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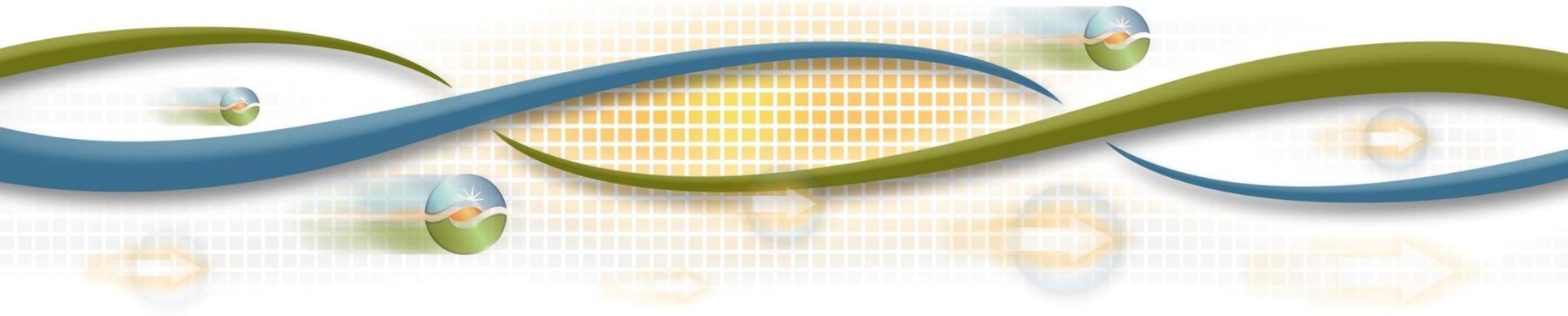
Release User Group Agenda

July 5th, 2017   *10:00 a.m.–11:00 a.m.* (Pacific Time)

Web Conference Information		Conference Call Information	
URL:	https://www.connectmeeting.att.com	Domestic Call In:	(866) 528-2256
Meeting Number:	8665282256	International Call In:	(216) 706-7052
Access Code:	5251941	Access Code:	5251941

Release User Group Agenda

July 5th, 2017   *10:00 a.m. – 11:00 a.m. (Pacific Time)*

Time	Topic	Facilitator
10:00 – 10:05	Agenda & ISO Roll call	Adrian Chiosea
10:05 – 10:45	Release Plan	Janet Morris Brett Bruderer Michael Lucas Joanne Alai Marcelo Da Costa Raymond Riley Marci Stuckey John Williams Christopher McIntosh Jami Herguth Prince Phillip Sandhya Balasubramanian Eureka Cullado Indu Nambiar Justin Wong LuAnn Rivera Cynthia Hinman Trang Deluca

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The ISO offers comprehensive training programs

Date	Training
Jul 6	Welcome to the ISO - webinar
Aug 16	Settlements 101
Aug 17	Settlements 201
Oct 5	Welcome to the ISO - webinar
Oct 11-12	Get to Know the ISO

All classes are offered at our Folsom, CA location unless noted otherwise.
Training calendar - http://www.caiso.com/participate/Pages/Training/default.aspx
Contact us - CustomerTraining@caiso.com

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Release Plan 2017 - 2018

Independent 2017
- MRI-S ACL Groups + CPG Enhancements (formerly OMAR Replacement)
- RIMS Functional Enhancements
- Black Start and System Restoration Phase 2
- Aliso Canyon Phase 3 (tentative)

Fall 2017 (11/1/17)
- EIM Portland General Electric (PGE) – 10/1/17
- Bidding Rules Enhancements – Part B
- Commitment Cost Enhancement Phase 3
- EIM 2017 Enhancements
- Gas Burn Report
- SIBR UI Upgrade
- RAAIM Implementation Update

Winter 2017 / Spring 2018
- EIM Winter 2017 Enhancements
- Energy Storage and DER Phase 1C
- EIM 2018 Idaho Power Company
- EIM 2018 Powerex
- Reliability Services Initiative 2017
- DRS Replacement
- Energy Storage and DER Phase 2 (tentative)
- EIM greenhouse gas compliance
- Temporary Suspension of Resource Operations (no system changes expected)
- Capacity Procurement Mechanism – risk-of-retirement (no system changes expected)

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Release Plan – 2018 and subject to further planning

