

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)									Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2026 Summer Peak	2029 Summer Peak	2034 Summer Peak	2039 Summer Peak	2026 Spring Off-Peak	2029 Spring Off-Peak	2034 Winter Peak	2026 SP with Forecasted Load Addition	2029 SP with Forecasted Load Addition	2026 OP BESS Charging			
Amargosa 230/138kV Transformer	PAHRUMP 230.0 to INNOVATION 230.0 Circuit 1 GAMEBIRD 230.0 to TROUT CANYON 230.0 Circuit 1	P6	N-1-1	118	<100	<100	<100	<100	<100	<100	<100	136	<100	<100	Existing UVLS scheme. The GLW core upgrades will mitigate the overload in the long term.	
Amargosa 230/138kV Transformer	TROUT CANYON 500.0 to SLOAN_CYN_5 500.0 Circuit 1 TROUT CANYON 500.0 to SLOAN_CYN_5 500.0 Circuit 2	P7	DCTL	<100	<100	<100	110	<100	<100	<100	<100	<100	<100	<100	Future Trout Canyon RAS, trip approximately 1,400MW installed capacity generation at Trout Canyon.	
CANYON 138 18102 SNOW MTN 138	GAMEBIRD 230.0 to TROUT CANYON 230.0 Circuit 1 INNOVATION 230.0 to DESERT VIEW 230.0 Circuit 1	P6	N-1-1	126	<100	<100	<100	<100	<100	<100	<100	143	<100	<100	Existing UVLS scheme. The GLW core upgrades will mitigate the overload in the long term.	
CANYON 138 18102 SNOW MTN 138	TROUT CANYON 500.0 to SLOAN_CYN_5 500.0 Circuit 1 TROUT CANYON 500.0 to SLOAN_CYN_5 500.0 Circuit 2	P7	DCTL	<100	<100	<100	135	<100	<100	<100	<100	<100	<100	<100	Future Trout Canyon RAS, trip approximately 1,400MW installed capacity generation at Trout Canyon.	
CANYON 138 18698 SIL FLG 138	GAMEBIRD 230.0 to TROUT CANYON 230.0 Circuit 1 INNOVATION 230.0 to DESERT VIEW 230.0 Circuit 1	P6	N-1-1	124	<100	<100	<100	<100	<100	<100	<100	142	<100	<100	Existing UVLS scheme. The GLW core upgrades will mitigate the overload in the long term.	
CANYON 138 18698 SIL FLG 138	TROUT CANYON 500.0 to SLOAN_CYN_5 500.0 Circuit 1 TROUT CANYON 500.0 to SLOAN_CYN_5 500.0 Circuit 2	P7	DCTL	<100	<100	<100	136	<100	<100	<100	<100	<100	<100	<100	Future Trout Canyon RAS, trip approximately 1,400MW installed capacity generation at Trout Canyon.	
COLDCREK 138 18091 RADAR 138	GAMEBIRD 230.0 to TROUT CANYON 230.0 Circuit 1 INNOVATION 230.0 to DESERT VIEW 230.0 Circuit 1	P6	N-1-1	118	<100	<100	<100	<100	<100	<100	<100	135	<100	<100	Existing UVLS scheme. The GLW core upgrades will mitigate the overload in the long term.	
COLDCREK 138 18091 RADAR 138	TROUT CANYON 500.0 to SLOAN_CYN_5 500.0 Circuit 1 TROUT CANYON 500.0 to SLOAN_CYN_5 500.0 Circuit 2	P7	DCTL	<100	<100	<100	139	<100	<100	<100	<100	<100	<100	<100	Future Trout Canyon RAS, trip approximately 1,400MW installed capacity generation at Trout Canyon.	
IS TAP 138 18091 RADAR 138	GAMEBIRD 230.0 to TROUT CANYON 230.0 Circuit 1 INNOVATION 230.0 to DESERT VIEW 230.0 Circuit 1	P6	N-1-1	116	<100	<100	<100	<100	<100	<100	<100	133	<100	<100	Existing UVLS scheme. The GLW core upgrades will mitigate the overload in the long term.	
