



California ISO



RC West

RC West Oversight Committee

Public Session

Nov 15, 2021

1:00 - 2:30 p.m. Pacific

Housekeeping Reminders

- This call is being recorded for informational and convenience purposes only. Please request permission from RC West before reprinting any related transcriptions.
- Materials related to the RC West Oversight Committee are available on www.caiso.com / Stay Informed / RC West.
- If you need technical assistance during the meeting, please send a chat to the event producer.

Agenda

| Time*: | Topic: | Presenter: |
|-------------|---|--|
| 1:00 - 1:05 | Welcome/agenda | Kristina Osborne |
| 1:05 - 1:15 | Roll call | Ben Brandt - Chair |
| 1:15 – 1:55 | RC West Operations Update <ul style="list-style-type: none"> • General operations • Procedures update • RC metrics update | Tim Beach, RC West Kathy Fernandez, CAISO Rachel Melton, CAISO |
| 1:55 – 2:15 | Working Group Updates <ul style="list-style-type: none"> • Customer Onboarding • Data Exchange • Real-Time Operations | Gina Wansor, CAISO Rachel Melton, CAISO Tim Beach, RC West |
| 2:15 – 2:25 | Decisional Item: <ul style="list-style-type: none"> • Formation of Information Security Working Group | Hubert Hafner, CAISO |
| 2:20 – 2:25 | Future agenda items | |
| 2:25 | Public Comment | |
| 2:30 | Public Session Adjourned | |

Committee Member Roll Call

Ben Brandt
Committee Chair

Update: RC West Operations

Tim Beach
Director, Reliability Coordination

Kathy Fernandez
Operations Procedure Control Specialist

Rachel Melton
Operations Compliance Analyst

Operations Update

COVID –

- Phased return to office began in Oct 4th, planned completion is January 18th
- Third Control Room – Continued availability for COVID exposed staff who are symptom free
- Evaluating potential vaccine mandates

RC West Summer Peak Load

- July 9th HE 18
- 120.6 GW

RC West Historical Peak Load

- Aug 18th 2020 HE 18
- 127.6 GW

Energy Emergency Alerts -

October 25th

EEA-1 and 2 (sequential)

- BA lost multiple generators,
- Deployed reserves,
- Fully deployed all available resources and curtailed export schedules
- Requested and received emergency assistance
- Event duration – 68 minutes

Operations Update

Energy Emergency Alerts

2021

- EEA- Watch (4)
- EEA-1 (7)
- EEA-2 (3)
- EEA-3 (3)
- Total = 17

2020

- EEA- Watch (0)
- EEA-1 (26)
- EEA-2 (9)
- EEA-3 (12)
- Total = 47

RC Procedures Update

Recently Published Procedures:

| RC Proc. # | Procedure Title | Status | Description of changes |
|------------|--|-----------------|--|
| RC0100A | RC Desk Area of Responsibility | Published 11/01 | Added City of Redding (RDNG) |
| RC0120A | RC West IRO-010 Data Specification | Published 11/01 | Added and clarified exceptions to data request |
| RC0430 | GMD Operating Plan | Published 11/01 | Periodic Review: Updated rotation of GMD Monitor with SPP taking over in February 1, 2022 and AESO following in 2023 |
| RC9110 | NW Washington Area Import IROL | Published 10/22 | Annual Review: Clarified GMS notification requirements. Minor updates |
| RC9130 | Path 61 /Lugo-Victorville IROL | Published 10/22 | Updates due to resource changes/ retirements |
| RC0120 | Guidelines for RC West IRO-010 Data Specification and Collection | Published 10/1 | Added supporting language for CIP-012 |
| RC9510 | Operating Plan for IPP DC Bi-pole Contingency | Published 10/1 | Updated Emergency Ratings and info related to PST adjustments |
| RC0110 | Communications Protocols | Published 9/02 | Annual Review: no content changes |
| RC0130A | SOL Exceedance Reporting Guideline | Published 9/02 | Added clarification to Section 1 on RC metrics reporting when an SOL exceedance is reported after-the-fact. |
| RC9010 | Unscheduled Flow Mitigation on Qualified Paths | Published 9/02 | Annual Review: No content changes, only minor formatting. |

