ01900	CEC Load Data Jurisdictional LS The external partitionary load data side data format: Data Element Company LSE ID MF ID Forecasted Month Month-Ahead Non-	Description Company Name Broken down by	ted	Core	- CRR
CRRSU- BRQ02000	Coincident Peak Forecasts by TAC Area CEC Load Data Jurisdictional LS The external parti hourly load data s following data ele	SCE, SDGE, PGE TAC areas and Total Format - Non-O SEs: icipants submitted	ted	Core	- CRR

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 21 of 108



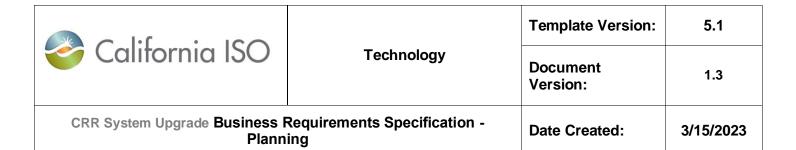
ID#	Business Featu	re		Requirement Type	Potential Application(s) Impacted
	Data Element Included in Submission	Description			
	LSE	LSE Name			
	TAC	TAC Name			
	RAR MF ID				
	Forecasted Month				
	Non- Coincident peak submitted by LSE				
CRRSU- BRQ02020	CPUC-Jurisdicti Data Mappings Data Nodes on I	to Submitted L		Core	- CRR
	The CEC MF ID column shall be mapped to the applicable MF SC ID that is used in the CRR System. Note: CEC Company Name and MF ID are part of the CPUC-Jurisdiction Non- Coincident data and is provided by the CEC.				
	 DLAP sinking locations shall be automatically mapped to MF SC ID. 				
		value in the SD0 columns shall be			

Copyright 2023 California ISO



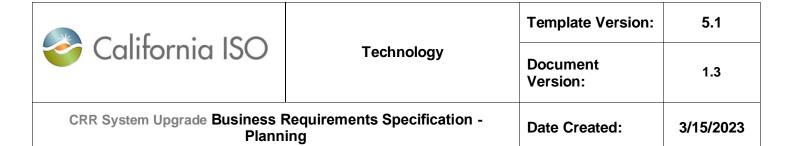
ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
	 assigned that associated DLAP as their Load sinking location and shall be given the MW quantity as their CEC Non-Coincident Peak load. CEC Company Name shall be mapped to CEC TAC Area. 		
	 Certain LSEs will submit hourly load data into the CRR system at the pump/CLAP location level. This pump/CLAP location needs to be mapped to a specific DLAP/TAC location in order for the CRR system to perform the necessary validation of the submitted CEC data For example, assume LSE 1 has submitted hourly load data to two CLAP/pump locations with a peak load value of 50MW for each pump. The system would have a mapping table that shows both of these pump locations are within the PGAE_DLAP location. The CRR system would sum up these two values to 100MW and compare this value to the CEC submitted value for the PGE TAC location for this LSE. 		
	The CRR system will provide a mechanism for the CRR operator to add/delete/edit this data which would include the following; LSE Name Pump Location name, this would agree with location submitted by LSE in the load submittal data Mapped DLAP location name		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 23 of 108



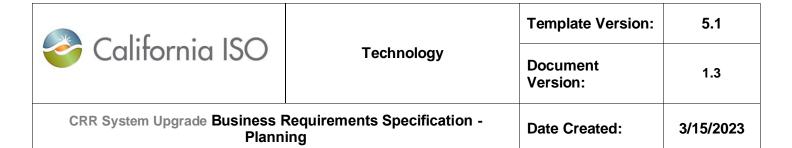
ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
	The resulting mapping dataset in current system contains:		
CRRSU- BRQ02040	Non-CPUC-Jurisdictional LSEs CEC Load Data Mappings to Submitted Load Data Nodes on DLAPs:	Core	- CRR
	The RAR MF ID column shall be mapped to the applicable MF SC ID that is used in the CRR System.	36.8.2 Tariff	
	Note: RAR MF ID is part of the Non-CPUC-Jurisdiction Non-Coincident data and is provided by the CEC.		
	Multiple RAR MF ID shall be able to be mapped to same MF SC ID.		
	 DLAP sinking locations shall be automatically mapped to CEC TAC Area. Note: MSS will submit to its MLAP if it has elected Net Settlement. 		
	 TAC Area is used to determine the DLAP assigned for load sinking location to be used for submission. Note: MSS will submit to its MLAP if it has elected Net Settlement. 		
	While performing the mapping, Solution shall automatically		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 24 of 108



ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
	aggregate the CEC Peak MW that are mapped to same TAC area		
	 Certain LSEs will submit hourly load data into the CRR system at the pump/CLAP location level. This pump/CLAP location needs to be mapped to a specific DLAP/TAC location in order for the CRR system to perform the necessary validation of the submitted CEC data For example, assume LSE 1 has submitted hourly load data to two CLAP/pump locations with an exceedance value of 50MW for each pump. The system would have a mapping table that shows both of these pump locations are within the PGAE_DLAP location. The CRR system would sum up these two values to 100MW and compare this value to the CEC submitted value for the PGE TAC location for this LSE. The CRR system will provide a mechanism for the CRR operator to add/delete/edit this data which would include the following; LSE Name Pump Location name, this would agree with location submitted by LSE in the load submittal data Mapped DLAP location name 		
	The resulting mapping dataset in current system contains:		
	 LSE SC ID SS Name (i.e. DLAP Name)		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 25 of 108



ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
	o CEC Peak		
CRRSU-	Historical Load Data Validation:	Core	- CRR
BRQ02080	Solution shall have the capability to automatically validate the submitted historical load data against the following rules:		
	Note:		
	 No validation is required on OBAALSE submitted load data. OBAALSE participants sign a declaration of their submitted data accuracy. 		
	 The interface for submission and validation of historical load data needs architectural vetting to align with system functionalities. 		
CRRSU- BRQ02093	Participants Notification of Exceedance Load Validation	Core	- CRR
	Upon validation failure the market participant should receive a notification of failure containing the submitted exceedance load value, the meter exceedance load value and the difference.		
CRRSU- BRQ02240	Participants Notification of Forecast Load Data Validation:	Core	- CRR
	Solution shall automatically notify the CRR participants of the status of the forecast load validation to be either one of the following:		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 26 of 108

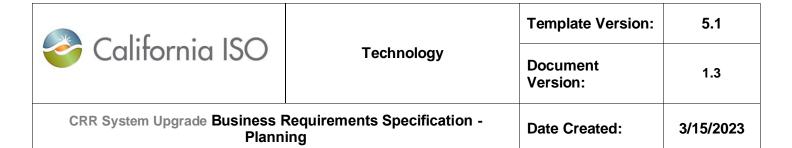
		Template Version:	5.1
California ISO	Technology	Document Version:	1.3
CRR System Upgrade Business I	•	Date Created:	3/15/2023

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
	 Successful validation and acceptance of the submitted data. 		
	 Validation errors and rejection of the submitted data and ask the CRR participants to correct the data and resubmit. The validation error details shall be communicated to the CRR participants. 		

5.1.2.3.3 Calculation & Publishing

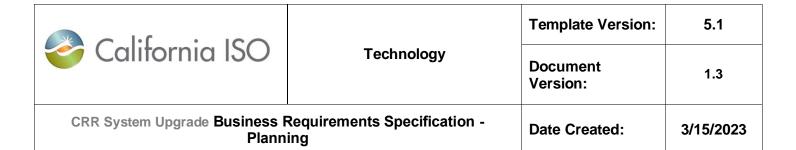
ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU-	Seasonal Load Metric Calculations:	Core	-CRR
BRQ02280	Solution shall have the capability to automatically calculate the load metric per sink location per TOU for each entity (CRR MP) for each effective allocation market effective period by calculating the 99.5 percentile (user-configurable) exceedance load from the validated historical load submitted by market participants at that sink location.	36.8.2.1 Tariff 36.8.2.2.1 Tariff	
	Business rule:		
	If there is no MP submission, then system will use locally stored SQMD per CRRR-BRQ02091 for the load metric calculation.		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 27 of 108



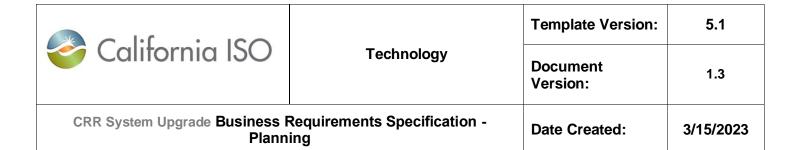
ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU- BRQ02291	Solution shall have capability to calculate load metric per sink location per TOU for each CRR entity that has made the election to use a 5 year rolling average for their seasonal eligibility.	Core	-CRR
	 Solution shall create a five-year average hourly load data set using the previous 5 years of validated historical submissions for each entity and sink location. Solution shall calculate the 99.5 Exceedance load(user-configurable) using the 5 year average for each TOU. 		
	Business rule:		
	If there is no MP submission, then system will use locally stored SQMD per CRRR-BRQ02091 for the load metric calculation.		
CRRSU- BRQ02294	Solution shall have capability to calculate monthly load metric from historical submission per sink location per TOU for each entity (CRR MP) for each effective allocation market effective period by taking the average of corresponding submitted historical load over past x years period where x is 5 years or less per approval from authorized CRR users.	Core	-CRR
	Business rule:		
	If there is no MP submission, then system will use locally stored SQMD per CRRR-BRQ02091 for the load metric calculation.		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 28 of 108



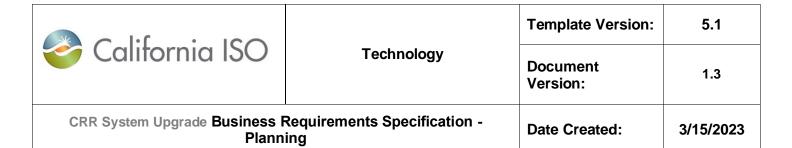
ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU-	MEQ Publishing to CRR MP:	Core	- CRR
BRQ02360	Upon completion of MEQ calculation and prior to the corresponding allocation market open window, Solution shall have the capability to automatically or ondemand privately publish MEQ to each external CRR MP. The publishing data shall include the following data elements:		- Integration
	 Short Name (Participant unique alpha identification) 		
	Month		
	Sink Name		
	• TOU		
	Peak load		
	Load Metric		
	TOR MW Quantity		
	ETC MW Quantity		
	Load Migration CRR		
	Seasonal CRR		
	LT CRR		
	MEQ Tier 1		
	Tier 1 Awards		
	MEQ Tier 2		
	•		
CRRSU-	SEQ Publishing to CRR MP:	Core	- CRR
BRQ02400	Upon completion of SEQ calculation and prior to the corresponding allocation market open window, Solution shall have		- Integration

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 29 of 108



	the capability to automatically or on-		
	demand privately publish SEQ to each external CRR MP. The publishing data shall include the following data elements:		
	 Short Name (Participant unique alpha identification) 		
	 Season 		
	Sink Name		
	• TOU		
	Peak load		
	 Load Metric 		
	 Load Migration Adjustment 		
	• TOR MW		
	• ETC MW		
	 Adjusted Load Metric 		
	 SEQ Total 		
	 Load Migration CRR 		
	LT CRR		
	 SEQ Tier 1 		
	 Tier 1 Awards 		
	SEQ Tier 2		
	 Tier 2 Awards 		
	SEQ Tier 3		
CRRSU- BRQ02480	Annual Tier-1 Sink Upper Bound Publishing to CRR MP:	Core	- CRR - Integration

