

Market Simulation Call - Fall 2020 Release

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August 31, 2020

Recordings

Calls and webinars are recorded for stakeholder convenience, allowing those who are unable to attend to listen to the recordings after the meetings. The recordings will be publicly available on the ISO web page for a limited time following the meetings. The recordings, and any related transcriptions, should not be reprinted without the ISO's permission.



Agenda

- MAP Stage Availability
- Fall 2020 Release Market Simulation Initiatives & Timelines
- Initiatives
 - Energy storage and distributed energy resources phase 3
 - Excess behind the meter production
 - Market settlement timeline transformation
 - Automated Dispatch System (ADS) replacement
 - FERC Order No. 841 requested adjustments
 - Commitment costs and default energy bid enhancements
 - Commitment cost enhancements tariff clarifications
 - Dispatch operating target tariff clarification
- Known Issues ADS
- Known Issues DRRS
- Next Steps



Fall 2020 Release MAP Stage Availability

- Refer to MAP Stage portal https://portalmap.caiso.com for system availability information
- Current MAP Stage Maintenance
 - None
- Upcoming MAP Stage Maintenance
 - Mon 8/31: MF API brief interruption finished
 - Thu 9/3-Fri 9/4: ADS UI/API
 - ADS UI closure, system will be unavailable
 - ADS API brief interruption
 - 9/14-9/18: CMRI UI/API for EIM Enhancements 2020 deployment Closure, system will be unavailable
- MAP Stage Weekly Maintenance Window
 - Friday



Fall 2020 Release Market Simulation Initiatives & Timelines

Fall 2020 Release hitiatives	Start Date	Start Date (Trade Date)	End Date	Structured Simulation Start (Trade Date)
Fall 2020 Release Market Simulation Phase 1	0727/20	0728/20	0904/20	0811/20
Automated Dispatch System (ADS) eplacement				0811/20 Completed) Rerou on 818 per NP request - Complete
Commitment osts and effault energy bd enhancements				NA
Dispatch p erating tr get tariff tarification				0812/20 Completed)
Energy storage and distributed energy esources base 3				0 8 9/20 (Complete) Rera on 92
ERC Oder No. &1 equested adjustments				0812/20 Settlement statement published)
Ommitment ost chancements tariff tarifications				NA
Fall 2020 Release Market Simulation Phase 2	0727/20	0728/20	0 91 8/20	0 & 5/2 0
Market settlement timeline transformation				0825/20 (TD 825 nder Settlements pocessing)
Excess behind the meter production				025/20 (TD 25 under Settlements pocessing)

Market Simulation Plan:

http://www.caiso.com/Documents/MarketSimulationPlan-Fall2020Release.pdf



Energy storage and distributed energy resources phase 3

- Timeline: July 27 September 04
- Structured: August 19 Complete (Rerun on 9/2)
- Setup needed:
 - PDR-LSR Curtailment.
 - If market participant wants to see only energy award, then, submit very cheap energy bids
 - If market participant wants to see AS award, say Spin, submit very expensive energy bids and 0\$ Spin bid
 - PDR-LSR Consumption.
 - Avoid submitting large negative energy bid. Suggested bid around \$ -1

Structured Scenarios document -

http://www.caiso.com/Documents/ESDER3MarketSimulationScenariosFall2019.pdf

Training -

http://www.caiso.com/Documents/EnergyStorage DistributedEnergyResources Phase3B.pdf



Excess behind the meter production

Timeline: July 27 – September 18

Structured: August 25

- Note:
 - MSTT cutover TD 8/24/20 (Corresponds to Production TD 1/1/21)
 - Phase 2 (MSTT, EBTMP) Structured Scenarios first Settling TD 8/25
 - MP needs to submit meter data by 8/28 for initial and by 9/2 for Recalc statement
 - On 8/31, ISO terminated submitted EBTMP values from Settlements only for TD 8/25 to execute SS#1 in order to demonstrate the use of only gross load "LOAD" data for the initial statement processing
 - EBTMP meter data was removed from Settlements only to exclude from initial statement and this submitted EBTMP meter data will be readded to Settlements for processing of the recalc statement
 - Submitted EBTMP meter data is still able to be retrieved in MRI-S
 - Please submit EBTMP values for TD 8/25 by 9/2 for SS#2 to include in Recalc
 - OASIS: EBTMP report will have data for TD 8/25 when the Settlements Recalc has been processed