IS TAP 138 18091 RADAR 138	TROUT CANYON 500.0 to SLOAN_CYN_5 500.0 Circuit 1 TROUT CANYON 500.0 to SLOAN_CYN_5 500.0 Circuit 2	P7	DCTL	<100	<100	<100	141	<100	<100	<100	<100	<100	<100	<100	Future Trout Canyon RAS, trip approximately 1,400MW installed capacity generation at Trout Canyon.	
IS TAP 138 189101 MERCYSW 138	GAMEBIRD 230.0 to TROUT CANYON 230.0 Circuit 1 INNOVATION 230.0 to DESERT VIEW 230.0 Circuit 1	P6	N-1-1	106	NA	NA	NA	<100	NA	NA	NA	123	NA	<100	Existing UVLS scheme. The GLW core upgrades will mitigate the overload in the long term.	
NWEST 138 18102 SNOW MTN 138 1	GAMEBIRD 230.0 to TROUT CANYON 230.0 Circuit 1 INNOVATION 230.0 to DESERT VIEW 230.0 Circuit 1	P6	N-1-1	127	<100	<100	<100	<100	<100	<100	<100	144	<100	<100	Existing UVLS scheme. The GLW core upgrades will mitigate the overload in the long term.	
NWEST 138 18102 SNOW MTN 138 1	TROUT CANYON 500.0 to SLOAN_CYN_5 500.0 Circuit 1 TROUT CANYON 500.0 to SLOAN_CYN_5 500.0 Circuit 2	P7	DCTL	<100	<100	<100	133	<100	<100	<100	<100	<100	<100	<100	Future Trout Canyon RAS, trip approximately 1,400MW installed capacity generation at Trout Canyon.	
SIL FLG 138 18050 COLDCREK 138 1	GAMEBIRD 230.0 to TROUT CANYON 230.0 Circuit 1 INNOVATION 230.0 to DESERT VIEW 230.0 Circuit 1	P6	N-1-1	124	<100	<100	<100	<100	<100	<100	<100	141	<100	<100	Existing UVLS scheme. The GLW core upgrades will mitigate the overload in the long term.	
SIL FLG 138 18050 COLDCREK 138 1	TROUT CANYON 500.0 to SLOAN_CYN_5 500.0 Circuit 1 TROUT CANYON 500.0 to SLOAN_CYN_5 500.0 Circuit 2	P7	DCTL	<100	<100	<100	137	<100	<100	<100	<100	<100	<100	<100	Future Trout Canyon RAS, trip approximately 1,400MW installed capacity generation at Trout Canyon.	
Remaining Pahrump 230/138kV Transformer	One Pahrump 230/138kV transformer Gamebird 230/138kV transformer	P6	N-1-1	<100	105	141	<100	<100	<100	<100	<100	124	<100	<100	Existing UVLS scheme.	
GAMEBIRD 230 189160 TROUT CANYON 230 1	Eldorado2 230/500-kV Tran Bnk 5 MEAD 5 230.0 to SLOAN CANYON 230.0 Circuit 1	P6	N-1-1	153	<100	<100	<100	<100	<100	<100	<100	154	<100	<100	System adjustments, Gen redispatch. The GLW core upgrades will mitigate the overload in the long term.	
TROUT CANYON 230 189040 SLOAN CANYON 230 1	Eldorado2 230/500-kV Tran Bnk 5 MEAD 5 230.0 to SLOAN CANYON 230.0 Circuit 1	P6	N-1-1	129	<100	<100	<100	<100	<100	<100	<100	129	<100	<100	System adjustments, Gen redispatch. The GLW core upgrades will mitigate the overload in the long term.	
VEA PST-IS Tap 138kV Line	PAHRUMP 138.0 to VISTA 138.0 Circuit 1 Tran INNOVATION 230.0 to INNOVATION 138.0	P6	N-1-1	<100	<100	<100	<100	<100	120	<100	<100	<100	<100	<100	System adjustments, Gen redispatch	
VEA_PST_2 138 18073 IS TAP 138 1 1	TROUT CANYON 500.0 to SLOAN_CYN_5 500.0 Circuit 1 TROUT CANYON 500.0 to SLOAN_CYN_5 500.0 Circuit 2	P7	DCTL	<100	<100	<100	150	<100	<100	<100	<100	<100	<100	<100	Future Trout Canyon RAS, trip approximately 1,400MW installed capacity generation at Trout Canyon.	
