California ISO

Business Requirements Specification

Highest Emergency Rating

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Revision History

Date	Version	Description
02/6/2024	1.0	Document Created.
3/20/2024	1.1	**Added:** BRQ423, BRQ434 **Updated:** BRQ403, BRQ417, BRQ428, BRQ448 **Removed:** BRQ421, included in BRQ417.

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1 Introduction

1.1 Purpose

This document describes high level business requirements to support the Highest Emergency Rating initiative.

The project aims to primarily improve market robustness, performance, and the technology foundation for system grid reliability by updating functionality and interfaces to reduce workarounds, automating manual processes and addressing minor defects or functionality enhancements identified by the business units. This enhancement focuses specifically on internal ISO users and RC Customers having the capability to adjust the HER and ER duration in webOMS and send downstream.

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2 Details of Business Need/Problem

2.1 Description

Business Opportunity/Problem Statement:	
What:	The project aims to primarily improve market robustness, performance, and the technology foundation for system grid reliability by updating functionality and interfaces to reduce workarounds, automating manual processes and addressing minor defects or functionality enhancements identified by the business units. This enhancement focuses specifically on internal ISO users and RC Customers having the capability to adjust the HER and ER duration in webOMS and send downstream.
When:	Refer to Release Users Group (RUG) postings for updated timelines.
Why do we have this opportunity/problem:	Delivering timely systems improvements that support day-to-day needs of Operations (OE), and Operations Engineering Services (OES).

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3 Business Impacts

3.1 Business Practice Manuals (BPM)

BPM	Description of Impact(s)
BPM Change Management	Not Impacted
Candidate CRR Holder Registration	Not Impacted
Compliance Monitoring	Not Impacted
Congestion Revenue Rights	Not Impacted
Credit Management and Market Clearing	Not Impacted
Definitions and Acronyms	Not Impacted
Demand Response	Not Impacted
Direct Telemetry	Not Impacted
Distributed Generation for Deliverability	Not Impacted
Energy Imbalance Market	Not Impacted
Generator Interconnection and Deliverability Allocation Procedures	Not Impacted
Generator Interconnection Procedures	Not Impacted
Generator Management	Not Impacted
Managing Full Network Model	Not Impacted
Market Instruments	Not Impacted
Market Operations	Not Impacted
Metering	Not Impacted
Outage Management	Not Impacted
Reliability Coordinator Services	Not Impacted
Reliability Requirements	Not Impacted
Rules of Conduct Administration	Not Impacted
Scheduling Coordinator Certification and Termination	Not Impacted

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BPM	Description of Impact(s)
Settlements and Billing	Not Impacted
Transmission Planning Process	Not Impacted

3.2 Tariff Business Ownership

Tariff Section	Business Owner
Not Impacted	Not Applicable

3.3 Other

Impact	Description (optional)
Market Simulation	**Yes** Unstructured Market Simulation
Market Participant Impact	**Yes**
External Bid Publication	No
Customer Readiness Impact	Yes, see below.
• **External Communication Needed**	**Yes**
• **External Onboarding and Maintenance**	No
• **External Training**	**Yes**

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Impact	Description (optional)
• **External Computer Based Training**	**TBD**
Policy Initiative	No

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4 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.

4.1 Business Process: Highest Emergency Rating

4.1.1 Business Requirements

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ID#	Business Feature	Req. Type	Potential Application Impacted

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<table>
<tr>
<td>HER – BRQ420</td>
<td>System (webOMS) must have three new fields on the current OMS Derate User Interface:

“Emergency Rating Duration”
“Highest Emergency Rating”
“Highest Emergency Rating Duration.”

Implementation note: Duration in this instance refers to the amount of time the operator has to reduce the flow across the device to below the normal rating or the next rating. For example:
<table>
<tr><th>Line X-Y Rating</th><th>Rating Value</th><th>Rating Duration</th></tr>
<tr><td>Normal</td><td>200</td><td>Continuous</td></tr>
<tr><td>Emergency</td><td>250</td><td>240 min</td></tr>
<tr><td>HER</td><td>300</td><td>30 min</td></tr>
</table>
Example:
Line X-Y has a Normal Rating of 200 MW, a 4-hour Emergency Rating of 250 MW, and a 30-minute Emergency Rating of 300 MW. If flow on Line X-Y is 240 MW: - Mitigation Time = 4 hours. Flow must be reduced below 200 MW within 4 hours. If flow on Line X-Y is 280 MW: - Mitigation Time = 30 minutes. Flow must be reduced below 200 MW within 30 minutes, unless the TOP provides a less stringent Facility Ratings methodology. If flow on Line X-Y exceeds 300 MW: - Mitigation Time = None. Flow must be reduced below 200 MW immediately, unless the TOP provides a less stringent Facility Ratings methodology, which allows additional mitigation time once flows have been reduced below 300 MW.</td>
<td>Core</td>
<td>webOMS</td>
</tr>
</table>