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 30 of 108



ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
	Upon completion of SUB calculation and prior to the corresponding allocation market open window, Solution shall have the capability to automatically or ondemand privately publish SUB to all external CRR MP. The publishing data shall include the following data elements: • Short Name (Participant unique alpha identification)		
	 Season Sink Name TOU Previous Year Annual CRR LT CRR Load Migration CRR 		
	• SUB		
CRRSU- BRQ02520	Signature Pair Data Publishing to CRR MP: Upon completion of Signature Pair data calculation (for Annual Tier-1 or Tier-T) and prior to the corresponding allocation market open window, Solution shall have the capability to automatically or ondemand privately post Signature Pair data to all external CRR MP. The posting data shall include the following data elements: • Short Name (Participant unique alpha identification) • Season	Core	- CRR - Integration

Copyright 2023 California ISO

		Template Version:	5.1
California ISO	Technology	Document Version:	1.3
CRR System Upgrade Business I Plann		Date Created:	3/15/2023

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
	• TOU		
	Source Name		
	Sink Name		
	Past Year CRR MW		
	Load Migration CRR		
	LT CRR		
	Signature Pair Data Tier 1		
	Signature Pair Data Tier LT		

 Doc ID: GNFDMDEHU6BB-46-53
 © 2022 California ISO
 Page 32 of 108

	Technology	Template Version:	5.1
California ISO		Document Version:	1.3
CRR System Upgrade Business Requirements Specification - Planning		Date Created:	3/15/2023

5.1.2.3.4 Automatic Notification to CRR Participants

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU-BRQ02540	Automatic Notification to CRR Participants – Reporting:	Core	- CRR
	Solution shall have the capability to automatically and on-demand (by authorized users) notify external CRR participants of publishing the following data for each applicable allocation market by utilizing the posted CRR calendar schedule and configurable number of lead business days:		
	 Monthly Eligible Quantities 		
	 Seasonal Eligible Quantities 		
	 Sink Upper Bound 		
	Signature Pair data		
	Note: • Refer to CRRSU-BRQ01540 for		
	notification methods.		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 33 of 108

California ISO	Technology	Template Version:	5.1
		Document Version:	1.3
CRR System Upgrade Business Requirements Specification - Planning		Date Created:	3/15/2023

5.1.2.4 LT Re-nomination Election

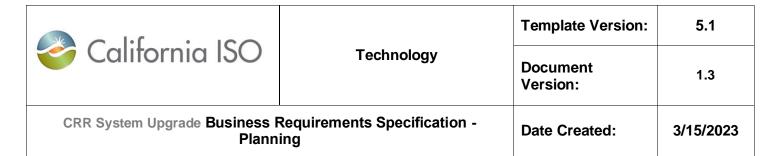
ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU- BRQ02550	LT Re-nomination Election Solution shall provide market participants with the ability to elect whether they would like to renominate expiring LT CRRs in the upcoming LT market.	Core	CRR

5.1.2.5 Load Migration CRRs

5.1.2.5.1 UDC Submission of LM Data

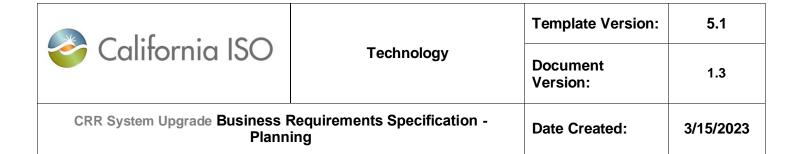
ID#	Business Feature	Requirem ent Type	Potential Application(s) Impacted
CRRSU- BRQ02580	Posting of UDC N-Hour Data: Solution shall provide the capability for authorized users to post the calculated N-Hour data to each UDC that are needed to compute the KW/customer rates.	Core	- CRR - Integration - AIM
CRRSU- BRQ02600	UDC Submission of LM Data: Solution shall have the capability for authorized external UDC participants to submit their load migration data into the system.	Core	- CRR - Integration - AIM
CRRSU- BRQ02620	UDC LM Data Format: The external UDC participants submitted LM data shall follow the following data format:	Core	- CRR

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 34 of 108



ID#	Business Featu	ire		Requirem ent Type	Potential Application(s) Impacted
	UDC's Number	of Customers:	_		
	Data Element	Description			
	UDC				
	LSE	Current LSE			
	DUNS Number				
	CAISO Classification				
	# of Customers				
	Date Stamp				
					
	UDC's DASR S	ummary :			
	UDC's DASR So				
	Data Element				
	Data Element Record ID Customer				
	Data Element Record ID Customer Class				
	Data Element Record ID Customer Class Old LSE				

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 35 of 108



ID#	Business Featu	ire		Requirem ent Type	Potential Application(s) Impacted
	Time Stamp				
	UDC's Custome	ers Rates:	ı		
	Data Element	Description			
	UDC				
	Customer Class				
	TOU				
	Season				
	kw Per customer rate				
	Year				
		umber is a new data elequesting from UDCs.	ement		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 36 of 108

California ISO	Technology	Template Version:	5.1
		Document Version:	1.3
CRR System Upgrade Business Requirements Specification - Planning		Date Created:	3/15/2023

5.1.2.5.2 Validate Submitted LM Results LM Data

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU-BRQ02670	DUNS Number Definition The DUNS number must be provided/defined for every registered CRR LSE (application process) and to be maintained within the MF.	Core	- CRR - MasterFile (MF)
CRRSU-BRQ02680	Display of LM Data Validation Results: Upon completion of UDC-submitted LM data validation, Solution shall have the capability to automatically store and display via UI the validation results to authorized CRR users.	Core	- CRR

5.1.2.5.3 Automatic Notification to UDCs of Submitted LM Data Issues and Request of Data Re-Submission

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU-BRQ02700	Automatic Notification to UDCs of Submitted LM Data Issues and Request for Data Re-Submission:	Core	- CRR
	Upon completion of UDC-submitted LM data validation, Solution shall have the capability to automatically notify the UDC with list of validation issues that are associated with the submitted data		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 37 of 108

California ISO	Technology	Template Version:	5.1
		Document Version:	1.3
CRR System Upgrade Business Requirements Specification - Planning		Date Created:	3/15/2023

5.1.2.5.4 Publishing of LM Results to MPs

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU-BRQ02800	Publishing of LM Results to MPs Upon completion of LM results calculation and prior to the corresponding allocation market open window, Solution shall have the capability to automatically or on-demand publish LM results to all external CRR MP.	Core	- CRR - Integration

5.1.2.5.5 Private Automatic Notification to all MPs that are impacted by LM Results

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU-BRQ02820	Automatic Notification to Impacted CRR MPs by the LM Results:	Core	- CRR
	Upon completion of the validation process of Final LM Results Integration with Core CRR Data, Solution shall have the capability to automatically notify (privately) the impacted CRR MPs with the LM results.		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 38 of 108

California ISO	Technology	Template Version:	5.1
		Document Version:	1.3
CRR System Upgrade Business Requirements Specification - Planning		Date Created:	3/15/2023

California ISO	Technology	Template Version:	5.1
		Document Version:	1.3
CRR System Upgrade Business Requirements Specification - Planning		Date Created:	3/15/2023

5.1.2.6 Creation Annual/Monthly CRR Allocation Market

5.1.2.6.1.1 Validate Data

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU- BRQ03212	Validation of CRR Transfer Registration	Core	- CRR
	Solution should validate the transferor and the transferee of the CRRs must register the transfer of the CRR with the CAISO using the Secondary Registration System five (5) Business Days prior to the effective date of transfer of revenues associated with a CRR, or with sufficient time necessary for the CAISO to evaluate the creditworthiness of the transferor and transferee, whichever is shorter.		

5.1.2.6.1.2 OBAALSE Source & Sink Data

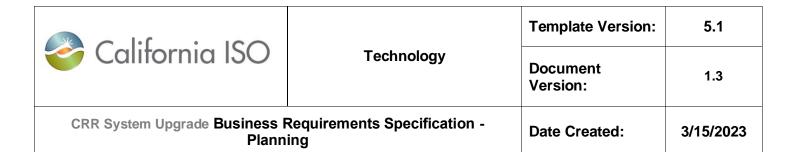
ID#	Business Feature	Requireme nt Type	Potential Application(s) Impacted
CRRSU- BRQ0322	OBAALSE Source & Sink Data Submission:	Core	- CRR
0	 Solution shall provide the capability for external OBAALSE participants to submit their load data with multiple designations, such as: 	22.2.7 "	- Integration - MF
	o OBAALSE-EXP	36.8.2 Tariff	- AIM
	○ OBAALSE-METER		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 40 of 108

California ISO		Template Version:	5.1
	Technology	Document Version:	1.3
CRR System Upgrade Business F	•	Date Created:	3/15/2023

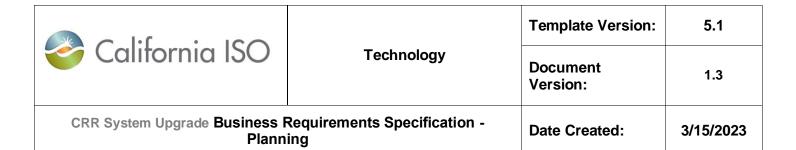
ID#	Business Feature	Requireme nt Type	Potential Application(s) Impacted
	 OBAALSE entity shall submit both types of load data, else the entity can choose not to submit anything for the specific market window 		
	 Solution shall have a separate tab for OBAALSE entity to submit their source and sink da 		
	Note:		
	 Refer to CRRSU-BRQ01720 for load data submission format. 		
	 There must be only one combination of date, hour, TOU, sink location, and load type (METER/EXPORT) 		
CRRSU-	OBAALSE participant identification	Core	- Masterfile
BRQ0322 5	An OBAALSE participant who is eligible to participate in the CRR allocation market must be a registered CRR LSE		(MF)
CRRSU- BRQ0344	For Accepted Response from Finance: OBAALSE Final Eligible Quantity Determination:	Core	- CRR
0	If Finance's response is "Accept", Solution shall have the capability to automatically set the OBAALSE Final Eligible Quantity to request in the allocation market $[FEQ_{(a,tou,p,t)}]$ to $EQ_{(a,tou,p,t)}$.	Phase 2	
CRRSU- BRQ0346	For Rejected Response from Finance: Automatic Notification to OBAALSEs of Insufficient Collateral:	Core	- CRR
0	If Finance's response is "Reject", Solution shall have the capability to automatically notify the submitting OBAALSE that it does not have sufficient collateral to participate and to contact the CAISO finance department.	Phase 2	
CRRSU-	Publishing of Eligible Quantity to MPs:	Core	- CRR
BRQ0348 0	Upon completion of OBAALSE seasonal/monthly EQ calculation and prior to the corresponding allocation		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 41 of 108

