



California ISO

# Reliability Requirements Customer Partnership Group

July 2017

*Gautham Katta*  
*Operations Lead*

*Sandhya Balasubramanian*  
*Business Solutions Manager*

# Customer Partnership Group

## Scope and Objective

- Created in response to customer's request to have more involvement in the planning, design and usability validation phases of ISO application development
- Provide an open interactive partnership forum to identify potential opportunities to improve the overall customer experience
- Share ideas, opinions and provide feedback
- Discuss issues and concerns, and answer customer questions
- All ideas are welcome and will be considered based upon feasibility, prioritization and timeline constraints. Not all ideas may be feasible to implement
- Meetings vary in frequency to review progress, provide feedback on design and usability and discuss implementation approaches
- Active participation is critical to the CPG success and to improve our customer's experience interacting with ISO applications

# Agenda

- RSI 1B Design Discussion for Changes to:
  - Planned and Forced Outage Substitution
- SC for Supplier role
- Product Backlog

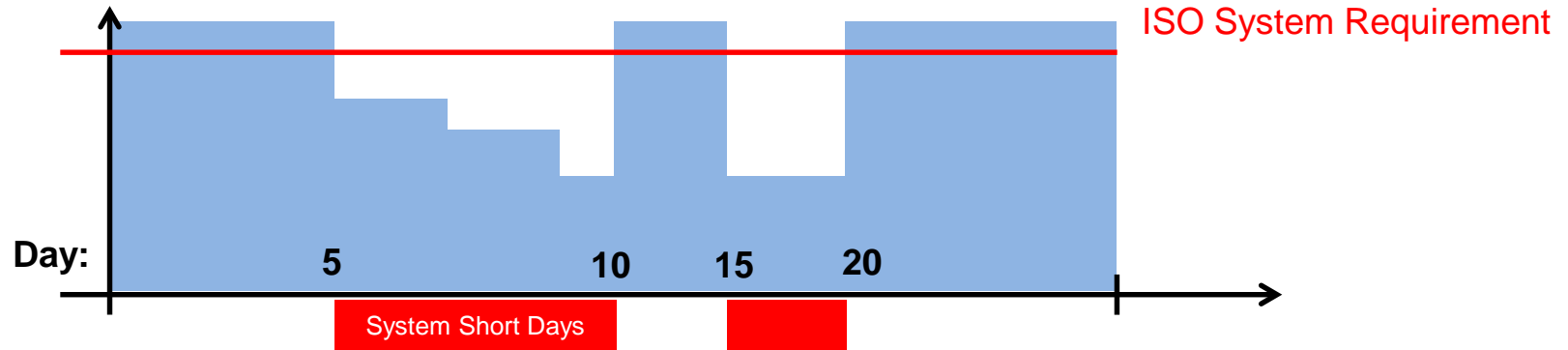
# Planned and Forced Outage Substitution

# Planned Outage Substitution

# Planned Outage Substitution

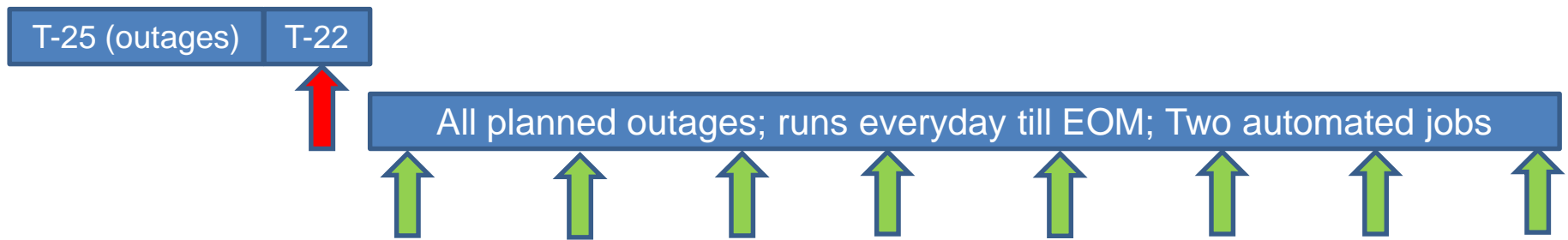
- ISO applies the impact of Planned Outages at T-25 to RA resources (includes CPM)
- On each day, if the ISO total system is short due to Planned Outages, a Planned Outage Substitution Obligation is assigned to suppliers in CIRA.
- Suppliers need to log in to CIRA to view substitution requirement as there is no automatic notification sent out.
- Planned Substitutions are due by T-8 (eight days before start date of the substitution)