AMARGOSA 138 189008 SANDY 138 1	TROUT CANYON 500.0 to SLOAN_CYN_5 500.0 Circuit 1 TROUT CANYON 500.0 to SLOAN_CYN_5 500.0 Circuit 2	P7	DCTL	<100	<100	<100	146	<100	<100	<100	<100	<100	<100	<100	Future Trout Canyon RAS, trip approximately 1,400MW installed capacity generation at Trout Canyon.	
SANDY 138 189020 GAMEBIRD 138 1	TROUT CANYON 500.0 to SLOAN_CYN_5 500.0 Circuit 1 TROUT CANYON 500.0 to SLOAN_CYN_5 500.0 Circuit 2	P7	DCTL	<100	<100	<100	127	<100	<100	<100	<100	<100	<100	<100	Future Trout Canyon RAS, trip approximately 1,400MW installed capacity generation at Trout Canyon.	
Gamebird 230/138kV Transformer	TROUT CANYON 500.0 to SLOAN_CYN_5 500.0 Circuit 1 TROUT CANYON 500.0 to SLOAN_CYN_5 500.0 Circuit 2	P7	DCTL	<100	<100	<100	164	<100	<100	<100	<100	<100	<100	<100	Future Trout Canyon RAS, trip approximately 1,400MW installed capacity generation at Trout Canyon.	
Gamebird 230/138kV Transformer	Two Pahrump 230/138kV transformers	P6	N-1-1	<100	<100	<100	120	<100	<100	<100	<100	<100	<100	<100	Existing UVLS scheme, System adjustments	
System	NWEST 230.0 to DESERT VIEW 230.0 Circuit 1 TROUT CANYON 230.0 to SLOAN CANYON 230.0 Circuit 1	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Diverge	System adjustments	
System	Eldorado2 230/500-kV Tran Bnk 5 ELDORDO2 230.0 to SLOAN CANYON 230.0 Circuit 1	P6	N-1-1	Diverge	<100	Diverge	<100	<100	Diverge	<100	Diverge	Diverge	<100	Diverge	Ivanpah RAS System adjustments, Gen redispatch	

Substation	Contingency (All and Worst P6)	Category	Category Description	High/Low Voltage	Voltage PU (Baseline Scenarios)							Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
					2026 Summer Peak	2029 Summer Peak	2034 Summer Peak	2039 Summer Peak	2026 Spring Off-Peak	2029 Spring Off-Peak	2034 Winter Peak	2026 SP with Forecasted Load Addition	2029 SP with Forecasted Load Addition	2026 OP BESS Charging	
Gamebird, Charleston, Thousandaire, Sandy 138kV	Gamebird-Parhump 138kV line and Gamebird 230/138kV transformer	P6	N-1-1	Low Voltage	<0.9	<0.9	<0.9	<0.9	0.9<P,U.<1.1	<0.9	0.9<P,U.<1.1	<0.9	<0.9	0.9<P,U.<1.1	Existing UVLS scheme
Pahrump 230kV, Gamebird 230kV	Gamebird-Trout Canyon 230kV and Parhump-Innovation 230kV lines	P6	N-1-1	Low Voltage	<0.9	0.9<P,U.<1.1	0.9<P,U.<1.1	0.9<P,U.<1.1	<0.9	0.9<P,U.<1.1	0.9<P,U.<1.1	0.9<P,U.<1.1	<0.9	<0.9	Short term: Existing UVLS scheme Long term: Previously approved GLW Core Upgrade
Pahrump, Gamebird, Charleston, Thousandaire, Sandy, Vista 138kV	Gamebird-Trout Canyon 230kV and Parhump-Innovation 230kV lines	P6	N-1-1	Low Voltage	<0.9	0.9<P,U.<1.1	0.9<P,U.<1.1	0.9<P,U.<1.1	<0.9	0.9<P,U.<1.1	0.9<P,U.<1.1	0.9<P,U.<1.1	<0.9	<0.9	Short term: Existing UVLS scheme Long term: Previously approved GLW Core Upgrade



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
				2026 Summer Peak	2029 Summer Peak	2034 Summer Peak	2039 Summer Peak	2026 Spring Off-Peak	2029 Spring Off-Peak	2034 Winter Peak	2026 SP with Forecasted Load Addition	2029 SP with Forecasted Load Addition	2026 OP BESS Charging	

No P1 or P3 contingencies resulted in voltage deviation greater than 8%

Contingency	Category	Category Description	Transient Stability Performance					Potential Mitigation Solutions
			Baseline Scenarios			Sensitivity Scenarios		
			2026 Spring Off-Peak	2029 Summer Peak	2034 Summer Peak	2026 OP BESS Charging	2029 SP with Forecasted Load Addition	
Amargosa-Sandy 138kV Fault-Armargosa Bus 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Pahrump-Vista 138kV Fault-Pahrump Bus 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Pahrump-Gamebird 138kV Fault-Pahrump Bus 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Vista-Valley Switch-Johnnie 138kV Fault-Vista Bus 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Pahrump-Vista 230kV line Fault-Pahrump-Vista 230kV line 3pb	P1	N-1	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Johnnie-Vista 230kV line Fault-Johnnie-Vista 230kV line 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