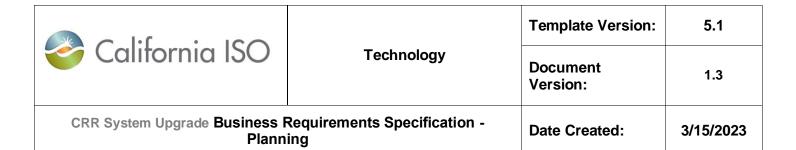


ID#	Busine	ess Fea	ture					Requireme nt Type	Potential Application(s) Impacted
	market open window, Solution shall have the capability to automatically or on-demand privately post OBAALSE seasonal/monthly EQ to each external CRR MP, similar to MEQ/SEQ publishing, respectively.								
	Note: Refer to CRRSU-BRQ02360 for MEQ publishing requirement. Refer to CRRSU-BRQ02400 for SEQ publishing								
CRRSU- BRQ0349 5	requirement. OBAALSE's must be able to indicate to the ISO what MW amount they are willing to prepay WAC for annual or monthly allocations. This MW amount may be up to a					nat MW or o a	Core	-CRR	
	 maximum of the EQ calculated by the CRR system. SCID = alphanumeric ID; must be a registered OBAALSE CRR participant Start Date = effective start date of the market period End Date = effective end date of the market period Sink Location Time Of Use = On or Off peak Requested Eligible Quantity = mw; must be up to the maximum EQ as calculated/posted by the system; up to 3 decimal places 0.001 is accepted 								
	Example: Jan 2022 Monthly								
	MP	Start Date	End Date	Sink	TO U	Requeste d EQ, mw	Max EQ, mw		
	SMU D	1/1/202	1/31/202	DLAP_PGA E-APND	OF F	271.001	348.77 1		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 42 of 108

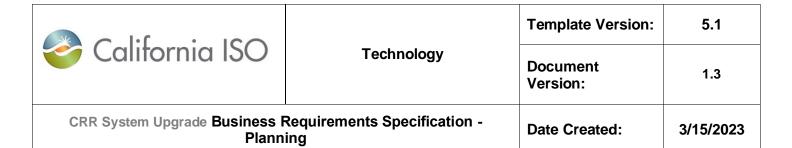


ID#	Business Feature				Requireme nt Type	Potential Application(s) Impacted			
		1/1/202	1/31/202 2	SMD8_ASR- APND	ON	142.001	192.85 1		
	• SEQtota	Market CRRR-I CRR m For the market	participat BRQ0346 ust raise OBAALS (p,p,t) = 0.2	tion election 30, if failed a any excepti SE SEQ max 75 * Adjuste R(a,tou,p,t)	any va on to < to el	alidation th the user ect in ann	nen		
CRRSU- BRQ0349 6	If the OBAALSE entity did not submit any EQ election (WAC prepayment) pass the submission window, then the system will use entity's maximum EQ in WAC prepayment calculation for credit approval.			hen the	Core	-CRR			
CRRSU- BRQ0349 7	WAC Long-Term Market Market participant can elect to carry over the same annual adjusted load metric for use in calculating the LT SEQ and the applicable WAC for the Long Term market. Business rules: • For the OBAALSE SEQ max to elect in LT market • SEQtierLT _(a,tou,p,t+1) = 0.50* Adjusted Load Metric _(a,tou,p,t) – LT CRR _(a,tou,p,t+1)		Core	-CRR					



ID#	Business Feature	Requireme nt Type	Potential Application(s) Impacted
	In effect, have one Annual year and nine Long Term years, thus credit is requested to be approved/disapproved under an Annual vs Long-Term market (different name).		
CRRSU- BRQ0349 8	If market participant has elected to carry over the annual adjusted load metric for the long term market the system will allow the participant to elect how much of the long term SEQ amount they wish to be able to nominate in the long term market. The system will then use this elected Long Term SEQ amount to calculate the required WAC for the total market period.	Core Phase 2	-CRR
CRRSU- BRQ0350 0	WAC Actual Credit Obligation Calculations: Upon posting an allocation market, and for all "Accept" responses, Solution shall have the capability to automatically calculate WAC Actual Credit Obligation value based on the OBAALSE awarded MW value [Award _(a,tou,p,t)] from the allocation market results that the OBAALSE participated in at the period/TOU/sink location as follows:	Core Phase 2	-CRR
	 Record OBAALSE award MW for the allocation market period, TOU, and sink location level [Award_(a,tou,p,t)]. If this amount is NOT zero, from the awards noted in step 'a' above find the sink location in the WAC rate table and take the associated WAC rate and multiply this value by the MWh amount from step 'a' above. Add both TOU amounts for the respective market. This amount will be the CRR WAC Actual value. Convert the Award_(a,tou,p,t) MW value to MWh [Award_{MWH(a,tou,p,t)}] based on the term. Sum up both TOU amounts so that there is a single value at the market level [Award_{MWH(a,p,t)}]: 		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 44 of 108



ID#	Business Feature	Requireme nt Type	Potential Application(s) Impacted
	 Award_{MWH(a,p,t)} = \sum_{tou} Award_{MWH(a,tou,p,t)} CRR WAC Actual value shall be calculated as the multiplication of Award_{MWH(a,p,t)} and the WAC rate for the corresponding sink location: WAC_{Actual(a,p,t)} = Award_{MWH(a,p,t)} * WACrate_(a) Note: Any awarded CRRs to the OBAALSE shall be done via the normal market award process with the CRR Type being labeled as "OBAALSE". 		
CRRSU- BRQ0354 0	Finance and Settlement Consumes WAC Actual Credit Obligation Value: Finance shall have the capability to automatically consume CRR WAC Future (actual) value [WAC _{Actual(a,p,t)}].	Core	- Integration - Market Clearing - Settlement
	 Notes for Finance: Finance will take accepted requests and first hold any WAC Estimated Credit Obligation as an EAL component until such time as the WAC Actual Credit Obligation is received at which time the WAC Estimated EAL component will be removed and replaced with the WAC Actual EAL component. Each month as the monthly prepayment amount is billed to the OBAALSE, the WAC Actual EAL component will be reduced by this amount until the end date of the market for which the prepayment is being made, at which time, the WAC Actual EAL component for that market will be zeroed out. 		
	Notes for Settlement:		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 45 of 108

California ISO		Template Version:	5.1
	Technology	Document Version:	1.3
CRR System Upgrade Business F	• • • • • • • • • • • • • • • • • • •	Date Created:	3/15/2023

ID#	Business Feature	Requireme nt Type	Potential Application(s) Impacted
	Settlements shall use the WAC actual credit obligation value in the existing CC 6722 configuration.		
CRRSU- BRQ0354 5	Finance Consumes WAC Actual Credit Obligation Value into EAL: Finance shall have the capability to include the CRR WAC ACTUAL as the WAC Actual EAL Liability component to calculate EAL.	Core Phase 2	-Market Clearing
CRRSU- BRQ0356 0	Automatic Notification to Finance (Manage Credit): Solution shall have the capability to automatically to notify authorized internal CAISO uses of final credit exposure on final awards at Scheduling Point/Wheeling Access location times WAC rate by entity.	Core Phase 2	-CRR
CRRSU- BRQ0358 5	Solution shall provide an external OBAALSE participant capability to change their EQ election, as long as: • Load submission window is open • Election mw has not yet exceeded the maximum EQ • EQ election has not yet been submitted Once an EQ election has passed the final collateral validation, it shall first be removed before it can be modified.	Core Phase 2	-CRR
CRRSU- BRQ0358 7	Solution must allow an external OBAALSE participant to remove/cancel an approved EQ election submission.	Core Phase 2	-CRR -CTS

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 46 of 108

		Template Version:	5.1
California ISO	Technology	Document Version:	1.3
CRR System Upgrade Business I Plann	•	Date Created:	3/15/2023

ID#	Business Feature	Requireme nt Type	Potential Application(s) Impacted
	Upon doing so, solution shall have the capability to automatically broadcast the removal/cancellation request to Finance so that the bidder's Secured Available Credit can be adjusted.		
	Business/validation rules: An external user must only be able cancel the EQ election it has provisioned entity access to EQ election record to be cancelled must exist		

5.1.2.6.1.3 Automatic Notification of Prepared CRR Data Readiness to MPs

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU- BRQ03640	Automatic Notification of Prepared CRR Data Readiness to MPs:	Core	- CRR
	Solution shall have the capability to automatically and on-demand (by authorized users) notify external CRR participants of prepared CRR data readiness for each allocation market by utilizing the posted CRR calendar schedule and configurable number of lead business days.		
	Note:		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 47 of 108

		Template Version:	5.1
California ISO		Document Version:	1.3
CRR System Upgrade Business Requirements Specification - Planning		Date Created:	3/15/2023

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
	Refer to CRRSU-BRQ01540 for notification methods.		

California ISO		Template Version:	5.1
	Technology	Document Version:	1.3
CRR System Upgrade Business F Plann	•	Date Created:	3/15/2023

5.1.2.7 CRR FNM Data Publishing to CRR Participants

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU-BRQ03660	Authorized users	Core	- CRR
	Solution shall have the capability for		-MPP
	authorized CRR users, external CRR participants, or external 3 rd parties		- Integration
	that have executed CRR FNM NDA, to access, view and export the following information		- AIM
	 Released approved CRR FNM model. 		
	 All associated data to the CRR FNM model. 		
	Note:		
	 Only external CRR users need to execute CRR FNM NDA in order to access CRR FNM information. 		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 49 of 108

California ISO		Template Version:	
	Technology	Document Version:	1.3
CRR System Upgrade Business Requirements Specification - Planning		Date Created:	3/15/2023

5.1.2.8 Automatic Notification of Open CRR Allocation Market

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU-BRQ03680	Participants Automatic Notification of Open CRR Allocation Market	Core	- CRR
	Solution shall have the capability to automatically notify external CRR participants of open CRR allocation market by utilizing the posted CRR calendar schedule.		
CRRSU-BRQ03700	Participants On-Demand Notification of Open CRR Allocation Market	Core	- CRR
	Solution shall provide the capability for authorized users to on-demand notify external CRR participants of open CRR allocation market.		
CRRSU-BRQ03720	Architecture Standards of Participants Notification of Open CRR Allocation Market	Core	- CRR
	External CRR participants notification provided by Solution shall meet the architecture standard for external notifications and may include any combinations of the following (as selected by authorized users):		
	 Message Log accessible by external participants via API. 		
	 Message Log accessible by external participants via UI. 		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 50 of 108

		Template Version:	5.1
California ISO	Technology	Document Version:	1.3
CRR System Upgrade Business Requirements Specification - Planning		Date Created:	3/15/2023

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
	Web services		

		Template Version:	5.1
California ISO	Technology	Document Version:	1.3
CRR System Upgrade Business Requirements Specification - Planning		Date Created:	3/15/2023

5.1.2.9 CRR Allocation Nomination

5.1.2.9.1 Submission by CRR Participants

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU-BRQ03740	Submission of CRR Allocation Nomination by CRR Participants:	Core	- CRR - Integration
	Solution shall have the capability for authorized external participants to submit their nomination data for each effective allocation market period and TOU into the system. The submission data shall have the following elements:		- megranon
	 Market Name 		
	CRR Participant SCID		
	CRR Type (e.g. LSE)		
	Source Name		
	Sink Name		
	• MW		
	TOU (On-Peak or Off-Peak)		
	 Hedge Type (Option or Obligation) 		
CRRSU-BRQ03780	CRR Participants Nominations Re- Submission:	Core	- CRR
	Solution shall provide the capability for CRR participants that have their original submission rejected to resubmit the nominations again after correction.		
CRRSU-BRQ03800	CRR Participants Nominations Submission Withdrawal:	Core	- CRR
	Solution shall provide the capability for CRR participants to withdraw their submitted nominations (whether		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 52 of 108

		Template Version:	5.1
California ISO	Technology	Document Version:	1.3
CRR System Upgrade Business I Plann	•	Date Created:	3/15/2023

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
	accepted or rejected) at any time before the corresponding allocation market close window.		
CRRSU-BRQ03820	CRR Participants Nominations Download:	Core	- CRR
	Solution shall provide the capability for CRR participants to retrieve accepted nominations from the CRR system.		