Structured Scenarios document -

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

Training - http://www.caiso.com/Documents/Presentation-Excess-Behind-Meter-Production-Training.pdf



Market settlement timeline transformation

- Timeline: July 27 September 18
- Structured: August 25
- Note:
 - MSTT cutover TD 8/24/20 (Corresponds to Production TD 1/1/21)
 - Phase 2 (MSTT, EBTMP) Structured Scenarios first Settling TD 8/25

Structured Scenarios document - http://www.caiso.com/Documents/MarketSimulationScenarios sMarketSettlementTimeline.pdf

Training - http://www.caiso.com/Documents/Presentation-MarketSettlementsTimelineTransformationTraining.pdf



Automated Dispatch System (ADS) replacement

- **Timeline**: July 27 September 04
- Structured: August 11 (Completed)

Rerun on 8/18 per Market Participant Request - Complete

Structured Scenarios document - http://www.caiso.com/Documents/MarketSimulationScenarios-
-ADSReplacement.pdf

Training -

- http://www.caiso.com/Documents/AutomatedDispatchSyste mReplacementPart1.pdf
- http://www.caiso.com/Documents/AutomatedDispatchSyste mReplacementPart2.pdf



ADS Replacement – Cutover Activities At a Glance

Mlestone Date	Activity	MAPStage	S tage	Production
7/27/2020	New Code Available	New ADS UI ADS API V8 Begin Market Sim	-	-
7/27/2020	Hard Cut-Over	ADS API V6	-	-
1 09/01/2020	New Code Available	-	New ADS U ADS API V8 Begin Parallel Operations	-
1 09/01/2020	Hard Cut-Over	-	ADS API V6	-
1 09/04/2020	Mlestone	End Market Sm	-	-
œ/30/2020	Mlestone	-	End Parallel Operations	-
10/1/2020	New Code Available	-	-	New ADS UI ADS API V8 Production Go-Live
10/1/2020	Hard Gut-Over	-	-	ADS API V6
11/04/2020	Hard Gut-Over	Current ADS Delphi Client	Current ADS Delphi Client	-
œ/01/2021	Hard Gut-Over	-	-	Current ADS Delphi Client



Automated Dispatch System (ADS) replacement (cont.)

Even for use of existing ADS API URL and version (v7), you may need to whitelist the new ADS API IPs as access to the v7 will redirect to the new IPs.

	MAP-STAGE	STAGE	RODUCTION
API Existing URL	https://adsmap.caiso.com:447/	https://adsstage.caiso.com:447	https://ads.caiso.com:447/
API Existing Ps	12.200.60.164	12.200.60.237	12.200.60.98
		12.200.60.238	12.200.60.99
			12.231.58.98
			12.231.58.99
API New Additional Ps	4 5.42.17.165	4 5.42.16.51	45 .42.16.51
	45.42.23.165	45.42.22.51	45 .42.22.51
U Existing URL	https://adsmap.caiso.com:447/	https://adsstage.caiso.com:447	https://ads.caiso.com:447/
U Existing P	12.200.60.164	12.200.60.237	12.200.60.98
		12.200.60.238	12.200.60.99
			12,231.58.98
			12.231.58.99
U New Additional URL	https://ads.map.caiso.com/	https://ads.stage.caiso.com/	https://ads.prod.caiso.com/
U New Additional P	45.42.17.130	45.42.17.16	45.42.16.16
	45.42.23.130	45.42.23.16	45.42.22.16



ADS Replacement – Data availability – During Parallel Operations

- During parallel operation Data for new functionalities (such as Follow DOT Flag, Operating instructions, Un announced AS TEST, RTCD Commitment) will not be available as we will stream production data to parallel environment.
- For those new functionalities data will be available in MAPStage.



FERC Order No. 841 requested adjustments

- Timeline: July 27 September 04
- Structured: August 12 (Settlement statement published)

Structured Scenarios document - http://www.caiso.com/Documents/FERC841RequestedAdjustm entsMarketSimulationStructuredScenariosFall2020.pdf

Training - http://www.caiso.com/Documents/FERC841Training.pdf



Commitment Costs and Default Energy Bid Enhancements

Timeline: July 27 – September 04

Training - http://www.caiso.com/Documents/Presentation-CommitmentCosts-DefaultEnergyBidEnhancements.pdf