Fall 2018 – tentative, subject to impact assessment
- Contingency Modeling Enhancements
- Flexible Resource Adequacy Criteria and Must-offer Obligation Phase 2
- FERC 831 and Commitment Costs and Default Energy Bid Enhancements
- Consolidated Energy Imbalance Market Initiatives
- ADS User Interface Replacement
- CIRA Technology Upgrade

Spring 2019
- EIM 2019 Seattle City Light
- EIM 2019 Balancing Authority of Northern California (BANC) / SMUD
- EIM 2019 LADWP

Fall 2019 – tentative, subject to impact assessment
- Generation Contingency and Remedial Action Scheme
- Frequency Response Phase 2
- Congestion Revenue Right auction efficiency

Spring 2020
- EIM 2020 Salt River Project

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2017 - MRI-S ACL Groups+ CPG Enhancements

Project Info	Details/Date
Application Software Changes	The MRI-S metering (MRI-S) application cannot currently support ACL (Access Control List) groups functionality for defining a subset of resources belonging to an SCID. Enhancements to the Application Identity Management (AIM) application will enable the use of ACL groups for SCID-level read-only access for MRI-S. A customer partnership group was conducted on June 12, 2017, continuing the discussion regarding the cut-over from OMAR Online to MRI-S Metering. MAP Stage will remain open for validation until the decommissioning of OMAR Online. OMAR Online will be decommissioned four months after the May 2nd re-opening of the MRI-S Metering: September 1, 2017.
BPM Changes	None
Business Process Changes	Potential Level-II business process changes under – • Manage Market & Reliability Data & Modeling • Manage Operations Support & Settlements

Milestone Type	Milestone Name	Dates	Status
Board Approval	Board Approval	N/A	
BPMs	BPMs	N/A	
External BRS	Post External BRS	Nov 14, 2016	✓
Tariff	Tariff	N/A	
Config Guides	Config Guide	N/A	
Tech Spec	Publish Tech Specs	Nov 02, 2016	✓
Market Simulation	Phase 2 - MRI-S Metering Enhancements	Mar 13, 2017 - Jun 16, 2017	✓
Production Activation	Phase 1 - ACL Groups	Mar 10, 2017	✓
	Phase 2 - MRI-S Metering Enhancements	Jul 11, 2017	
	OMAR Decommission	Sep 1, 2017	

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2017 – RIMS Functional Enhancements

Project Info	Details/Date	Status
Application Software Changes	Functional enhancements resulting from the Customer Partnership Group CPG. More details to be provided in the future.	
BPM Changes	Generator Interconnection and Deliverability Allocation Procedures Generator Interconnection Procedures Managing Full Network Model Metering Generator Management Transmission Planning Process	
Customer Partnership Group	10/16/15	✔
Application and Study Webinar	3/31/16	✔

Milestone Type	Milestone Name	Dates	Status
Board Approval	Board approval not reqiured	N/A	
BPMs	Generator Interconnection and Delivery Allocation	Apr 29, 2016	✔
External BRS	External BRS not Required	N/A	
Tariff	No Tariff Required	N/A	
Config Guides	Configuration Guides not required	N/A	
Tech Spec	No Tech Specifications Required	N/A	
Production Activation	RIMS5 App & Study	Mar 21, 2016	✔
	RIMS 5 Queue Management, Transmission & Generation	Dec 14, 2017	

2017- Black Start and System Restoration Phase 2

Project Info	Details/Date
Application Software Changes	**Settlements:** • Modifications to existing charge codes for Black Start capacity and Black Start allocations will need to occur. **MPP (Market Participant Portal):** • Possibility to use current functionality for receiving RMR invoices for Black Start units.
BPM Changes	**Definitions & Acronyms:** • Revision of the following definitions to match the Tariff language: Ancillary Services (AS), Black Start Generator, Black Start Generating Unit, Interim Black Start Agreement, Reliability Services Costs **Settlements & Billing:** • Pending Settlements review. Revisions will be directly based on Tariff changes.

