



California ISO | RC West

RC West Oversight Committee

Public Session


Feb 20, 2025

1:00pm-2:30pm Pacific Time

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 / Products and Services/ RC West.

Instructions for raising your hand to ask a question

- Please open the Participant and Chat panels from the bottom right of your screen.
- If you are connected to audio through your computer or used the “call me” option, select the raise hand icon  at the bottom of the participant panel to raise your hand.
- **Note:** *3 only works if you dialed into the meeting.
 - Please remember to state your name and affiliation before making your comment.
- If you need technical assistance during the meeting, please send a chat to the event producer.
- You may also send your question via chat to either Yelena Kopylov-Alford or to all panelists.

Agenda

Time:	Topic:	Presenter:
1:00 - 1:05	Welcome/agenda	Yelena Kopylov-Alford
1:05-1:15	Oversight Committee Business <ul style="list-style-type: none"> Welcome new chair & vice chair Q4 2024 Annual Charter Review FirstLight Energy WISDA request status LS Power Grid CATOP - Onboarding update 	Tricia Johnstone & John Phipps
1:15- 1:45	RC West Operations Update <ul style="list-style-type: none"> RC Operations Reorg Emergency Declarations Cold Weather Event LA Fires Procedures update RC metrics year end 2024 update 	John Phipps Raja Thappetaobula Samson Adigun Cody Smith Kathleen Fernandez Kendall Parra, Ran Xu
1:45 – 2:05	Working Group Updates <ul style="list-style-type: none"> FERC 881 Update ECC Expansion Update 	RajaShekar Thappetaobula
2:20 – 2:25	Future agenda items	Tricia Johnstone
2:25	Public Comment	
2:30	Public Session Adjourned <p><i>*Note Executive session will start immediately following Public session. This may be earlier than 2:30 pm.</i></p>	

Oversight Committee Business

Christopher Sanford
Committee Chair

Ashley Kelly
Vice Chair

Tricia Johnstone
RC West/ Operational Readiness

Oversight Committee Business

- Welcome new Chair & Vice Chair
- Q4 2024 Annual Charter Review – Guideline – Decisional Voting Rules update – add electronic voting option
- FirstLight Energy WISDA request status
 - New Gen Only BA interconnected at SRP's Abel station
 - Need 80% (53 yes votes) to reach quorum
- LS Power Grid CA TOP - Onboarding update

CAISO BA Area – LSPG TOP Onboarding Update

Milestone	Status	Target Date of Completion
Agreements/Approvals	Complete	-
Network Model Updates Submission	Complete	-
Network Model Updates – Production	Complete	-
RC Customer Integration/Data Validation	Complete	December 2024
Messaging Validation	Complete	February 2025
Operating Procedures	On Track	February 2025
Operating Guides	N/A	February 2025
Settlement Integration	Complete	February 2025
Shadow Operations	N/A	N/A
Executive Statement of Readiness (T-30)	Complete	February 2025
Go-Live	On Track	3/3/2025

LS Power is an onboarding TOP, targeting implementation for March 2025 (updated based on project timelines). For more information about RC West Onboarding and Readiness criteria, please refer to Business Practice Manual: RC Services on www.caiso.com

