



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)					Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2020 Summer Peak	2023 Summer Peak	2028 Summer Peak	2020 Spring Off-Peak	2023 Spring Off-Peak	2020SP Load Addition & NNSS Reconfiguration*	2023SP Load Addition & NNSS Reconfiguration*	2023OP High Renewable	
Pahrump 230/138kV Transformer No.3	Pahrump 230/138kV Transformer No.4	P1	Single outage	<100	<100	<100	<100	<100	106.2	<100	<100	Operation procedure to switch in Mercury SW-Jackass-Lanthrop line for emergency
	Desert View-Northwest 230kV & Innovation-Mercury SW 138kV lines	P6	Overlapping singles	<100	<100	100.95	<100	<100	<100	<100	<100	Congestion management
Pahrump 230/138kV Transformer No.4	Pahrump 230/138kV Transformer No.3	P1	Single outage	<100	<100	<100	<100	<100	105.3	<100	<100	Operation procedure to switch in Mercury SW-Jackass-Lanthrop line for emergency
Innovation 230/138kV Transformer	Innovation-Desert View 230kV & Pahrump-Innovation 230kV lines	P6	Overlapping singles	<100	<100	197.88	<100	<100	<100	<100	<100	Congestion management
Northwest-Mercury SW 138kV loop	Innovation-Desert View 230kV Line	P1	Single outage	<100	<100	134.49	<100	<100	<100	<100	<100	New RAS proposed in GIDAP process; opening Indian Spring-Mercury SW-Jackass-Lanthrop line
	Innovation-Desert View 230kV & Pahrump-Innovation 230kV lines	P6	Overlapping singles	<100	<100	201.74	<100	<100	<100	<100	<100	New RAS proposed in GIDAP process
Amargosa 230/138kV Transformer	Gamebird-Pahrump 138kV Line	P1	Single outage	<100	102.59	113.57	<100	<100	110.56	137.08	<100	New Charleston-Vista line; 230kV source from the new Gamebird 230kV switching station; potentail DG/battery in the local pocket
	Pahrump-Bob SS 230kV & Pahrump-Gamebird 138kV lines	P7	Common Structure	<100	102.71	113.57	<100	<100	110.6	136.88	<100	New Charleston-Vista line; 230kV source from the new Gamebird 230kV switching station; potentail DG/battery in the local pocket
	PAHRUMP-VISTA 138 & PAHRUMP-GAMEBIRD 138; BKR PA222	P4-2	Stuck Breaker	<100	102.6	113.57	<100	<100	110.55	137.07	<100	New Charleston-Vista line; 230kV source from the new Gamebird 230kV switching station; potentail DG/battery in the local pocket
	PAHRUMP 138/230kV Tran Bnk. 3 & PAHRUMP-GAMEBIRD 138; BKR PA232	P4-3	Stuck Breaker	<100	102.59	113.57	<100	<100	110.45	137.05	<100	New Charleston-Vista line; 230kV source from the new Gamebird 230kV switching station; potentail DG/battery in the local pocket
Innovation-Mercury SW 138kV Line	Desert View-Northwest 230kV & Pahrump-Innovation 230kV lines	P6	Overlapping singles	<100	<100	111.34	<100	<100	<100	<100	<100	Congestion management
Jackass Flat-Mercury SW 138kV Line	Desert View-Northwest 230kV & Pahrump-Innovation 230kV lines	P6	Overlapping singles	<100	<100	119.67	<100	<100	<100	<100	<100	Congestion management
Jackass - Mercury SW 138kV Line	Vista-Johnnie-ValleyTP 138kV Line	P1	Single contingency	<100	<100	<100	<100	<100	<100	<100	130	New RAS proposed in GIDAP process
Jackass - Mercury SW 138kV Line	Vista-Pahrump 138kV Line	P1	Single contingency	<100	<100	<100	<100	<100	<100	<100	134	New RAS proposed in GIDAP process
System diverge	Pahrump-Bob SS & Pahrump-Innovation 230kV lines	P6	Overlapping singles	<100	<100	<100	<100	<100	Nconv	Nconv	<100	Existing UVLS or operational action plan
System diverge	Innovation-Desert View 230kV & Pahrump-Bob SS 230kV lines	P6	Overlapping singles	Nconv	<100	<100	<100	<100	Nconv	Nconv	<100	Existing UVLS or operational action plan

* The 2020SP & 2023SP Load Addition & NNSS Reconfiguration sensitivity cases modeled VEA new load service application and the NNSS radial line arrangement

