

Study Area: SCE East of Lugo

Thermal Overload



ID	Overloaded Facility	Worst Contingencies	Category	Category Description	Loading (%)						Potential Mitigation Solutions
					2019 Summer Peak	2022 Summer Peak	2027 Summer Peak	2019 Spring Light Load	2022 Spring Off-Peak	2022SP Heavy Renewables & Min Gas Gen	
EOL-T-1	System diverge	Eldorado 500/230kV Transformer No.5	P1	Single contingency	Nconv	Nconv	Nconv	<95	Nconv	<95	Ivanpah RAS
EOL-T-2	Ivanpah 230/115kV Transformer No.1	Ivanpah 230/115kV Transformer No.2 & Ivanpah Mountain Pass 115kV line	P6	Two overlapping singles	<95	<95	<95	<95	109.91	109.10	Ivanpah RAS
EOL-T-3	Ivanpah 230/115kV Transformer No.2	Ivanpah 230/115kV Transformer No.1 & Ivanpah Mountain Pass 115kV line	P6	Two overlapping singles	<95	<95	<95	<95	109.91	109.10	Ivanpah RAS
EOL-T-4	Ivanpah-Mountain Pass 115kV Line	Ivanpah 230/115kV Transformer Nos. 1&2	P6	Two overlapping singles	133.94	134.56	134.21	<95	<95	Nconv	Ivanpah RAS
EOL-T-5	System diverge	Eldorado N/S bus Section A	P5	Fault plus relay failure to operate	Nconv	Nconv	Nconv	<95	Nconv	Nconv	Install redundant relay
EOL-T-6	System diverge	Lugo E/W Bus	P5	Fault plus relay failure to operate	Nconv	Nconv	Nconv	<95	Nconv	Nconv	Install redundant relay
EOL-T-7	System diverge	Ivanpah-Eldorado & Primm-Eldorado 230kV lines	P6	Two overlapping singles	Nconv	Nconv	Nconv	<95	Nconv	Nconv	Ivanpah RAS

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Voltage Deviations



ID	Substation	Worst Contingencies	Category	Category Description	Post Cont. Voltage Deviation %						Potential Mitigation Solutions
					2019 Summer Peak	2022 Summer Peak	2027 Summer Peak	2019 Spring Light Load	2022 Spring Off-Peak	2022SP Heavy Renewables & Min Gas Gen	
EOL-VD-1											

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High/Low Voltage



ID	Substation	Worst Contingencies	Category	Category Description	Voltage (PU)						Potential Mitigation Solutions
					2019 Summer Peak	2022 Summer Peak	2027 Summer Peak	2019 Spring Light Load	2022 Spring Off-Peak	2022SP Heavy Renewables & Min Gas Gen	
EOL-V-1											
EOL-V-2											
X-V-3											
X-V-4											
X-V-5											
X-V-6											
X-V-7											
X-V-8											
X-V-9											
X-V-10											
X-V-11											
X-V-12											
X-V-13											
X-V-14											
X-V-15											
X-V-16											
X-V-17											
X-V-18											
X-V-19											

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Transient Stability



ID	Contingency	Category	Category Description	Transient Stability Performance						Potential Mitigation Solutions
				2019 Summer Peak	2022 Summer Peak	2027 Summer Peak	2019 Spring Light Load	2022 Spring Off-Peak	2022SP Heavy Renewables & Min Gas Gen	
EOL-TS-1	Bulk_P1_EIDorado_5AA_RAS	P1	Normal clearing	Stable	Stable	Stable	Stable	Stable	Stable	
EOL-TS-2	Main_P5-5_Eldorado230	P5.5	Non-redundant relay failure	Stable	Stable	Stable	Stable	Stable	Stable	
EOL-TS-3	Main_P5-5_EldoradoB230	P5.5	Non-redundant relay failure	Stable	Stable	Stable	Stable	Stable	Stable	
EOL-TS-4	Bulk_EOL_Lugo-EID-Mh-500_RAS	P7	Normal clearing	Stable	Stable	Stable	Stable	Stable	Stable	
EOL-TS-5										
EOL-TS-6										
EOL-TS-7										
EOL-TS-8										
EOL-TS-9										
EOL-TS-10										
EOL-TS-11										
EOL-TS-12										
EOL-TS-13										
EOL-TS-14										
EOL-TS-15										
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EOL-TS-27										
EOL-TS-28										
EOL-TS-29										
EOL-TS-30										
EOL-TS-31										

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Single Contingency Load Drop

ID	Worst Contingencies	Category	Category Description	Amount of Load Drop (MW)										Potential Mitigation Solutions
				Select..	Select..	Select..	Select..	Select..	Select..	Select..	Select..	Select..	Select..	
X-SLD-1														

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

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Single Source Substation with more than 100 MW Load

ID	Substation	Load Served (MW)										Potential Mitigation Solutions
		Select..	Select..	Select..	Select..	Select..	Select..	Select..	Select..	Select..	Select..	
X-SS-1												

No single source substation with more than 100 MW Load