# Concept - POSO for Scheduled Generation Outages



- ISO system requirement is the total adjusted obligation; Blue is total RA per day
- Days 5 through 10 & 15 through 20 system is short

# Concept – Planned Outage Analysis



1. Outage analysis runs on T-25 using outages known as of T-25, where T is the start of the RA Month.
2. Substitution requirement assigned on or before T-22
  1. This requirement doesn't change (Initial POSO)
3. Substitution requirement assigned everyday for any change in outages and new outages in system are assessed
4. ISO will display substitution requirement assigned at T-22 (Initial) and change in substitution requirement due to change in outages (Latest)



# Concept – Planned Outage Analysis

- All planned outage substitutions are submitted using the CIRA user interface
- APIs and bulk substitution uploads are not supported
- Substitution RA from planned outages is treated as system RA
  - RA is transferred as system RA to the substitute resource irrespective of the RA designation on the outage resource

# Concept – Planned Outage Analysis

- Substitutions may be canceled if the substitution has not yet commenced (i.e. moved past its DAM submission deadline)
- Substitution may be released if substitution has already commenced AND substitution is still active
- For both cancel and release features, the original resource RA will revert substitution RA back to its initial RA listing

# Forced Outage Substitution

# Local RA

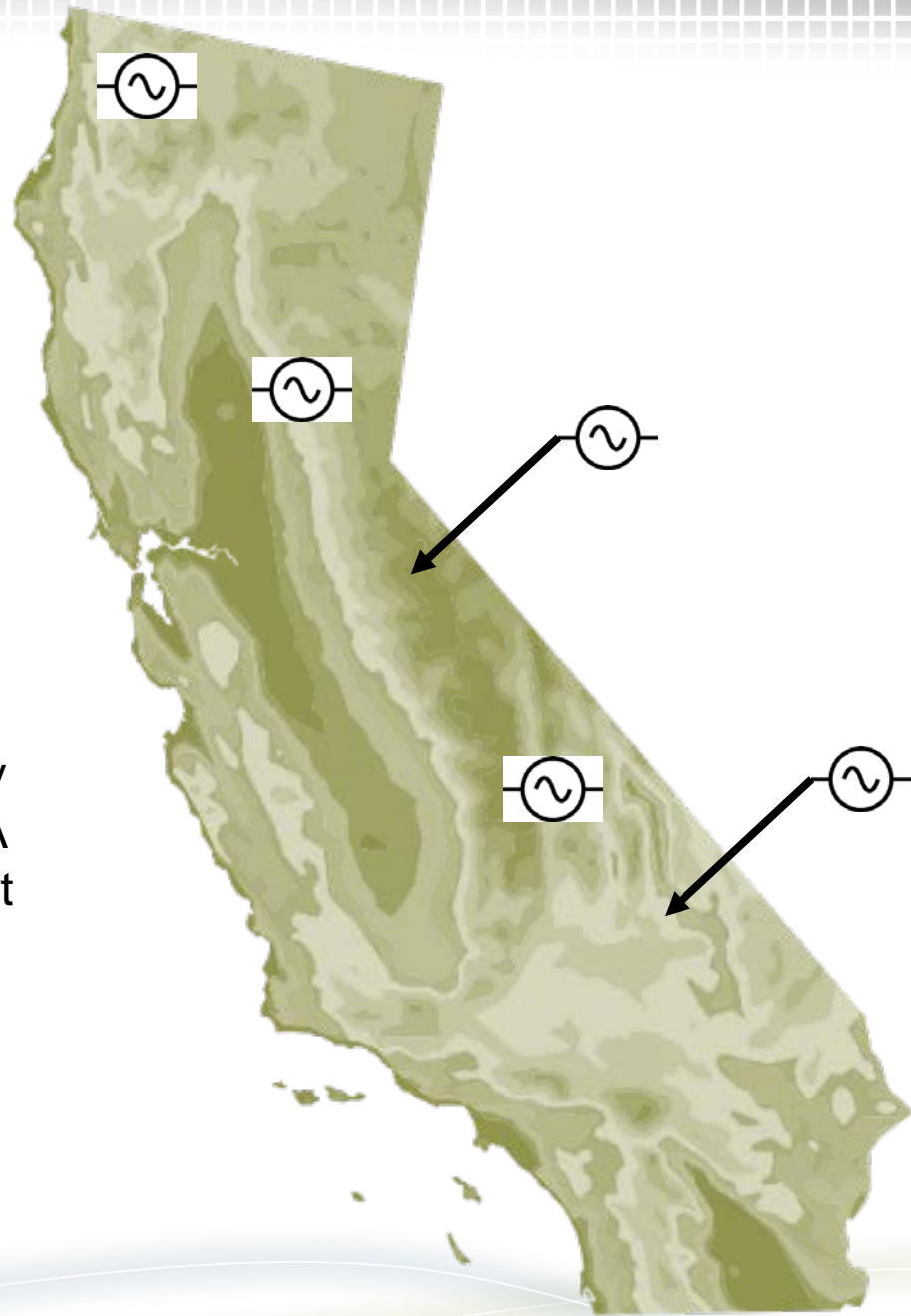
## Local RA

(within any local area)

1. PGE TAC area has 7 local areas
  1. Humboldt,
  2. Bay Area,
  3. North Bay,
  4. Sierra,
  5. Stockton,
  6. Fresno,
  7. Kern
2. SCE TAC area has 2 local areas
  1. Big Creek
  2. LA Basin
3. SDG TAC area has 1 local area
  1. San Diego - IV



# System RA



## System RA

1. Non Local Internal Capacity
  1. Anywhere within the ISO BAA
2. Non Local External Capacity
  1. Outside the ISO BAA if an entity has import allocation