RC Procedures Update - continued

Recently Published Procedures - continued:

| RC Proc. # | Procedure Title | Status | Description of changes |
|------------|--|-------------------|--|
| RC0470 | Loss of Control Center Functionality | Published 8/19 | Annual Review: Minor formatting and grammar edits only |
| RC0470 B | Evacuation and Loss of Control Center Functionality Checklists | Published 8/19 | Annual Review: Minor format edits only, no content changes |
| RC9000 | Open Loop Procedure | Published 8/19 | Annual Review: Minor formatting only, no content changes |
| RC9030 | Mitigating Forced and Inter-area Oscillations | Published 8/19 | Annual Review: Minor formatting and grammar updates only |
| RC9240 | Bonanza Area Operating Guide | Published 8/19 | New operating guide |
| RC9130 | Path 61/Lugo-Victorville IROL | Published 8/05 | Updated language and communication requirements for clarity |
| RC9220 | WECC Transfer Path 83 (Montana-Alberta Line) | Published 8/05 | Annual Review: Section 4: Added "Path 83" to Bullet 5, sub bullet 1. Minor formatting and grammar updates. |
| RC9710 | El Paso Adjusted Actual Net Interchange | Published 8/05 | Annual Review: Minor formatting and grammar updates. |

RC Procedures Update - continued

Recently Published Procedures - continued:

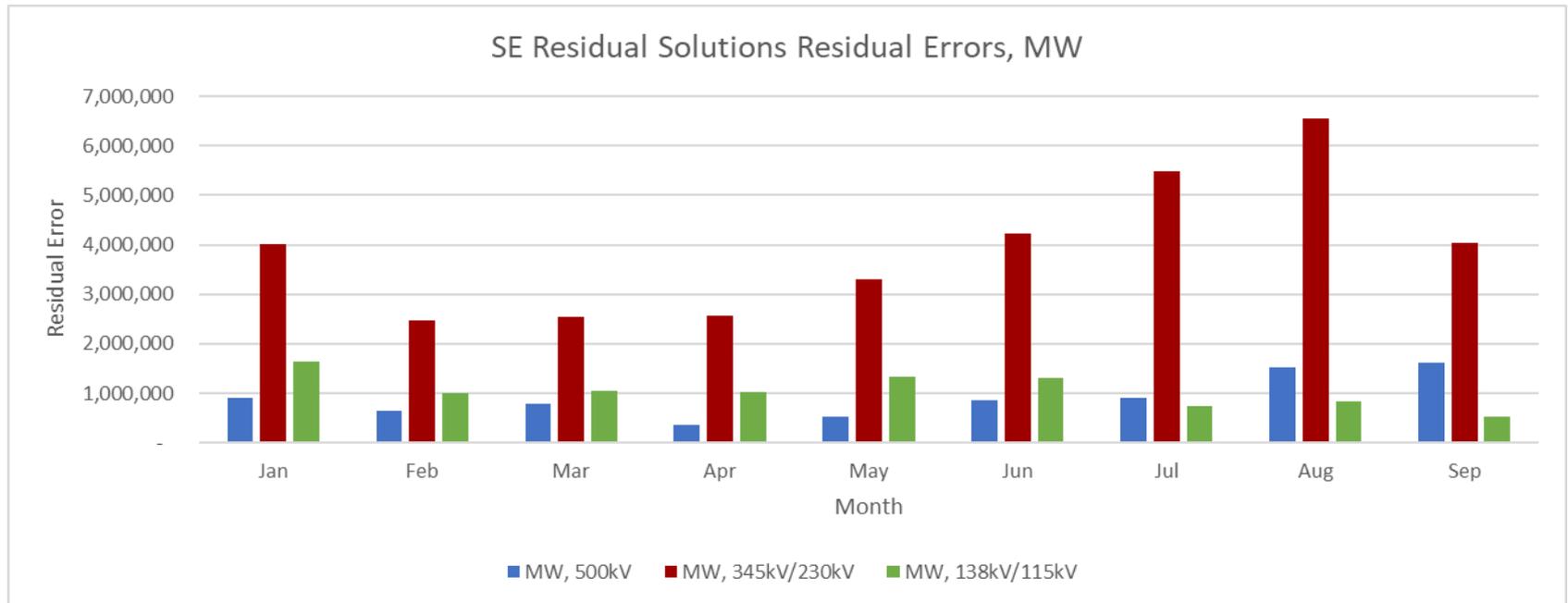
| RC Proc. # | Procedure Title | Status | Description of changes |
|------------|--|----------------|---|
| RC0130 | Notification Requirements for Real-Time Events | Published 7/21 | Minor updates throughout. Added requirement for phone notifications to RC for forced and urgent generation derates ≥ 300 MW. Approved by the Real-Time Working Group (RTWG). |
| RC0310A | Stability SOLs and Areas with Risk of Localized Voltage Collapse | Published 7/21 | Procedure title changed to "Stability SOLs and Areas with Risk of Localized Voltage Collapse". Updates throughout and added section for Known Areas with Risk of Localized Voltage Collapse.. Approved by the Real-Time Working Group (RTWG). |
| RC0410B | Transmission Emergencies due to Wildfire | Published 7/21 | New procedure attachment. Approved by RTWG. |
| RC9320 | Montana Facilities Seams | Published 7/21 | Annual Review: Minor updates |
| RC9320A | Montana Facilities Seams Overview | Published 7/21 | Annual Review: Minor format and grammar updates |
| RC9540 | Monitoring IID System | Published 7/21 | Updates throughout in conjunction with feedback received from IID |