5.1.2.9.2 Automatic Notification to CRR Participants

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU- BRQ03920	Automatic Notification to CRR Participants:	Core	- CRR
	 Solution shall have the capability to automatically notify each CRR participant who submitted a nomination with the status of their data submission (either accepted or rejected). 		
	 For the rejected nominations, Solution shall provide the submitting CRR participant with the reason of the rejection. 		
	The notification shall be done via the CRR system upon		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 53 of 108

		Template Version:	5.1
California ISO	Technology	Document Version:	1.3
CRR System Upgrade Business I Plann	•	Date Created:	3/15/2023

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
	participant's submission of the nomination data.		

5.1.2.10 Automatic Notification to CRR Participants of CRR Allocation Market Nomination Close

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU- BRQ03940	Participants Automatic Notification of Close of CRR Allocation Market Nomination	Core	- CRR
	Solution shall have the capability to automatically notify external CRR participants of close of CRR allocation market nomination by utilizing the posted CRR calendar schedule.		
CRRSU- BRQ03960	Participants On-Demand Notification of Close of CRR Allocation Market Nomination Solution shall provide the capability for authorized users to on-demand notify external CRR participants of close of CRR allocation market nomination.	Core	- CRR
CRRSU- BRQ03980	Architecture Standards of Participants Notification of Close of CRR Allocation Market Nomination	Core	- CRR
	External CRR participants notification provided by Solution shall include any combinations of the following (as selected by authorized users):		
	 Message Log accessible by external participants via API. 		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 54 of 108

		Template Version:	5.1
California ISO		Document Version:	1.3
CRR System Upgrade Business Requirements Specification - Planning		Date Created:	3/15/2023

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
	 Message Log accessible by external participants via UI. 		

		Template Version:	5.1
California ISO		Document Version:	1.3
CRR System Upgrade Business I Plann	•	Date Created:	3/15/2023

5.1.2.11 Market Report & Executive Summary

5.1.2.12 Communication of CRR Allocation Market Results to CRR Participants

5.1.2.12.1 Publishing

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU-BRQ04120	OASIS – Public Data (CRR Inventory): This shall include: Accepted allocation nominations. Load migration. Auction bid awards. Sell offers in the auction. CRRs created from Auctions CRRs created from Allocations CRRs created from Load Migration CRRs created from all Ad-Hoc processes CRRs created from SRS Awarded sell offers in	Core	
	the auction		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 56 of 108

		Template Version:	5.1
California ISO	Technology	Document Version:	1.3
CRR System Upgrade Business I Plann	•	Date Created:	3/15/2023

5.1.2.12.2 Automatic Notification

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU- BRQ04240	Automatic Notification to CRR Participants – CRR Allocation Market Results: Upon, posting CRR allocation market results, Solution shall have the capability to automatically and on-demand (by authorized users) notify external CRR participants of posted CRR Allocation market results for each CRR allocation market by utilizing the posted CRR calendar schedule and	Core	- CRR
	configurable number of lead business days. Note: Refer to CRRSU-BRQ01540 for notification methods.		

 Doc ID: GNFDMDEHU6BB-46-53
 © 2022 California ISO
 Page 57 of 108

		Template Version:	5.1
California ISO	Technology	Document Version:	1.3
CRR System Upgrade Business Requirements Specification - Planning		Date Created:	3/15/2023

5.1.3 Business Requirements – Annual/Monthly Auction Process

5.1.3.1 Automatic Notification of Open CRR Auction Market

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU- BRQ04420	Participants Notification of Open CRR Auction Market Solution shall have the capability to automatically and on-Demand (by authorized users) notify external CRR participants of open CRR auction window for each auction market by utilizing the posted CRR calendar schedule and configurable number of lead business days. Note: Refer to CRRSU-BRQ01540 for	Core	- CRR
	notification methods.		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 58 of 108

		Template Version:	5.1
California ISO	Technology	Document Version:	1.3
CRR System Upgrade Business Requirements Specification - Planning		Date Created:	3/15/2023

5.1.3.2 CRR Bid Data

5.1.3.2.1 Submission by CRR Participants

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU- BRQ04450	Submission of CRR Auction Bids by CRR Participants:	Core	- CRR
	CRR system shall allow CRR auction participants to submit buy and sell offers according to the validation rules listed below.		
	Note:		
	 Refer to Section CRR Buy & Sell Bid Portfolios Validation. 		

5.1.3.2.2 CRR Buy & Sell Bid Portfolios Validation

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU- BRQ04660	Preparation of CRR Bids Validation Results (Accept/Reject):	Core	- CRR
	Solution shall have the capability to automatically prepare CRR bids validation results (accept/reject) along with the reasons of rejection, if any.		
CRRSU- BRQ04680	Publishing Rejection Status and Reason to CRR MPs: If any reject status, Solution shall have the capability to automatically	Core	- CRR - Integration
	and on-demand provide the reasons		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 59 of 108

California ISO		Template Version:	5.1
	Technology	Document Version:	1.3
CRR System Upgrade Business I Plann	Date Created:	3/15/2023	

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
	for the CRR bid rejection to CRR external participant bidders.		

5.1.3.2.3 Automatic Notification to CRR Participants

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU- BRQ04800	Automatic Notification to CRR Participants – Post-CRR Auction Market Data:	Core	- CRR
	Upon publishing post-CRR auction market data, Solution shall have the capability to automatically and on-demand (by authorized users) notify external CRR participants of published post-CRR auction market data for each CRR auction market by utilizing the posted CRR calendar schedule and configurable number of lead business days.		
	Note: • Refer to CRRSU- BRQ01540 for notification methods.		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 60 of 108

California ISO	Technology	Template Version:	5.1
		Document Version:	1.3
CRR System Upgrade Business Requirements Specification - Planning		Date Created:	3/15/2023

5.1.3.2.4 CRR Participants Re-submission

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU- BRQ04820	CRR Bid Portfolio Creation/Edit Capability for External CRR • Solution shall provide external CRR participants the capability to create and edit their bid portfolios as long as the CRR auction bid submission window is open. Once a portfolio has passed the final collateral validation, it shall first be removed before it can be edited.	Core	- CRR
CRRSU- BRQ04840	Broadcast Portfolio Removal Request to Finance: Upon requesting to remove a submitted CRR bid portfolio, Solution shall have the capability to automatically and on-demand broadcast the removal request to Finance so that the bidder's collateral can be adjusted.	Core	- CRR - CTS - Integration

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 61 of 108

California ISO	Technology	Template Version:	5.1
		Document Version:	1.3
CRR System Upgrade Business Requirements Specification - Planning		Date Created:	3/15/2023

5.1.3.3 Automatic Notification to CRR Participants of CRR Auction Market Close

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU- BRQ04860	Participants Notification of Close of CRR Auction Market	Core	- CRR
	Solution shall have the capability to automatically and on-Demand (by authorized users) notify external CRR participants of close of CRR auction window for each auction market by utilizing the posted CRR calendar schedule and configurable number of lead business days.		
	Note:		
	Refer to CRRSU-BRQ01540 for notification methods.		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 62 of 108

California ISO	Technology	Template Version:	5.1
		Document Version:	1.3
CRR System Upgrade Business Requirements Specification - Planning		Date Created:	3/15/2023

5.1.3.4 Communication of CRR Auction Market Results to CRR Participants & Internal Finance

5.1.3.4.1 Publishing

ID#	Business Feature	Requirem ent Type	Potential Application (s) Impacted
CRRSU- BRQ0504 0	 OASIS - Public Data (Market Clearing Prices; Masked Bid Data): Solution shall have the capability to automatically provide a payload with the results of CRR auction market results and bid data. This shall include: Clearing Prices Bid Data 	Core	- CRR - OASIS - Integration
CRRSU- BR05050	OASIS – Publication of CRR Market Names Publication of all available CRR market names & its effective period (as to date of request).	Core	- OASIS - Integration

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 63 of 108

California ISO	Technology	Template Version:	5.1
		Document Version:	1.3
CRR System Upgrade Business Requirements Specification - Planning		Date Created:	3/15/2023

5.1.3.4.2 Automatic Notification

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU- BRQ05180	Automatic Notification to CRR Participants –CRR Auction Market Results: Upon posting CRR auction market results, Solution shall have the	Core	- CRR
	capability to automatically and on- demand (by authorized users) notify external CRR participants of posting CRR auction market results for each CRR auction market by utilizing the posted CRR calendar schedule and configurable number of lead business days.		
	Note: • Refer to CRRSU-		
	BRQ01540 for notification methods.		

 Doc ID: GNFDMDEHU6BB-46-53
 © 2022 California ISO
 Page 64 of 108

California ISO	Technology	Template Version:	5.1
		Document Version:	1.3
CRR System Upgrade Business Requirements Specification - Planning		Date Created:	3/15/2023

5.1.3.5 SRS Trade

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted			
CRRSU-	SRS Submission & Validation:	Core	- CRR			
BRQ05340	Solution shall have the capability to make available the function for a CRR holder to transfer active CRRs to other CRR holders.					
CRRSU- BRQ05360	CRR Holders SRS Transfers: Solution shall provide the capability for current CRR holders to transfer a single CRR or bulk transfer any CRRs within their portfolio.	Core	- CRR			

5.1.3.6 CRR Editor Function

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU- BRQ05785	Participants Notification of Updated Apnode Mapping of Retired Generating Units Solution should send MP notification of updated Apnode mapping for retired generating units based on the closest electrically connected CRR biddable Anode.	Core	- CRR

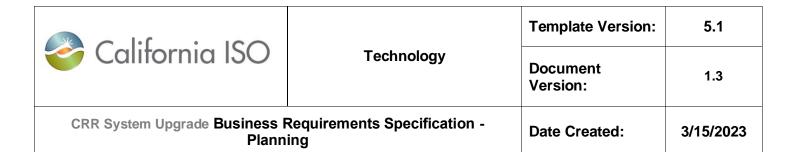
Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 65 of 108

California ISO		Template Version:	5.1
	Technology	Document Version:	1.3
CRR System Upgrade Business I Plann	• • • • • • • • • • • • • • • • • • •	Date Created:	3/15/2023

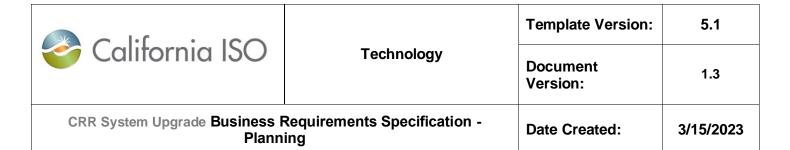
5.1.3.7 CRR Holding Requirement Calculations – common functionality