CMTY_SOL_SW-VI-MBUS 24.94kV Fault-CMTY_SOL_SW Bus 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Beatty isolated 138kV Fault-Beatty Bus 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Lathrop Wells isolated 138kV Fault-Lathrop Wells Bus 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Desert View-Northwest 230kV line Fault-Desert View-Northwest 230kV line 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Yellow Pine 2-Trout Canyon 230kV line Fault-Yellow Pine 2-Trout Canyon 230kV line 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Trout Canyon 500/230kV trf #1 Fault-HAE SVC 500kV bus 3pb	P1	N-1	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Outage-Sloan Canyon 500/230kV trf Fault-HAE SVC 3pb	P1	N-1	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Lathrop Wells isolated 138kV Fault-Lathrop Wells Bus 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Lathrop Wells-Jackass Flats 138kV Fault-Lathrop Wells-Jackass Flats line 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Sandy isolated 138kV Fault-Sandy Bus 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Valley Sub isolated 138kV Fault-Valley Sub Bus 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Valley-Sunshine Valley T2 138kV Fault-Valley-Sunshine Valley T2 138kV line 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Valley Sub - Valley Switch 138kV Fault-Valley Sub - Valley Switch 138kV line 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Valley Switch 138kV isolated Fault-Valley Switch Bus 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Gamebird 230/138kV trf Fault-Gamebird Bus 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Gamebird-Sandy 138kV Fault-Gamebird Bus 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Gamebird-Thousandaire 138kV Fault-Gamebird-Thousandaire 138kV line 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Thousandaire 138kV isolated Fault-Thousandaire Bus 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Charleston Park-Thousandaire 138kV Fault-Charleston Park-Thousandaire 138kV line 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Charleston Park- 138kV isolated Fault-Charleston Park Bus 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Sunshine Valley PV Gen Fault-Sunshine Valley PV Gen 34.5kV Bus 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Lathrop Wells-Bondgap 230kV line Fault-Lathrop Wells-Bondgap 230kV line 3pb	P1	N-1	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Lathrop Wells-Valley Switch 230kV line Fault-lathrop Wells-Valley Switch 230kV line 3pb	P1	N-1	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Johnnie-Valley Switch 230kV line Fault-Johnnie-Valley Switch 230kV line 3pb	P1	N-1	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Johnnie-Innovation 230kV line Fault-Johnnie-Innovation 230kV line 3pb	P1	N-1	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Desert View-Northwest 230kV line Fault-Desert View 230kV bus 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Outage-Sloan Canyon 500/230kV trf Fault-HAE SVC 3pb	P1	N-1	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Desert View-Innovation 230kV line Fault-Desert View-Innovation 230kV line 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
INN.RAS 1 Open-DV-INN1 and 2 Outage-Innovation 230/138V trf Fault-Innovation bus 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