Upcoming RC Procedures Updates

| RC Proc. # | Procedure Title | Status | Description of changes |
|------------|--|----------------------------------|--|
| RC0120B | RC West IRO-010 Data Specification for Adjacent RCs | Pending External Coordination | Section 2 - added data format and frequency for RC-2.10. Added exceptions to data requests. Changes coordinated with the RC-RC IRO-010 coordination subteam. |
| RC0540 | WIT Administration | Pending update / RC Coordination | Pending update detail. |
| RC0540B | BA Guide for Annual Frequency Bias and Lmax Changes | Pending update / RC Coordination | Pending update detail. |
| RC0600 | RC West Implementation of Common Interconnection-wide Methodology | Target Publish Date is 12/1 | Annual Review: Purpose & References sections: Updated NERC standard IRO-002 references. Minor format and grammar updates. |
| RC0600A | Western Interconnection Modeling and Monitoring Common Methodology | Target Publish Date is 12/1 | Annual Review: Section 1: Updated version of IRO-002 reference. |
| RC0610 | System Operating Limits Methodology For the Operations Horizon | Pending Internal Coordination | Pending update detail. |
| RC9015 | Configurable Shift Factors for USFMP | Pending Internal Coordination | Initial Procedure, coordinated with ECC Working Group. |
| RC9120 | Oregon Export IROL | Pending Internal Coordination | Section 5: Added Steps 7 and 8 for clarification of GMS notification requirements. Minor formatting throughout for clarity. |