ID#	Business Feature					Req. Type	Potential Application(s) Impacted			
CRRSU-	Cred	it ma	rgir	report	:				Busine	-CAISO.com
BRQ05262		natior			/ailable o manner		argin S), with th	ne	ss Proces s	-CRR -OASIS
	•				= effec	tive sta	t/end		7	
	 dates of the month Time of Use = Off, On Source-to-Sink credit \$ margin value, round-up to 2 decimal places Sink-to-Source credit \$ margin value, 							Core Phase 2		
	•	rou Sou	nd-ı ırce	up to 2 o	decimal ce node de identi	places identifie				
	Sta rt Dat e	End Dat e	T O U	Sour ce- to- Sink Cred it Marg in	Sink- to- Sourc e Credit Margi n	Sourc e	Sink			
	1/1 /20 22	1/3 1/2 022	O F F	0	0.29	0096 WD_7 _N001	AMARG OSA_1_ SN001			
	1/1 /20 22	1/3 1/2 022	O F F	0.26	0	0096 WD_7 _N001	BARRE_ 6_N001			
	1/1 /20 22	1/3 1/2 022	O F F	2.06	0.83	0096 WD_7 _N001	BLYTHE _1_N10 1			

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 66 of 108



ID#	Business Feature	Req. Type	Potential Application(s) Impacted
	1/1 1/3 0 0 0.05 0096 CAPTJA WD_7 CK_5_N 22 022 F 0 0.05 0096 WD_7 CK_5_N N001 003 Currently posted on www.caiso.com http://www.caiso.com/Pages/documentsbygroup.asp x?GroupID=CFC1D23A-0C90-47D3-815F- 512BAE96E167		
CRRSU- BRQ05264	Broadcast Three Year Historical Expected Value to OASIS Solution shall broadcast 3 year historical expected value including: Month Three year daily average value Pnode/Apnode name TOU	Core Phase 2	- CRR - OASIS - Integration
CRRSU- BRQ05268	The calculated CRR 3yr historical expected monthly average values must be published to the public via OASIS, with the following: • Trade Month = effective start/end dates of the trade month • Pnode/Apnode name • Time of Use = Off, On; each node must have both on or off values • Three year daily average value = 3yr daily congestion LMP average per node, round-up to 2 decimal places Example:	Busine ss Proces s , Core Phase 2	-CAISO.com -OASIS



ID#	Business	Feature	Req. Type	Potential Application(s) Impacted		
	Start Date	End Date	NODE_NAME			
	7/1/2022	7/30/2022	0096WD_7_N 001			
	7/1/2022	7/30/2022	0096WD_7_N 001			
	7/1/2022	7/30/2022	2PBLSM34_7 _N001			
	7/1/2022	7/30/2022	2PBLSM34_7 _N001			
	Publication timeline: Initial publication: Monthly – once a month, every 15th of each calendar month for the following month Post Initial publication; Data corrections may be published post its first publication, as needed/applicable On either publications, OASIS must provide the latest updated data per market effective period, no historical record changes need to be preserved.					
	site <u>www.ca</u> Processes/0 Processes p for going for	<u>iso.com</u> (Ma Congestion F page) and wi	arket & Operati Revenue Right			
			ocuments/3Ye -Calculatedin2	arHistoricalExp 022.xls		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 68 of 108

California ISO		Template Version:	5.1
	Technology	Document Version:	1.3
CRR System Upgrade Business I Plann	Date Created:	3/15/2023	

ID#	Business Feature	Req. Type	Potential Application(s) Impacted
	http://www.caiso.com/Documents/3YearHistoricalExpectedValue_August-Calculatedin2022.xls		

5.1.4 Business Requirements – Data Validation Against Settlements & CEC Data

ID#	Business Feature	Req. Type	Potential Application(s) Impacted
CRRSU- BRQ02091	Solution shall receive 5-minute SQMD for load resources, for the effective period of the load window to validate the Historical load submission	Core	- CRR
CRRSU- BRQ02100	Historical MSS Load Data Validation – Net Settlement Election:	Core	- CRR
	Solution shall have the capability to automatically validate, unless the user is exempt from the corresponding market period, the submitted historical MSS load data that have elected "Net Settlement" option using the following rules:	36.8.2 Tariff	
	For each hour:		
	Final Load = Gross load – Gross Generation		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 69 of 108

California ISO		Template Version:	5.1
	Technology	Document Version:	1.3
CRR System Upgrade Business I Plann		Date Created:	3/15/2023

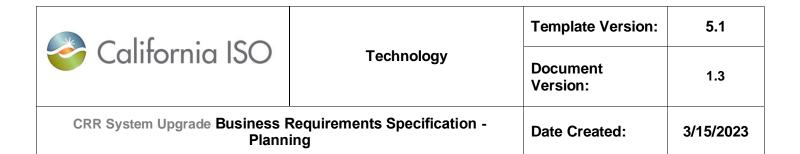
ID#	Business Feature	Req. Type	Potential Application(s) Impacted
	(with 0.1 MW tolerance - configurable by the user).		
	Apply same rules as regular load (CRRR-BRQ04220) using Final Load for the MSS.		

5.1.5 Business Requirements - Daily/Ad Hoc Process

5.1.5.1 CRR Editor Function

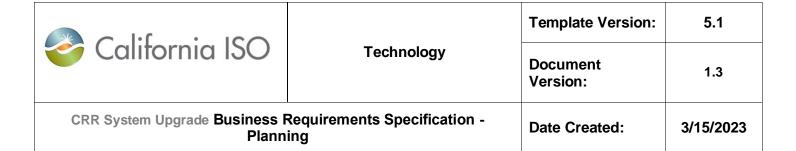
ID#	Business Feature			Req. Type	Potential Application(s) Impacted
CRRSU- BRQ0578 6	In the event when eit respective replaceme CRR market, OASIS published: Old Source/Sidentifier New Source/SApnode ident	on Date = when the glo	retires and a its fined for use in the wing must be node or Apnode ent Pnode or	Busines s Process, Core Phase 2	- CAISO.com -CRR - OASIS - Integration

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 70 of 108



ID#	Business Feature				Potential Application(s) Impacted
	APPLEHL_1_N00 4	APLHILGN_7_N00 2	9/15/2022		
	Publication trigger: T existing CRR source				
	Report must include "All the exist Implementati old source/sink re historical eve information. / to a future maney resource				
	www.caiso.com (Ma Processes/Congestic	ort is published on the public site Market & Operations/Market stion Revenue Rights/Current Processes nsition to the OASIS site for going forward s.			
CRRSU- BRQ0578 8	CRR system must be able to publish the retired pnode/anode change mapping per the following methods, in support of CRRR-BRQ05786.			Core Phase 2	-Vendor Solution -OASIS
	-	Scheduled/Autor	nati Or On- demand		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 71 of 108



ID#	Business Feature			Req. Type	Potential Application(s) Impacted
	Triggering event	Event-based when the Global update is done	Initiated by an operator user		
	Initial publication	All new records at the time of publication	All new records at the time of publication		
	Any data corrections/change s after the initial publication (only new records expected)	All new records at the time of publication	All new records at the time of publication		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 72 of 108

California ISO		Template Version:	5.1
	Technology	Document Version:	1.3
CRR System Upgrade Business F Plann	•	Date Created:	3/15/2023

5.1.6 Business Requirements - Merchant Transmission Markets Process

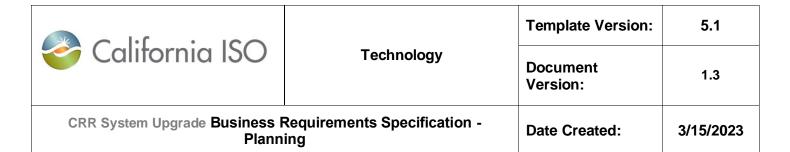
5.1.6.1 Setup of MT Final Results Market

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU- BRQ05900	MT CRR Type Submission by External MT Sponsors: Solution shall provide the capability for external MT sponsors to submit MT CRR type as either: Option Obligation	Core	- CRR - Integration - AIM - MasterFile (MF)
CRRSU- BRQ05905	MT Owner Identification A merchant transmission owner who is eligible to participate in the CRR Merchant Transmission type market must be a registered CRR Holder.	Core	- Masterfile (MF) -AIM

5.1.6.2 Communication of MT Market Results to CRR Participants

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU- BRQ06020	Publishing MT Market Results to CRR Participants: Upon completion of MT Market, Solution shall have the capability to automatically or on-demand publicly post the following data to all external CRR MP, in same manner as allocation market, but	Core	- CRR - OASIS - Integration

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 73 of 108



ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
	with a different CRR type enumeration:		
	MT market results.		
	Note:		
	Refer to the following requirement:		
	CRRSU-BRQ04120		
CRRSU- BRQ06040	Publishing CRR Nomination Data to CRR Participants: Upon completion of MT Market, Solution shall have the capability to automatically or on-demand privately post the following data to all external CRR MP, in same manner as allocation market, but with a different CRR type enumeration: • CRR Nominations.	Core	- CRR - Integration
CRRSU- BRQ06120	Automatic Notifications to External MT Sponsor Participants:	Core	- CRR
	Upon, posting MT market results, Solution shall have the capability to automatically and on-demand (by authorized users) notify external MT sponsor participants of posted MT market results for each MT market by utilizing the posted CRR calendar schedule		

Copyright 2023 California ISO

California ISO		Template Version:	5.1
	Technology	Document Version:	1.3
CRR System Upgrade Business I Plann		Date Created:	3/15/2023

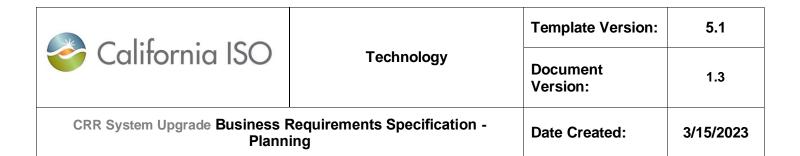
ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
	and configurable number of lead business days.		
	Note:		
	Refer to CRRSU-BRQ01540 for notification methods.		

5.1.7 Business Requirements - Reporting

5.1.7.1.1 Internal Reports

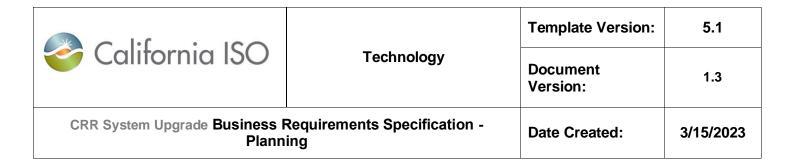
ID#	Business Feature	Req. Typ e	Potenti al Applica tion(s) Impact ed
CRR SU- BRQ0 6770	Publish Binding Constraints Solution shall broadcast binding constrains from each annual or monthly market run for OASIS consumption, with the following: Market Name = market name of the monthly or annual/season Market start/end dates = annual (4 seasons) or monthly allocation market period start/end effective dates Binding Constraint Type = Interface, Line Transformer Binding Constraint Name = PSLF name of the device Interface Direction = import or export; only applies to ITC Contingency Name = only applies to the binding constraint if it is a line or transformer Time of Use = On or Off of the market	Pha se 2	Vendor Solution - OASIS - Integrati on

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 75 of 108



ID#	Business Feature								Req. Typ e	Potenti al Applica tion(s) Impact ed
	Note: No MT marke binding constraints		st also be a	pplied t e	o the M	1UI down	loads of			
	Example data Monthly market for	Oct 20)22:							
	Market Name	Mark et Start Date	t End	Bindi ng Const raint Type	Bindi ng Cons raint Name	t direc	Contin gency Name	Ti m e of Us e		
	ALLOC_MN_20 22_M11_T1	11/1 202		Interf ace	NOB.	= Impo	NA	O n		
	Annual market for 2023 year:									
	Market Name		Market Start Date	Marke End E		Binding Constra t Type		train		
	ALLOC_AN_2023	3_ S 0	1/1/2023	3/31,	/2023	Interfac	e NOB	_ITC		
	ALLOC_AN_2023	3_ S 0	4/1/2023	6/30	/2023					
	ALLOC_AN_2023	3_ S 0	7/1/2023	9/30	/2023					