INN.RAS 2 Open-DV-NW1 and 2 Outage-Innovation 230/138V trf Fault-Innovation bus 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
INN.RAS 3 Open-INN-JC-PH Outage-Innovation 230/138V trf Fault-Innovation bus 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Innovation 230/138kV trf Fault-Innovation 230kV bus 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
VEA_PST_2-IS Tap line Fault-VEA_PST_2-IS Tap line 3pb	P1	N-1	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Innovation-Mercury Switch 138kV line Fault-Innovation-Mercury Switch 138kV line 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Johnnie-Pahrump 2 230kV line Fault-Johnnie-Pahrump 2 230kV line 3pb	P1	N-1	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Gamebird-Pahrump 2 230kV line Fault-Gamebird-Pahrump 2 230kV line 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Pahrump 230/138kV trf #1 Fault-Pahrump 230kV Bus 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Pahrump 138/230kV Tran Bnk. 2 Fault-Pahrump 230kV bus 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Pahrump-Pahrump 2 230kV line Fault-Pahrump-Pahrump 2 230kV line 3pb	P1	N-1	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Gamebird-Trout Canyon 230kV line Fault-Gamebird-Trout Canyon 230kV line 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Sloan Canyon5-Trout Canyon 500kV line Fault-Sloan Canyon5-Trout Canyon 500kV line 3pb	P1	N-1	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Trout Canyon 500/230kV trf #2 Fault-Trout Canyon 500kV bus 3pb	P1	N-1	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Sloan Canyon-Eldorado 230kV line Fault-Sloan Canyon 230kV Bus 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Sloan Canyon-Mead 230kV line Fault-Sloan Canyon 230kV Bus 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Sloan Canyon-Eldorado 500kV line Fault-HAE SVC 500kV bus 3pb	P1	N-1	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
CMTY_SOL_SOL_1A Gen Fault-CMTY_SOL_SOL_1A 24.94kV Bus 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
CMTY_SOL_SOL_1B Gen Fault-CMTY_SOL_SOL_1B 24.94kV Bus 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Yellow Pine PV Gen Fault-Yellow Pine PV Gen 0.66kV Bus 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Yellow Pine BESS Gen Fault-Yellow Pine BESS Gen 0.66kV Bus 3pb	P1	N-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Trout Canyon 500/230kV trf #3 Fault-Trout Canyon 500kV bus 3pb	P1	N-1	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Innovation-Pahrump 230kV line Fault-Innovation-Pahrump 230kV line 3pb	P1	N-1	Stable/WECC criteria met	NA	NA	Stable/WECC criteria met	NA	
Sloan Canyon-Trout Canyon 230kV line Fault-Sloan Canyon-Trout Canyon 230kV line 3pb	P1	N-1	Stable/WECC criteria met	NA	NA	Stable/WECC criteria met	NA	
Innovation-Desert View and Desert View-Northwest 230kV lines Fault-Desert View 230kV Bus slg	P4	Stuck breaker	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Innovation-Desert View #2 and Desert View-Northwest 230kV #2 lines Fault-Desert View 230kV Bus slg	P4	Stuck breaker	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Innovation-Desert View #2 and Desert View-Northwest 230kV #1 lines Fault-Desert View 230kV Bus slg	P4	Stuck breaker	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Innovation-Desert View #1 and Desert View-Northwest 230kV #2 lines Fault-Desert View 230kV Bus slg	P4	Stuck breaker	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Innovation-Desert View #2 and Innovation-Johnnie 230kV lines Fault-Innovation 230kV Bus slg	P4	Stuck breaker	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Innovation-Desert View #2 line and Innovation 230/138kV trf Fault-Innovation 230kV Bus slg	