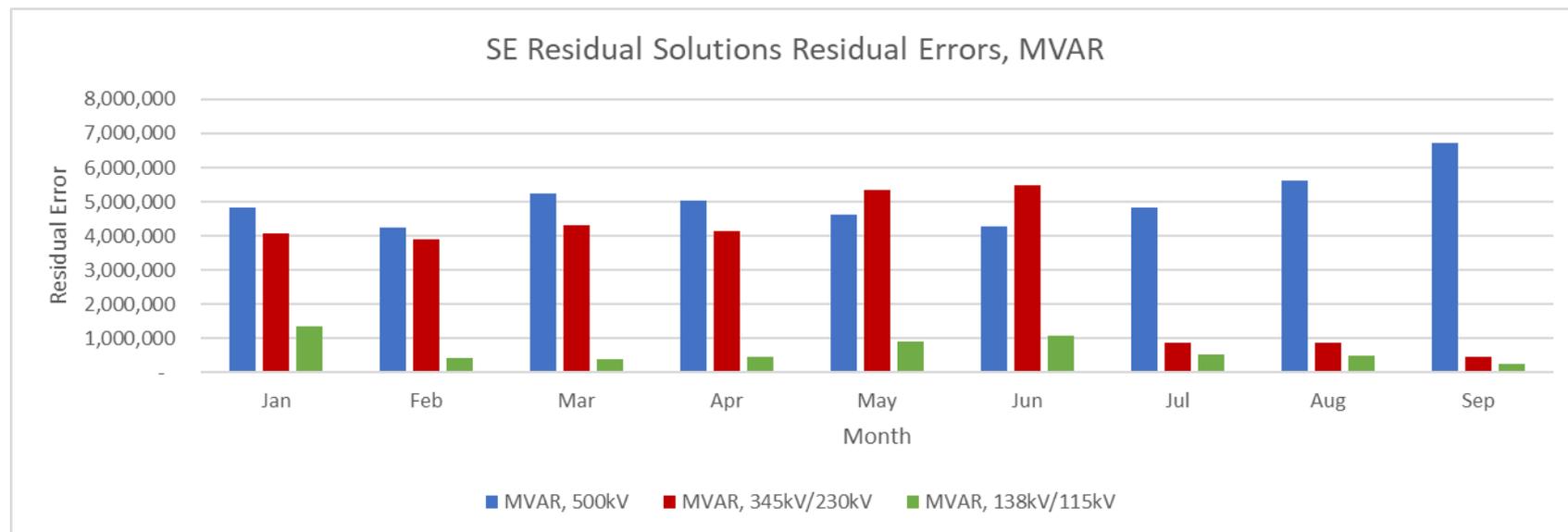
RC Metrics Q3 2021 - State Estimator Solutions Residual Errors

- SE Residual Error – sum of MW flow on 500kV, 345kV, 230kV, 138kV, and 115kV lines
- *Note: Residual flow is the difference between the calculated SE solution flow on each line compared to the actual telemetry value. This is a reflection of SE accuracy in RC West area.*



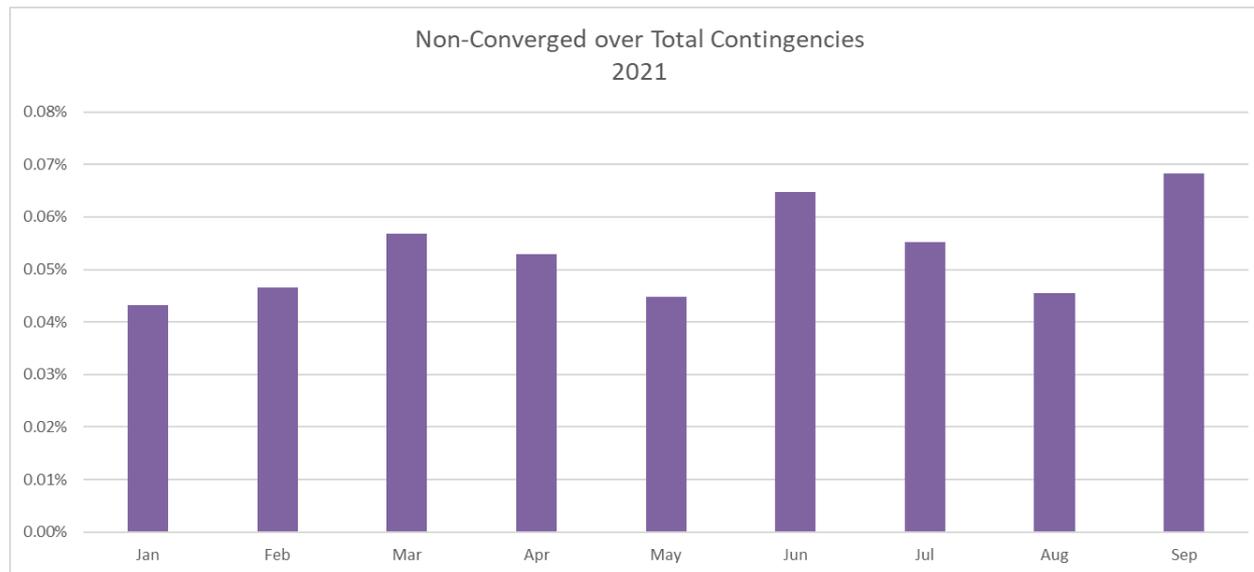
RC Metrics Q3 2021 - State Estimator Solutions Residual Errors

- SE Residual Error – sum of MVAR values on 500kV, 345kV, 230kV, 138kV, and 115kV lines
- *Note: Residual flow is the difference between the calculated SE solution flow on each line compared to the actual telemetry value. This is a reflection of SE accuracy in RC West area.*



RC Metrics Q3 2021 - RTCA Non-Converged Contingencies

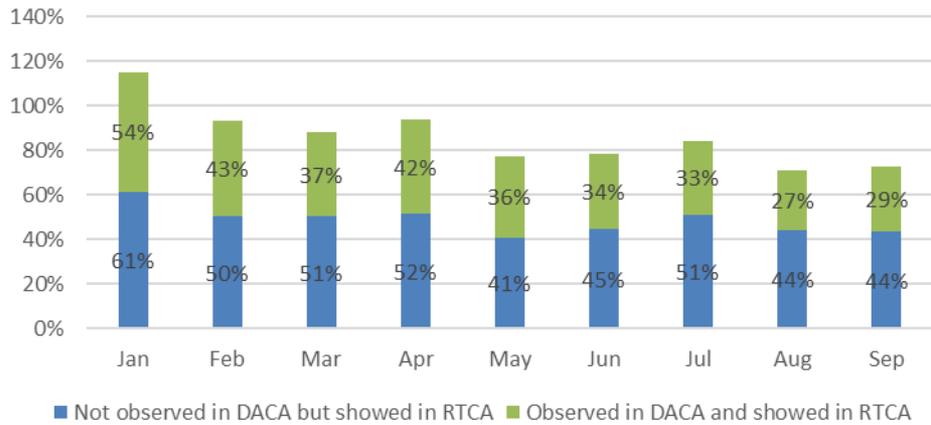
- Percentage of Real-Time Contingency Analysis (RTCA) non-converged contingencies over the total number of contingencies in five-minute intervals
- *Note: Over 8,500 contingencies are solved in every RTCA solution*



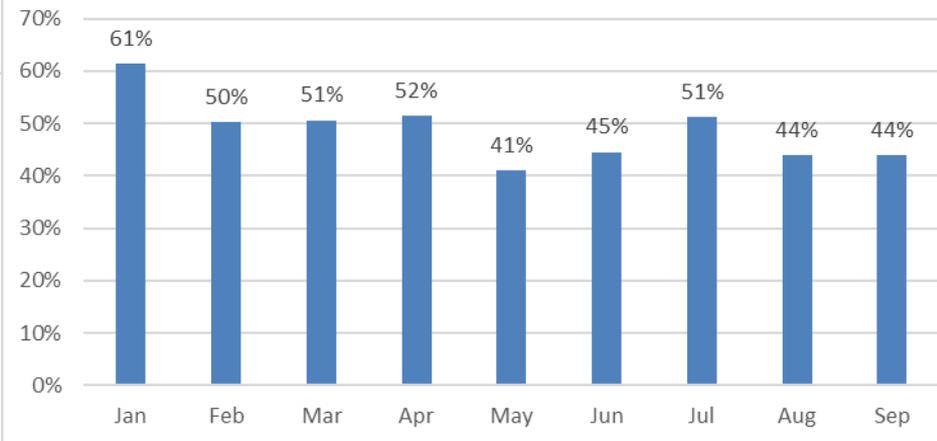
RC Metrics Q3 2021 - DACA Accuracy

Day Ahead Contingency Analysis (DACA) tool is designed to identify potential contingencies in the day ahead timeframe

DACA Accuracy - 2020 Format

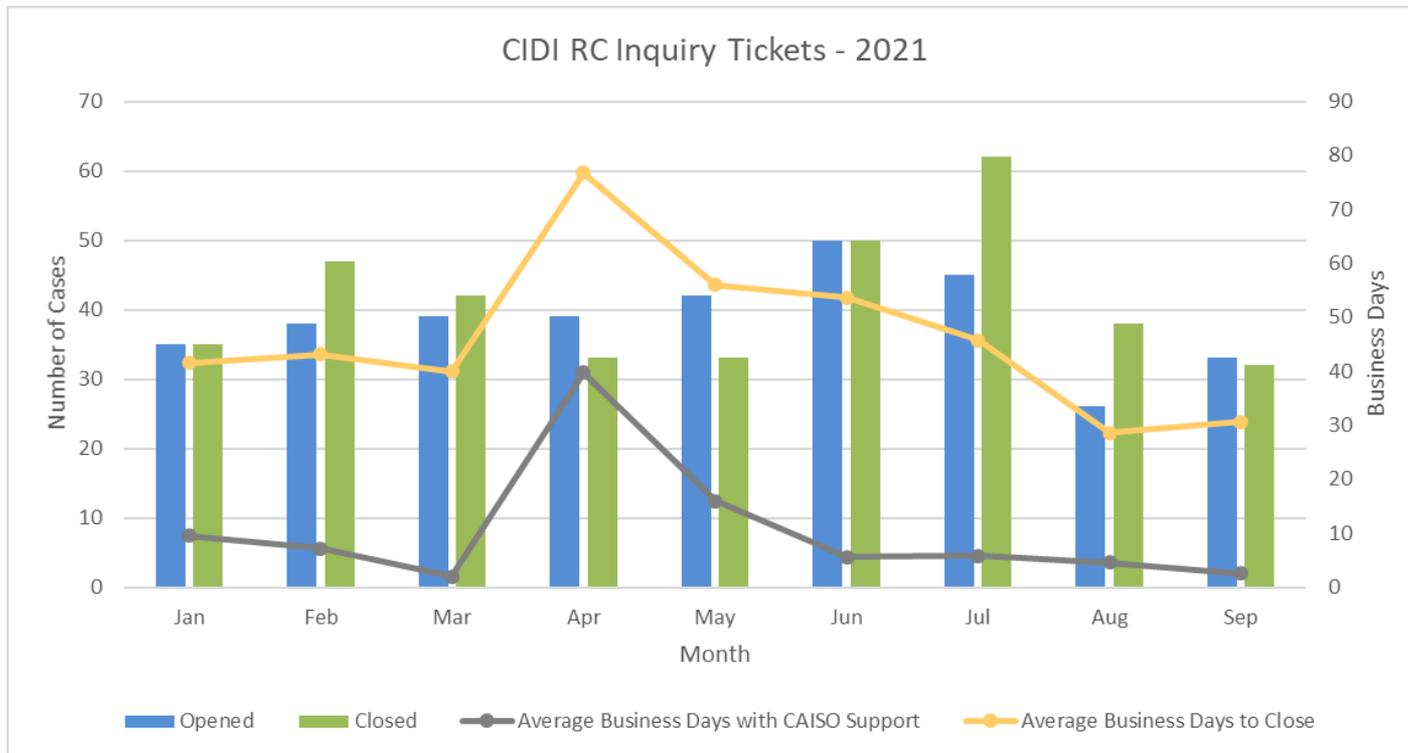


DACA Accuracy - 2021 Updated Format
Not observed in DACA but showed in RTCA



RC Metrics Q3 2021 - CIDI/Issue Resolution Progress

- Count of Customer Inquiry and Dispute Information (CIDI) tickets of the RC Inquiry case record type
- The number of opened cases will not change each time the data is pulled, but the other numbers can change as there are still cases opened from a prior month that haven't been closed.



Working Group Updates

Customer Onboarding

Gina Wansor
Operations Project Coordinator, Grid Ops

City of Redding Final Onboarding Update (TOP only)

- Transition went smoothly – great job to City of Redding, BANC/SMUD, and RC West teams who were involved

| Milestone | Status | Target Date of Completion |
|---|------------------|---------------------------|
| Agreements/Approvals | Completed | N/A |
| Network Model Updates Submission | Completed | 5/27/2021 |
| Operating Procedures | Completed | 11/1/2021 |
| Operating Guides | N/A | N/A |
| Messaging Validation | Completed | 7/29/21 |
| RC Customer Integration/Data Validation | Completed | 10/1/21 |
| Network Model Updates - Production | Completed | 7/21/21 |
| Settlement Integration | Completed | N/A |
| Shadow Operations | Completed | 11/1/2021 |
| Executive Statement of Readiness | Completed | 10/1/2021 |
| Go-Live | Completed | 11/1/2021 |

