Business Requirements Specification

Dispatch Operating Target Tariff Clarification

Document Version: ~~1~~1.1

Current Version Date: ~~12/26/2018~~4/6/2020

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Revision History

Date	Version	Description
12/26/2018	1.0	Initial document release
4/06/2020	1.1	Multiple updates to Section 4.1 BRQ001: • System changed to Master File • Clarified Operating Instructions are for resources in CAISO BAA only BRQ003 and BRQ017 – Deleted BRQ009 - Clarified Operating Instructions are for resources in CAISO BAA only BRQ005 – Corrected reference BRQ018 – Corrected reference BRQ019 – Deleted "code" BRQ023 - Deleted "code" BRQ004 – Clarified RTD timeline BRQ020 – Changed EIR flag to FOLLOW_DOT flag BRQ025: • Changed EIR flag to FOLLOW_DOT flag • Clarified RTD instructions included RTCD and RTDD BRQ006: • Deleted "code" • Clarified RTD instructions included RTCD and RTDD BRQ008: • Added that the four (4) Operating Instruction elements are to be included in the API • Noted "Reason" to be included in the API BRQ008A - Added BRQ015 – Clarified pop up messages

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Date	Version	Description
		BRQ015A – Added BRQ027: • Deleted "code" • Added FOLLOW_DOT flag • Revised EIR flag to FOLLOW_DOT flag BRQ022: • Changed EIR flag to FOLLOW_DOT flag • Corrected to indicate API will make flag available

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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 delivery, satisfy or meet the business requirements (what).

Currently, Eligible Intermittent Resources (EIRs) are not consistently following their dispatch operating target (DOT) when certain system conditions persist (overgeneration). When a resource doesn't follow their DOT, it can pose an operational risk in areas where transmission is constrained. As more EIRs are introduced to the CAISO balancing area, this will pose a greater risk. This project will allow EIRs to automate their responses to operational instructions that require the resource not to exceed their DOT. This enhancement will improve reliability during stressed system conditions.

1.2 References

1.   Policy documentation and other relevant documents that precede the BRS are located at:

http://www.caiso.com/informed/Pages/StakeholderProcesses/DispatchOperatingTargetTariffClarification.aspx

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2 Details of Business Need/Problem

2.1 Description

- Ability for EIRs to automate their response to operational instructions that require the resource not to exceed their DOT.

- Ability for Operations to define list of resources at a region, customer, and system level.

3 Business Impacts

3.1 High Level Description of Business Process

- Manage Market & Grid
    - Manage Real Time Operations – Transmission & Electric System

3.2 Business Practice Manual (BPM)

BPM	Description of Impact(s)
Managing Full Network Model	N/A
Congestion Revenue Rights	N/A
Market Instruments	**Yes.** BPM will describe what notifications will be sent via API and UI to market participants informing unit to follow their DOT.
Outage Management	N/A
Reliability Requirement	N/A
Market Operations	**Yes.** BPM will describe what notifications will be sent via API and UI to market participants informing unit to follow their DOT.
Compliance Monitoring	N/A

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BPM	Description of Impact(s)
Metering	N/A
Scheduling Coordinator Certification & Termination	N/A
Rules of Conduct Administration	N/A
BPM Change Management	N/A
Definitions & Acronyms	N/A
Settlements & Billing	N/A
Credit Management	N/A
Candidate CRR Holder	N/A
Transmission Planning Process	N/A
Direct Telemetry	N/A
Distributed Generation for Deliverability	N/A
Energy Imbalance Market (EIM)	N/A
Generator Interconnection Procedure (GIP)	N/A
Generator Interconnection and Deliverability Allocation Procedures	N/A
Generator Management	N/A
Managing Full Network Model	N/A

3.3 Other

Impact:	Description: (optional)
Market Simulation	Yes
Market Participant Impact	Yes
User Acceptance Testing (UAT)	Yes
Internal Training	Yes
External Training	Yes
Policy Initiative	Yes
Vendor	Yes – Siemens, True Wind, Meterologica

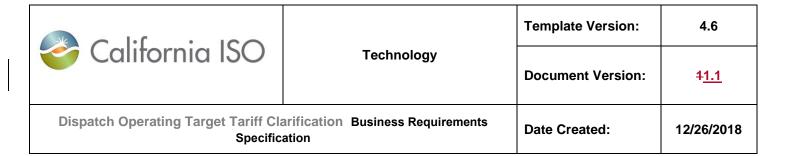Program Office

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: Manage Real Time Operations – Transmission & Electric System

4.1.1 Business Requirements

ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DOT-BRQ001	Operators must have the ability to define and maintain custom-defined resource groups for purposes of sending operating instructions for multiple resources at one time. Note: Resources belonging only to CAISO BA are subject to Operating Instructions	Core	~~RTM~~ Master File
~~DOT-BRQ003~~	~~Operators must have the ability to define groups of resources from a new user interface. Groups shall be selected from a list of all resources visible to the RTM system.~~	~~Core~~	~~RTM~~
~~DOT-BRQ017~~	~~Operators must have the ability to delete custom-defined resource groups if needed.~~	~~Core~~	~~RTM~~
DOT-BRQ009	In order to send operating instructions for multiple resources at one time, system shall maintain a list of resource grouping by TAC and HUB as defined by Master File. This list shall be defined for all Eligible Intermittent Resources (and intermittent resources not yet certified) within a TAC or HUB within CAISO ~~all~~ BAA~~s~~. List shall be updated with each Master File refresh.	Core	RTM