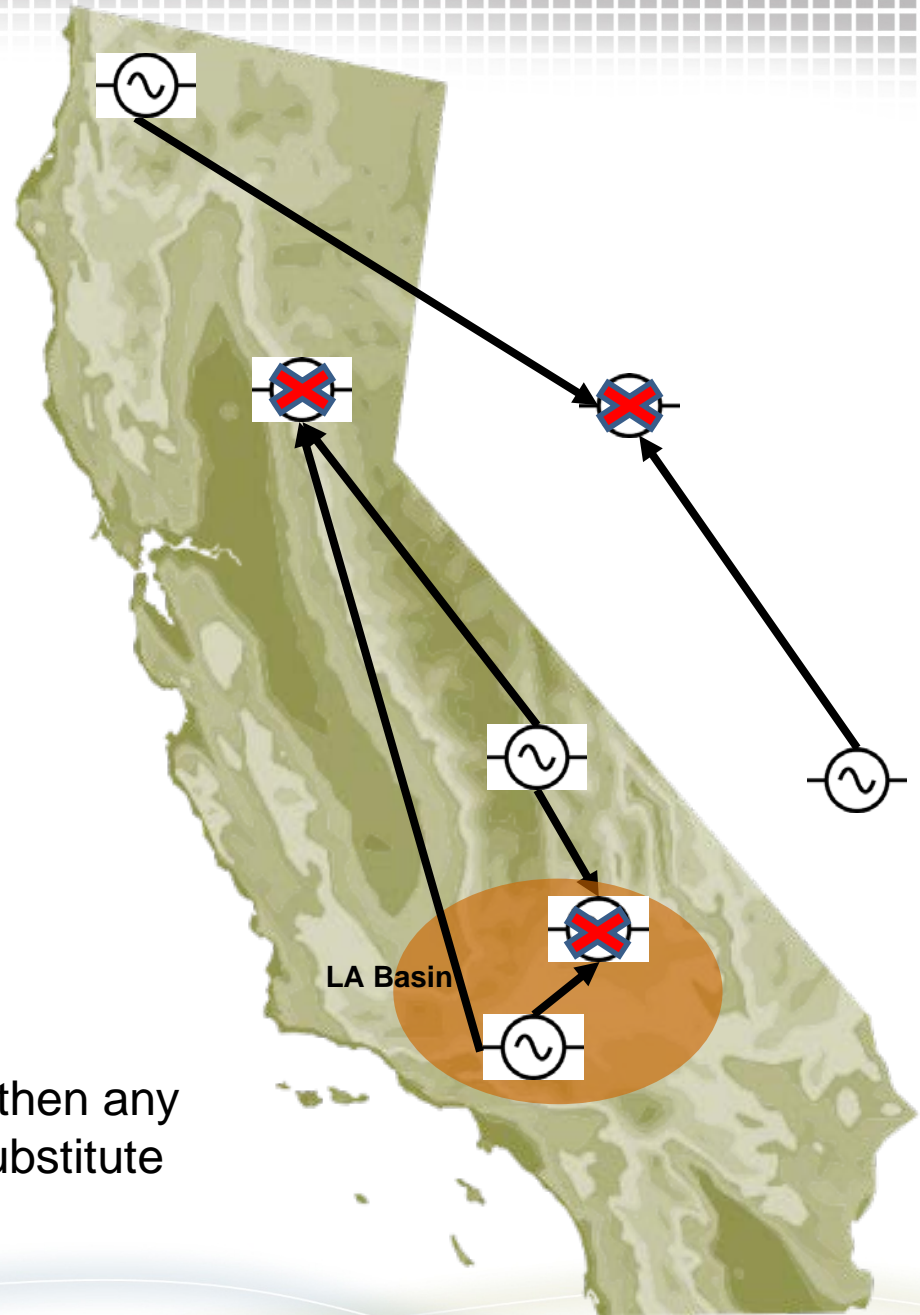
# System RA Substitution

If resource is an internal system resource or if local resource is listed as System RA then any non-RA resource within ISO BAA can be used to substitute the RA resource on outage