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ID#	Business Feature	Req. Type	Potential Application Impacted
HER – BRQ403	System (webOMS) must have the capability for internal ISO users and RC Customers to adjust the following new transmission MVA rating data elements/fields: • Emergency Rating Duration (~~new field, integer value,~~ set in minutes) • Highest Emergency Rating Limit (~~new field, numeric input,~~ set in MVA) • Highest Emergency Rating Duration (~~new field, integer value,~~ set in minutes) • Start/End time of override (existing field, set for above fields) Implementation note: Operators shall be able to adjust to a higher rating, in addition to how they currently adjust to a lower rating; ; ISO users and RC customers shall use existing “Nature of Work” type of “EQUIPMENT_DERATE” in order to adjust rating higher or lower. Implementation and note: ISO users and RC customers shall utilize existing “Nature of Work” type of “EQUIPMENT_DERATE” in order to adjust to a higher or lower rating.	Core	webOMS
HER – BRQ434	System (webOMS) must have validation for duration limit entry to be no greater than 32,767 minutes.	Core	webOMS

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HER – BRQ417	System (webOMS) must enforce the following validation rules for ~~have a validation~~ for Internal ISO user and External RC user ratings submissions ~~to only submit a HER value greater than or equal to the active emergency rating~~: - All Rating Limits and Durations must be defined as either zero or a positive numeric value that is not in excess of 32,767 - Normal Rating Limit must be defined - Emergency Rating Limit and Duration must be defined - Emergency Rating Limit cannot be less than its associated Normal Rating Limit - HER Limit and Duration must be defined - If HER Limit and Duration values are partially incomplete, or invalid, they must be completed/corrected before saving - If neither HER Limit and Duration values are defined, system should auto-fill the HER Limit and Duration values to match their associated Emergency Rating Limit and Duration values and then save (no error) - HER Limit cannot be less than its associated Emergency Rating Limit, but must be the same value if Emergency Rating Duration is zero - HER Duration cannot be greater than its associated Emergency Rating Duration, but may be equal if Emergency Rating Duration is zero OR both HER Limit and Emergency Limits are equal (otherwise reject) ~~- If rating entered is less than or equal to the active emergency rating then OMS to display notification message: "HER value must be greater than current emergency rating."~~ User must receive notification of any open validation error(s) from system (e.g. "HER value must be greater than or equal to current emergency rating.") and resolve prior to the system allowing the ERC to be saved.	Core	webOMS

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ID#	Business Feature	Req. Type	Potential Application Impacted
	~~Implementation note: Users may enter or leave normal emergency value as is but the HER that is entered must be greater than or equal to the active emergency rating.~~ Note: - If TOPs want to adjust the HER rating down they must utilize the existing ERC process.		
~~HER – BRQ421~~	~~System (webOMS) must have a validation for Internal ISO user and External RC user to only submit an Emergency Rating (ER) value less than or equal to the HER:~~ ~~• If Emergency Rating entered is greater than the HER then OMS to display notification message: "Emergency Rating value must be less than or equal to the Highest Emergency Rating."~~ ~~Implementation note: Similarly, ER entered cannot exceed HER nor have a more limiting duration limit than HER. If OE's want to enter ER greater than the current HER then would first have to adjust HER then update ER.~~ ~~Note If TOPs want to adjust the HER rating down they must utilize the existing ERC process.~~	~~Core~~	~~webOMS~~
HER – BRQ422	Upon Internal ISO user or External RC submission of ER or HER, System (webOMS) must have a pop-up notification that states the following: • "Emergency Rating (ERC) flows to Market, RTCA, and EMS; and HER only flows to RTCA, and EMS."	Core	webOMS

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ID#	Business Feature	Req. Type	Potential Application Impacted
HER – BRQ423	With regards to Normal Rating Duration values, system shall only publish and will not provide viewing/data entry via its UI OR allow consumption from API submission of transmission equipment MVA rating changes. Training Note: - Provide WebOMS users with explanation that Duration = 0 minutes is analogous to having it set continuously, Normal Rating Duration will always be zero, and its addition is to provide basis for comparative validation of the three rating types (normal, emergency, and highest emergency)	Core	webOMS
HER-BRQ448	System (webOMS) must publish ~~broadcast~~ updated Normal, ER ,and HER limit, and duration values to downstream systems.	Core	webOMS
HER – BRQ428	External Users must be able to see new limits UI with: • ~~1 Normal~~ • 2 Emergency ratings • ER duration • HER • HER Duration Note: duration on the operator RT monitor in HANA Implementation note: The operator RT monitor will only have ~~normal,~~ emergency and HER.	Core	HANA

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4.2 Business Process: Market/Business Simulation

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. If the project team has deemed that no structured testing is needed, an end-to-end test case must be specified.

In the Reason for Potential Scenario column, 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 or export 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.

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4.2.1 Business Requirements

ID#	Guidance on Market Participant Impacts	Source System	Sink System	Reason for Potential Scenario
MKT - 001	**End-to-End Testing:** RC Customers to adjust the ER, HER and limit durations. Note: Reference BRQ403 for more information.	webOMS	webOMS, HANA	New Data Fields

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