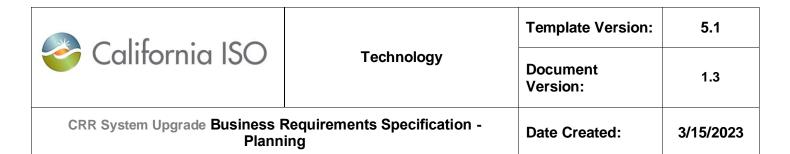
Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 76 of 108



ID#	Business Feature								Req. Typ e	Potenti al Applica tion(s) Impact ed
	ALLOC_AN_20:	23_ S 0	10/1/2 (02 12 3	/31/202 3					
CRR SU- BRQ0 6774	be published to the public via OASIS, with the following: A Market Name – market name of the monthly or annual/season								Busi ness Proc ess 7 Core Pha se 2	- CAISO. com -OASIS
	ALLOC_MN_2 022_M11_T1	11/1/ 2022	11/30/ 2022	Interface	NOB_ ITC	Imp ort	NA	On		

Copyright 2023 California ISO

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 77 of 108



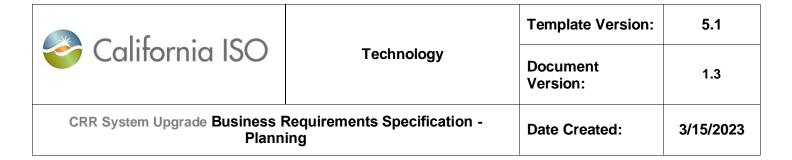
<i>market fo</i> et Name	or 2023 y Marke		Bindin	Bindin					
t Name	Marke		Bindin	Dindin					
	t Start Date	Market End Date	g Const raint Type	g Const raint Name	Interf ace direc tion	Conting ency Name	Ti me of Us e		
	1/1/20 23	3/31/2 023	Interfa ce	NOB_ ITC	Impo rt	NA	On		
	4/1/20 23	6/30/2 023							
	7/1/20 23	9/30/2 023							
	10/1/2 023	12/31/ 2023							
		3_S01 23 0C_AN_2 4/1/20 3_S02 23 0C_AN_2 7/1/20 3_S03 23 0C_AN_2 10/1/2 3_S04 023 extion timeline:	3_S01	3_S01	3_S01	3_S01	3_S01	3_S01	3_S01

Copyright 2023 California ISO

		Template Version:	5.1
California ISO	Technology	Document Version:	1.3
CRR System Upgrade Business I Plann		Date Created:	3/15/2023

ID#	Business Feature	Req. Typ e	Potenti al Applica tion(s) Impact ed

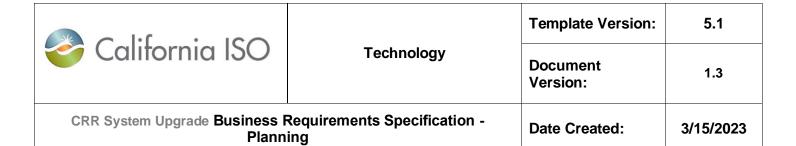
 Doc ID: GNFDMDEHU6BB-46-53
 © 2022 California ISO
 Page 79 of 108



5.1.7.2 External Reports

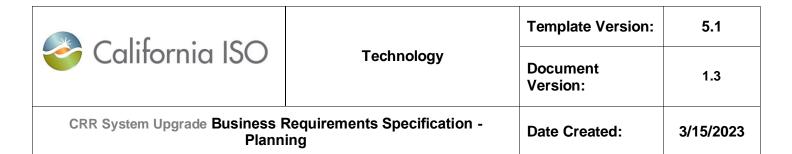
5.1.7.2	External Reports					
ID#	Business Feature				Red Тур е	ial
CRR SU- BRQ 0687 1	As a result of the initial model procomenthly and annual eligible CRR alist (for OASIS consumption), with Market start/end date = sea period start/end effective date. Source or Sink name = Proceeding Proceed	cess, CRR Solution and allocation and allocation and allocation and allocation and allocation and allocation (4 quarters/) ates ade or APnode id (7 Yes/No) (resID) mapped to source/sink defined as inclusion list (2 node or APnode pation Point; inclusion as inclusion as inclusions are if specified, it or restriction	entifier the individual source/sink any of the following the index of the following the interfaces the interfaces Matri	source/sir othly auctic ual pnode ollowing: , Sub-LAP s/Ties	Of St.	OASIS

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 80 of 108



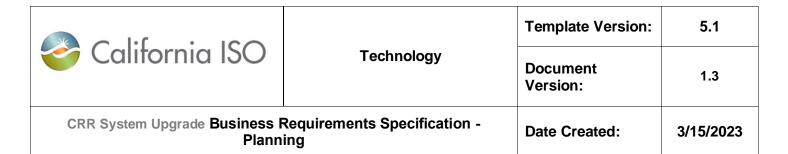
ID#	Business Feature								Req Typ e	Potent ial Applic ation(s) Impact ed	
	Ter m	t Date	End Date		to ₩ ₽ ?		natio n	g Point Restr ictio n	Settle ment Locat ion		
	Mo nthl y	11/1 /202 2	11/3 0/20 22	AVLYSLR_ 7_N005	Ye s	ARLVAL_ 5_SOLAR	GEN		PWW EST		
	Mo nthl y	11/1 /202 2	11/3 0/20 22	DLAP_PG AE-APND	Ye s		LAP				
	Mo nthl y	11/1 /202 2	11/3 0/20 22	CLAP_EA GLEMTN- APND	N 0		GEN				
	Mo nthl y	11/1 /202 2	11/3 0/20 22	CLAP_EA GLEMTN- APND	N 0		CAIS O				
	Mo nthl Y	11/1 /202 2	11/3 0/20 22	0096WD_7 _N001	¥	7STDRD_ 1_SOLAR 1	GEN				
	Mo nthl Y	11/1 /202 2	11/3 0/20 22	MLAP_AN HM-APND	¥		LAP				
	Mo nthl Y	11/1 /202 2	11/3 0/20 22	CLAP_BA NKPP- APND	¥		LAP				

Copyright 2023 California ISO



ID#	Busin	Business Feature									Potent ial Applic ation(s) Impact ed
	Me nthl y	11/1 /202 2	11/3 0/20 22	BARRE_6_ N001	N		CAIS O				
	Mo nthl y	11/1 /202 2	11/3 0/20 22	AMARGOS A_1_SN00 1	¥	AMARGO SA230	SP				
	Mo nthl y	11/1 /202 2	11/3 0/20 22	SYLMARD C_2_N501	¥	NOB	SP	Sourc e			
	Mo nthl y	11/1 /202 2	11/3 0/20 22	TH_NP15_ GEN- APND	¥		ŦĦ				
	Annue	al marke	∍t								
	Mar ket Ter m	Mar ket Start Date		Source/S ink Name	O pe n to M P?	Resource	Matrix Desig natio n	Sche dulin g Point Restr iction	Tie Gen- Tie Settl emen t Loca tion		
	Sea son al	1/1/2 023	3/31/ 2022	AVLYSL R_7_N00 5	Ye s	ARLVAL_ 5_SOLAR	GEN		PWW EST		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 82 of 108



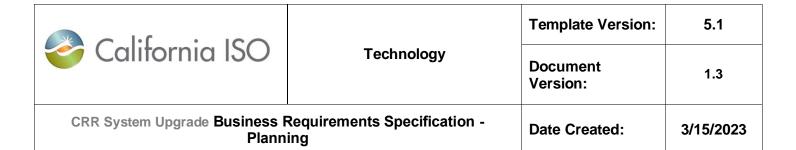
ID#	Busine	ess Fea	ture							Req Typ e	Potent ial Applic ation(s) Impact ed
	Sea son al	4/1/2 023	6/30/ 2023								
	Sea son al	7/1/2 023	9/30/ 2023								
	Sea son al	10/1/ 2023	12/31 /2023								
CRR SU- BRQ 0687	The ad	ldition o		w liabilities (_HOLDING m reports of sc				Exis ting	-MPP - Market Clearin
2	Reports: CRR Parent-Child EAL CRR Parent-Child EAL Historical Report Detailed Charge Code Report Detailed Charged Code Historical Report Parent-Child EAL Parent Company EAL Parent Company EAL Historical Report									g	
	Availat			R Auction d		•					
	•	 Total Estimated Aggregate Liabilities Available Credit CRR Liabilities Usable Secured Available Credit 									

Copyright 2023 California ISO

		Template Version:	5.1
California ISO	Technology	Document Version:	1.3
CRR System Upgrade Business I Plann	Date Created:	3/15/2023	

ID#	Business Feature	Req Typ e	Potent ial Applic ation(s) Impact ed
CRR SU- BRQ 0687 2 - B	Credit Management Portal The addition of two new liabilities WAC_ESTIMATED, WAC_ACTUALS must be reflected and aggregated in the EAL / available credit reports of scheduling coordinators:	Exis ting Pha se 2	-MPP - Market Clearin g
	 CRR Parent-Child EAL CRR Parent-Child EAL Historical Report Detailed Charge Code Report Detailed Charged Code Historical Report Parent-Child EAL Parent Company EAL Parent Company EAL Historical Report 		
	 Available Credit for CRR Auction display Total Estimated Aggregate Liabilities Available Credit CRR Liabilities Usable Secured Available Credit 		
CRR SU- BRQ	Solution must be able to publish the monthly and annual eligible CRR auction and allocation market source/sink list per the following methods, in support of CRRR-BRQ06871:	Cor e	-CRR - OASIS

 Doc ID: GNFDMDEHU6BB-46-53
 © 2022 California ISO
 Page 84 of 108



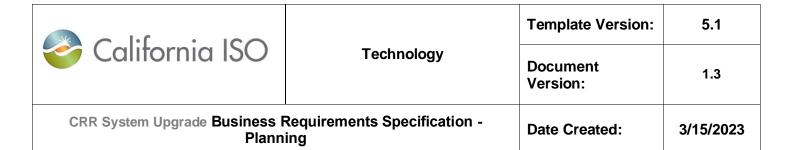
ID#	Business Feature			Req Typ e	Potent ial Applic ation(s) Impact ed
0687 3	-	Scheduled/Automatic	Or On- demand	Pha se 2	
		Calendar event	Initiated by an operator		
	Triggering event	Public download task for the source/sink	user, by specifying any monthly or annual market period		
		FULL market dataset * Monthly			
	Initial publication	market = contains the entire month's worth of source/sink list recs	FULL market dataset *		
		Annual market = contains the entire year's worth of source/sink,			

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 85 of 108

		Template Version:	5.1
California ISO	Technology	Document Version:	1.3
CRR System Upgrade Business I	•	Date Created:	3/15/2023

