| Overloaded Facility | Contingency (All and Worst P6) | Category | Category Description | Loading % (Baseline Scenarios) | | | | | | Loading % (Sensitivity Scenarios) | | | | Project & Potential Mitigation Solutions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2024 Summer Peak | 2027 Summer Peak | 2032 Summer Peak | 2024 Spring Off-Peak | 2027 Spring Off-Peak | 2032 Spring Off-Peak | 2024 Summer Peak Heavy Renewable & Minimum Gas Generation | 2024 Spring Off-Peak Storage charging in load pockets | 2027 Summer Peak High CEC forecasted load | 2035 Summer Peak with ATE load | |
| 22886 SUNCREST 230 22832 SYCAMORE 230 1 1 | PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL23055_Line SCR-SX 230kV ck 2 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.1 | 104.5 | Rely on the existing TL50001 Gen Drop RAS or TL23054/ TL23055 RAS, along with the 30-minute short-term emergency ratings of the 230 kV lines (30% higher than their continuous ratings), to allow the market and operators to bring down the overloads that do not exceed 130% for the P6 contingencies within the continuous ratings in 30 minutes as operational mitigation measures. The remaining P6 overloads that exceed 130% can be eliminated by additional system adjustment between the overlapping P1 events. Either the operational mitigations or the system adjustment could involve operational actions, such as reducing generation output in the greater Imperial Valley area, dispatching conventional gas generation, preferred resources, battery energy storage and/or pumped hydro storage in the San Diego area, and adjusting the Imperial Valley phase shifting transformers as needed. The use of energy storage is subject to verification that it has sufficient MWh capability and can be fully charged when needed.<br><br>For the 2024 Spring-Off Peak Sensitivity Case, charging of the battery energy storage in the San Diego area needs to be curtailed for P6 events. |
| | EA_ALL_Gen EAGEN1U6/U7/U8/U9/U10 ID 1 AND TL23055_Line SCR-SX 230kV ck 2 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 102.5 | |
| | OMEC_ALL_Gen OTAYMGT1/GT2/ST1 ID 1 AND TL50001_Line ECO-ML 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.1 | < 100 | 102.2 | |
| | PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL50001_Line ECO-ML 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 102.2 | |
| | OMEC_ALL_Gen OTAYMGT1/GT2/ST1 ID 1 AND TL23055_Line SCR-SX 230kV ck 2 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.6 | |
| | EA_ALL_Gen EAGEN1U6/U7/U8/U9/U10 ID 1 AND TL50001_Line ECO-ML 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.5 | |
| | TL50001_Line ECO-ML 500kV ck 1 AND TL23055_Line SCR-SX 230kV ck 2 | P6 | N-1-1 | 150.7 | 173.1 | 166.7 | 133.4 | < 100 | < 100 | 151.5 | 168.3 | 176.3 | 187.0 | |
| | TL50001+GEN_DROP_RAS_Line ECO-ML 500kV ck 1 + GEN DROP RAS AND TL23055_Line SCR-SX 230kV ck 2 | P6 | N-1-1 | 118.7 | 141.8 | 134.3 | < 100 | < 100 | < 100 | 121.1 | 132.9 | 145.4 | 152.3 | |
| 22886 SUNCREST 230 22832 SYCAMORE 230 2 1 | PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL23054_Line SCR-SX 230kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.1 | 104.6 | |
| | EA_ALL_Gen EAGEN1U6/U7/U8/U9/U10 ID 1 AND TL23054_Line SCR-SX 230kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 102.5 | |
| | OMEC_ALL_Gen OTAYMGT1/GT2/ST1 ID 1 AND TL50001_Line ECO-ML 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.1 | < 100 | 102.2 | |
| | PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL50001_Line ECO-ML 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 102.2 | |
| | OMEC_ALL_Gen OTAYMGT1/GT2/ST1 ID 1 AND TL23054_Line SCR-SX 230kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.7 | |
| | EA_ALL_Gen EAGEN1U6/U7/U8/U9/U10 ID 1 AND TL50001_Line ECO-ML 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.5 | |
| | TL50001_Line ECO-ML 500kV ck 1 AND TL23054_Line SCR-SX 230kV ck 1 | P6 | N-1-1 | 150.7 | 173.1 | 166.7 | 133.5 | < 100 | < 100 | 151.5 | 168.3 | 176.3 | 187.0 | |
| | TL50001+GEN_DROP_RAS_Line ECO-ML 500kV ck 1 + GEN DROP RAS AND TL23054_Line SCR-SX 230kV ck 1 | P6 | N-1-1 | 118.7 | 141.8 | 134.3 | < 100 | < 100 | < 100 | 121.1 | 132.9 | 145.5 | 152.3 | |
| 22886 SUNCREST 230 22888 SNCRSMP1 500 1 1 | TL50001_Line ECO-ML 500kV ck 1 AND SCR_BK81_Tran SCR 500/230kV ck 2 | P6 | N-1-1 | 113.5 | 129.8 | 124.6 | 100.9 | < 100 | < 100 | 115.0 | 127.7 | 131.7 | 137.3 | Rely on the existing TL50001 Gen Drop RAS, along with the use of the 24-hr emergency ratings of the Suncrest banks (if necessary, the 30-min emergency rating may also be utilized). If this is not enough to mitigate the overloads, congestion management and additional system adjustments can be used after the first contingency for the P6 events. These system adjustments would be similar to the actions described |