Commitment cost enhancements tariff clarifications

• Timeline: July 27 – September 04



Dispatch operating target tariff clarification

- Timeline: July 27 September 04
- Structured: August 12 (Completed)

Structured Scenarios document - http://www.caiso.com/Documents/MarketSimulationScenarios-
-DispatchOperatingTargetTariffClarification.pdf

Training - http://www.caiso.com/Documents/Presentation-Dispatch-Operating-Target-Clarification-Training-Jul16-2020.pdf



Known Issues - ADS

#	System	Summary	S tatus	Estimated Fix Date
1	ADS	Continuous Alarm Change to repeat every x seconds (ecommend 5 seconds)	Open	94
2	ADS	Trajectory grid shrinks (Grid Auto resize does not work properly)	Open	94
3	ADS	Reset Audio Profile' does not refresh automatically, user needs to refresh or reopen the window	Open	94
4	ADS	Multiple criteria not saved, it only persist the last filter condition when user re-launch the client	Open	94
5	ADS	Advance filter does not persist all the applied filters in several cases	Open	94
7	ADS	Validated' & Validated By' Columns are keep updating for batches other than Operating Instructions'	Open	94
8	ADS	AS TEST column on interval grid shows active for SCs without AS TEST instructions	Open	94
9	ADS	System must categoriæ the Resource type properly for Import/Export Resources(Transaction IDs)	Open	94
10	ADS	Column Picker should sort list of checkboxes alphabetically	Open	TBD



Known Issues - DRRS

#	System	Summary	S atus	Estimated Fix Date
1	DRRS	U: Advanced filter input controls do not automatically dose as the user is dicking from one control to another, causing the controls (date picker, text felds, dropdown lists, etc.) to stack on top of each other. User must dick on the control to make it disappear.	Cpen	TBD
2	DRRS	U: The application disconnect/connect icon and its respective display text are not in-sync: "Onnected where it should display as" Disconnected . impacted.	C pen	TBD



Next Steps

 The next teleconference is scheduled on Thursday, September 3 at 1400 PDT



Reference Slides



Upcoming change for ADS

- Based on several feedback we planned to make some changes for 'FMM AS/EN' from Interval Grid and how it's filter the data when user click on 'Filter Resource' checkbox. Summary is given below:
 - Proposed change:
 - Renamed the 'FMM AS/EN' as 'FMM AS'
 - Checkbox must filter only the operating reserve (Non-zero SR, NR, RU & RD)
 - Notes:
 - For FMM AS, keep processing and displaying all productType (SR, NR, RU, RD, FRU, FRD, LFU, LFD as applicable) for
 - Visual alert (pop-up/dialogue) FMM AS
 - Visual alert (Flashing) No change
 - Audio alert No Change
 - For FMM Energy, keep processing and displaying productType (EN)
 - Visual alert (pop-up/dialogue) FMM Energy
 - Visual alert (Flashing) No Flashing
 - Audio alert No Change
 - The audio alert for FMM energy will still be able to be configured for no alarm, 1 time, or continuous
 - Batch types will remain two separate (batchType = 11 for 'FMM Energy', batchType = 3 for 'FMM AS' ('RT AS') also known as 'AS Awards')
 - The message will show as own message in message history.
 - API remains same (FMM energy dispatches & intertie bid type available)



Market Simulation Issue Management

- Submit all issues to the CIDI case management system
- CIDI tickets must have "Functional Environment" =
 "Market Simulation Fall 2020" to be reviewed by ISO
 SMEs



ISO Market Simulation Support

- Hours: Monday thru Friday 0900-1800 PDT
- ISO's 24x7 Service Desk: (916) 351-2309 (Connectivity
 - UI or API)
 - Issues called in after hours will be worked on during the next business day
- Email: MarketSim@caiso.com



Fall 2020 Release Communication Plan

Schedule

Monday	Tuesday	T hursday
July 27	September 8	July 23, 30
August 3, 10, 17, 24, 31		August 6,13, 20, 27
September 14		September 3 10, 17

Connection Information

Web Conference Information

prompted, select "Call me" and enter the phone number you will use during the call. You will be called by the conference shortly.

- Conference Cal Information



Structured Scenario Registration Details

MP's will need to register their request with the ISO to participate in this simulation via the MarketSim@caiso.com mailbox.

Date of registration July 3, 2020.