P4	Stuck breaker	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Innovation 138kV bus isolated Fault-Innovation 230kV Bus slg	P4	Stuck breaker	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Innovation-Mercury Switch 138kV line and Innovation 230/138kV trf Fault-Innovation 230kV Bus slg	P4	Stuck breaker	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Innovation-VEA_PST_2 138kV line and VEA_PST_2-IS Tap 138kV line Fault-Innovation 230kV Bus slg	P4	Stuck breaker	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Johnnie-Vista and Johnnie-Valley Switch 230kV lines Fault-Johnnie 230kV Bus slg	P4	Stuck breaker	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Johnnie-Valley Switch #2 and Johnnie-Innovation 230kV #2 lines Fault-Johnnie 230kV Bus slg	P4	Stuck breaker	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Johnnie-Pahrump 2 and Johnnie-Innovation 230kV lines Fault-Johnnie 230kV Bus slg	P4	Stuck breaker	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	

Contingency	Category	Category Description	Transient Stability Performance					Potential Mitigation Solutions
			Baseline Scenarios			Sensitivity Scenarios		
			2026 Spring Off-Peak	2029 Summer Peak	2034 Summer Peak	2026 OP BESS Charging	2029 SP with Forecasted Load Addition	
Pahrump-Vista and Gambird-Pahrump 138kV lines Fault-Pahrump-Vista 138kV line slg	P4	Stuck breaker	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Pahrump 230/138kV trf #2 and Pahrump-Vista 138kV line Fault-Pahrump 138kV Bus slg	P4	Stuck breaker	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Pahrump 230/138kV trf #1 and Pahrump-Gamebird 138kV line Fault-Pahrump 138kV Bus slg	P4	Stuck breaker	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Pahrump 230/138kV trf #1 and Pahrump-Gamebird 230kV line Fault-Pahrump 230kV Bus slg	P4	Stuck breaker	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Pahrump 230/138kV trf #2 and Pahrump 2-Vista 230kV line Fault-Pahrump 2 230kV Bus slg	P4	Stuck breaker	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Pahrump-Gamebird 230kV and Sandy-Gamebird 138kV Fault-Pahrump-Gamebird 230kV line slg	P4	Stuck breaker	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Gamebird 230/138kV trf and Gamebird-Pahrump 138kV line Fault-Gamebird 138kV Bus slg	P4	Stuck breaker	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Gamebird-Pahrump and Gamebird-Thousandair 138kV lines Fault-Gamebird 138kV Bus slg	P4	Stuck breaker	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Gamebird-Sandy 138kV line and Gamebird-Thousandair 138kV lines Fault-Gambird 138kV Bus slg	P4	Stuck breaker	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Gamebird 230/138kV trf and Gamebird-Sandy 138kV line Fault-Gamebird 138kV Bus slg	P4	Stuck breaker	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Trout Canyon 500/230kV trf #2 and Trout Canyon-Sloan Canyon5 500kV line Fault-Trout Canyon5 500kV Bus slg	P4	Stuck breaker	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Trout Canyon 500/230kV trf #3 and Trout Canyon-Sloan Canyon5 500kV line Fault-Trout Canyon5 500kV Bus slg	P4	Stuck breaker	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Gamebird-Trout Canyon and Yellow Pine 2-Trout Canyon 230kV lines Fault-Trout Canyon 230kV Bus slg	P4	Stuck breaker	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Sloan Canyon5 500/230kV trf and HAE SVCL-Sloan Canyon5 500kV line Fault-Sloan Canyon5 500kV Bus slg	P4	Stuck breaker	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Sloan Canyon-Trout Canyon #1 and Sloan Canyon-Trout Canyon #2 500kV lines Fault-Sloan Canyon 500kV Bus slg	P4	Stuck breaker	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Johnnie-Valley