Milestone Type	Milestone Name	Dates	Status
Board Approval	Board approval	May 1, 2017	✔
BPMs	BPM Changes Required	TBD	
External BRS	External BRS not Required	N/A	
Tariff	Draft tariff - Web Conference to finalize tariff	May 1, 2017 May 15, 2017	✔ ✔
Request for Proposal (RFP)	Posted request for proposal documents	June 15, 2017	✔
RFP bids	Closure of RFP	July 31, 2017	
Production	Awards and final report	December 1, 2017	

Fall 2017 Release – Overview

	Board Approval	BPMs	External BRS	Tariff	Config Guide	Tech Spec	Market Sim	Production Activation
Fall 2017 Release								
EIM Portland General Electric	N/A	N/A	N/A	8/31/17	N/A	N/A	6/6/17 - 7/6/17	10/1/17
Bidding Rules Enhancements - Part B	3/25/16	7/21/17	1/13/17	N/A	N/A	• MF • 4/3/17 • 6/12/17 • 6/30/17 • OASIS • 4/3/17 • 5/2/17 • 6/23/17 • CMRI • 4/17/17 • 4/25/17 • 6/28/17	9/6/17 - 9/29/17	11/1/17
Commitment Cost Enhancement Phase 3		7/21/17	1/6/17 4/10/17 7/6/17	7/27/17	6/23/17			
EIM 2017 Enhancements	N/A	N/A	1/23/17 2/17/17 4/10/17	N/A				
Gas Burn Reports	N/A	N/A	7/29/16	N/A	N/A		N/A	
SIBR UI Upgrade	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

COMPLETE
N/A

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Fall 2017 Release – Updated Tech Specs

System	Version	Published	Notes
OASIS	5.1.1	Jun 23, 2017	Fall 2017 Release • Control Area Generating Capability List -Renamed element GENERATING_UNIT_NAME to GEN_UNIT_NAME Updated ENE_FLEX_RAMP_INPUT Service • Added TEST_INDICATOR element • Added RAMP_TYPE element • Added FLEX_RAMP_REQ_MW element • Removed CHANGE_IN_LOAD_DEMAND element • Removed UC_COMPONENT element
CMRI	3.6.2	Jun 28, 2017	Fall 2017 Release – Third Iteration • Updated Resource Opportunity Cost Request to add marketType element • Updated Resource Opportunity Cost Response to add schedulingCoordinator element • Updated DailyElectricityPriceIndex • Removed timeperiod element • Added marketType element to request and response • Added intervalStartTime and intervalEndTime to response • Updated GasBurnResourceData and GasBurnSummaryData Response schema's gasBurn element type to float • Updated EIMEntityMarketBaseSchedules Request and Response to add resourceType element • Updated MarketBaseSchedules Request and Response to add resourceType element
Master File	4.1.1	Jun 30, 2017	Replace CT Start Count with Implied Starts. Remove Energy Adder Type, Run Hours Adder Type, and Start Adder Type. Market Ramp Rate (Resource and Config) applies to Operational, Operating Reserve, and Regulation Ramp types.

Fall 2017 – EIM Portland General Electric

Project Info	Details/Date
Application Software Changes	Implementation of Portland General Electric as an EIM Entity.
BPM Changes	EIM BPM will be updated to reflect new modeling scenarios identified during PGE implementation and feedback from PGE.
Market Simulation	PGE continues Day in the Life and unstructured scenario testing in a non-production environment in preparation for Market Simulation.
Parallel Operations	August 1 – September 30, 2017

Milestone Type	Milestone Name	Dates	Status
Tariff	File Readiness Certification	Aug 31, 2017	
Market Sim	Market Sim Window	Jun 6, 2017 – Jul 6, 2017	
Parallel Operations	Parallel Operations Window	Aug 1, 2017 – Sep 30, 2017	
Production Activation	EIM - Portland General Electric	Oct 01, 2017	

California ISO

Fall 2017 - Bidding Rules Enhancements – Part B

Project Info	Details/Date

Application Software Changes	• **Master File:**
	    • Electric Region added to GRDT as non-modifiable
	
	• **CMRI:**
	    • Resource-level monthly EPI (calculated on daily basis) based on wholesale or retail electric region type.
	