We will do our best to accommodate for late registration



Fall 2020 Release MAP Stage Connectivity Testing

- Timeline Phase 1: July 27 August 10
- Timeline Phase 2: July 27 August 10



Energy imbalance market enhancements 2020 - Independent 2020

- Timeline
 - Phase 1: August 31 October 14
 - Phase 2: September 21 October 14
- Structured: N/A market simulation will now be tested as unstructured with a CAISO issued guide for market participants

Structured Scenarios document - http://www.caiso.com/Documents/MarketSimulationScenarios EnergyImbalanceMarket2020Enhancements.pdf



Energy imbalance market enhancements 2020

Syste m	Pha se 1 831	Phase 2 921
ВААФ	 Allow EIM entity override activation for the contingencies up to 15 in NA contingency list Add visibility of other adjacent BAAs ETSR locks and reasons Add Static ETSR transfer data to RTD Dispatch Control Display (ETSR tab). Add Static ETSR transfer data to BAA® ETSR Detail Display (in RTD) In RTD/RTPD Dispatch Control display, in Dispatch Instruction Review table, add columns for UP and DN remaining ramp capacity (5/15 minute respectively). In addition, include the sum of these columns at bottom of table. Example Calculation: RTD UP Ramp = MIN(5MinRampRate, UpperLim-CurrentDispatch] Add Supplemental DOT to VER resources to Dispatch Control displays; Detail: In BAA® RTD/RTPD Dispatch Control, add SUPP DOT column Fix the functionality for Manual Dispatches - users should be able to utilize MSG functions, such as designating a specific configuration, and users should be able to do commitment override EIM Entities have a notification status of market inputs, showing if BAA® received the latest payload of critical market inputs. Example Critical data submissions: (not all inclusive) 	• FixImprove SVG One Lines. Request to be able to view SE and telemetry values for all substation flows and elements
BSAP	 Add Manual Dispatch information to BSAP Resource Bal Viewer. Add any applicable deviations that used in the test to BSAP BAA Bal Viewer. For the Bid Range Capacity Test Results report, Requirement Amount Column needs to publish the true requirement, not just the INCREMENTAL/DECREMENTAL requirement 	N/A
RTM	 Publish the data of the MW infeasibility data and ABC Up and Down Dispatches of RTPD/RTD Publish the effective ETSR import and export limits for the market run for RTPD and RTD Support Pump Storage for EIM BAAs 	 Publish the effective load conforming for the market run for RTPD and RTD for Binding and Advisory
CMRI	 Display and publish, download the data of the MW infeasibility data and ABC Up and Down Dispatches of RTPD/RTD For the Bid Range Capacity Test Results report, Requirement Amount Column needs to display and publish, download the true requirement, not just the INCREMENTAL/DECREMENTAL requirement. Only upstream has changes with regards to the data that is sends to CMRI. 	 Display and publish, download the data of the effective load conforming for the market run for RTPD and RTD for 1.CMRI Load Conforming Binding rpt 2. CMRI Load Conforming Advisory rpt



Trouble-shooting tips to access ADS

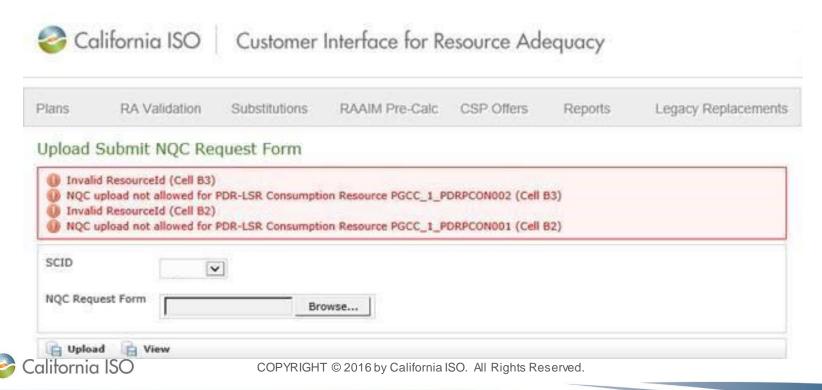
- Check your firewall settings.
- Clear the browser cache & cookies.
- Pop-up blockers on your browser may lead to issues accessing CAISO ADS.
- If you use a pop-up blocker, you must whitelist the CAISO domain (caiso.com)



Energy storage and distributed energy resources phase 3 - CIRA changes



- PDR_LSR Consumption resources are not eligible for Resource Adequacy
- CIRA will not allow a PDR-LSR Consumption resource to submit a request for NQC



