

Study Area: Valley Electric Association

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	2022 Summer Off-Peak with Maximum PV Output	
VEA-T-1	Jackass - Mercury SW 138kV Line	VISTA -JOHNNIE -VALLEYTP 138-kV Line CKT 1	P1	Single contingency	<95	<95	<95	<95	<95	130.63	Vista RAS
VEA-T-2	Jackass - Mercury SW 138kV Line	VISTA-CHARLSTN 138 & VISTA-JOHNIE 138; BKR VI242	P4	Fault plus stuck breaker	<95	<95	<95	<95	<95	130.37	Vista RAS
VEA-T-3	Jackass - Mercury SW 138kV Line	PAHRUMP-INNOVATION 230 & VISTA-JOHNIE 138	P7	Common structure	<95	<95	<95	<95	<95	130.32	Vista RAS
VEA-T-4	Valley - LTHRPWLS 138kV Line	VISTA-CHARLSTN 138 & VISTA-PAHRUMP 138; BKR VI232	P4	Fault plus stuck breaker	<95	<95	<95	<95	<95	108.93	Vista RAS
VEA-T-5	LTHRPWLS- JACKASSF 138kV Line	VISTA-CHARLSTN 138 & VISTA-PAHRUMP 138; BKR VI232	P4	Fault plus stuck breaker	<95	<95	<95	<95	<95	106.23	Vista RAS
VEA-T-6	Pahrump 230/138kV Transformers Nos.3&4	Bob-Mead 230kV & Eldorado 230/115kV Transformer No.5	P6	Two overlapping singles	<95	Nconv	<95	<95	<95	<95	Ivanpah RAS
VEA-T-7	Pahrump-Vista 138kV Line	VALLEYTP -LTHRPWLS & CHARLSTN -VISTA 138kV lines	P6	Two overlapping singles	<95	<95	<95	<95	<95	110.30	Vista RAS
VEA-T-8	Jackass-ValleyNTS-Tweezer 138kV Line	VISTA -JOHNNIE -VALLEYTP & Mercury SW- Jackass Flats 138kV lines	P6	Two overlapping singles	<95	<95	<95	<95	<95	116.87	Vista RAS
VEA-T-9	Tweezer-French Flat 138kV Line	VISTA -JOHNNIE -VALLEYTP & Mercury SW- Jackass Flats 138kV lines	P6	Two overlapping singles	<95	<95	<95	<95	<95	111.25	Vista RAS
VEA-T-10	French Flat-Merc dist 138kV Line	VISTA -JOHNNIE -VALLEYTP & Mercury SW- Jackass Flats 138kV lines	P6	Two overlapping singles	<95	<95	<95	<95	<95	108.56	Vista RAS
VEA-T-11	System diverge	Pahrump-Bob SS & Pahrump-Innovation 230kV lines	P6	Two overlapping singles	<95	Nconv	Nconv	<95	<95	<95	Existing UVLS or operational action plan
VEA-T-12											

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VEA-T-13											
VEA-T-14											
VEA-T-15											
VEA-T-16											
VEA-T-17											
VEA-T-18											
VEA-T-19											
VEA-T-20											

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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	2022 Summer Off-Peak with Maximum PV Output	
VEA-VD-1											
VEA-VD-2											
VEA-VD-3											
VEA-VD-4											
VEA-VD-5											
VEA-VD-6											
VEA-VD-7											
VEA-VD-8											
VEA-VD-9											
VEA-VD-10											
VEA-VD-11											
VEA-VD-12											
VEA-VD-13											
VEA-VD-14											
VEA-VD-15											
VEA-VD-16											
VEA-VD-17											
VEA-VD-18											
VEA-VD-19											
VEA-VD-20											
VEA-VD-21											
VEA-VD-22											
VEA-VD-23											
VEA-VD-24											
VEA-VD-25											
VEA-VD-26											
VEA-VD-27											
VEA-VD-28											
VEA-VD-29											
VEA-VD-30											

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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	2022 Summer Off-Peak with Maximum PV Output	
VEA-V-1	Pahrump 230kV	Pahrump-Innovation & Pahrump-Mead 230kV lines	P6	Two overlapping singles	>0.9	>0.9	>0.9	0.8773	>0.9	>0.9	Existing UVLS
VEA-V-2	System diverge	Desert View-Nwest & Pahrump-Bob SS 230kV lines	P6	Two overlapping singles	>0.9	Nconv	Nconv	>0.9	>0.9	>0.9	Existing UVLS
VEA-V-3	System diverge	Pahrump-Bob SS & Pahrump-Innovation 230kV lines	P6	Two overlapping singles	>0.9	Nconv	Nconv	>0.9	>0.9	>0.9	Exisiting UVLS
VEA-V-4	Vista, Charlstn and Thsndair 138kV buses	GAMEBIRD -THSND AIR & PAHRUMP - VISTA 138kV lines	P6	Two overlapping singles	0.8983	0.8257	0.8237	>0.9	>0.9	>0.9	Existing UVLS
VEA-V-5											
VEA-V-6											
VEA-V-7											
VEA-V-8											
VEA-V-9											
VEA-V-10											
VEA-V-11											
VEA-V-12											
VEA-V-13											