	• **CAISO.COM:**
	    • Only publish total monthly fuel region GPI (existing) and eliminate publishing the monthly fuel region GPI components as PDF file. (public information)

Business Process Change	• Manage Transmission & Resource Implementation • Manage Entity & Resource Maintenance Updates • Manage Full Network Model Maintenance
BPMs	Market Instruments

Milestone Type	Milestone Name	Dates	Status
Board Approval	BOG Approval	Mar 25, 2016	✓
External BRS	Post External BRS	Jan 13, 2017	✓
BPMs	Post Draft BPM changes	July 21, 2017	
Configuration Guides	Prepare Draft Configuration Guides	N/A	
Tech Spec	Publish MF Tech Specs Publish updated MF Tech Specs	Apr 03, 2017 Jun 30, 2017	✓ ✓
	Publish CMRI Tech Specs Publish updated CMRI Tech Specs	Apr 25, 2017 Jun 28, 2017	✓ ✓
Market Simulation	Market Simulation window	Sept 6, 2017 – Sept 29, 2016	
Production Activation	Bidding Rules Part B	Nov 01, 2017	

California ISO

Project Info	Details/Date

Application Software Changes	**Scope:**
	1. Clarify use-limited registration process and documentation to determine opportunity costs
	2. Determine if the ISO can calculate opportunity costs
	   • ISO calculated; Modeled limitation Start/run hour/energy output
	   • Market Participant calculated; Negotiated limitation
	3. Clarify definition of "use-limited"
	4. Change Nature of Work attributes (Outage cards)
	   • Modify use-limited reached for RAAIM Treatment
	   • Allow PDR to submit use-limit outage card for fatigue break.
	5. Market Characteristics
	   • Maximum Daily Starts
	   • Maximum MSG transitions
	   • Ramp rates
	Impacted Systems:
	  1. Master File: Set use-limited resource types and limits; Set market-based values
	  2. ECIC: Process use limited resource input values for and Receive opportunity cost adders from opportunity cost tool
	  3. CIRA: RAAIM exempt rule for "use-limited reached"
	  4. CMRI: Publish opportunity cost
	  5. IFM/RTN: Use market-based values MDS, MDMT and RR
	  6. SIBR: Add Opportunity cost adders on bid caps, remove daily bid RR
	  7. MasterFile: Set use-limited resource types and limits; Set market-based values
	  8. OMS: "Use-Limited Reached" nature of work attribute for Generation Outage Card
	  9. Settlements: Publish the actual start up, run hour and energy output for the use-limited resources
	  10. Opportunity cost calculator (OCC): Calculate and publish opportunity costs for start-up, MLC and DEB

BPM Changes	Market Instruments, Outage Management, Reliability Requirement, Market Operations
Business Process Changes	• Manage Market & Reliability Data & Modeling • Manage Markets & Grid

Milestone Type	Milestone Name	Dates	Status
Board Approval	Board of Governors (BOG) Approval	Mar 25, 2016	✓
BPMs	Post Draft BPM changes	Jul 21, 2017	
External BRS	Post External BRS	Jan 06, 2017	✓
	Post Updated External BRS	Jul 06, 2017	
Tariff	Post Draft Tariff	Jul 27, 2017	
	File with FERC	TBD	
Config Guides	Config Guide	Jun 27, 2017	✓
Tech Spec	Publish ISO Interface Spec (Tech spec) – MF	Apr 03, 2017	✓
	Publish Updated ISO Interface Spec (Tech spec) – MF	Jun 30, 2017	✓
	Publish ISO Interface Spec (Tech spec) – CMRI	Apr 17, 2017	✓
	Publish Updated ISO Interface Spec (Tech spec) – CMRI	Jun 28, 2017	✓
Market Sim	Market Sim Window	Sept 6, 2017 – Sep 29, 2017	
Production Activation	Commitment Costs Phase 3	Nov 01, 2017	

California ISO

Fall 2017 – EIM Enhancements 2017

Project Info	Details/Date
Application Software Changes	Address enhancements identified by policy, operations, technology, business and market participants. **Scope:** 1. Access & Integration Enhancements: EIM Entity Access in ALFS, MF, OASIS, WebOMS, and CMRI. 2. EIM data report enhancements to support market participant and EIM entity settlements 3. EIM software enhancements 4. Change to ETSR formulation to separate base energy transfer to distinct non-optimizable ETSRs. *Out of Scope:* 1. BAAOP provisioning in AIM 2. Joint Owned Unit/Shared BAA Resource Modeling
BPM Changes	Energy Imbalance Market: Access & Integration, Data Report Outage Management: Access & Integration Market Instruments: Access & Integration, Data Reports Market Operations: Data Report Settlements & Billing: Data Report
Business Process Changes	N/A