Study Area: Valley Electric Association

High/Low Voltages



Substation	Contingency (All and Worst P6)	Category	Category Description	Post Cont. Voltage Deviation % (Baseline Scenarios)					Post Cont. Voltage Deviation % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2020 Summer Peak	2023 Summer Peak	2028 Summer Peak	2020 Spring Off-Peak	2023 Spring Off-Peak	2020SP High Load*	2023SP High Load*	2023OP High Renewable	
Sandy-Gamebird-Thousandir-Vista 138kV buses	Gamebird-Pahrump 138V line	P1	Single outage	0.81	0.80	0.77	>0.9	0.89	0.77	0.76	>0.9	New Charleston-Vista line; 230kV source from the new Gamebird 230kV switching station; potential DG/battery in the local pocket
Pahrump-Vista-Johnnie-Lanthrop 138kV buses	Pahrump 230/138kV Bank & Pahrump-Bob SS 230kV line	P6	Overlapping singles	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.82	>0.9	Existing UVLS; operation procedure to switch in Mercury SW-Jackass-Lanthrop line for emergency
System diverge	Pahrump-Bob SS & Pahrump-Innovation 230kV lines	P6	Overlapping singles	>0.9	>0.9	>0.9	>0.9	>0.9	Nconv	Nconv	>0.9	Existing UVLS
System diverge	Innovation-Desert View 230kV & Pahrump-Bob SS 230kV lines	P6	Overlapping singles	Nconv	>0.9	>0.9	>0.9	>0.9	Nconv	Nconv	>0.9	Existing UVLS

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Study Area: Valley Electric Association

Voltage Deviation



Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)					Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2020 Summer Peak	2023 Summer Peak	2028 Summer Peak	2020 Spring Off-Peak	2023 Spring Off-Peak	2020SP High Load	2023SP High Load	2023OP High Renewable	
None												

Study Area: Valley Electric Association

Transient Stability



Contingency	Category	Category Description	Transient Stability Performance (Number of voltage and frequency violations)								Potential Mitigation Solutions
			2020 Summer Peak	2023 Summer Peak	2028 Summer Peak	2020 Spring Off-Peak	2023 Spring Off-Peak	2020SP High Load*	2023SP High Load*	2023OP High Renewable	
Innovation-Desert View 230kV Line	P1.2	Single contingency	Stable	Stable	Stable	NA	NA	NA	Stable	NA	
Desert View-Northwest 230kV Line	P1.2	Single contingency	Stable	Stable	Stable	NA	NA	NA	Stable	NA	
Pahrump-Bob SS (Gamebird) 230kV Line	P1.2	Single contingency	Stable	Stable	Stable	NA	NA	NA	Stable	NA	
Bob SS-Mead 230kV Line	P1.2	Single contingency	Stable	Stable	Stable	NA	NA	NA	Stable	NA	
Eldorado-Bob SS 230kV Line	P1.2	Single contingency	Stable	Stable	Stable	NA	NA	NA	Stable	NA	
Pahrump 230/138kV Bank No. 3	P1.3	Single contingency	Stable	Stable	Stable	NA	NA	NA	Stable	NA	
PAHRUMP-VISTA 138 & PAHRUMP-GAMEBIRD 138; BKR PA222	P4.2	Stuck breaker	Stable	Stable	Stable	NA	NA	NA	Stable	NA	
Innovation-Desert View & Pahrump-Bob SS (Gamebird) 230kV lines	P6	Normal clearing	Stable	Stable	Stable	NA	NA	NA	Stable	NA	
Desert View-Northwest 230kV & Pahrump-Innovation 230kV lines	P6	Normal clearing	Stable	Stable	Stable	NA	NA	NA	Stable	NA	
Pahrump-Innovation and Pahrump-Bob SS (Gamebird) 230kV lines	P6	Normal clearing	Stable	Stable	Stable	NA	NA	NA	Stable	NA	
PAHRUMP-BOB 230 & PAHRUMP-GAMEBIRD 138	P7.1	Normal clearing	Stable	Stable	Stable	NA	NA	NA	Stable	NA	
Pahrump 230kV Sub	Extreme	Normal clearing	Stable	Stable	Stable	NA	NA	NA	Stable	NA	

* The 2020SP & 2023SP Load Addition & NNSS Reconfiguration sensitivity cases modeled VEA new load service application and the NNSS radial line arrangement

Study Area: Valley Electric Association



Single Contingency Load Drop

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

Study Area: **Valley Electric Association**

Single Source Substation with more than 100 MW Load



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