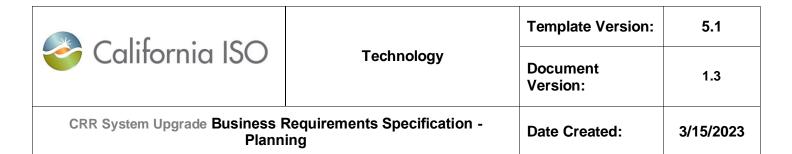
ID#	Business Feature	Req Typ e	Potent ial Applic ation(s) Impact ed
	with the four quarter/seasons		
	Any data corrections/changes after the initial publication FULL market dataset * full market dataset corrections/changes after the initial publication * full market dataset dataset *		
CRR SU- BRQ 0687 5	The CRR monthly and annual eligible CRR auction and allocation mark source/sink list must be published to the public via CAISO.com OASIS, the following: • Market start/end date = season (4 quarters/year) or monthly auction period start/end effective dates • Source or Sink name = Pnode or APnode identifier • Open to MP = biddable flag Yes/No • Resource = either: • Resource identifier (resID) mapped to the individual pnotaggregated pnode source/sink • Tie mapped to the scheduling point source/sink • Matrix Designation = source/sink defined as any of the following • CAISO – based on inclusion list • GEN – Generator Pnode or APnode location • LAP – Load Aggregation Point; includes DLAPs, Sub-LAMSS LAPs, CLAPs for participating loads • SP – Scheduling Point associated with interfaces/Ties • TH – Trading Hub locations	with ness suction cess s, Core e	CAISO .com OASIS

Copyright 2023 California ISO



ID#	Busines	Business Feature							
	Example Monthly								
	Mark et Term	Market Start Date	Market End Date	Source/Sink Name	Ope n to MP ?	Resource			
	Month ly	11/1/20 22	11/30/20 22	AVLYSLR_7_N00 5	Yes	ARLVAL_5_SOL AR			
	Month ly	11/1/20 22	11/30/20 22	DLAP_PGAE- APND	Yes				
	Month ly	11/1/20 22	11/30/20 22	CLAP_EAGLEMT N-APND	No				
	Month ly	11/1/20 22	11/30/20 22	CLAP_EAGLEMT N-APND	No				
	Month ly	11/1/20 22	11/30/20 22	0096WD_7_N001	Y	7STDRD_1_SOL AR1			
	Month ly	11/1/20 22	11/30/20 22	MLAP_ANHM- APND	Y				
	Month ly	11/1/20 22	11/30/20 22	CLAP_BANKPP- APND	Y				
	Month ly	11/1/20 22	11/30/20 22	BARRE_6_N001	N				

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 87 of 108



В	3usiness	s Feature					Req Typ e	Potent ial Applic ation(s) Impact ed
	Month ly	11/1/20 22	11/30/20 22	AMARGOSA_1_S N001	Υ	AMARGOSA230		
	Month ly	11/1/20 22	11/30/20 22	SYLMARDC_2_N 501	4	NOB		
	Month ly	11/1/20 22	11/30/20 22	TH_NP15_GEN- APND	Υ			
	Annual ma Market Term	arket Market Start Date	Market End Date	Source/Sink Name	Ope n to MP?	Resource		
	Season al	1/1/202	3/31/20		Yes	ARLVAL_5_SOL		
		3	3	2 005	res	AR		
	Season		2 6/30/20		res			
	Season	4/1/202	2 6/30/20 3 9/30/20	2	res			

Copyright 2023 California ISO

() () () () () ()		Template Version:	5.1
California ISO	Technology	Document Version:	1.3
CRR System Upgrade Business F Plann	Date Created:	3/15/2023	

ID#	Business Feature	Req Typ e	Potent ial Applic ation(s) Impact ed
	 Post Initial publication; Data corrections may be published post its first publication, as needed/applicable 		
	On either publication, OASIS must provide the latest updated data per market effective period, no historical record changes need to be preserved.		
	Note: Currently, this report is published on the public site www.caiso.com (Market & Operations/Market Processes/Congestion Revenue Rights/Current Processes page) and will transition to the OASIS site for going forward report publications.		
	Examples: http://www.caiso.com/Documents/CRRFNMDB113SourceandSinkAPNodes20 23AnnualProcess.xlsx		

5.1.8 Business Requirements – Conversion of TORs to MT-TOR CRRs

5.1.8.1 TOR Owner's Submission of Conversion Data through CRR UI

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU- BRQ06160	TOR Owner's (Transferor) Submission of Conversion Data through CRR UI:	Core	- CRR - Integration
	Solution shall provide the capability for external TOR owners to submit their own conversion		- AIM - Masterfile (MF)

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 89 of 108

	alifornia ISO Technology	Template Version:	5.1
California ISO		Document Version:	1.3
CRR System Upgrade Business F	Date Created:	3/15/2023	

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
	 data via UI and API. The submitted data shall include: Source and Sink Locations MW Conversion Amount Transfer Period (Start and End Dates) Transferee Identification 		
CRRSU- BRQ06165	TOR Owner (Transferor) registration The TOR Owner must be registered to transact business with the CAISO (turning over capacity to the ISO) after contract signing and FERC authorization is granted. A TOR owner: does not need to be a registered CRR Holder, example PacifiCorp can be at the same time a CRR Holder, example: TANC	Core	- Masterfile (MF) - AIM

5.1.8.2 TORs' Transferee of Confirmation of Transfer Data through CRR UI

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU- BRQ06200	Viewing of Conversion Data by TOR Transferees:	Core	- CRR

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 90 of 108

	Technology	Template Version:	5.1
California ISO		Document Version:	1.3
CRR System Upgrade Business Requirements Specification - Planning		Date Created:	3/15/2023

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
	Solution shall provide the capability for Transferee of TORs to view their own conversion data via UI.		
CRRSU- BRQ06220	Acceptance/Rejection of Conversion Data by TOR Transferees:	Core	- CRR
	Solution shall provide the capability for Transferee of TORs to accept or reject their TOR conversion data via UI.		
	Note:		
	 All TOR conversions shall be in Pending status until the Transferee accept or reject them. 		

 Doc ID: GNFDMDEHU6BB-46-53
 © 2022 California ISO
 Page 91 of 108

		Template Version:	5.1
California ISO	Technology	Document Version:	1.3
CRR System Upgrade Business Requirements Specification - Planning		Date Created:	3/15/2023

5.1.8.3 Automatic Notification to TOR Transferor and Transferee of Approval or Denial

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU- BRQ06420	Post TOR Conversion Transfer to External CRR Participants: Upon approval of TOR conversion transfer by authorized CRR users, Solution shall have the capability to automatically or on-demand publicly post the following data to all external CRR participants, in same manner as allocation market, but with a different CRR type enumeration: • TOR Conversion Transfer.	Core	- CRR - OASIS - Integration
CRRSU- BRQ06440	Approval Status Notification to External TOR Transferors & Transferees: Solution shall have the capability to automatically notify external TOR Transferor and TOR Transferee of the approval status (accept/reject). Note: Refer to CRRSU-BRQ01540 for notification methods.	Core	- CRR

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 92 of 108

	Technology	Template Version:	5.1
California ISO		Document Version:	1.3
CRR System Upgrade Business Requirements Specification - Planning		Date Created:	3/15/2023

5.1.9 Business Requirements – Integration

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU- BRQ06580	Web Services Format Support Solution shall have the capability to consume web services supporting SOAP and REST APIs for inbound and outbound services data connections from internal CAISO systems. Note: At the time of writing the BRS, SOAP over HTTP based web services is the production implementation. But POC is underway to evaluate REST/JSON for B2B services and JSON/AVRO over Kafka for internal pub/sub pattern.	Core	- CRR - Integration
CRRSU- BRQ06600	Web Services Standard Format Support Solution shall be able to consume and broadcast payloads from/to external CAISO CRR participants, using standard web services format. Note: The interaction with external CRR participants will follow the request/response pattern.	Core	- CRR - Integration
CRRSU- BRQ06680	System Capability to Integrate with the CAISO's Provisioning Application Solution shall have the capability to integrate with the CAISO's provisioning application.	Core	- CRR - AIM - Integration

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 93 of 108

	Technology	Template Version:	5.1
California ISO		Document Version:	1.3
CRR System Upgrade Business Requirements Specification - Planning		Date Created:	3/15/2023

5.1.9.1 External Reports

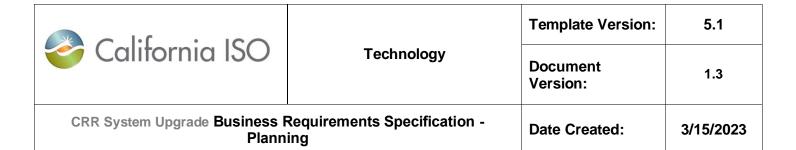
ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU-BRQ06800	Pre-Configured External Reports Solution-provided pre-configured external reports shall support, at a minimum, generation of these basic category types: • Generic reports: • Contains same information and are shared by all CRR entities. • These reports shall not be accessible by public users (e.g. only CRR entities can access these reports). • Private reports: • Contains private information and are accessible by each individual CRR entity. • CRR FNM NDA Related reports: • Contains CRR FNM related data for external entities that signed CRR FNM NDA.	Core	- CRR - Integration - MPP

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 94 of 108

		Template Version:	5.1
California ISO	Technology	Document 1.3 Version:	
CRR System Upgrade Business I		Date Created:	3/15/2023

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU- BRQ06820	Pre-Configured External Generic Reports Solution-provided pre-configured external generic reports shall, at minimum, support inclusion of the following sample data in the report: • List of all active existing CRRs for all CRR holders from the date the report is requested. • List of awarded CRRs by market. • List of binding constraints by market. • List of biddable locations by market. • List of base loading CRRs by market. • Clearing prices by auction market.	Core	- CRR - Integration
CRRSU- BRQ06840	Pre-Configured External Private Reports Solution-provided pre-configured external private reports shall, at minimum, support inclusion of the following sample data in the report: • List of all active existing CRRs for only the logged in CRR holder from the date the report is requested. • List of awarded CRRs by market for the logged in CRR holder.	Core	- CRR - Integration

 Doc ID: GNFDMDEHU6BB-46-53
 © 2022 California ISO
 Page 95 of 108



ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
	 Reports that show market validation data for the logged in CRR holder. 		
CRRSU- BRQ06860	Pre-Configured External CRR FNM NDA Related Reports	Core	- CRR - Integration
	Solution-provided pre-configured external CRR FNM NDA Related reports shall, at minimum, support inclusion of the following sample data in the report:		- MPP
	 Constraint definitions. Constraint limits. Biddable location definitions. FNM data model. 		
CRRSU- BRQ06870	Update and Publishing of Biddable Source and Sink List	Core	CRR
	Solution should update CRR biddable source and sink list and publish to MP in the event that unforeseen changes to network conditions and warrant revisions to that list, the CAISO will provide updates to the list prior to the closing of nominations for the CRR Allocation.		

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 96 of 108

		Template Version:	5.1
California ISO	Technology	Document Version:	1.3
CRR System Upgrade Business I Plann	•	Date Created:	3/15/2023

5.1.10 Business Requirements – Application Access

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
CRRSU- BRQ07880	Granular Role Permission Based on Internal User Access Solution shall provide the capability of granular role permissions based on internal user access to perform distinct business functions.	Core	- CRR - AIM
CRRSU- BRQ07920	Support External CRR Participants' Access via UI and API Solution shall provide the capability to support external CRR participants' access via UI and API.	Core	- CRR - AIM

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 97 of 108

		Template Version:	5.1
California ISO	Technology	Document Version:	1.3
CRR System Upgrade Business I Plann		Date Created:	3/15/2023

5.2 Business Process: Market/Business Simulation

Note: This section is not required for the RFP and initial BRS. It will be added later, once a vendor is selected.