For more information about RC West Onboarding and Readiness criteria, please refer to Business Practice Manual: RC Services on www.caiso.com

Data Exchange Working Group

Rachel Melton
Operations Compliance Analyst

Data Exchange Working Group

- Guidelines for IRO-010 Data Specification – published 10/1/2021
 - Added supporting language for implementation of NERC Standard CIP-012
- Modeling Templates – published 10/1/2021
 - JOU & Dynamic Schedules Template (Clarifications added)
 - ICCP Template (added measurement RDFID column)
- IRO-010 Data Specification (RC0120A) – published 11/1/2021
 - Added exceptions to data requests
- Business requirements posted for new Data Reporting Automation initiative

Real-Time Operations Working Group

Tim Beach
Director, Reliability Coordination

Real-Time Operations Working Group

- Reviewed July 9th Bootleg Wildfire Event
- Reviewed the new Bonanza Area Operating Guide (RC9240)
 - RC West Seam with SPP
 - Coordinated with NVE, PACE, WACM, PSCO and SPP-RC
- Reviewed RC procedure updates
- WECC activity update
 - WECC EEA Advisory Board
 - Dec 13th Open Loop Event Advisory Board
 - RC-RC Wildfire Coordination Advisory Board

Real-Time Operations Working Group

WECC RC-RC Wildfire Coordination Advisory Board

- WECC agreed to RC West Proposal to form Advisory Board
- Create a team consisting of representatives from RCs operating within the Western Interconnection
- Draft scope out for comment
 - The team will:
 - Identify how the RCs currently identify and monitor wildfires
 - Identify how the RCs analyze and study potential impacts and risks to BES facilities
 - Determine processes for sharing information and coordinating mitigate or system posturing
 - Publish a WECC RC-RC Wildfire Coordination Reference Guideline by May 2022 (preliminary)

New Task Force: Cold and Extreme Weather Contingency Planning

Raja Thappetaobula
Director, Operations Engineering Services

Tricia Johnstone
Director, Operational Readiness

Cold and Extreme Weather Contingency Planning

- First meeting will be on 12/9/21
- 24 signups - APS, BPA, CAISO, HHWP, IID, LST, NWMT, PGE, Redding, SRP, SCE
 - Solicited PSRWG, DEWG, OPWG and RTWG
 - If interested in participating, update contacts list and/or email isorc@caiso.com
 - Task Force files to be stored in DEWG library
- Objective
 - Develop RC West approach for Cold Weather Standard changes (EOP-011, IRO-010, TOP-003) which will be effective 4/1/23
 - Validate BA and TOP plans for implementation to ensure consistency
- Initial proposal
 - Adding attributes to generator data template and modifying outage cards
 - Changes likely impacting data requests and specifications, webOMS UI and integration, resource model templates, outage coordination and notification related operating procedures

Decisional Item: Formation of a New Information Security Working Group

Hubert Hafner
Sr Manager, Information Security

RC Cyber Security Working Group Formation

Proposal

- Form Cyber Security Collaboration (CSC) working group
- Focused on RC West members (42 companies)

Objective:

- Collaboration on cyber security incident response (IR)
- Threat intelligence sharing (TI) and zero day vulnerability
- Risk mitigation tactics
- Best practice sharing

Tooling:

- Dedicated RC West CSC SharePoint
- Leverage secure messaging tool (ArmorText) used by E-ISAC and 20 RC West companies
- Allows for quick SME identification

RC Cyber Security Working Group – Next steps

Create

- RC West CSC SharePoint
- Roster:
 - Information Security Managers
 - Security Operation Center (SOC) Managers
- RC West NDA

Extend SOC to SOC communication pilot

- Pilot in progress with 5 RC West members
- Leveraging communication tool used by E-ISAC / CRISP

Develop Charter

Committee Vote: Formation of a New Information Security Working Group

Future Agenda Items

- The next RC West Oversight Committee meeting will be in Q1 2022 – Date TBD
- Send topic suggestions to rc-westoc@caiso.com.

Open for Public Comments

Public Session Adjourned