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ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DOT-BRQ005	Operators must have the ability to set a flag from the user interface that will indicate the resource shall follow their DOT. ~~The flag shall be selectable from one or more of the groups defined in BRQ002 and BRQ003.~~ Note: Only those Eligible Intermittent Resources (EIRs) having an CAISO forecast (classified as VER Stage 3) or in the process of developing an CAISO forecast (classified as VER Stage 2) can be given an Operating Instruction (OI). BRQ005 applies only to these resources.	Core	RTM
DOT-BRQ018	Operators must have the ability to set a flag from the user interface that will indicate all EIRs (entire system) as currently defined in the master file shall follow their DOT. The flag shall also be selectable from one or more of the groups defined in ~~BRQ002~~ BRQ009~~and BRQ003~~.	Core	RTM
DOT-BRQ019	When setting the operating instruction flag, operators must have the ability to specify the reason~~ code~~. The selectable reasons ~~codes~~ shall be: • *"Congestion"* • *"System Reliability"* • *"Over generation"* Note: If setting the flag for a group of resources or the entire system, operators shall have the ability to set the reason ~~code~~ once and have it apply to all resources in the group/system.	Core	RTM

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ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DOT-BRQ016	When setting the operating instruction flag, operators must have the ability to specify a start and end time. If setting the flag for a group of resources or the entire system, operators shall have the ability to set the start and end time once and have it apply to all resources in the group/system. By default, Start time will be auto populated with the next RTD binding interval time when the operating instruction flag is checked. By default, end time will be auto populated with the last 5 min interval of the current operating day when the operating instruction flag is checked. By default, End time will be auto populated with the next RTD binding interval time when the operating instruction flag is un-checked. If a resource belongs to a group and a hub and the end time of the group instruction and hub instruction are different, the end time of the greater of the two instructions shall be used for dispatch and publication.	Core	RTM
DOT-BRQ023	Once the operating instruction flag has been set, operators shall have the ability to edit the reason ~~code~~ or the start time until the flag has been broadcasted for the first interval. If setting the flag for a group of resources or the entire system, operators shall have the ability to perform this edit once and have it apply to all resources in the group/system.	Core	RTM
DOT-BRQ024	Once the operating instruction flag has been set, operators shall have the ability to edit the end time until the flag has been broadcasted for the last interval. Note: Upon end time, the custom-defined resource group must be inactive.	Core	RTM

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ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DOT-BRQ004	System shall use the provider forecast instead of the persistence forecast for the entire RTD market horizon when the operating instruction flag is activated. Note: The dispatch logic for such resources when they are flagged uses the Automated Load Forecast System (ALFS) forecast instead of the persistence forecast for both RTPD and RTD.	Core	RTM
DOT-BRQ020	An additional flag called the ~~EIR~~ FOLLOW_DOT flag shall be set by the market optimization when the resource DOT is below the forecast due to reasons such as congestion and over generation, but not due to outage or derate.	Core	RTM
DOT-BRQ025	System shall broadcast ~~EIR~~FOLLOW_DOT flag with RTD dispatch instructions, including RTCD and RTDD.	Core	RTM
DOT-BRQ006	System shall broadcast operating instruction flag, current reason ~~code~~, and current start/end time with RTD dispatch instructions, while the RTD (or RTCD/RTDD as applicable) interval is within the current start and end time.	Core	RTM
DOT-BRQ008	System shall provide the four elements related to Operating Instruction ~~notice~~ through the system API ~~as a trajectory compliance element~~ with a notice of "Do not exceed DOT" due to <Reason>",where <Reason> is sent from the market as part of the Operating Instruction.	Core	ADS
DOT-BRQ008*A*	System shall provide the FOLLOW_DOT flag through the system API	Core Tariff Appendix A	ADS

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ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DOT-BRQ015	Upon system receiving the operational instruction flag along with the operating instruction notices with reason, system will pop up a message to the UI with the reason provided by upstream system (within the payload). The message shall only pop up once per user per time horizon of the instruction, and will remain until acknowledged by the user. System must record the user's acknowledgement and display the acknowledgement on the UI. Note: The acknowledgement should be visible when the first user from the SC organization acknowledges the pop up. Note: Pop up needs to reappear if any changes have occurred, such as end time extension.	Core	ADS
DOT-BRQ015A	System shall display the Operating Instruction pop up message even during a contingency dispatch	Core	ADS
DOT-BRQ027	On the UI for 5-minute instructions, UI shall display the following fields as a default: • Operating instruction flag • Start date/time • End date/time • Reason ~~code~~ • FOLLOW_DOT flag Similar to existing functionality, users shall be able to customize their displays to include or exclude these fields as well as the field containing the ~~EIR~~ FOLLOW_DOT flag.	Core	ADS

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ID#	Business Feature	Requirement Type	Potential Application(s) Impacted
DOT-BRQ022	System must ~~broadcast~~ make available the FOLLOW_DOT ~~EIR resource~~ flag to all external forecast service providers.	Core	ADS

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4.2 Business Process: Market/Business Simulation

4.2.1 Business Requirements

ID#	Guidance on Market Participant Impacts	Source System	Sink System	Reason for Potential Structured Scenario
DOT-BRQ010	When RTM dispatcher determines an operational system condition, such as over generation, exacerbated by EIRs, they shall issue an operational instruction instructing EIR resources to follow their DOT which can be retrieved through the ADS API.	Market (RTM)	ADS (API)	Interface changes; New application/report
DOT-BRQ011	When RTM dispatcher determines an operational system condition, such as over generation, exacerbated by EIRs, they shall issue an operational instruction instructing EIR resources to follow their DOT through a pop up.	Market (RTM)	ADS (UI)	Interface changes; New application/report

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