This section shall provide a basis for the development of the Market/Business Simulation Scenarios. These requirements will provide guidance on the market participant impacts, inputs into the Scenarios, endpoints to the Scenarios and reasons for potential Scenarios. The guidance on market participant impacts shall be gathered from the requirements that impact rules, interfaces, applications/reports, new system processes, new/modified data models and new user roles. The source and sink systems shall be determined through the development of the system context diagram and the web service requirements. The Reason for the Potential Scenario column will be to offer guidance regarding what potential Scenarios, and their context, may be needed for this project. This section applies to all policy development projects, market enhancements, technology enhancements, operation enhancements, Energy Imbalance Market (EIM) implementations and Reliability Coordination (RC) service implementations.

In the Reason for Potential Scenario column, the Business Analyst must select one or more of the following reasons:

- **1. Rule Impacts**: Generalized changes in market rules, bidding rules, settlements rules, market design changes, or other business rules.
- **2. Interface changes**: Changes that impact templates (e.g. the Resource Adequacy {RA} supply plan), user interface (UI), and application programming interface (API) (e.g. retrievals of new shadow settlement data).
- **3. New application/report**: Changes that cause addition/modification of market software or reports, especially when market data input is required by the market participant.
- **4. New system process**: Modification of data flow in systems, especially if the new process requires the market participant to demonstrate proficiency prior to production.
- **5. New/Modified model data**: Addition or substantial modification of model data as a market solution provided by the ISO.
- **6. New user role**: The addition or modification of access permissions for a user role applied to specific business units within an EIM entity or market participant organization (e.g. Load Serving Entity (LSE) as a Local Regulatory Authority (LRA) role). Scenarios are beneficial for market participants taking on a new function or process within their organization.

5.2.1 Business Requirements

		Template Version:	5.1
California ISO	Technology	Document Version:	1.3
CRR System Upgrade Business I Plann	• • • • • • • • • • • • • • • • • • •	Date Created:	3/15/2023

ID#	Guidance on Market Participant Impacts	Source System	Sink System	Reason for Potential Scenario
	Pending – Market Simulation impacts are currently being reviewed. External BRS to be updated at later point in time.			

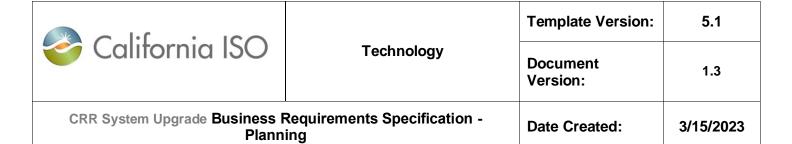
 Doc ID: GNFDMDEHU6BB-46-53
 © 2022 California ISO
 Page 99 of 108

		Template Version:	5.1
California ISO	Technology	Document Version:	1.3
CRR System Upgrade Business I Plann	•	Date Created:	3/15/2023

6 Appendices

6.1 Appendix 1 – Acronym Definition

Acronym	Definition
A2A	Application to Application
AF	Allocation Factor
Anode	Aggregate Node
API	Application Program Interface
APnode	Aggregate Price Node
B2B	Business to Business
ВА	Business Analyst
ВА	Balancing Authority
BAA	Balancing Authority Area
BOG	Board Of Governors
BPM	Business Process Manual
BRS	Business Requirement Specifications
CAISO	California Independent System Operator
СВТ	Computer-Based Training
CEC	California Energy Commission
CIM	Common Information Model
CIP	Critical Infrastructure Protection
CLAP	Custom Load Aggregation Point
CLSE	CRR participant which is Load Serving Entity



Acronym	Definition
CMRI	Customer Market Results Interface
Code	Connectivity Node
CPUC	California Public Utility Commission
CRR	Congestion Revenue Right
CRRH	Congestion Revenue Right Holder
CRRSU	Congestion Revenue Right Replacement project
CSS	Critical Systems Support
CSV	Comma Separated Values
CTS	Credit Tracking System
DA	Day-Ahead
DAM	Day-Ahead Market
DASR	Direct Access Service Request
DB	Data Base
DDS	Design & Development Specifications
DI	Develop Infrastructure
DIM	Data Input Model
DLAP	Default Load Aggregation Point
DM	Develop Markets
DMM	Department of Market Monitoring
DST	Daylight Saving Time

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 101 of 108



Template Version: Technology Document

1.3 Version:

5.1

CRR System Upgrade Business Requirements Specification - Planning

Date Created: 3/15/2023

Acronym	Definition
DUNS	Data Universal Numbering System
EAL	Estimated Aggregate Liability
EDR	Enterprise Data Repository
EIM	Energy Imbalance Market
EMM	Enterprise Modeling Management
EMMS	Enterprise Modeling Management System
EQ	Eligible Quantity
ERC	Equipment Rating Change
ESP	Electronic Security Perimeter
ETC	Existing Transmission Contracts
FERC	Federal Energy Regulatory Commission
FEQ	Final Eligible Quantity
FNM	Full Network Model
FODD	FERC Outgoing Data Depository
FR	Frequency Response
GCARM	Generator Contingency and RAS Modelling
GDF	Generation Distribution Factor
GFF	Generation Flow Factor
GIP	Generator Interconnection Procedure
GRDT	Generator Resource Data Template

© 2022 California ISO Page 102 of 108 Doc ID: GNFDMDEHU6BB-46-53



Technology

Template Version:	5.1
Document Version:	1.3

CRR System Upgrade Business Requirements Specification - Planning

Date Created:	3/15/2023
---------------	-----------

Acronym	Definition
GUI	Graphical User Interface
HF	Historical or Forecast
IAIQ	IT Architecture, Integration and QA
IBAA	Inter-Balancing Authority Area
IEC	International Electrotechnical Commission
IC	Injection Change
ID	Identification
IFM	Integrated Forward market
IS	Information Security
ISL	Intertie Scheduling Limit
ISO	California Independent System Operator
IT	Information Technology
ITC	Inter-Tie Constraint
ITPD	Information Technology Product Development
ITPM	Information Technology Product Management
kW	Kilo Watt
LAP	Load Aggregation Point
LDF	Load Distribution Factor
LM	Load Migration
LMP	Local Marginal Price

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 103 of 108



Technology

Template Version:	5.1
Document Version:	1.3

CRR System Upgrade Business Requirements Specification - Planning

Date Created: 3/15/2023

Acronym	Definition
LMT	Load Migration Tool
LSE	Load Serving Entities
LT	Long Term
MCI	Model & Contract Implementation
MEQ	Monthly Eligible Quantity
MF	Master File
MHC	Manage Human Capabilities
MLAP	MSS Load Aggregation Point
MMG	Manage Markets & Grid
MMR	Manage Market & Reliability Data & Modeling
MOI	Market Operator Interface
MOS	Manage Operations Support & Settlements
MP	Market Participant
MPP	Market Participant Portal
MQRI	Market Quality and Renewable Integration
MQS	Market Quality System
MSG	Multi-Stage Generator
MSS	Metered Sub System
MT	Merchant Transmission
MUI	Market User Interface

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 104 of 108



Technology

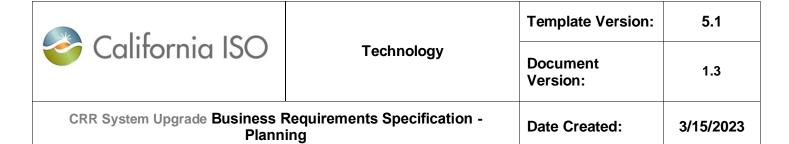
Template Version:	5.1
Document Version:	1.3

CRR System Upgrade Business Requirements Specification - Planning

Date Created: 3/15/2023

Acronym	Definition
MVA	Mega Volt Ampere
MVQ	Market Validation Quality
MVQA	Market Validation Quality & Analysis
N/A	Not Applicable
NGR	Non-Generating Resource
OASIS	Open Access Same-Time Information System
OBAALSE	Out-of-Balancing Authority Area Load Serving Entities
OES	Operations Engineering Services
OMS	Outage Management System
PA	Participant
PAID	Participant numeric ID
PCA	Price Correction Application
PDF	Portable Document Format
PDR	Proxy Demand Response
Pmax	Maximum Generation (Load) MW Level
РМВ	Plan & Manage Business
Pmin	Minimum Generation (Load) MW Level (same as ML)
Pnode	Price Node
PNP	Priority Nomination Process
PSS/E	Power System Simulation for Engineering

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 105 of 108



Acronym	Definition
PSTD	Power Systems Technology Development
PSTO	Power Systems Technology Operations
РТО	Participating Transmission Owner
QRB	Quality Review Board
RAR	Resource Adequacy Requirement
RAS	Remedial Action Scheme
RC	Reliability Coordinator
RDT	Resource Data Template
RES	Resource
REST	Representational State Transfer
RRDR	Reliability Resource Demand Response
RT	Real-Time
RTCA	Real-Time Contingency Analysis
RTM	Real-Time Market
RTN	Real-Time Market
RUC	Residual Unit Commitment
SADS	System And Design Specifications
SaMC	Settlements system
SaMP	Settlements Production system
SAMQ	Security, Architecture, Model management & Quality

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 106 of 108



Template Version:	5.1
Document Version:	1.3

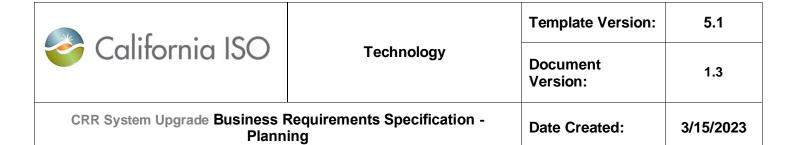
3/15/2023

Date Created:

CRR System Upgrade Business Requirements Specification - Planning

Acronym	Definition
SBS	Support Business Services
SC	Scheduling Coordinator
SCED	Security Constrained Economic Dispatch
SCS	Support Customers & Stakeholders
SCUC	Security Constrained Unit Commitment
SEQ	Seasonal Eligible Quantity
SF	Shift Factor
SFT	Simultaneous Feasibility Test
SFTP	Secure File Transfer Protocol
SIBR	Scheduling Infrastructure Business Rules
SLAP	Sub-Load Aggregation Point
SME	Subject Matter Expert
SOA	Simple Object Access
SOAP	Simple Object Access Protocol
SP	Scheduling Point
SQMD	Settlements Quality Meter Data
SRS	System Requirement Specifications
SRS	Secondary Registration System
SS	Source/Sink
STUC	Short-Term Unit Commitment

Copyright 2023 California ISO



Acronym	Definition
SUB	Sink Upper Bound
TAC	Transmission Access Charge
TH	Trading Hub
TBD	To Be Determined
TOR	Transmission Ownership Rights
TOU (tou)	Time Of Use
TRTC	Transmission Rights and Transmission Curtailment
UDC	Utility Distribution Company
UI	User Interface
WAC	Wheeling Access Charges
WebOMS	Web-based Outage Management System
WECC	Western Electricity Coordinating Council
WLS	Weighted Least Squares
XML	Load Aggregation Point

Doc ID: GNFDMDEHU6BB-46-53 © 2022 California ISO Page 108 of 108