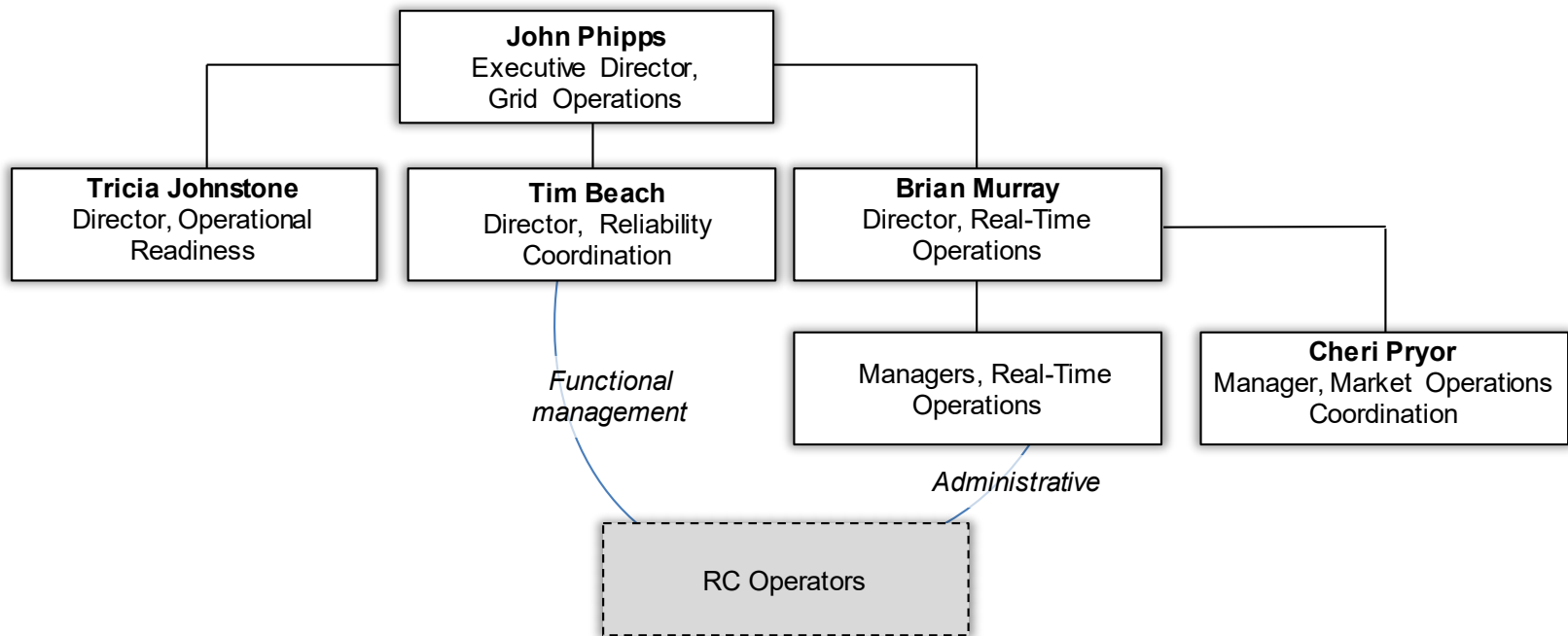
RC West Operations Update

John Phipps
Raja Thappetaobula
Samson Adigun
Kathleen Fernandez

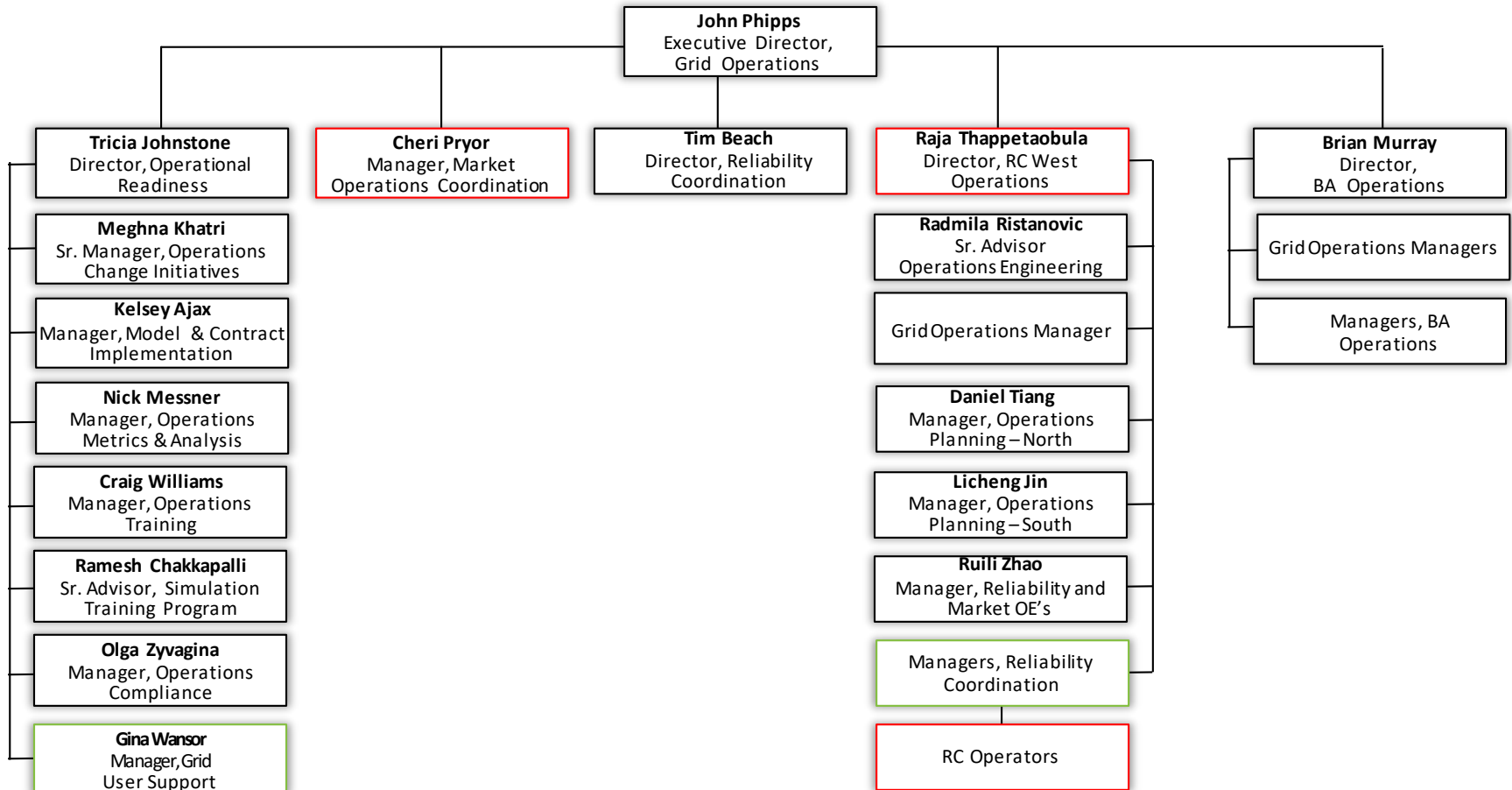
RCWEST Operations Re-Org 2/24

Current Grid Operations Structure

- Market Operations Coordination reports to CAISO BA Director
- RC operators have split management, partially under CAISO BA management
- Operations Engineering Services works closely with RC West, Market Operations, and CAISO BA - sits in a different Division



Updated Grid Operations Organization Structure – February 24



Green = new roles

Red = change in reporting structure

Emergency Declarations in RC Area

Operations update

Energy Emergency Alert	2024	2023	2022	2021	2020
EEA - W	38	9	9	4	NA
EEA - 1	12	14	19	7	26
EEA - 2	0	0	7	3	9
EEA - 3	11	6	7	3	12
Total	61	29	42	17	47
ISO	1	2	4		
TE	13	1	3		

Peak Load	YTD	Historical
WECC	167,988 MW (07/10/2024)	167,988 MW (07/10/2024)
RC West	128,470 MW (07/10/2024)	130,986 MW (9/6/2022)