*For example,*

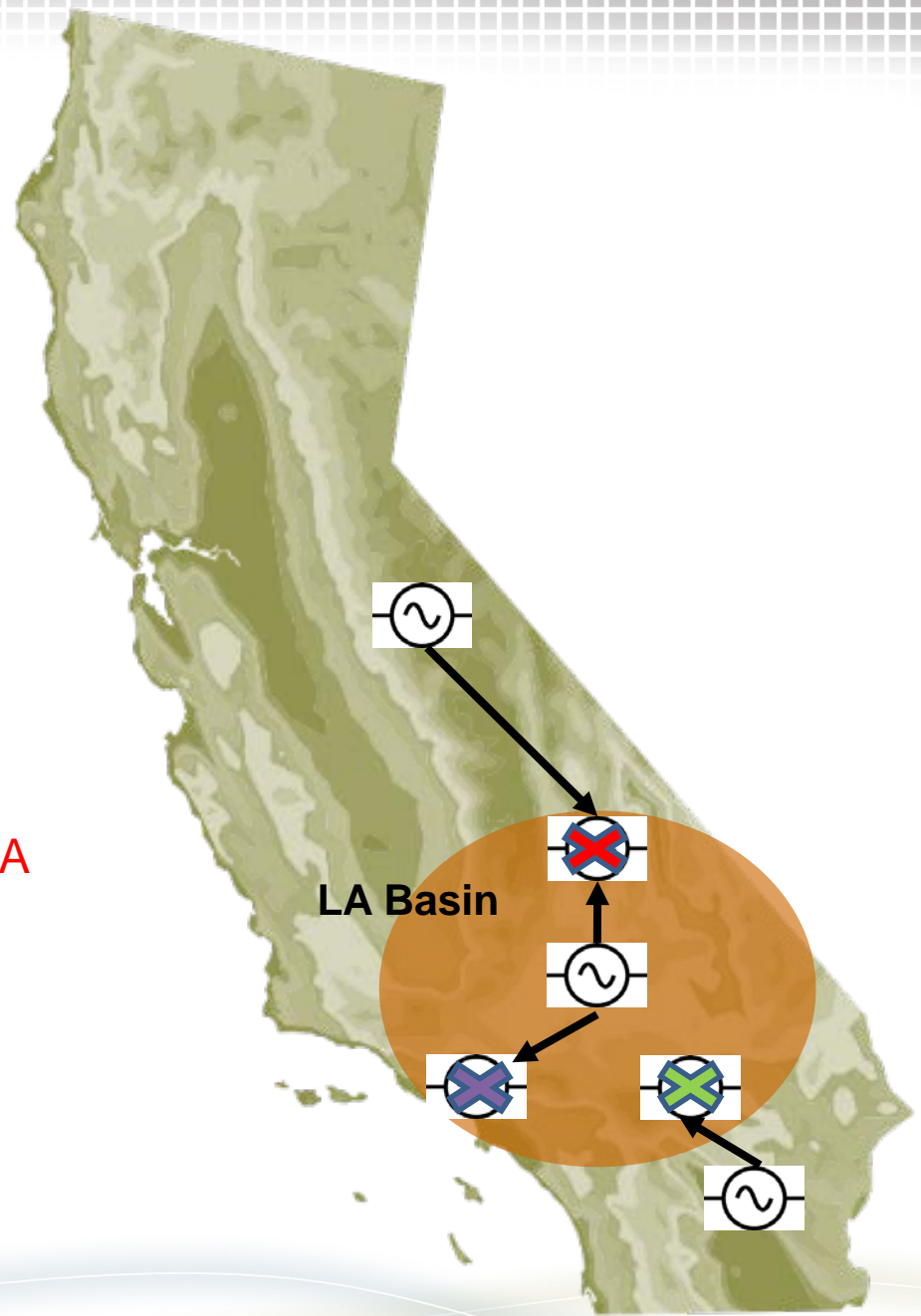
- LA Basin resource is on forced outage which is listed as system RA
  - Unit within LA Basin is used for substitution
  - Internal system resource is used for substitution
- Internal system resource is on forced outage

If resource is an external system resource then any resource within ISO BAA can be used to substitute the RA resource on outage



# Local RA Substitution

- A local area resource on forced outage may be:
  - Listed as local RA
  - Listed as local and system RA
  - Listed as system RA



# Concept – Forced Outage Substitution

- All forced outage substitutions are submitted using the CIRA user interface
- APIs and bulk substitution uploads are not supported
- Substitution RA from forced outages is treated as System RA or Local RA based on Original RA listing



# Concept – Forced Outage Substitution

- Substitutions may be canceled if the substitution has not yet commenced
- Substitution may be released if substitution has already commenced AND substitution is still active
- For both cancel and release features, the original resource RA will revert substitution RA back to its initial RA listing

# Forced Outage Substitution User Interface (UI) Changes

# Forced Outage Create Substitution UI Changes

### Outage Resource Selection

Trade Month:  Trade Year:  Outage ID:   Retro-active Substitution

Resource ID:  Substitution Required?:  Outage Type:  Supplier SC:

Description:

[Link to Search Forced Substitution Request Report](#) [Review Substitution](#)

Users can filter on 1 or more SC IDs

### Outage Information

Select Outage	Res ID	Res Name	Outage ID	Outage Type	Start Date	End Date	Nature of Work	SCID	Substitution Required?	RA Information	
<a href="#">Select</a>	Res A	Res Unit A	123546	Planned	5/13/2015	5/14/2015	ICCP	SC1	Yes	<a href="#">Generic RA</a>	<a href="#">Flex RA</a>
<a href="#">Select</a>	Res A	Res Unit A	123549	Planned	5/1/2015	5/10/2015	RTU/RIG	SC1	No	<a href="#">Generic RA</a>	<a href="#">Flex RA</a>

Link to RA Info Display (RA Resource Info)

### Substitute Resource Selection

Resource ID:  SCID:  Area:   Non-RA Capacity Only

Compatible Only  Third Party Only

Substitution Start Date: mm/dd/yyyy Time:

Physical  ITIES Sub Type:  Market Timeframe:  Substitution End Date: mm/dd/yyyy

Select	RES ID	RES NAME	SCID	RA Information		Outage Info	Area	Compatible	Dispatchable
<a href="#">Add</a>	CAISO_123	CAISO Unit 123	PBS1	<a href="#">Generic RA</a>	<a href="#">Flex RA</a>	<a href="#">View</a>	Bay Area	Yes	Yes
<a href="#">Add</a>	CAISO_124	CAISO Unit 124	PBS1	<a href="#">Generic RA</a>	<a href="#">Flex RA</a>	<a href="#">View</a>	Bay Area	Yes	Yes
<a href="#">Add</a>	CAISO_125	CAISO Unit 125	PBS4	<a href="#">Generic RA</a>	<a href="#">Flex RA</a>	<a href="#">View</a>	LA Basin	No	Yes

Currently, start date is always assumed top of the hour for current date. Moving forward, users can provide a date range for forced substitution.

Outage ID	Outage Type	Nature of Work	Resource ID	Resource Name	SCID	Start Date	End Date
4810445	FORCED	PLANT_TROUBLE	CAISO_125	CAISO Unit 125	PBS1	05/13/2017 00:00:00	05/18/2017 00:00:00

Start DTS	End DTS	NQC	Total RA MW	Local MW	System MW	CPM MW	Dispatchable?	Area
5/1/2015	5/5/2015	25	0	0	0	0	Yes	Bay Area
5/6/2015	5/15/2015	25	15	10	3	2	Yes	Bay Area

# Forced Outage Create Substitution UI Changes for Generic

1. Renamed "Outage MW" to "Curtailement MW"
2. Added Total RA = Local + System + CPM MW

3. Generic RA broken down to Local & System RA MW
4. UI will validate that Local/System/ CPM substitute MW  $\leq$  Orig. resource's corresponding RA MW

Substitute MW						
Day	13	14	15	16	17	18
<b>Resource on Outage: RESOURCE_A   Outage SCID = PBS1</b>						
<b>Curtailement MW</b>	25	25	25	30	30	30
<b>Total RA MW</b>	<b>145</b>	<b>155</b>	<b>135</b>	<b>150</b>	<b>150</b>	<b>145</b>
Local RA MW	80	80	75	90	90	90
System RA MW	50	60	45	55	50	50
CPM MW	15	15	15	5	10	5
<b>Total Cumulative Substitution Cap</b>	<b>145</b>	<b>145</b>	<b>140</b>	<b>145</b>	<b>130</b>	<b>150</b>
Local Cumulative Substitution Cap	80	75	75	100	80	90
System Cumulative Substitution Cap	50	60	50	40	50	50
CPM Cumulative Substitution Cap	15	10	15	5	0	10
<b>CAISO_123   Remove Resource</b>						
Availability MW	175	175	150	150	150	150
Eligible Non-RA Capacity	150	150	125	125	125	125
Local Substitute MW	40	35	35	50	50	50
System Substitute MW	30	30	20	20	10	20
CPM Substitute MW	0	0	0	0	0	0
<b>CAISO_124   Remove Resource</b>						
Availability MW	100	100	100	100	60	60
Eligible Non-RA Capacity	100	100	100	100	30	60
Local Substitute MW	40	40	40	50	30	40
System Substitute MW	20	20	30	10	20	20
CPM Substitute MW	5	0	5	0	0	0
<b>CAISO_125   Remove Resource</b>						
Availability MW	30	30	30	30	30	30
Eligible Non-RA Capacity	30	30	30	30	30	30
Local Substitute MW						
System Substitute MW	0	10	0	10	20	10
CPM Substitute MW	10	10	10	5	0	10