Master File GRDT v14 Submissions

- Please submit GRDT v14 to MAP Stage Master File UI/API
- GRDT 14.0
- UI: https://portalmap.caiso.com/mf
- API:
 - https://wsmap.caiso.com/sst/runtime.asvc
 - RetrieveGeneratorRDT_MFRDv5
 - RetrieveGeneratorRDT_MFRDv5_DocAttach
 - SubmitGeneratorRDT_MFRDv5
 - SubmitGeneratorRDT_MFRDv5_DocAttach

Master file	
Project	Change
EDER3B	Add enumeration to GRDT: DR_TYPE of PDR_LSR
ERC841 RA	New CRDT attribute: Apply Wholesale Charge
BM2020	New CRDT attribute: Meter Data hterval
C ther	Remove from GRDT: MN_DISP_LEVEL
CE Tariff	New CRDT attribute: Run of River
Sow DR	New CRDT attribute: Sow DR

Settlements Calendar

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Fall 2020 Release - System Interface Changes - CCDEBE1

S BR					
Poject	c hange y pe	API Service Name & Major Version, Artifacts	MAP Sage	Poduction	Technical Specifications
CDEBE1	Modify	RetrieveCleanBidSet_SIBRv5_AP	√ 0 /16/19	✓ Deploy \$26/20	8.2
CDEBET	Iwuliy	RetrieveCleanBidSet_SIBRv5_DocAttach_AP	W/16/19	Activation 10/1/20	B.2
CDEBE1	Modify	RetrieveCurrentBidResults_SIBRv5_AP	A 0/1C/10	✓ Deploy \$26/20	3.2
C DEBET	IVOCITY	RetrieveCurrentBidResults_SIBRv5_DocAttach_AP	√ 0 /16/19	Activation 10/1/20	
C DEBE1	Modity	SibmitRawBidSet_SIBRv5_AP	√ 0 /16/19	✓ Deploy \$26/20	B .2
CDEBE1		SibmitRawBidSet_SIBRv5_DocAttach_AP	W/16/19	Activation 10/1/20	

0MRI						
Poject	C hange Typ e	U	API Service Name & Major Version, Artifacts	MAP Sage	Poduction	Technical Specifications
MPME CDEBE1		New Incompany Property Patault	RetrieveDefaultBidCurves_CMRIv2_AP RetrieveDefaultBidCurves_CMRIv2_DocAttach_AP	MPME ✓ \$12/19 ©DEBE1 ✓ 1/6/19	MPME 1/13/19 CDEBE1 Deploy \$26/20 Activation 10/1/20	39.4 Release Notes 12
CDEBE1	Modify	New Incompany Property Patault	RetrieveExternalDefaultCommitmentCost_CMRIv1_AP RetrieveExternalDefaultCommitmentCost_CMRIv1_DocAttach_AP	√ 1 /11/19	✓ Deploy 326/20 Activation 10/1/20	39.4 Release Notes 12

http://developer.caiso.com

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Fall 2020 Release - System Interface Changes

ADS			9		
Poject	Change Type	Summary	Technical Specifications	MAP Sage	Poduction
ŊA	Decom	Decommission of exprecated versions	✓ Ø16/20, %.1.0	727/20	D/1/20
ADS Replacement IDDTTC	New	ÆRIWebService & ÆRIResponseWebService &	✓ Ø16/20, %.1.0 ✓ Ø21/20, %.0.0	7 27/20	D/1/20

DRRS	DRRS					
Poject	Change Type	Summary	Technical Specifications	MAP Sage	Poduction	
		SubmitDRLocations_DRRSv2_AP				
		SubmitDRLocations_DRRSv2_DocAttach_AP				
		SubmitDRRegistrations_DRRSv2_AP				
ISD ER 3 B	Modify	SubmitDRRegistrations_DRRSv2_DocAttach_AP		727/20	D. Jan. 614/20	
DUEKSB	Iwaliy	RetrieveDRLocations_DRRSv2_AP	√ \$1/20, 3 .2	7 27/20	l eploy 9 14/20	
		RetrieveDRLocations_DRRSv2_DocAttach_AP				
		RetrieveDRRegistrations_DRRSv2_AP				
		RetrieveDRRegistrations_DRRSv2_DocAttach_AP				