MLK Weekend and Recent Cold Weather Operations

MLK Weekend Cold Weather – System Update

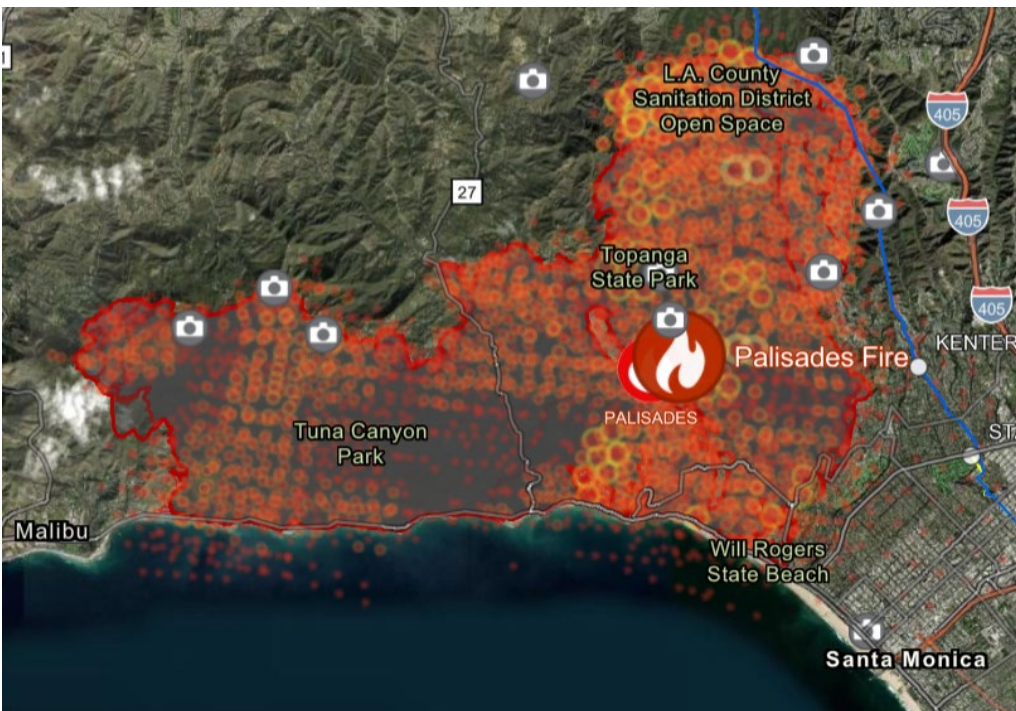
January 19 – 21st, 2025

- Minimum temperatures on Monday 20-40 degrees below normal for large portion of the US.
- RCW Status Condition Orange on 1/20 due to AVA, NWMT, PACE temp forecast within 98th percentile of historic lows for the month.
- Canceled outages limiting transmission capacity to pacific NW
 - LDWP transmission outage limiting PDCI S-N limit
- No EEAs declared during this event.
 - EEA Watch requested by CENACE BA on 1/21
- Unscheduled flow mitigation (UFMP)
 - Step 3 issued for WAPA Path 31 N>S flows on 1/20,
 - Step 4 issued for NWMT Path 80 S-N on 1/21

LA Fire Operations Update:

Palisades Fire

Devastating to the local community, forced PDCI HVDC offline



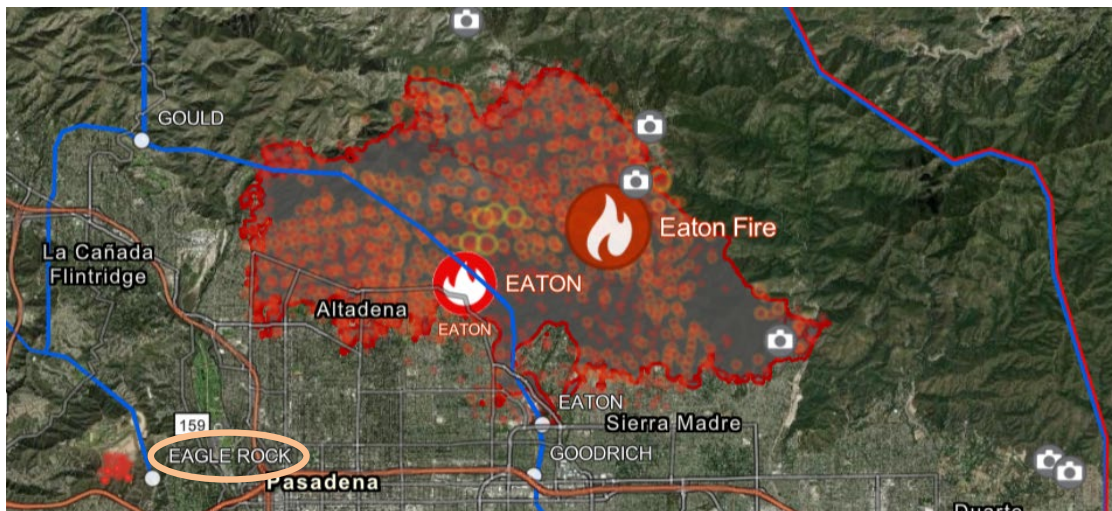
Tarzana – Olympic 230kV and
Tarzana - Olympic 138kV forced out
of service at 00:29 on 1/11/25

PDCI ground electrode shares
towers with these lines; Monopole
operation of PDCI is unavailable.
If a single pole of PDCI trips, both
poles will trip. LDWP forced-off PDCI
at 08:00 on 1/11/25

Potential impact to one natural gas line, would make El Segundo
units unavailable

Eaton Fire

7,000 structures destroyed in Altadena and Pasadena, loss of lines and load



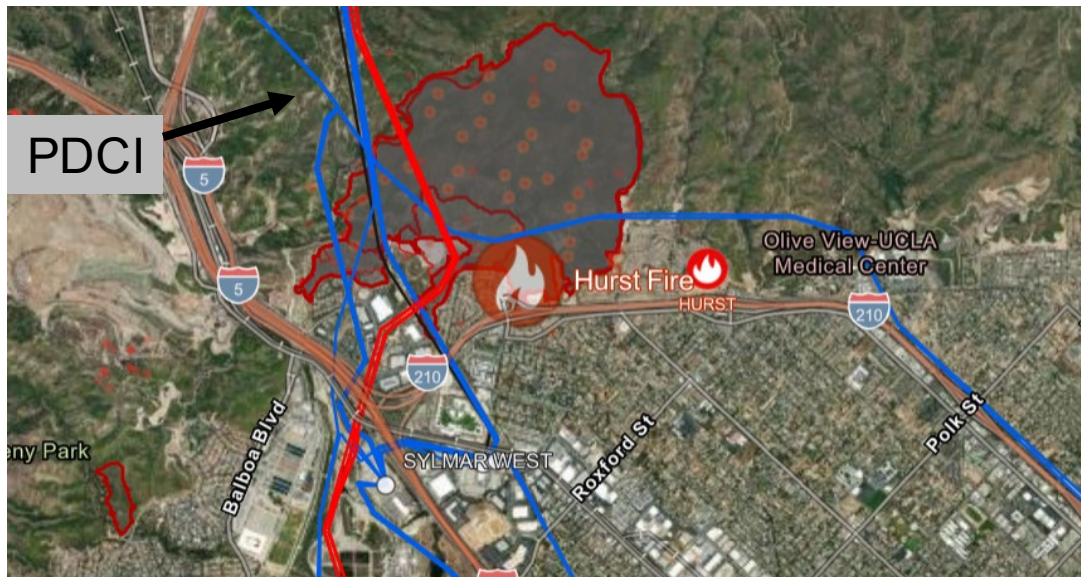
220kV lines forced out of service:
Gould-Goodrich
Mesa-Vincent #1 & #2
Eagle Rock-Mesa
Vincent-Rio Hondo #1

Eagle Rock substation was dropped along with 92MW of load at 00:34 on 1/8/25

(Later all load was transferred off of Gould and Eagle Rock subs, and both were de-energized)

Hurst Fire

Located in a dense corridor of power equipment



Loss of:

Eagle Rock-Sylmar 220kV

Pardee-Sylmar #2 220kV

Adelanto-Rinaldi 500kV

Victorville-Rinaldi 500kV

PDCI HVDC

PDCI locked out due to loss of lines, but could be returned, if needed.

Loss of lines and load in LDWP/SCE area caused frequency to rise from 59.88Hz to 60.086Hz, exceeding Frequency Trigger Limit high at 22:11 on 1/7/25

Procedures Update

Upcoming Changes:

RC Proc. #	Procedure Title	Status	Description of changes
RC0120	Guidelines for RC West IRO-010 Data Specification and Collection	Internal Coordination – Target Publish 3/27	Annual Review: Updated Section 3.5 on performance criteria based on discussions with DEWG on 2/5/2025 and RC-RC IRO-010 subgroup. Minor formatting and grammar/punctuation edits. Removed history prior to five years.
RC0120A	RC West IRO-010 Data Specification	Internal Coordination – Target Publish 3/27	Updated data request 6.8.2 to extreme weather template to remove NERC Alert 3 language and add reference to EOP-012-1 effective 10/1/2024. Updated data request 6.10.2 as FERC 881 mapping can now be submitted via a CIM file. Updated data request 6.23 to remove CIM file as a method of submitting information as the RC Data Gathering Template has RDFIDs to map to the equipment. Added Reference Section in Version History tab to include NERC Requirements IRO-010-4 and PRC-002-4. Added column for Data Validation Method. Removed Note for Req. 2.15 since NERC Standard is inactive and this no longer applies. Updated NERC Standard version numbers, where applicable.
RC0120B	RC West IRO-010 Data Specification for Adjacent RCs	Internal Coordination – Target Publish 3/27	Annual Review: Added columns for Data Validation Method, Performance Criteria and Last Revision Date in main Data Specifications tab. Added tab for AESO, BCRC and SPP. Added References section in Version History tab to include NERC Requirements.
RC0120C	ICCP or PMU Data Request Procedure	Internal Coordination – Target Publish 3/27	Annual Review: Updated Sections 3.1, Item 1 and 32, Item 1 for PMU Registry data availability. Updated Operationally Affected Parties language.
RC0520	Loss of Monitoring and Analysis Tools	Target Publish 3/13	Periodic Review: Minor formatting and grammar edits throughout. Updated version of INT-020-WECC-CRT in footnote reference and removed history prior to five years.
RC0540	WIT Administration	Internal Coordination – Target Publish 3/27	Periodic Review: Minor edits TBD
RC0540A	RCW WIT Schedule Change Process	Internal Coordination – Target Publish 3/27	Periodic Review: Minor edits TBD
RC0550	Reliability Coordinator Procedure Development, Maintenance and Distribution	Target Publish 3/13	Periodic Review: Minor formatting and grammar edits. Operationally Affected Parties: Updated to read, “Shared with the Public.” for procedures consistency. References: Added FAC-011 to NERC Requirements.
RC9000	Open Loop Guideline	Internal Coordination – Target Publish TBD	Annual Review: Minor formatting and grammar edits only.
RC9250	Mitigating Thermal Exceedances in the Dave Johnston Area	Internal/external Coordination – Target Publish TBD	Procedure to potentially be retired after completion of procedure review with PAC and SPP - Samson will advise when ready.
RC9330	NWMT Path 80 Operating Guide	Internal Coordination – Target Publish 2/20	Annual Review: Minor edits to Section 4, Item 3 for clarification. Minor formatting and punctuation edits.

Procedures Update

Recently Published:

RC Proc. #	Procedure Title	Status	Description of changes
RC0130	Notification Requirements for Real-Time Events	Effective 2/1/25	Periodic Review: Updated Items 3.2.1 through 3.2.4 in Section 3.2 by removing "Outage(s)" from event. Removed Items 3.2.5 and 3.2.6, since these thresholds are more related to Planning not applicable for real-time reliability operations. Added "Derate" to Definitions section, and minor formatting and grammar edits.
RC0210	Monitoring Frequency and Balancing Authority Performance	Effective 2/1/25	Added new Section 3.1.2 for Persistent abnormal frequency due to incorrect ACE. References: Updated NERC Standards EOP-011 and IRO-008 version numbers. Minor formatting and grammar edits.
RC0330A	List of Ties with Neighboring RCs	Effective 2/1/25	Table 3: Added new tie for BNBA to SRP. Minor punctuation edit.
RC0430	GMD Operating Plan	Effective 2/1/25	Revised for GMD Monitor transition to BCRC on February 1, 2025.
RC9710	Southern New Mexico Area	Effective 1/27/25	Annual Review: Changed procedure title, SPP RC and EPE now identifies the SOL as EPIC SOL, instead of EPEANI. Added clarification and details to the Purpose, Applicability and Background sections. Removed Operating Characteristics section since the SOL is an SPP Stability SOL. Added mitigation steps to Section 3. Updated related RAS schemes and procedure references in Sections 6 and 7.
RC9110	NW Washington Area Import IROL	Effective 1/09/25	Annual Review: Section 7.2.1: Clarified criteria for triggering EMS alarm when RTVSA limit is below study limit. References: Added version to NERC FAC-014 reference. Minor formatting and grammar edits.
RC0520	Loss of Monitoring and Analysis Tools	Effective 1/06/25	Updated language in Section 3.2 and 3.3 to include notification from Service Desk on ICCP link degradation as a trigger for RC actions. Changed event-reporting channel from MRT0 to JIC Lead in instances where event reporting is required per RC0420. Minor formatting and grammar edits.
RC0600	RC West Implementation of Common Interconnection-wide Methodology	Effective 1/01/25	Annual Review: Minor formatting and grammar edits and updated procedure references.
RC0600A	Western Interconnection Modeling and Monitoring Common Methodology	Effective 1/01/25	Annual Review: Section 2.1.3: Revised text to add "annually upon request" (Included with version 3.0 update, per BCRC version of this document). Sections 2.2.1, 2.2.4, and 2.3: Added note to indicate applicability to AESO and BCRC only (Included with version 3.0 update, per BCRC version of this document). Sections 5.1.1 and 5.2: Removed yellow highlighting (As noted with version 3.0 update, per BCRC version of this document). Section 5.1.2: Updated from "... any of three categories:" to "... any of the following categories:" (As reflected in BCRC version of this document). Section 3.1: Updated Footnote 4 with FAC-014-3 version update. Minor formatting and grammar edits.

Procedures Update

Recently Published:

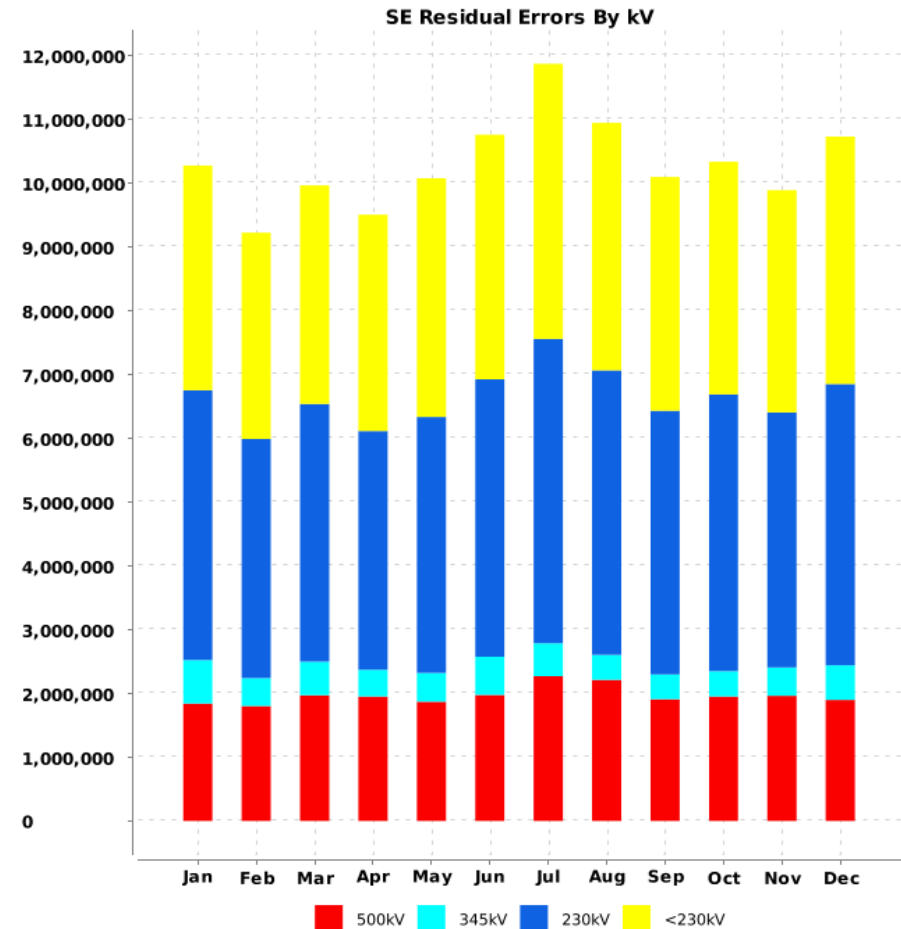
RC Proc. #	Procedure Title	Status	Description of changes
RC9010	Unscheduled Flow Mitigation on Qualified Paths	Effective 12/20/24	Added Path 80 as a qualified path to Table 1, and updated requirement to qualify for USF Step 3 or 4 in Section 2.1 per latest WIUFMP doc on SPP UFC website. References: Added IRO-006-5 and IRO-006-WECC-3 to NERC Requirements. Minor formatting and grammar edits.
RC9020	Nuclear Plant Interface Coordination	Effective 12/20/24	References: Added APS System Restoration Plan. Appendix A: Updated 500 kV Steady-State maximum range. Minor formatting and grammar edits.
RC9000	Open Loop Guideline	Effective 12/16/24	Updated Tables 1 and 2 to include PDCI S-N limit. Moved the section on Potential Open Loop to be prior to the Section on Open Loop (i.e., swapped Section 3.2 and 3.3). Incorporated RAS configuration steps formerly in Section 3.4 when PDCI flows are high, into Section 3.3 for Open Loop. Section 3.2.2: Added Malin BFR 4186 and 4582 contingencies to list of always credible multiple contingencies, under specific line outage scenarios. Clarified in Section 3.2.5 that RC operating instruction should be issued to disable the NE/SE separation scheme. New step added, per NVE request to minimize risk of separating NVE into two islands. Section 3.1.2: With Path 80 a new RCW qualified path, added clarifying language on UFMP Step 4 use. Section 3.2.5: Added requirement for RC to establish a Path 66/NWACI SOL limit if voltage stability issue identified in potential open loop. Section 3.1.5: Added new sub-section to clarify operations during WECC-1 RAS 1-of-1 voting. Updated Image in Appendix C. Minor formatting and grammar edits. Changes approved by RTWG.
RC0210A	Reserve Sharing Group Information	Effective 12/05/24	Updated name of Northwest Power Pool to Western Power Pool. Deleted Southwest Reserve Sharing Group. Consolidated former SRSG members into WPP. Updated WPP zones. Replaced NaturEner with BHE Montana.
RC0330A	List of Ties with Neighboring RCs	Effective 12/05/24	Replaced NaturEner with BHE Montana. Added References section to include NERC Requirements.
RC9040	Frequency Response Monitoring and Mitigation	Effective 12/05/24	Annual Review: Updated RC West procedure reference in Purpose section. Replaced PG&E with PG&E in Section 3 footnote. Included RC0610 procedure under References. Minor formatting and punctuation edits.

RC Metrics Year End 2024

Kendall Parra
Ran Xu

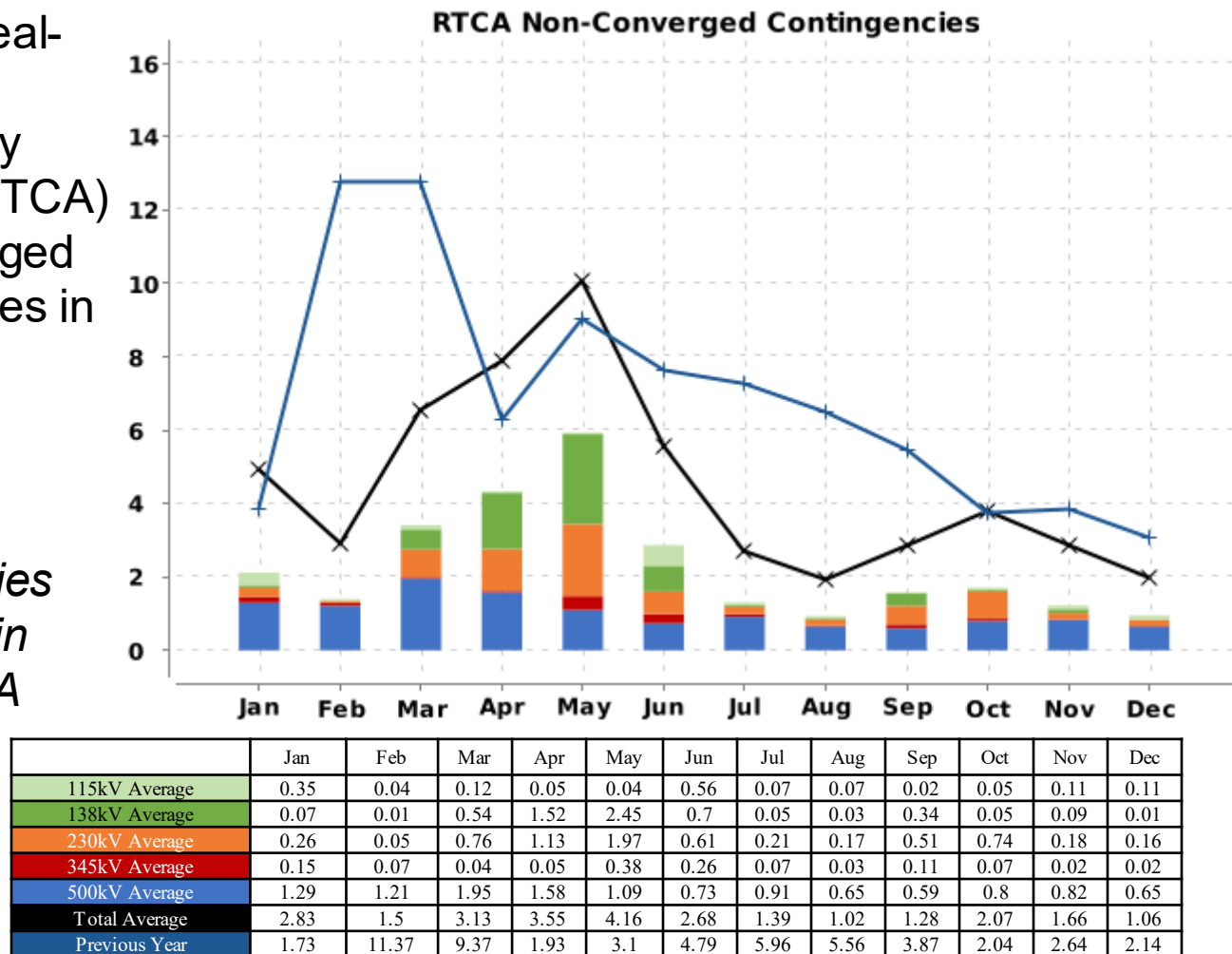
RC Metrics Year End 2024 - SE Residual Errors

- Residual Errors for line MW flow observed on 500kV, 345kV, 230kV, and less than 230kV lines
- Note: Though the measurements in anomaly are not used by SE in estimating the solution, the count of anomalies provide opportunity of reducing them.*



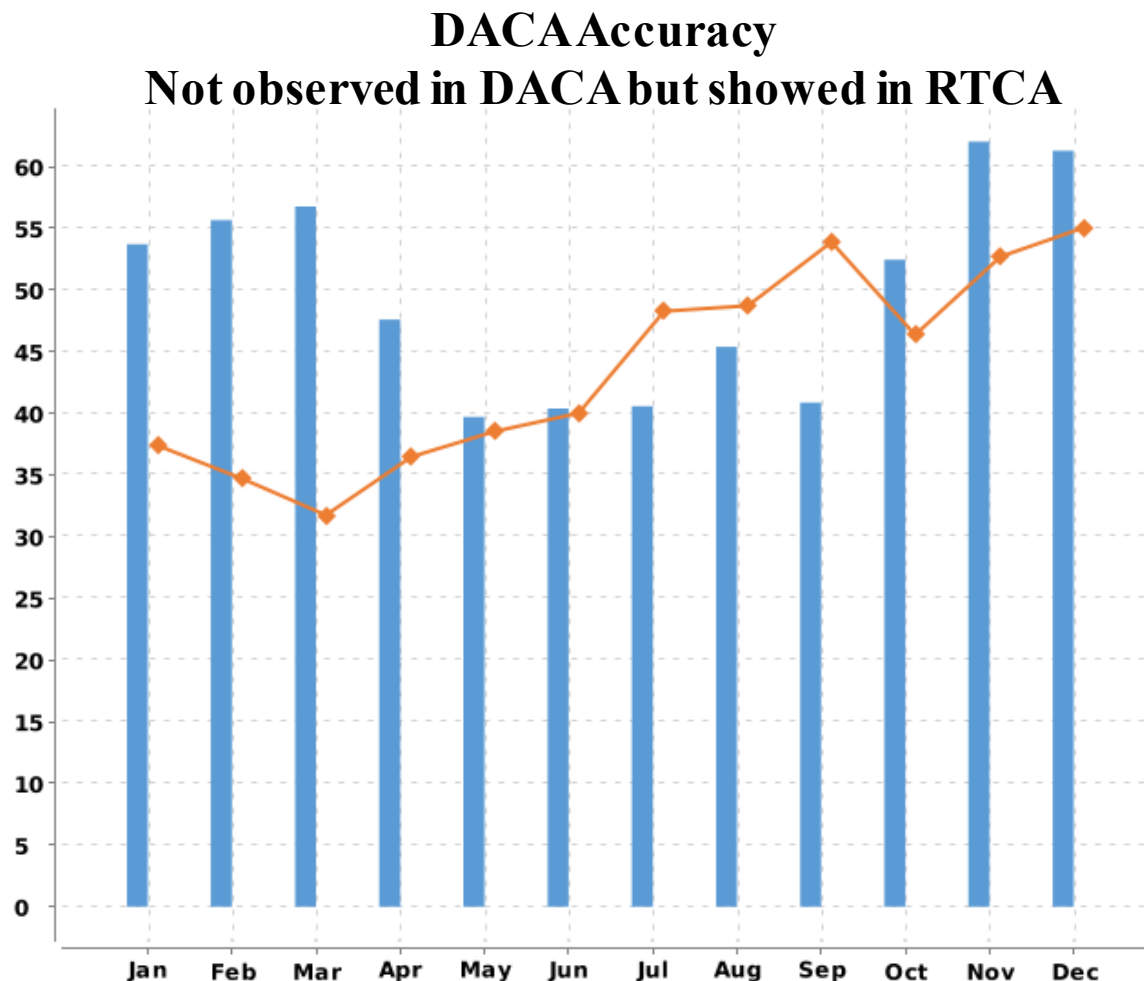
RC Metrics Year End 2024 - RTCA Non-Converged Contingencies

- Count of Real-Time Contingency Analysis (RTCA) non-converged contingencies in five-minute intervals
- Note: Over 10,000 contingencies are solved in every RTCA solution*



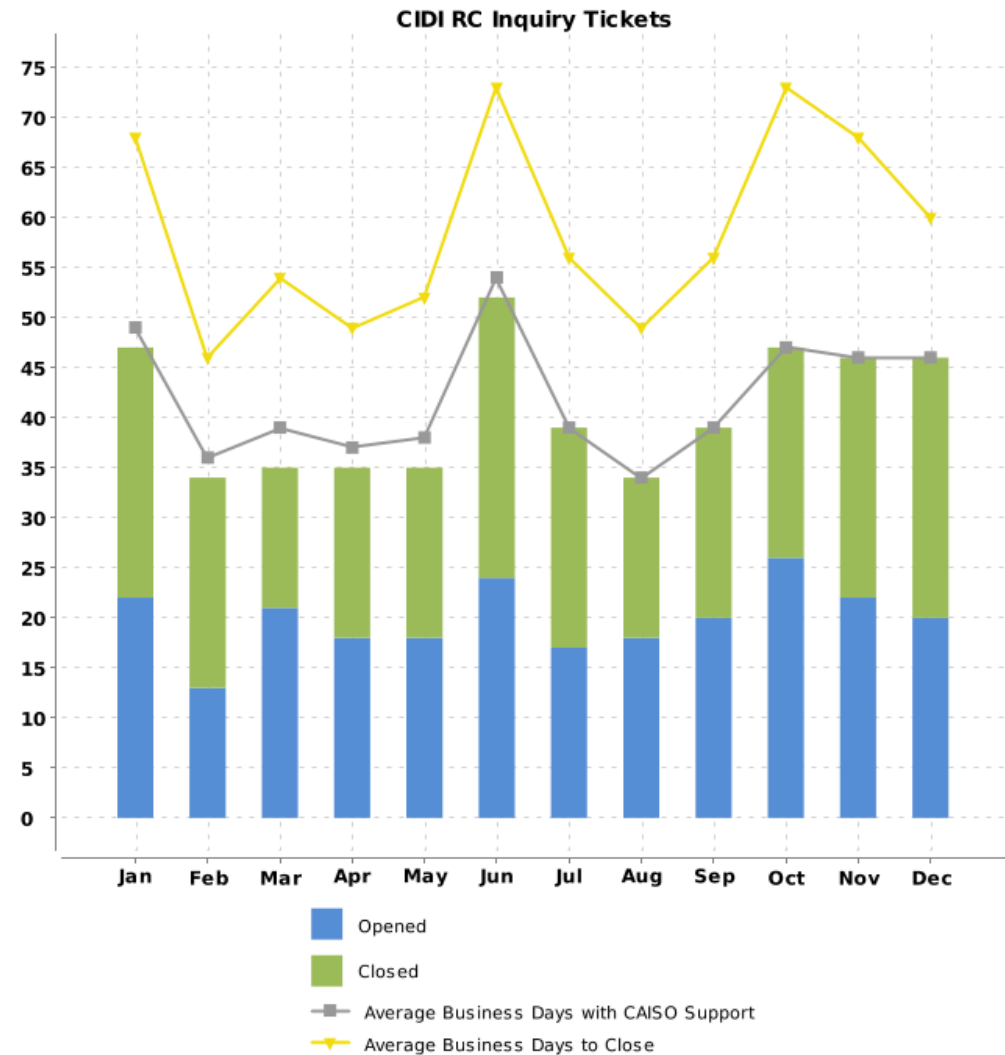
RC Metrics Year End 2024 - DACA Accuracy

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



RC Metrics Year End 2024 - 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

FERC 881 Ambient Adjusted Rating & Dynamic Line Ratings

Raja Thappetaobula
Director, Operations Engineering Services

Motion for Extension:

On January 27, 2025, the California Independent system Operator Corporation (CAISO) filed a motion for an extension of time to implement Federal Energy Regulatory Commission Order No. 881.¹ In its motion, the CAISO requested the Commission grant the following relief:

- (1) an extension of time to implement its Order No. 881 tariff provisions up to and including December 17, 2026, subject to the CAISO filing a notice with the Commission 7 days before the actual effective date;
- (2) an extension of time up to and including October 15, 2027 for the CAISO's participating transmission owners to implement their requirements under Order No. 881 and the CAISO tariff; and
- (3) an extension of time up to and including October 15, 2027 for public utility transmission providers in the EDAM and WEIM as Order No. 881 relates to their submission of ratings for use in the day-ahead and real-time markets administered by the CAISO.

CAISO /RCWEST Compliance Phased In Implementation

June 2025

CAISO/RCWEST EMS/EMNA/HANA applications can receive real time AAR ratings through ICCP. Only reliability apps and no markets usage. TOP can send AAR ratings

June 2025

OATI webLineR tool will be ready to receive 240 hrs of AAR.

TR and weblineR will be ready for 4 seasonal ratings

TOP can send Seasonal and AAR ratings .

Monitor and evaluate ratings

January 2026

Siemens FERC 881 code real time markets into production.

Enable usage of AAR in EIM market for WEIM entities.

Entities can choose to enable usage of AAR in real time markets

April 2026

Siemens FERC 881 code in Day ahead markets into production.

Entities that participate in both markets can choose to enable usage of AAR.

Enable Usage of AAR in DACA/LACA / LTCA and IOOC. Look ahead reliability applications.

July 2026

Complete remaining compliance work.

Nomograms and usage of AAR in RAS.

Usage of AAR in ETCC/Webwheel and TTC calculations and post hourly ATC.

Seasonal COI and other Path Limits calculations.

ECC Expansion

Raja Thappetaobula
Director, Operations Engineering Services

ECC Expansion Update:

- SPP and RC West coordinated effort on ECC model validation and constraint benchmarking.
- Process to standardize Curtailment Methodology with NAESB
 - Changes to IRO-006-5 or IRO-006-WECC-3 once standards have been formalized at NAESB.
 - FERC backing for approved standards
- NAESB Taskforce created to help create standard for curtailment methodology.
- Implement the curtailment methodology into ECC and go live of RC led congestion management across western interconnect.

ECC Expansion - Benchmarking of calculations:

- RCWEST & SPP are working together on the benchmarking existing WebECC tool.
 - Improve modeling in the existing WebECC tool to make sure all e-tags and dynamic transfer impacts are being calculated/modeled correctly.
 - Impact of phase shifters are accounted correctly.
 - Compare RT flows vs WebECC calculated impacts on top 20-30 constraints.
 - Coordinate with BA's in west to improve the tag modeling and Generation to Load impacts in webECC.
 - Compare webECC source/sink Transfer distribution impacts with other tools like TARA calculated impacts.
 - Share RCWEST model and develop a plan to improve model if any modeling issues identified.

ECC Expansion - Benchmarking of calculations:

Element Congestion

Freeze Element Column: Yes

Monitored Element Name	Start Time (CST)	Element Type	Flow Direction	Limit			Monitoring Threshold (%)	webECC Calculations										Element Flow	Owner	Force Monitored
				Units	MW	Congestion (%)		Units	Pre Contingency Flow	Post Contingency Flow	Impact Layers									
											Tags	Dynamic Transfers	GTL	ACE	DC Line	Phase Shifters	Unaccounted			
RIMROCK PAR TEST	11/13/2023 19:30	OTDF	FORWARD	MVA	100	474	100	MW	193	474	286.2	47.7	40.2	-2.0	0.1	18.5	83.4		Reliability Coordinator West	Yes
RIMROCK PAR TEST_2	11/13/2023 21:15	OTDF	FORWARD	MVA	100	457	100	MW	193	457	278.0	46.6	37.2	-2.0	0.1	10.0	87.8		Reliability Coordinator West	Yes
YellowTail-Rimrock FL YELLOWT Billings	11/13/2023 05:30	OTDF	FORWARD	MVA	167	281	70	MW	193	470	285.6	47.9	38.1	-2.1	0.1	188.3	-87.9		Reliability Coordinator West	Yes
WTP072 Hayden - Artesia 138kV FTLO Craig - Bonanza 345kV and Meeker - White River 138kV	12/09/2023 12:15	OTDF	FORWARD	MVA	143	129	100	MW	50	184	221.8	-1.3	5.0	-3.0	0	37.8	-75.8		SPPW	Yes
WTP073 Boyesen - Thermopopolis 115 kV FTLO Riverton - Thermopopolis 230 kV	12/11/2023 12:00	OTDF	FORWARD	MVA	109	116	100	MW	76	127	40.4	10.1	10.8	-0.7	0	45.8	20.9		SPPW	Yes
WTP074 LRS - Stegall 230kV FTLO LRS - Ault 345	N/A	OTDF	FORWARD	MVA	478	81	100	MW	275	387	352.8	4.9	25.6	2.9	0	34.7	-33.7		SPPW	Yes
WTP044 Alcova - Miracle Mile FTLO Alcova - Miracle Mile	N/A	OTDF	REVERSED	MVA	109	53	100	MW	31	58	19.3	7.3	4.8	-2.4	0	31.4	-1.7		SPPW	Yes
WTP077 Yellowtail - Lovell dkt1 115 kV FTLO Yellowtail - Lovell dkt2 115 kV	N/A	OTDF	REVERSED	MVA	118	43	100	MW	30	51	-12.5	7.9	3.7	-0.7	0	41.6	11.7		SPPW	Yes
PSCO SMKBUK1230_FLO SMKBUK2230	N/A	OTDF	FORWARD	MVA	574	21	100	MW	88	122	17.9	3.6	97.3	1.4	0	-3.7	5.6		PSCO	Yes
FC CH1 For Loss Of FC MK Test1	N/A	OTDF	REVERSED	MVA	687	10	95	MW	95	69	93.4	-5.4	-19.2	1.6	0.1	44.6	-45.7		Reliability Coordinator West	Yes
FC CH2 For Loss Of FC MK Test2	N/A	OTDF	REVERSED	MVA	687	10	100	MW	95	69	94.0	-5.4	-19.3	1.6	0.1	45.0	-46.1		Reliability Coordinator West	Yes
PSCO LEETHMONR230_FLO ARAPAKO230	N/A	OTDF	FORWARD	MVA	398	7	100	MW	28	28	0.8	0	23.2	0.3	0	0	4.3		PSCO	Yes
WTP041 Meeker - Rifle 138 kV FTLO Craig - Meeker 345 kV	N/A	OTDF	REVERSED	MVA	125	7	100	MW	28	9	4.1	1.3	-19.3	-1.0	0	34.4	-10.5		SPPW	Yes
Path 3 (S>N)	N/A	PTDF	FORWARD	MW	3000	65	70	MW	1952	1952	1947.6	43.4	52.7	-5.2	1.1	-29.5	-58.0		BCRC	Yes
Path 31 (N>S) UFMP	N/A	PTDF	REVERSED	MW	690	45	120	MW	315	315	-322.9	11.1	65.1	7.1	0.3	254.8	300.3		SPPW	No

ECC Expansion Update:

- This effort should help with visualizing accurate impacts on a constraint while NAESB Process is on going.
- There is an opportunity for RC 's and BA/TOP to work on operating guides and help find an equitable solution to resolve the SOL's with the tool identifying all source of impacts.

Future Agenda Items

- The next RC West Oversight Committee meeting is May 15, 2025. Visit [RC West webpage](#) for additional details
- Send topic suggestions to isorc@caiso.com.

Open for Public Comments

Public Session Adjourned