

2013/2014 ISO Reliability Assessment - Study Results

Study Area: **SCE Eastern area - Summer Peak**

Thermal Overloads



ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)			Mitigation Solutions
					2015 Summer Peak	2018 Summer Peak	2023 Summer Peak	
Eastern-SP-T-1	Julian Hinds SCE–MWD 230 kV bus tie	Julian Hinds–Mirage 230 kV line (Bythe RAS tripping one CTG unit)	B	L-1	<100	102	102	The following mitigations are proposed to address all of the issues identified in this area: (1) Increase the rating of the Julian Hinds bus section and the Blythe Energy RAS set-point (2) Permanently close Mead–Camino West 230 kV line (MWD) (3) Open Eagle Mountain–Blythe 161 kV line after first contingency
		Julian Hinds–Mirage & Iron Mountain–Camino–Mead–Gene 230 kV lines (Bythe RAS tripping one CTG unit)(Note 1)	C	L-1/L-1	<100	107	104	
		Julian Hinds–Mirage & Eagle Mountain–Iron Mountain 230 kV lines (Bythe RAS tripping one CTG unit)(Note 1)	C	L-1/L-1	<100	109	106	
		Julian Hinds–Mirage & Parker–Gene 230 kV lines (Bythe RAS tripping one CTG unit) (Note 1)	C	L-1/L-1	<100	102	102	
Eastern-SP-T-2	Eagle Mountain–Blythe 161 kV line	Julian Hinds–Mirage & Iron Mountain–Camino–Mead–Gene 230 kV lines (Bythe RAS tripping one CTG unit) (Note 1)	C	L-1/L-1	<100	109	106	
		Julian Hinds–Mirage & Eagle Mountain–Iron Mountain 230 kV lines (Bythe RAS tripping one CTG unit) (Note 1)	C	L-1/L-1	<100	122	118	

Note 1: The existing Blythe RAS is designed to trip the Blythe gen tie if the overload persists after one unit is tripped. This RAS action could lead to instability in the area.

San Onofre Nuclear Generation Station was retired on June 7, 2013 and therefore was removed from the base cases used for the 2013/14 ISO transmission planning process.

Thermal Overloads

ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)			Mitigation Solutions
					2015 Summer Off-Peak	2018 Summer Light Load	N/A	
Eastern-NP-T-1	Julian Hinds SCE–MWD 230 kV bus tie	Julian Hinds–Mirage 230 kV line (Bythe RAS tripping one CTG unit)	B	L-1	<100	103	-	Same as above
		Julian Hinds–Mirage & Iron Mountain–Camino–Mead–Gene 230 kV lines (Bythe RAS tripping one CTG unit)(Note 1)	C	L-1/L-1	<100	110	-	
		Julian Hinds–Mirage & Eagle Mountain–Iron Mountain 230 kV lines (Bythe RAS tripping one CTG unit)(Note 1)	C	L-1/L-1	<100	112	-	
		Julian Hinds–Mirage & Parker–Gene 230 kV lines (Bythe RAS tripping one CTG unit) (Note 1)	C	L-1/L-1	<100	103	-	
Eastern-NP-T-2	Eagle Mountain–Blythe 161 kV line	Julian Hinds–Mirage & Iron Mountain–Camino–Mead–Gene 230 kV lines (Bythe RAS tripping one CTG unit) (Note 1)	C	L-1/L-1	<100	107	-	
		Julian Hinds–Mirage & Eagle Mountain–Iron Mountain 230 kV lines (Bythe RAS tripping one CTG unit) (Note 1)	C	L-1/L-1	<100	119	-	

Note 1: The existing Blythe RAS is designed to trip the Blythe gen tie if the overload persists after one unit is tripped. This RAS action could lead to instability in the area.

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Voltage Deviations



ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %			Potential Mitigation Solutions
					2015 Summer Peak	2018 Summer Peak	2023 Summer Peak	
Eastern-SP-VD-1	Intake (MWD) substation	Gene-Parker 230 kV line (RAS not activated)	B	L-1	5	5	5	Same as above
Eastern-SP-VD-2	Multiple MWD substations	Gene-Parker & Julian Hinds-Mirage 230 kV lines (RAS opening Blythe gen tie)	C	L-1/L-1	>10%	>10%	>10%	Same as above

Transient Stability

ID	Contingency	Category	Category Description	Transient Stability Performance			Potential Mitigation Solutions
				2015 Summer Peak	2018 Summer Peak	2023 Summer Peak	
Eastern-SP-TS-1	Gene-Parker 230 kV line (RAS not activated)	B	L-1	Voltage dip at Intake substation (MWD) did not meet requirements	Voltage dip at Intake substation (MWD) did not meet requirements	Voltage dip at Intake substation (MWD) did not meet requirements	Same as above
Eastern-SP-TS-2	Gene-Parker & Julian Hinds-Mirage 230 kV lines (RAS opening Blythe gen tie)	C	L-1/L-1	Voltage and frequency dip at Multiple MWD substations did not meet requirements	Voltage and frequency dip at Multiple MWD substations did not meet requirements	Voltage and frequency dip at Multiple MWD substations did not meet requirements	Same as above

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Single Contingency Load Drop

ID	Worst Contingency	Category	Category Description	Amount of Load Drop (MW)			Potential Mitigation Solutions
				Select..	Select..	Select..	

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



Single Contingency Load Drop

ID	Worst Contingency	Category	Category Description	Amount of Load Drop (MW)			Potential Mitigation Solutions
				Select..	Select..	Select..	

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

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Study Area: **SCE Eastern area - Summer Peak**



Single Source Substation with more than 100 MW Load

ID	Substation	Load Served (MW)			Potential Mitigation Solutions
		Select..	Select..	Select..	

No single source substation with more than 100 MW Load

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Study Area: **SCE Eastern area - Summer Off-Peak & Summer Light Load**



Single Source Substation with more than 100 MW Load

ID	Substation	Load Served (MW)			Potential Mitigation Solutions
		Select..	Select..	Select..	

No single source substation with more than 100 MW Load