Switch #1 and Johnnie-Lathrop Wells 230kV #1 lines Fault-Valley Switch 230kV Bus slg	P4	Stuck breaker	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Johnnie-Valley Switch #2 and Johnnie-Lathrop Wells 230kV #2 lines Fault-Valley Switch 230kV Bus slg	P4	Stuck breaker	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Lathrop Wells-Valley Switch #1 and Beatty-Bondgap230kV lines Fault-Lathrop Wells 230kV Bus slg	P4	Stuck breaker	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Pahrump 231/138kV trf #2 and Pahrump-Gamebird 230kV line Fault-Pahrump 230kV Bus slg	P4	Stuck breaker	Stable/WECC criteria met	NA	NA	Stable/WECC criteria met	NA	
Pahrump 231/138kV trf #1 and Pahrump-Innovation 230kV line Fault-Pahrump 230kV Bus slg	P4	Stuck breaker	Stable/WECC criteria met	NA	NA	Stable/WECC criteria met	NA	
Pahrump 231/138kV trf #2 and Pahrump-Gamebird 230kV line Fault-Pahrump 230kV Bus slg	P4	Stuck breaker	Stable/WECC criteria met	NA	NA	Stable/WECC criteria met	NA	
Pahrump-Gamebird 230kV and Trout Canyon-Gamebird 230kV lines Fault-Gamebird 230kV Bus slg	P4	Stuck breaker	Stable/WECC criteria met	NA	NA	Stable/WECC criteria met	NA	
Pahrump-Gamebird 230kV line and Trout Gamebird 230/138kV trf Fault-Gamebird 230kV Bus slg	P4	Stuck breaker	Stable/WECC criteria met	NA	NA	Stable/WECC criteria met	NA	
Gamebird 138kV isolated Fault-Gamebird 138kV Bus slg	P4	Stuck breaker	Stable/WECC criteria met	NA	NA	Stable/WECC criteria met	NA	
Sloan Canyon 230kV isolated Fault-Sloan Canyon 230kV Bus slg	P4	Stuck breaker	Stable/WECC criteria met	NA	NA	Stable/WECC criteria met	NA	
Sloan Canyon-Eldorado2 and Sloan Canyon-Trout Canyon 230kV lines Fault-Sloan Canyon 230kV Bus slg	P4	Stuck breaker	Stable/WECC criteria met	NA	NA	Stable/WECC criteria met	NA	
Desert View 230kV isolated Fault-Desert View 230kV Bus slg	P4	Stuck breaker	Stable/WECC criteria met	NA	NA	Stable/WECC criteria met	NA	
Trout Canyon 230kV isolated Fault-Trout Canyon 230kV Bus slg	P4	Stuck breaker	Stable/WECC criteria met	NA	NA	Stable/WECC criteria met	NA	
Lathrop Wells 138kV isolated Fault-Lathrop Wells 138kV Bus slg	P5	Non-redundant protection	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Thousandairs 138kV isolated Fault-Thousandairs 138kV Bus slg	P5	Non-redundant protection	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Lathrop Wells-Bondgap 138kV line Fault-Lathrop Wells-Bondgap 138kV line slg	P5	Non-redundant protection	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Lathrop Wells-Valley Switch 138kV line Fault-Lathrop Wells-Valley Switch 138kV line slg	P5	Non-redundant protection	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Lathrop Wells-Jackass Flats 138kV line Fault-Lathrop Wells-Jackass Flats 138kV line slg	P5	Non-redundant protection	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Sandy-Amargosa 138kV line Fault-Sandy-Amargosa 138kV line slg	P5	Non-redundant protection	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Johnnie-Valley Switch 138kV line Fault-Johnnie-Valley Switch 138kV line slg	P5	Non-redundant protection	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Sandy-Gamebird 138kV line Fault-Sandy-Gamebird 138kV line slg	P5	Non-redundant protection	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Valley Switch-Lathrop Wells 138kV line Fault-Valley Switch-Lathrop Wells 138kV line slg	P5	Non-redundant protection	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Valley Switch-Valley Sub 138kV line Fault-Valley Switch-Valley Sub 138kV line slg	P5	Non-redundant protection	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Valley Sub 138kV isolated Fault-Valley Sub 138kV Bus slg	P5	Non-redundant protection	