California ISO

Fall 2017 – EIM Enhancements 2017

Milestone Type	Milestone Name	Dates	Status
External BRS	Post External BRS	Jan 23, 2017	✓
	Post Updated (v1.2) External BRS to public site	Apr 10, 2017	✓
Tech Spec	Publish Technical Specifications (Master File)	Apr 10, 2017	✓
	Publish Updated Technical Specifications (Master File)	Jun 30, 2017	✓
	Publish Technical Specifications (OASIS)	Apr 07, 2017	✓
	Publish Updated Technical Specifications (OASIS)	Jun 23, 2017	✓
	Publish Technical Specifications (CMRI)	Apr 26, 2017	✓
	Publish Updated Technical Specifications (CMRI)	Jun 28, 2017	✓
Configuration Guides	Post Configuration Guides	June 27, 2017	✓
Market Sim	Market Sim Window	Sep 6, 2017 – Sept 29, 2017	
Production Activation	EIM Enhancements 2017	Nov 01, 2017	

Fall 2017 – Gas Burn Report

Project Info	Details/Date
Application Software Changes	**CMRI** - implement ISO Market software functionality to calculate and present gas burn estimates to gas companies serving electric generation located within the CAISO BAA **OASIS** - Control Area Generating Capability List report
Business Process Change	• Develop Infrastructure • Manage Market & Reliability Data & Modeling

Milestone Type	Milestone Name	Dates	Status
Board Approval	BOG Approval	N/A	
BPMs	Post Draft BPM changes	N/A	
External BRS	External Business Requirements	Jul 29, 2016	✓
Tariff	Receive FERC order	N/A	
Config Guides	Configuration Guides	N/A	
Tech Spec	Publish Technical Specifications – CMRI Publish Updated Technical Specifications – CMRI	Apr 26, 2017 Jun 28, 2017	✓ ✓
	Publish Technical Specifications – OASIS Publish Updated Technical Specifications – OASIS	May 02, 2017 Jun 23, 2017	✓ ✓
Market Sim	Market Sim Window	N/A	
Production Activation	GenDB MF Consol and Gas Burn Report	Nov 01, 2017	

California ISO

Fall 2017 – SIBR UI Upgrade

Project Info	Details/Date
Application Software Changes	**SIBR** – The CASIO will be upgrading the underlying SDK platform utilized for displaying the user interface. This latest SDK version will strengthen the security of the SIBR application and will improve compatibility with the latest version of Internet Explorer. It is anticipated no functional changes or API will be impacted by this upgrade.

Milestone Type	Milestone Name	Dates	Status
Board Approval	Board Approval	N/A	
BPMs	Publish Final Business Practice Manuals	N/A	
External BRS	Post Draft BRS	N/A	
Tariff	Receive FERC order	N/A	
Config Guides	Configuration Guide	N/A	
Tech Spec	Publish Tech Specs	N/A	
	Technical Specifications	N/A	
MAP Stage	System available in MAP Stage	Sep 18, 2017 - Sep 29, 2017	
Production Activation	SIBR UI Upgrade	Nov 01, 2017	

Fall 2017 – RAAIM Implementation Update

Project Info	Details/Date
Application Software Changes	**RAAIM (Resource Adequacy Availability Incentive Mechanism)** – California ISO intends to file a petition with the Federal Energy Regulatory Commission for limited tariff waiver of CAISO tariff section 40.9.6 to forego assessing any RAAIM charges for the period April 1, 2017 through December 31, 2017. California ISO proposes to include updated charge codes for RAAIM with the 2017 Fall Release that would become financially binding on January 1, 2018. This would provide market participants with a two month period to review their settlement statements and assess the application of RAAIM before becoming it becomes financially binding.

Milestone Type	Milestone Name	Dates	Status
Tariff	File petition with FERC – waiver filing	TBD - July	
	Receive FERC decision (anticipated date)	TBD	
Penalties and Incentives	Reverse out all RAAIM penalties and incentives	April 1, 2017 – Dec 31, 2017	
Configuration Guides	Update Configuration Guide	TBD	
Production Deployment	Implement and deploy into Production in advisory mode revised charge codes	Nov 1, 2017	
Review Period	Financially non-binding review period for settlement statements based on revised charge codes and to assess the application of RAAIM before becoming financially binding	Nov 1, 2017 – Dec 31, 2017	
Production Activation	New charge codes – revised RAAIM penalties and incentives become financially binding	Jan 1, 2018	