**Submitter Information**

Name  Email  Phone  Notes

# Forced Outage Create Substitution UI changes for Flex RA

Flex RA MW for Forced Only

Flex CPM MW for both Forced or Planned

Flex RA Substitute MW for Forced Only

Flex RA CPM Substitute MW for Forced or Planned

Substitute MW							
Day	13	14	15	16	17	18	
<b>Resource on Outage: RESOURCE_A   Outage SCID = PBS1</b>							
<b>Curtailment MW</b>	25	25	25	30	30	30	
<b>Total RA MW</b>	130	140	120	145	140	140	
RA MW	80	80	75	90	90	90	
CPM MW	50	60	45	55	50	50	
<b>Total Cumulative Substitution Cap</b>	95	85	90	105	80	100	
RA Cumulative Substitution Cap	80	75	75	100	80	90	
CPM Cumulative Substitution Cap	15	10	15	5	0	10	
<b>CAISO_123   Remove Resource</b>							
Availability MW	175	175	150	150	150	150	
Eligible Non-RA Capacity	150	150	125	125	125	125	
Substitute MW	40	35	35	50	50	50	
CPM Substitute MW	0	0	0	0	0	0	
<b>CAISO_124   Remove Resource</b>							
Availability MW	100	100	100	100	60	60	
Eligible Non-RA Capacity	100	100	100	100	30	60	
Substitute MW	40	40	40	50	30	40	
CPM Substitute MW	5	0	5	0	0	0	
<b>CAISO_125   Remove Resource</b>							
Availability MW	30	30	30	30	30	30	
Eligible Non-RA Capacity	30	30	30	30	30	30	
Substitute MW	40	40	40	50	30	40	
CPM Substitute MW	10	10	10	5	0	10	
<b>Submitter Information</b>							
Name	<input type="text"/>	Email	<input type="text"/>	Phone	<input type="text"/>	Notes	<input type="text"/>

Submit

# Forced Outage Review Substitution UI Changes

**Search Substitution Request**

Substitution ID  Original Resource ID  Sub Resource ID  Outage ID  Substitution Status

Trade Month  Trade Year  Substitution Type   Pending  Third Party

Supplier SC   DA  RT

Select	Outage ID	Outage Start Date	Outage End Date	Nature of Work	Sub ID	Original SCID	Original Res ID	Original Res Name	Sub SCID	Sub Res ID	Description	Sub Type	Sub Status	Market Timeframe
<input checked="" type="radio"/>	12345	12/1/2016	12/19/2016	Planned Maint...	654321	SCID 1	CAISO_GEN 1	ISO Gen Unit 1	SCID 1	SUB_GEN 1 SUB_GEN 2 SUB_GEN 3	Test 1-2-3	Generic	Approved	DA
<input type="radio"/>	12345	12/1/2016	12/19/2016	Planned Maint...	654322	SCID 1	CAISO_GEN 1	ISO Gen Unit 1	SCID 2	SUB_GEN 2	Test 1-2-3	Generic	Approved	RT
<input type="radio"/>	12345	12/20/2016	12/31/2016	Planned Maint...	654323	SCID 1	CAISO_GEN 1	ISO Gen Unit 1	SCID 1	SUB_GEN 3	Test 1-2-3	Generic	Cancelled	RT
<input type="radio"/>	12346	12/1/2016	12/15/2016	Planned Maint...	654324	SCID 1	CAISO_GEN 1	ISO Gen Unit 1	SCID 1	SUB_GEN 4	Test 1-2-3	Generic	Rejected	DA
<input type="radio"/>	12347	12/16/2016	12/31/2016	Planned Maint...	654325	SCID 1	CAISO_GEN 1	ISO Gen Unit 1	SCID 1	SUB_GEN 5	Test 1-2-3	Generic	Pending	DA