MRI-S					
Poject	Change Type	Summary	Technical Specifications	MAP Sage	Poduction
ВТМР	Modify	For: - NRIS Nater: Submit Nater & - NRIS Nater: Retrieve Nater additionally include BtMP neasurement type values (as negative bad) touch Goss bad and BtMP neter data would associate with same bad Resource D	✓ \$28/20, 2 .5	7 27/20 Page 36	Activation 11/21



Fall 2020 Release - System Interface Changes

Master He							
Project	C hange	Change Type	Summary	Technical Specifications	MAP Stage	Production	
₿DER3B	Add enumeration to CRDT: CR_TYPE of PDR_LSR		RetrieveGeneratorRDT_MFRDv5				
ÆRC841 RA	New CRDT attribute: Apply Wholesale Charge	RetrieveGeneratorRDT_MFRDv5_DocAtta dn ✓		✓ Ø12/20, v6.1	727/20	0/4/20	
EM2020	New CRDT attribute: Meter Data Interval	Modify	SubmitGeneratorRDT MFRDv5	✓ 5/28/20, √ 6.0	7/27/20	D/1/20	
O ther	Remove from GRDT: MIN_DISP_LEVEL		SubmitGeneratorRDT MFRDv5 DocAttac				
CE Tariff	New CRDT attribute: Run of River		h				
Slow DR	New GRDT attribute: Sow IR						

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Fall 2020 Release - System Interface Changes

Q MRI						
Project	Change Type	Summary	Techn	ical Specifications	MAP \$ age	Production
ŊΆ	Decom	Decommission of deprecated versions	✓	5 /29/20, 3 .9.5	7/27/20	91/20
EM2020	11/40/1/1	RetrieveEIMInfeasibility_CMRIv1_AP RetrieveEIMInfeasibility_CMRIv1_DocAttach_AP	✓	<i>5</i> /29/20, v 3.9.5	7/27/20	10/1/20
EM2020	I	RetrieveLoadConfirming_CMRIv1_AP RetrieveLoadConfirming_CMRIv1_DocAttach_A P	✓	\$29/20, v 3.9.5	7/27/20	10/1/20
EM2020	New	Available Balance Capacity		7/2/20	7/27/20	10/1/20

OASIS					
Project	Change Type	Summary	Technical Specifications	MAP \$ age	Production
ŊſA	Decom	Decommission of deprecated versions	✓ 5/29/20, √5.1.13	7/27/20	91/20
ВТМР	New	ENE_ EBTMP_PERF_DATA	✓ Ø22/20 ✓ Ø29/20, Ø.1.13	7/27/20	Activation 1/1/21

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Introducing ISO Settlements Twitter Tool for Market Sim Updates

- Market sim updates will be made available
- Note: Will not replace any existing media communications
- Please take the opportunity to follow <u>@ISOSettlements on Twitter</u> by downloading the Twitter application to **any mobile device**
- Twitter feed can be accessed on any web browser
- No account required to view the Twitter feed and posts



Updates that are tweeted

Tweets Information

- Market Smulation MAP-STAGE Master File UI and API available for Fall 2020 Release connectivity
- http://www.caiso.com/Pages/documentsby group.aspx@roupID=25991DEB-2F25-4976-8958-4F04745A59AA

Submit updates to us: twitter.com/isosettlements.com





Recent Tweets



Follow us on Twitter @ISO Settlements





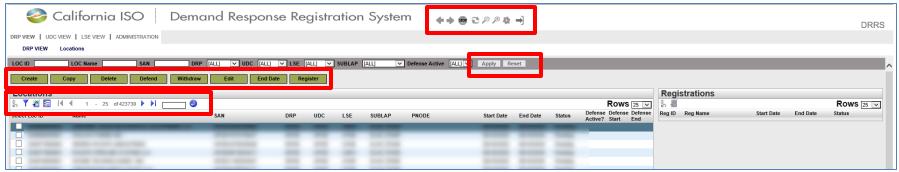
Reminder: DRRS UI Upgrade features

- Image icons, control buttons, label fonts have a new different color scheme
- The "Apply" and "Reset" buttons appear on the far right side of the screen, as opposed to appearing after the last display input filter
- The data grid output export filename no longer contain the user certificate name
- The application window is not maximized by default, when launching the application
- The data grid columns are no longer adjustable
- <u>Technical User Group Presentation 623</u>



Reminder: DRRS UI Upgrade features

Current Production/Pre-Fall 2020 Release



Fall 2020 Release currently in MAP-Stage:

