2022-2023 ISO Reliability Assessment - Preliminary Study Results
Study Area: **SCE Eastern area**
Thermal Overloads

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)					Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Spring Off-Peak	2027 Spring Off-Peak	2027 SP with Forecasted Load Addition	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Heavy Renewable & Min Gas Gen	2035 SP with Additional Transportation Electrificatio	
J.HINDS - MIRAGE 230 kV #1	CAMINO - GENE - IRON MTN - MEAD 230 KV (4 terminal line)	P1	N-1	<100	<100	<100	107.1	<100	<100	<100	<100	<100	Blythe RAS
	JHINDMWD - EAGLEMTN 230 kV	P1	N-1	135.4	<100	136.4	140.0	<100	<100	<100	<100	<100	Blythe RAS
	CBs-J.HindsMWD | J.HindMWD portion & EagleMTN-J.Hinds Jh & Eagle Shunt Reactor (P2 with long lead time equipment loss)	P2	Bus-Tie Breaker	135.4	<100	136.4	140.0	<100	<100	<100	<100	138	Blythe RAS
	CBs-EagleMTN | loss EagleMTN sub. Jh & Eagle Shunt Reactor (P2 with long lead time equipment loss)	P2	Bus-Tie Breaker	114.1	<100	114.7	140.0	<100	<100	<100	<100	116	Blythe RAS
	CB405 EagleMTN | loss EagleMTN sub and J.Hind MWD portion Jh & Eagle Shunt Reactor (P2 with long lead time equipment loss)	P2	Bus-Tie Breaker	135.2	<100	136.2	140.0	<100	<100	<100	<100	138	Blythe RAS
	CB407 EagleMTN | loss EagleMTN sub and EagleMT-IronMTN Jh & Eagle Shunt Reactor (P2 with long lead time equipment loss)	P2	Bus-Tie Breaker	114.0	<100	114.6	140.0	<100	<100	<100	<100	116	Blythe RAS
	CB307 Eagle | Iron-Camino-Gene-Mead 230kV-loss Iron Jh Shunt Reactor (P2 with long lead time equipment loss)	P2	Bus-Tie Breaker	<100	<100	<100	107.7	<100	<100	<100	<100	<100	Blythe RAS
	CB405 Eagle | Iron-Camino-Gene-Mead 230kV-loss Iron Eagle Shunt Reactor (P2 with long lead time equipment loss)	P2	Bus-Tie Breaker	<100	<100	<100	107.7	<100	<100	<100	<100	<100	Blythe RAS
	CB208 Iron | Camino-Gene-Mead-Parker 230kV-loss Gene Jh Shunt Reactor (P2 with long lead time equipment loss)	P2	Bus-Tie Breaker	<100	<100	<100	107.1	<100	<100	<100	<100	<100	Blythe RAS
	CB208 Iron | Camino-Gene-Mead-Parker 230kV-loss Gene Eagle Shunt Reactor (P2 with long lead time equipment loss)	P2	Bus-Tie Breaker	<100	<100	<100	107.1	<100	<100	<100	<100	<100	Blythe RAS
	CB405-EagleMT | Line JHINDMWD - EAGLEMTN 230 kV Jh Shunt Reactor (P2 with long lead time equipment loss)	P2	Bus-Tie Breaker	114.2	<100	114.9	140.0	<100	<100	<100	<100	116	Blythe RAS
	CB405-EagleMT| Line JHINDMWD - EAGLEMTN 230 kV Eagle Shunt Reactor (P2 with long lead time equipment loss)	P2	Bus-Tie Breaker	114.2	<100	114.9	140.0	<100	<100	<100	<100	116	Blythe RAS
	CB407-EagleMT| Line EAGLEMTN - IRON MTN 230 kV Jh Shunt Reactor (P2 with long lead time equipment loss)	P2	Bus-Tie Breaker	<100	<100	<100	108	<100	<100	<100	<100	<100	Blythe RAS
	CB407-EagleMT| Line EAGLEMTN - IRON MTN 230 kV Eagle Shunt Reactor (P2 with long lead time equipment loss)	P2	Bus-Tie Breaker	<100	<100	<100	108	<100	<100	<100	<100	<100	Blythe RAS
J.HINDS MWD - EAGLE MTN 230 kV #1	J.HINDS - MIRAGE 230 kV and BLYTHESC - EAGLEMTN 161 kV	P6	N-1-1	122	<100	120	<100	<100	<100	<100	<100	121	Curtail Blythe area generation after the first contingency
	DEVERS - MIRAGE 230 kV #1 and DEVERS - MIRAGE 230 kV #2	P7	DCTL	111	<100	181	153	127	<100	<100	<100	<100	Blythe RAS, Path 42 RAS
	J.HINDS - MIRAGE 230 kV	P1	N-1	116	<100	116	148	<100	<100	<100	<100	116	Blythe RAS
J.HIND MWD - J.HINDS 230 kV #1	DEVERS - MIRAGE 230 kV #1 and DEVERS - MIRAGE 230 kV #2	P7	DCTL	133	<100	205	153	127	<100	<100	<100	105	Blythe RAS, Path 42 RAS
	J.HINDS - MIRAGE 230 kV	P1	N-1	138	<100	138	148	<100	<100	<100	<100	138	Blythe RAS
RED BLUFF 500/230/13.8 kV #1	RED BLUFF 500/230/13.8 kV #2	P1	N-1	<100	<100	<100	<100	<100	<100	134	<100	<100	Colorado River CRAS
RED BLUFF 500/230/13.8 kV #2	RED BLUFF 500/230/13.8 kV #1	P1	N-1	<100	<100	<100	<100	<100	<100	134	<100	<100	Colorado River CRAS
COL. RIVER 500/230/13.8 kV #1	COLRIVER 500/230/13.8 kV #2	P1	N-1	123	118	<100	<100	<100	118	143	<100	<100	Colorado River CRAS
COL. RIVER 500/230/13.8 kV #2	COLRIVER 500/230/13.8 kV #1	P1	N-1	123	118	<100	<100	<100	118	143	<100	<100	Colorado River CRAS

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Thermal Overloads

California ISO

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)					Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Spring Off-Peak	2027 Spring Off-Peak	2027 SP with Forecasted Load Addition	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Heavy Renewable & Min Gas Gen	2035 SP with Additional Transportation Electrificatio	
EAGLE MTN - IRON MTN 230 kV #1	J.HINDS - MIRAGE 230 kV and BLYTHESC - EAGLEMTN 161 kV	P6	N-1-1	141	<100	139	<100	<100	<100	<100	<100	139	Curtail Blythe area generation after the first contingency
	DEVERS - MIRAGE 230 kV #1 and DEVERS - MIRAGE 230 kV #2	P7	DCTL	<100	<100	154	158	136	<100	<100	<100	<100	Blythe RAS, Path 42 RAS
	J.HINDS - MIRAGE 230 kV	P1	N-1	<100	<100	<100	141	<100	<100	<100	<100	<100	Blythe RAS
IRON MTN - CAMINO 230kV	J.HINDS - MIRAGE 230 kV and BLYTHESC - EAGLEMTN 161 kV	P6	N-1-1	107	<100	104	<100	<100	<100	<100	<100	105	Curtail Blythe area generation after the first contingency
	DEVERS - MIRAGE 230 kV #1 and DEVERS - MIRAGE 230 kV #2	P7	DCTL	<100	<100	<100	130	<100	<100	<100	<100	<100	Blythe RAS, Path 42 RAS
	J.HINDS - MIRAGE 230 kV	P1	N-1	<100	<100	<100	116	<100	<100	<100	<100	<100	Blythe RAS
VEGA_3_SS - NILAND 161kV	RAMON - MIRAGE #1 and CVSUB - MIRAGE 230kV #1	P6	N-1-1	106	<100	<100	<100	<100	<100	110	<100	<100	Path 42 RAS
RAMON - MIRAGE 230 kV # 2	RAMON - MIRAGE 230kV and CVSUB - RAMON 230kV	P6	N-1-1	<100	<100	132	<100	117	<100	<100	<100	163	Curtail IID area generation after the first contingency

Substation	Contingency (All and Worst P6)	Category	Category Description	High/Low Voltage	Voltage PU (Baseline Scenarios)					Voltage PU (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
					2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Spring Off-Peak	2027 Spring Off-Peak	2027 SP with Forecasted Load Addition	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Heavy Renewable & Min Gas Gen	2035 SP with Additional Transportation Electrification	
EAGLEMTN	DEVERS - MIRAGE 230 kV #1 and DEVERS - MIRAGE 230 kV #2	P6		Low Voltage	>0.90	>0.90	0.83	>0.90	0.86	>0.90	>0.90	>0.90	>0.90	Curtail Blythe area generation after the first contingency
RAMON	RAMON - MIRAGE 230kV and CVSUB - RAMON 230kV	P6	N-1-1	High Voltage	1.16	<1.10	<1.10	1.43	<1.10	<1.10	1.15	1.43	<1.10	Curtail IID area generation after the first contingency
EAGLEMTN	J.HINDS - MIRAGE 230 kV and EAGLEMTN-IRON MTN 230 kV	P6	N-1-1	High Voltage	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10	<1.10	1.22	<1.10	Curtail Blythe area generation after the first contingency

Substation	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)					Loading % (Sensitivity Scenarios)			
				2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Spring Off-Peak	2027 Spring Off-Peak	2027 SP with Forecasted Load Addition	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Heavy Renewable & Min Gas Gen	2035 SP with Additional Transportation Electrification

No voltage deviation issues were found

2022-2023 ISO Reliability Assessment - Preliminary Study Results
Study Area: **SCE Eastern area**
Transient Stability

Contingency	Category	Category Description	Transient Stability Performance				
			Baseline Scenarios			Sensitivity Scenarios	
			2027 Summer Peak	2032 Summer Peak	2024 Spring Off-Peak	2027 SP High CEC Forecast	2024 OP Heavy Renewable & Min Gas Gen*
EagleMTN-BlytheSCE 161 kV	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues
EagleMTN-BlytheSCE 161 kV & Blythe 1CT	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues
EagleMTN-IronMTN 230 kV	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues
Julian Hinds-EagleMTN 230 kV	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues
Julian Hinds-EagleMTN 230 kV & Blythe 1CT trip (RAS)	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues
Julian Hinds-Mirage 230 kV	P1	N-1	No Issues	No Issues	Unstable	No Issues	No Issues
Julian Hinds-Mirage 230 kV & Blythe 1CT trip (RAS)	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues
Colorado River-Palo Verde 500 kV	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues
Colorado River-Palo Verde 500 kV, no Devers SVC	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues
Colorado River - Red Bluff 500 kV #1	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues
Colorado River - Red Bluff 500 kV #1, no Devers SVC	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues
Devers - Red Bluff 500 kV #1	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues
Devers - Red Bluff 500 kV #1 , no Devers SVC	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues
Devers-Valley 500 kV #1	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues
Devers-Valley 500 kV #1, no Devers SVC	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues
Valley-Serrano/Alberhill 500 kV	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues
Valley-Serrano/Alberhill 500 kV, no Devers SVC	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues
Devers 500/230 AA #2	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues
Devers 500/230 AA #2 , no Devers SVC	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues
Devers 500/230 AA #2	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues
Devers 500/230 AA #2 , no Devers SVC	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues
Julian Hinds Bus tie CB fault, loss Julian Hinds	P2.4	Bus-Tie-Breaker	No Issues	No Issues	No Issues	No Issues	No Issues
Devers Middle CB fault, loss of Devers - Red Bluff 500 kV #1 and Devers-Valley 500 kV #1, no Devers SV	P2.3	Non-Bus-Tie Breaker	No Issues	No Issues	No Issues	No Issues	No Issues
Devers Middle CB fault, loss of Devers - Red Bluff 500 kV #2 and Devers 1AA Bank, no Devers SVC	P2.3	Non-Bus-Tie Breaker	No Issues	No Issues	No Issues	No Issues	No Issues
BlytheSCE-EagleMTN 161 kV, CB 872 stuck at BlytheSCE	P4.2	Breaker Failure	No Issues	No Issues	No Issues	No Issues	No Issues
BlytheSCE-EagleMTN 161 kV, CB 872 stuck at BlytheSCE & Blythe 1CT trip (RAS)	P4.2	Breaker Failure	No Issues	No Issues	No Issues	No Issues	No Issues
BlytheSCE-EagleMTN 161 kV, CB 70 stuck at EagleMTN	P4.2	Breaker Failure	No Issues	No Issues	No Issues	No Issues	No Issues
BlytheSCE-EagleMTN 161 kV, CB 70 stuck at EagleMTN & Blythe 1CT trip (RAS)	P4.2	Breaker Failure	No Issues	No Issues	No Issues	No Issues	No Issues
EagleMTN-IronMTN 230 kV, CB 407 stuck at EagleMTN	P4.2	Breaker Failure	No Issues	No Issues	No Issues	No Issues	No Issues
EagleMTN-IronMTN 230 kV, CB 407 stuck at EagleMTN & Blythe 1CT trip (RAS)	P4.2	Breaker Failure	No Issues	No Issues	No Issues	No Issues	No Issues
EagleMTN-IronMTN 230 kV, CB 307 stuck (close to Iron)	P4.2	Breaker Failure	No Issues	No Issues	No Issues	No Issues	No Issues
Julian Hinds-EagleMTN 230 kV, CB 405 stuck at EagleMTN	P4.2	Breaker Failure	No Issues	No Issues	No Issues	No Issues	No Issues
Julian Hinds-EagleMTN 230 kV, CB 405 stuck at EagleMTN & Blythe 1CT trip (RAS)	P4.2	Breaker Failure	No Issues	No Issues	No Issues	No Issues	No Issues
Julian Hinds-Mirage 230 kV, Stuck CB 509 at J.Hinds	P4.2	Breaker Failure	No Issues	No Issues	No Issues	No Issues	No Issues
EagleMTN 230/161 kV Transformer #5, Stuck CB432 at EagleMTN	P4.3	Breaker Failure	No Issues	No Issues	No Issues	No Issues	No Issues
EagleMTN 230/161 kV Transformer #5, Stuck CB432 at EagleMTN & Blythe 1CT trip (RAS)	P4.3	Breaker Failure	No Issues	No Issues	No Issues	No Issues	No Issues
Valley-Serrano/Alberhill 500 kV with stuck breaker followed by Valley 4AA Bank	P4.2	Breaker Failure	No Issues	No Issues	No Issues	No Issues	No Issues
Devers - Red Bluff 500 kV #1 with stuck breaker followed by Devers-Valley 500 kV #1	P4.2	Breaker Failure	No Issues	No Issues	No Issues	No Issues	No Issues
Devers - Red Bluff 500 kV #2 with stuck breaker followed by Devers 1AA bank	P4.2	Breaker Failure	No Issues	No Issues	No Issues	No Issues	No Issues
Devers - Mirage 230 kV with stuck breaker followed by Coachell Valley-Mirage 230 kV	P4.2	Breaker Failure	No Issues	No Issues	No Issues	No Issues	No Issues
Devers - Vista 230 kV with stuck breaker followed by Devers 3A bank	P4.2	Breaker Failure	No Issues	No Issues	No Issues	No Issues	No Issues
Devers - Vista 230 kV #2 with stuck breaker followed by Devers-San Bernardino 230 kV	P4.2	Breaker Failure	No Issues	No Issues	No Issues	No Issues	No Issues
Devers - El Casco 230 kV with stuck breaker followed by El Casco 2A bank	P4.2	Breaker Failure	No Issues	No Issues	No Issues	No Issues	No Issues
Mirage-J.Hinds 230 kV with stuck breaker followed by Mirage-Ramon 230 kV	P4.2	Breaker Failure	No Issues	No Issues	No Issues	No Issues	No Issues
Mirage-J.Hinds 230 kV with stuck breaker followed by Mirage-Ramon 230 kV Blythe 1CT trip (RAS)	P4.2	Breaker Failure	No Issues	No Issues	No Issues	No Issues	No Issues
BlytheSCE-EagleMTN 161 kV, non-redundant pilot relay fail (20% Blythe)	P5.2	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues

Contingency	Category	Category Description	Transient Stability Performance				
			Baseline Scenarios			Sensitivity Scenarios	
			2027 Summer Peak	2032 Summer Peak	2024 Spring Off-Peak	2027 SP High CEC Forecast	2024 OP Heavy Renewable & Min Gas Gen*
BlytheSCE-EagleMTN 161 kV, non-redundant pilot relay fail (20% EagleMTN)	P5.2	Non-Redundant Relay	No Issues	No Issues	Diverge	No Issues	No Issues
EagleMTN-IronMTN 230 kV, non-redundant pilot relay fail (20% EagleMTN)	P5.2	Non-Redundant Relay	No Issues	No Issues	Diverge	No Issues	No Issues
EagleMTN-IronMTN 230 kV, non-redundant pilot relay fail (20% IronMTN)	P5.2	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues
Julian Hinds-EagleMTN 230 kV, non-redundant pilot relay fail (20% EagleMTN)	P5.2	Non-Redundant Relay	No Issues	No Issues	Diverge	No Issues	No Issues
Julian Hinds-EagleMTN 230 kV & Blythe 1CT trip (RAS), non-redundant pilot relay fail	P5.2	Non-Redundant Relay	No Issues	No Issues	Diverge	No Issues	No Issues
Julian Hinds-EagleMTN 230 kV, non-redundant pilot relay fail (20% Julian Hinds)	P5.2	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues
Julian Hinds-EagleMTN 230 kV & Blythe 1CT trip (RAS), non-redundant pilot relay fail	P5.2	Non-Redundant Relay	No Issues	No Issues	Diverge	No Issues	No Issues
Julian Hinds-Mirage 230 kV, non-redundant pilot relay fail (20% Julian Hinds)	P5.2	Non-Redundant Relay	No Issues	No Issues	Unstable	No Issues	No Issues
Julian Hinds-Mirage 230 kV & Blythe 1CT trip (RAS),non-redundant pilot relay fail	P5.2	Non-Redundant Relay	No Issues	No Issues	Diverge	No Issues	No Issues
Julian Hinds-Mirage 230 kV, non-redundant pilot relay fail (20% Mirage)	P5.2	Non-Redundant Relay	No Issues	No Issues	Diverge	No Issues	No Issues
Julian Hinds-Mirage 230 kV & Blythe 1CT trip (RAS), non-redundant pilot relay fail	P5.2	Non-Redundant Relay	No Issues	No Issues	Diverge	No Issues	No Issues
Julian Hinds-Mirage & EagleMTN-IronMTN 230 kV	P6.1	N-1-1	Diverge	Diverge	Unstable	Diverge	No Issues
Julian Hinds-Mirage & EagleMTN-IronMTN 230 kV & ISO7720 (OP)	P6.1	N-1-1	Diverge	No Issues	Diverge	Diverge	No Issues
Colorado River - Red Bluff 500 kV #1 & #2	P6.1	N-1-1	No Issues	No Issues	No Issues	Diverge	No Issues
Devers - Red Bluff 500 kV #1 & #2	P6.1	N-1-1	No Issues	No Issues	No Issues	No Issues	No Issues
Devers - Valley 500 kV #1 & #2	P6.1	N-1-1	No Issues	No Issues	No Issues	No Issues	No Issues
Etiwanda - San Bernardino & El Casco-San Bernardino 230kV	P6.1	N-1-1	No Issues	No Issues	No Issues	No Issues	No Issues
San Bernardino - Vista & Devers - San Bernardino 230kV	P6.1	N-1-1	No Issues	No Issues	No Issues	No Issues	No Issues
Colorado River - Palo Verde & Colorado River - Delaney 500 kV	P6.1	N-1-1	No Issues	No Issues	No Issues	No Issues	No Issues
Mirage-Ramon & Coachella Valley-Mirage 230 kV	P6.1	N-1-1	Diverge	No Issues	Diverge	Diverge	Diverge
Mirage-Ramon & Coachella Valley-Mirage 230 kV with RAS	P6.1	N-1-1	Diverge	No Issues	Diverge	Diverge	Diverge
Devers - Mirage 230 kV #1 & #2	P7.1	DCTL	No Issues	Diverge	Diverge	No Issues	No Issues
Devers - Mirage 230 kV #1 & #2 with RAS	P7.1	DCTL	No Issues	Diverge	No Issues	No Issues	No Issues
Devers-Glimmer & Devers-El Casco 230 kV	P7.1	DCTL	No Issues	No Issues	No Issues	No Issues	No Issues
Glimmer-San Bernardino & San Bernardino-El Casco 230 kV	P7.1	DCTL	No Issues	No Issues	No Issues	No Issues	No Issues
Devers - Vista 230 kV #1 & #2	P7.1	DCTL	No Issues	No Issues	No Issues	No Issues	No Issues
Etiwanda-San Bernardino & San Bernardino-Vista 230 kV	P7.1	DCTL	No Issues	No Issues	No Issues	No Issues	No Issues
Mira Loma-Vista #2 & Mira Loma-Vista #1/Vista-Wildlife 230 kV	P7.1	DCTL	No Issues	No Issues	No Issues	No Issues	No Issues
Coachella Valley-Ramon & Coachella Valley-Mirage 230 kV	P7.1	DCTL	Diverge	No Issues	Diverge	Diverge	Diverge
Coachella Valley-Ramon & Coachella Valley-Mirage 230 kV with RAS	P7.1	DCTL	Diverge	No Issues	Diverge	Diverge	Diverge
Devers Substation 500 kV Bus & AA Banks	Extreme	N-1-1	No Issues	No Issues	No Issues	No Issues	No Issues
Valley Substation 500 kV Bus & AA Banks	Extreme	N-1-1	No Issues	No Issues	No Issues	No Issues	No Issues
Loss of Mountainview Generation Station	Extreme	N-1-1	No Issues	No Issues	No Issues	No Issues	No Issues
Non Redundant DC Supply							
EagleMTN 230 kV Bus, non-Redundant DC Supply fail	P5.3.13c	Non-Redundant DC Supply	WECC criteria not met	WECC criteria not met	WECC criteria not met	WECC criteria not met	WECC criteria not met
Julian Hinds 230 kV Bus, non-Redundant DC Supply fail	P5.3.13c	Non-Redundant DC Supply	WECC criteria not met	WECC criteria not met	WECC criteria not met	WECC criteria not met	WECC criteria not met
BlytheSCE 161 kV Bus, non-Redundant DC Supply fail	P5.3.13c	Non-Redundant DC Supply	WECC criteria not met	WECC criteria not met	WECC criteria not met	WECC criteria not met	WECC criteria not met
Mirage 230 kV Bus, non-Redundant DC Supply fail	P5.3.13c	Non-Redundant DC Supply	WECC criteria not met	WECC criteria not met	WECC criteria not met	WECC criteria not met	WECC criteria not met
Devers 500 kV Bus, non-Redundant DC Supply fail	P5.3.13c	Non-Redundant DC Supply	WECC criteria not met	WECC criteria not met	WECC criteria not met	WECC criteria not met	WECC criteria not met
El Casco 230 kV Bus, non-Redundant DC Supply fail	P5.3.13c	Non-Redundant DC Supply	WECC criteria not met	WECC criteria not met	WECC criteria not met	WECC criteria not met	WECC criteria not met
San Bernardino 230 kV Bus, non-Redundant DC Supply fail	P5.3.13c	Non-Redundant DC Supply	WECC criteria not met	WECC criteria not met	WECC criteria not met	WECC criteria not met	WECC criteria not met
Vista 230 kV Bus, non-Redundant DC Supply fail	P5.3.13c	Non-Redundant DC Supply	WECC criteria not met	WECC criteria not met	WECC criteria not met	WECC criteria not met	WECC criteria not met
Etiwanda 230 kV Bus, non-Redundant DC Supply fail	P5.3.13c	Non-Redundant DC Supply	WECC criteria not met	WECC criteria not met	WECC criteria not met	WECC criteria not met	WECC criteria not met
Valley 500 kV Bus, non-Redundant DC Supply fail	P5.3.13c	Non-Redundant DC Supply	WECC criteria not met	WECC criteria not met	WECC criteria not met	WECC criteria not met	WECC criteria not met

Contingency	Category	Category Description	Transient Stability Performance				
			Baseline Scenarios			Sensitivity Scenarios	
			2027 Summer Peak	2032 Summer Peak	2024 Spring Off-Peak	2027 SP High CEC Forecast	2024 OP Heavy Renewable & Min Gas Gen*
Non Redundant Trip Coils							
Colorado River-Palo Verde 500 kV, non-Redundant Trip Coil fail at Colorado River	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Colorado River-Red Bluff 500 kV #1 , non-Redundant Trip Coil fail at Colorado River	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Colorado River 1AA Bank, non-Redundant Trip Coil fail at Colorado River	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Colorado River-Genesis 230 kV, non-Redundant Trip Coil fail at Colorado River	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Colorado River-Black Creek 230 kV, non-Redundant Trip Coil fail at Colorado River	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Colorado River-Dracker 230 kV, non-Redundant Trip Coil fail at Colorado River	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Colorado River-Suncatcher 230 kV, non-Redundant Trip Coil fail at Colorado River	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Colorado River-Crimson 230 kV, non-Redundant Trip Coil fail at Colorado River	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Colorado River-Centipede 230 kV, non-Redundant Trip Coil fail at Colorado River	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Colorado River-Filippi 230 kV, non-Redundant Trip Coil fail at Colorado River	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Colorado River-Red Bluff 500 kV #1 , non-Redundant Trip Coil fail at Red Bluff	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Red Bluff 1AA Bank, non-Redundant Trip Coil fail at Red Bluff	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Devers-Red Bluff 500 kV No. 2, non-Redundant Trip Coil fail at Red Bluff	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Desert Sunlight-Red Bluff 230 kV, non-Redundant Trip Coil fail at Red Bluff	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Black Ranch-Red Bluff 230 kV, non-Redundant Trip Coil fail at Red Bluff	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Almasol-Red Bluff 230 kV, non-Redundant Trip Coil fail at Red Bluff	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Devers-Red Bluff 500 kV No. 2, non-Redundant Trip Coil fail at Devers	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Devers-Valley 500 kV No. 1, non-Redundant Trip Coil fail at Devers	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Devers-Red Bluff 500 kV No. 2, non-Redundant Trip Coil fail at Devers	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Devers-Valley 500 kV No. 1, non-Redundant Trip Coil fail at Devers	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Devers 1AA Bank, non-Redundant Trip Coil fail at Devers	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Devers-El Casco 230 kV, non-Redundant Trip Coil fail at Devers	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Devers-Mirage 230 kV No. 1 , non-Redundant Trip Coil fail at Devers	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Devers-Glimmer 230 kV, non-Redundant Trip Coil fail at Devers	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Devers-Sentinel 230 kV, non-Redundant Trip Coil fail at Devers	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Devers-Vista 230 kV No. 2, non-Redundant Trip Coil fail at Devers	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Devers-El Casco 230 kV, non-Redundant Trip Coil fail at El Casco	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
El Casco-San Bernadino 230 kV, non-Redundant Trip Coil fail at El Casco	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
El Casco-San Bernadino 230 kV, non-Redundant Trip Coil fail at San Bernadino	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Glimmer-San Bernadino 230 kV, non-Redundant Trip Coil fail at San Bernadino	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Etiwanda-San Bernardino 230 kV, non-Redundant Trip Coil fail at San Bernadino	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Mountainview-San Bernardino 230 kV No. 3, non-Redundant Trip Coil fail at San Bernadino	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
San Bernardino-Vista 230 kV, non-Redundant Trip Coil fail at San Bernadino	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
San Bernardino-Vista 230 kV, non-Redundant Trip Coil fail at Vista	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Devers-Vista 230 kV No. 1, non-Redundant Trip Coil fail at Vista	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Etiwanda-Vista 230 kV, non-Redundant Trip Coil fail at Vista	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Mira Loma-Vista 230 kV No. 1, non-Redundant Trip Coil fail at Vista	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Mira Loma-Vista 230 kV No. 2, non-Redundant Trip Coil fail at Vista	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Etiwanda-San Bernadino 230 kV, non-Redundant Trip Coil fail at Etiwanda	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Etiwanda-Vista 230 kV, non-Redundant Trip Coil fail at Etiwanda	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Devers-Valley 500 kV No. 1, non-Redundant Trip Coil fail at Valley	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Serrano-Valley 500 kV, non-Redundant Trip Coil fail at Valley	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Valley 1AA Bank, non-Redundant Trip Coil fail at Valley	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Valley 4AA Bank, non-Redundant Trip Coil fail at Valley	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Devers-Mirage 230 kV No. 1 , non-Redundant Trip Coil fail at Mirage	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues

Study Area: **SCE Eastern area**

Transient Stability

Contingency	Category	Category Description	Transient Stability Performance				
			Baseline Scenarios			Sensitivity Scenarios	
			2027 Summer Peak	2032 Summer Peak	2024 Spring Off-Peak	2027 SP High CEC Forecast	2024 OP Heavy Renewable & Min Gas Gen*
Julian Hinds-Mirage 230 kV, non-Redundant Trip Coil fail at Mirage	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Mirage-Ramon 230 kV, non-Redundant Trip Coil fail at Mirage	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Coachella Valley-Mirage 230 kV, non-Redundant Trip Coil fail at Mirage	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Julian Hinds-Mirage 230 kV, non-Redundant Trip Coil fail at Julian Hinds	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Buck Blvd-Julian Hinds 230 kV, non-Redundant Trip Coil fail at Julian Hinds	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues
Eagle Mtn-Julian Hinds (MWD) , non-Redundant Trip Coil fail at Julian Hinds	P5.4.13d	Non-Redundant TC	No Issues	No Issues	No Issues	No Issues	No Issues

Potential Mitigation Solutions
Blythe RAS

Potential Mitigation Solutions
Add redundant pilot relay
Add redundant pilot relay
Add redundant pilot relay
Add redundant pilot relay
Add redundant pilot relay
Add redundant pilot relay
Add redundant pilot relay
Add redundant pilot relay
Add redundant pilot relay
ISO7720 (OP) with system adjustments after the first contingency
ISO7720 (OP) with system adjustments after the first contingency
Colorado River CRAS
System adjustments after the first contingency
System adjustments after the first contingency
System adjustments after the first contingency
Path 42 RAS, Blythe RAS
Path 42 RAS, Blythe RAS
Further investigation in collaboration with IID
Further investigation in collaboration with IID

Potential Mitigation Solutions

Potential Mitigation Solutions

Worst Contingency	Category	Category Description	Loading % (Baseline Scenarios)					Loading % (Sensitivity Scenarios)				Potential Mitigation Solutions
			2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Spring Off-Peak	2027 Spring Off-Peak	2027 SP with Forecasted Load Addition	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Heavy Renewable & Min Gas Gen	2035 SP with Additional Transportation Electrification	

No single contingency resulted in total load drop of more than 250 MW

2022-2023 ISO Reliability Assessment - Preliminary Study Results
Study Area: SCE Eastern area
Single Source Substation with more than 100 MW Load

Worst Contingency	Category	Category Description	Loading % (Baseline Scenarios)					Loading % (Sensitivity Scenarios)				Potential Mitigation Solutions
			2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Spring Off-Peak	2027 Spring Off-Peak	2027 SP with Forecasted Load Addition	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Heavy Renewable & Min Gas Gen	2035 SP with Additional Transportation Electrification	

No single source substation with more than 100 MW