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	2022 Summer Off-Peak with Maximum PV Output	
VEA-TS-1	INNOVATION -DESERT VIEW 230.0-kV Line	P1.2	Single contingency	Stable	Stable	Stable	Stable	Stable	Stable	
VEA-TS-2	DESERT VIEW -NWEST 230.0-kV Line	P1.2	Single contingency	Stable	Stable	Stable	Stable	Stable	Stable	
VEA-TS-3	PAHRUMP -BOB 230.0-kV Line CKT 1	P1.2	Single contingency	N/A	Stable	Stable	Stable	Stable	Stable	
VEA-TS-4	MEAD S -BOB 230.0-kV Line CKT 1	P1.2	Single contingency	N/A	Stable	Stable	Stable	Stable	Stable	
VEA-TS-5	ELDORDO2 -BOB 230.0-kV Line CKT 1	P1.2	Single contingency	N/A	Stable	Stable	Stable	Stable	Stable	
VEA-TS-6	PAHRUMP -INNOVATION 230.0-kV Line CKT 1	P1.2	Single contingency	Stable	Stable	Stable	Stable	Stable	Stable	
VEA-TS-7	PAHRUMP 138/230-kV Tran Bnk 3	P1.3	Single contingency	Stable	Stable	Stable	Stable	Stable	Stable	
VEA-TS-8	INNOVATION 138/230-kV Tran Bnk 1	P1.3	Single contingency	Stable	Stable	Stable	Stable	Stable	Stable	
VEA-TS-9	THSNDAIR-CHARLSTN 138 & THSNDAIR-GAMEBIRD 138; BKR TH222	P4.2	Stuck breaker	Stable	Stable	Stable	Stable	Stable	Stable	
VEA-TS-10	PAHRUMP-GAMEBIRD 138 & GAMEBIRD-THSNDAIR 138; BKR GB222	P4.2	Stuck breaker	Stable	Stable	Stable	Stable	Stable	Stable	
VEA-TS-11	PAHRUMP-GAMEBIRD 138 & GAMEBIRD-SANDY 138; BKR GB212"	P4.2	Stuck breaker	Stable	Stable	Stable	Stable	Stable	Stable	
VEA-TS-12	SANDY-GAMEBIRD 138 & GAMEBIRD-THSNDAIR 138; BKR GB232	P4.2	Stuck breaker	Stable	Stable	Stable	Stable	Stable	Stable	
VEA-TS-13	PAHRUMP-VISTA 138 & PAHRUMP-GAMEBIRD 138; BKR PA222	P4.2	Stuck breaker	Stable	Stable	Stable	Stable	Stable	Stable	
VEA-TS-14	BOB SS 230-kV BRKR	P4.2	Stuck breaker	N/A	Stable	Stable	Stable	Stable	Stable	
VEA-TS-15	PAHRUMP 138/230kV Tran Bnk. 3 & PAHRUMP-BOB 230-kV Line; BKR PA112	P4.3	Stuck breaker	N/A	Stable	Stable	Stable	Stable	Stable	
VEA-TS-16	PAHRUMP 138/230kV Tran Bnk. 3 & PAHRUMP-INNOVATION 230; BKR PA132	P4.3	Stuck breaker	Stable	Stable	Stable	Stable	Stable	Stable	
VEA-TS-17	PAHRUMP-MEAD 230 & PAHRUMP-GAMEBIRD 138	P7.1	Normal clearing	Stable	Stable	Stable	Stable	Stable	Stable	



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	2022 Summer Off-Peak with Maximum PV Output	
VEA-TS-18	PAHRUMP-BOB 230 & PAHRUMP-GAMEBIRD 138	P7.1	Normal clearing	Stable	Stable	Stable	Stable	Stable	Stable	
VEA-TS-19	PAHRUMP-MEAD 230 & GAMEBIRD -SANDY 138	P7.1	Normal clearing	Stable	Stable	Stable	Stable	Stable	Stable	
VEA-TS-20	PAHRUMP-BOB 230 & GAMEBIRD -SANDY 138	P7.1	Normal clearing	N/A	Stable	Stable	Stable	Stable	Stable	
VEA-TS-21	PAHRUMP-INNOVATION 230 & PAHRUMP-VISTA 138	P7.1	Normal clearing	Stable	Stable	Stable	Stable	Stable	Stable	
VEA-TS-22	PAHRUMP-INNOVATION 230 & VISTA-JOHNIE 138	P7.1	Normal clearing	Stable	Stable	Stable	Stable	Stable	Stable	
VEA-TS-23										
VEA-TS-24										
VEA-TS-25										
VEA-TS-26										
VEA-TS-27										
VEA-TS-28										
VEA-TS-29										
VEA-TS-30										
VEA-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