<< Prev 1 2 3 4 5 6 7 8 9 10 Next >>

- ADDED:
  - Supplier SC filter for users with multiple-SC certificates
  - “Substitution Status” applies to each substituting resource
  - “Original SCID” column (i.e. Supplier SC of Outage Resource)
- REMOVED:
  - “Pending” search filter and Substitution Status column
  - “Sub Status” column for status at the substitution level

# Forced Outage Review Substitution User Interface (UI)

**View Substitution Request**

Outage ID: 12345 | Resource on Outage: CAISO\_GEN 1 | Outage SCID: SCID 1

Generic RA | Flex RA | Outage Info

Day	12/01	12/02	...	12/19
Outage MW	35	35	...	35

SUB\_GEN 1 | SCID 1 | GENERIC | APPROVED

Generic RA | Flex RA | Outage Info

Local Substitute MW	4	6	...	11
System Substitute MW	2	0	...	
CPM Substitute MW	0	0	...	0

SUB\_GEN 2 | SCID 2 | GENERIC | APPROVED

Generic RA | Flex RA | Outage Info

Local Substitute MW	0	6	...	12
System Substitute MW	6	0	...	
CPM Substitute MW	1	0	...	0

Reject | Approve

SUB\_GEN 3 | SCID 2 | GENERIC | PENDING

Generic RA | Flex RA | Outage Info

Local Substitute MW	0	6	...	12
System Substitute MW	1	1	...	0
CPM Substitute MW	0	1	...	0

Reject | Approve

Total Substitution MW	14	14	...	23
Local Cumulative Sub MW	4	12	...	23
System Cumulative Sub MW	9	1	...	0
CPM Cumulative Sub MW	1	1	...	0

Update | Cancel Request

Link to Generic or Flex RA Info pop-up

Link to Generic or Flex RA Info pop-up

Link to Outage Info pop-up

# Planned Outage Substitution Release User Interface (UI) Change



# Planned Substitution Review UI Change

The review screen for planned substitution will house the following functions:

- Search
- Approve
- Reject and
- Release substitutions

Note: Release will not be a common screen for forced & planned substitutions.

# New SC for Supplier Roles

Only the new SC for Supplier read only and read/write access have access to the following screens:

Screen	SC for Supplier Read Only Role	SC for Supplier Read/Write Role
OIA Validation Run Results <ul style="list-style-type: none"><li>MW Impact by Outage</li><li>View Operational RA MW</li></ul>	Read access	Read access
POSO (Assignment)	Read access	Read access
Create Planned Substitution	No access	Edit access
Review Planned Substitution	Read access	Edit access
Release Substitution	<ul style="list-style-type: none"><li>Read access for planned substitutions</li><li>No access to forced substitutions</li></ul>	<ul style="list-style-type: none"><li>Edit access for planned substitutions</li><li>No access to forced substitutions</li></ul>

Retain the existing SC role to access current CIRA screens to perform current functions.

## Product Backlog and Roadmap

[http://www.caiso.com/Documents/CIRARoadmap\\_ProductionBacklogJul242017.xlsx](http://www.caiso.com/Documents/CIRARoadmap_ProductionBacklogJul242017.xlsx)

**Questions?**