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Pahrump-Pahrump2 and Pahrump-Gamebird 230kV lines Fault-Pahrump-Innovation 230kV line slg	P6	N-1-1	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Sloan Canyon-Mead and Sloan Canyon-Eldorado 230kV lines Fault-Sloan Canyon 230kV bus slg	P6	N-1-1	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Northwest-Desert View and Pahrump-Gamebird 230kV lines Fault-Northwest-Desert View 230kV line slg	P6	N-1-1	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Innovation and Pahrump-Gamebird 230kV lines Fault-Pahrump-Innovation 230kV line slg	P6	N-1-1	Stable/WECC criteria met	NA	NA	Stable/WECC criteria met	NA	
Northwest-Desert View and Pahrump-Gamebird 230kV lines Fault-Northwest-Desert View 230kV line slg	P6	N-1-1	Stable/WECC criteria met	NA	NA	Stable/WECC criteria met	NA	
Innovation-Desert View 230kV line #1 and Innovation-Desert View 230kV line #2 Fault-Innovation-Desert View 230kV line #1 230kV line slg	P7	DCTL	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Trout Canyon-Sloan Canyon5 500kV #1 and Trout Canyon-Sloan Canyon5 500kV #2 lines Fault-Trout Canyon-Sloan Canyon5 500kV line #	P7	DCTL	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Trout Canyon-Gamebird 230kV #1 and Trout Canyon-Gamebird 230kV #2 lines Fault-Trout Canyon-Gamebird 230kV #1 slg	P7	DCTL	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Desert View-Northwest 230kV #1 and Desert View-Northwest 230kV #2 lines Fault-Desert View-Northwest 230kV #1 slg	P7	DCTL	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Pahrump2-Gamebird 230kV #1 and Pahrump2-Gamebird 230kV #2 lines Fault-Pahrump2-Gamebird 230kV #1 slg	P7	DCTL	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	Stable/WECC criteria met	
Pahrump2-Pahrump 230kV #1 and Pahrump2-Pahrump 230kV #2 lines Fault-Pahrump2-Pahrump 230kV #1 slg	P7	DCTL	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Innovation-Desert View 230kV #1 and Innovation-Johnnie 230kV #2 lines Fault-Innovation-Desert View 230kV #1 slg	P7	DCTL	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Valley Switch-Johnnie #1 230kV #1 and Valley Switch-Johnnie #2 lines Fault-Valley Switch-Johnnie #1 slg	P7	DCTL	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Valley Switch-Lathrop Wells #1 230kV #1 and Valley Switch-Lathrop Wells #2 lines Fault-Valley Switch-Lathrop Wells #1 slg	P7	DCTL	NA	Stable/WECC criteria met	Stable/WECC criteria met	NA	Stable/WECC criteria met	
Pahrump-Gamebird 230kV and Sandy-Gamebird 138kV Fault-Pahrump-Gamebird 230kV line slg	P7	DCTL	Stable/WECC criteria met	NA	NA	Stable/WECC criteria met	NA	
Pahrump-Innovation 230kV and Pahrump-Vista 138kV Fault-Pahrump-Innovation 230kV line slg	P7	DCTL	Stable/WECC criteria met	NA	NA	Stable/WECC criteria met	NA	
Pahrump-Innovation 230kV and Valley Switch-Johnnie-Vista 138kV Fault-Pahrump-Innovation 230kV line slg	P7	DCTL	Stable/WECC criteria met	NA	NA	Stable/WECC criteria met	NA	

Worst Contingency	Category	Category Description	Amount of Load Drop (MW)									Potential Mitigation Solutions	
			2026 Summer Peak	2029 Summer Peak	2034 Summer Peak	2039 Summer Peak	2026 Spring Off-Peak	2029 Spring Off-Peak	2034 Winter Peak	2026 SP with Forecasted Load Addition	2029 SP with Forecasted Load Addition		2026 OP BESS Charging

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



Substation	Load Served (MW)									Potential Mitigation Solutions	
	2026 Summer Peak	2029 Summer Peak	2034 Summer Peak	2039 Summer Peak	2026 Spring Off-Peak	2029 Spring Off-Peak	2034 Winter Peak	2026 SP with Forecasted Load Addition	2029 SP with Forecasted Load Addition		2026 OP BESS Charging

No single source substation with more than 100 MW