California ISO

Spring 2018 – EIM Idaho Power Company

Project Info	Details/Date
Application Software Changes	Implementation of Idaho Power Company as an EIM Entity.
BPM Changes	EIM BPM will be updated if needed to reflect new modeling scenarios identified during Idaho Power implementation and feedback from Idaho Power.
Market Simulation	The ISO approved the Idaho Power network model and continues to make progress integrating the Idaho model into the ISO non-production environment in preparation for integration testing.
Parallel Operations	February 1, 2018 – March 30, 2018

Milestone Type	Milestone Name	Dates	Status
Tariff	File Readiness Certification	Feb 28, 2018	
Market Sim	Market Sim Window	Dec 01, 2017 - Jan 31, 2018	
Parallel Operations	Parallel Operations Window	Feb 01, 2018 - Mar 30, 2018	
Production Activation	EIM - Idaho Power	Apr 04, 2018	

Spring 2018 – EIM Powerex

Project Info	Details/Date
Application Software Changes	Implementation of Powerex as an EIM Entity.
BPM Changes	EIM BPM will be updated if needed to reflect new modeling scenarios identified during the Powerex implementation.
Market Simulation	The ISO and Powerex have developed a plan for integrating incremental changes into the ISO full network model in preparation for integration testing.
Parallel Operations	February 1, 2018 – March 30, 2018

Milestone Type	Milestone Name	Dates	Status
Tariff	File Readiness Certification	Feb 28, 2018	
Market Sim	Market Sim Window	Dec 01, 2017 - Jan 31, 2018	
Parallel Operations	Parallel Operations Window	Feb 01, 2018 - Mar 30, 2018	
Production Activation	EIM - Powerex	Apr 04, 2018	

Project Info	Details/Date

Application Software Changes	Developments under consideration include:
	
	Scope:
	Redesign of Replacement Rule for System RA and Monthly RA Process.
	• RA Process and Outage Rules for implementation for 2017 RA year.
	• CSP Offer Publication (RSI 1A scope)
	• Local and system RA capacity designation
	• RA showing requirements for small load serving entities (LSEs)
	• RA showing tracking and notification
	
	Impacted Systems:
	
	    • OASIS
	    • Settlements
	    • CIRA
	CIRA:
	• Modifications to the RA and Supply Plan to show breakdown of local and system. Validation rules need to be updated.
	• Update planned/forced outage substitution rules
	• Allow market participants to select how much system/local MWs to substitute.
	• Modification of UI screens to accommodate system/local MW split.
	• Enhance system to allow exemption from submission of RA Plans for LSE that have a RA obligation < 1 MW for a given capacity product.
	
	Settlements:
	• Splitting local from system in upstream RA system could potentially impact the RAAIM calculation.

BPM Changes	• Reliability Requirements: Changes to the monthly RA process • Settlements and Billing
Business Process Changes	**Manage Market & Reliability Data & Modeling** - Manage Monthly & Intra-Monthly Reliability Requirements - Manage Yearly Reliability Requirements

California ISO

Spring 2018 - Reliability Services Initiative 2017

Milestone Type	Milestone Name	Dates	Status
Board Approval	Board Approval	May 12, 2015	✔
BPMs	Post Draft BPM Changes - Reliability Requirements	Dec 15, 2017	
	Post Draft BPM Changes - Settlements & Billing	Aug 30, 2017	
External BRS	Post Updated External BRS v1.1 (RSI 2)	Apr 07, 2017	✔
	Post Updated External BRS v1.3 (RSI 1B)	Mar 03, 2017	✔
	Post RSI 2017 External BRS v2.0	Apr 19, 2017	✔
Tariff	File Tariff	Q3 2017	
Config Guides	Config Guide	Jun 23, 2017	✔
Tech Spec	Publish Technical Specifications	Apr 03, 2017	✔
Market Sim	Market Simulation	Dec 19, 2017 - Jan 25, 2018	
Production Deployment	Production Deployment	Feb 13, 2018	
Production Activation	Production Activation	Apr 01, 2018	

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Spring 2018 – Demand Response System (DRS) Replacement

Project Info	Details/Date
Application Software Changes	Replace DRS by migrating functions to existing applications: • DR meter data submission moves from DRS to MRI-S • Direct submission of DR Performance results eliminating baseline calculations
BPM Changes	TBD
Business Process Changes	TBD

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