| | TL50001+GEN_DROP_RAS_Line ECO-ML 500kV ck 1 + GEN DROP RAS AND SCR_BK81_Tran SCR 500/230kV ck 2 | P6 | N-1-1 | < 100 | 107.7 | 101.9 | < 100 | < 100 | < 100 | < 100 | 100.8 | 110.3 | 115.4 | |
| | TL50001_Line ECO-ML 500kV ck 1 AND SCR_BK80_Tran SCR 500/230kV ck 1 | P6 | N-1-1 | 113.6 | 129.9 | 124.7 | 100.7 | < 100 | < 100 | 115.0 | 127.5 | 131.8 | 137.3 | |

| Overloaded Facility | Contingency (All and Worst P6) | Category | Category Description | Loading % (Baseline Scenarios) | | | | | | Loading % (Sensitivity Scenarios) | | | | Project & Potential Mitigation Solutions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2024 Summer Peak | 2027 Summer Peak | 2032 Summer Peak | 2024 Spring Off-Peak | 2027 Spring Off-Peak | 2032 Spring Off-Peak | 2024 Summer Peak Heavy Renewable & Minimum Gas Generation | 2024 Spring Off-Peak Storage charging in load pockets | 2027 Summer Peak High CEC forecasted load | 2035 Summer Peak with ATE load | |
| 22886 SUNCREST 230 22889 SNCRSMP2 500 1 1 | TL50001+GEN_DROP_RAS_Line ECO-ML 500kV ck 1 + GEN DROP RAS AND SCR_BK80_Tran SCR 500/230kV ck 1 | P6 | N-1-1 | < 100 | 107.7 | 102.0 | < 100 | < 100 | < 100 | < 100 | 100.6 | 110.4 | 115.4 | These system adjustments would be similar to the actions described above for the TL23054/23055 (Suncrest - Sycamore Canyon) overload issues. |
| 22886 SUNCREST 230 22893 SNCRS SVC HV 230 1 1 | TL50004_Line IV-ECO 500kV ck 1 AND TL50005_Line IV-OCO 500kV ck 1 | P6 | N-1-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.4 | System adjustments can be used after the first contingency for the P6 events. These system adjustments would be similar to the actions described above for the TL23054/23055 overload issues. |
| | TL50004+GEN_DROP_RAS_Line IV-ECO 500kV ck 1 + GEN DROP RAS AND TL50005_Line IV-OCO 500kV ck 1 | P6 | N-1-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.9 | |
| 22464 MIGUEL 230 22468 MIGUEL 500 2 1 | OMEC_ALL_Gen OTAYMGT1/GT2/ST1 ID 1 AND ML_BK80_Tran ML 500/230kV ck 1 | P3 | G-1/N-1 | < 100 | 101.9 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.9 | 109.7 | |
| | PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND ML_BK80_Tran ML 500/230kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 105.2 | |
| | EA_ALL_Gen EAGEN1U6/U7/U8/U9/U10 ID 1 AND ML_BK80_Tran ML 500/230kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 104.2 | |
| | PSH_Gen PSH ID 1 AND ML_BK80_Tran ML 500/230kV ck 2 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.1 | |
| | TL50003_Line OCO-SCR 500kV ck 1 AND ML_BK80_Tran ML 500/230kV ck 1 | P6 | N-1-1 | 121.4 | 137.9 | 133.8 | 104.6 | < 100 | < 100 | 124.4 | 132.2 | 140.8 | 148.8 | |
| | TL50003+GEN_DROP_RAS_Line OCO-SCR 500kV ck 1 + GEN DROP RAS AND ML_BK80_Tran ML 500/230kV ck 1 | P6 | N-1-1 | < 100 | 113.6 | 108.1 | < 100 | < 100 | < 100 | < 100 | 105.0 | 116.7 | 122.2 | |
| 22464 MIGUEL 230 22472 MIGUELMP 500 1 1 | OMEC_ALL_Gen OTAYMGT1/GT2/ST1 ID 1 AND ML_BK81_Tran ML 500/230kV ck 2 | P3 | G-1/N-1 | < 100 | 103.4 | 101.1 | < 100 | < 100 | < 100 | < 100 | < 100 | 105.5 | 111.6 | Rely on the existing TL50003 Gen Drop RAS or Miguel BK 80/81 RAS, along with the use of the 24-hr emergency ratings of the Miguel banks (if necessary, the 30-min emergency rating may also be utilized). If this is not enough to mitigate the overloads, congestion management and additional system adjustments can be used after the first contingency for the P6 events. These system adjustments would be similar to the actions described above for the TL23054/23055 overload issues. |
| | PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND ML_BK81_Tran ML 500/230kV ck 2 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.4 | 106.9 | |
| | EA_ALL_Gen EAGEN1U6/U7/U8/U9/U10 ID 1 AND ML_BK81_Tran ML 500/230kV ck 2 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.7 | 106.0 | |
| | PSH_Gen PSH ID 1 AND ML_BK81_Tran ML 500/230kV ck 2 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.9 | |
| | PPEC_1A_Gen PIO PICO 1A ID 1 AND ML_BK81_Tran ML 500/230kV ck 2 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.8 | |
| | PPEC_1B_Gen PIO PICO 1B ID 1 AND ML_BK81_Tran ML 500/230kV ck 2 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.8 | |
| | PPEC_1C_Gen PIO PICO 1C ID 1 AND ML_BK81_Tran ML 500/230kV ck 2 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.8 | |
| | BD_GEN3_Gen CALPK_BD ID 1 AND ML_BK81_Tran ML 500/230kV ck 2 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.4 | |
| | BD_GEN1_Gen LRKSPBD1 ID 1 AND ML_BK81_Tran ML 500/230kV ck 2 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.4 | |
| | BD_GEN2_Gen LRKSPBD2 ID 1 AND ML_BK81_Tran ML 500/230kV ck 2 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.4 | |
| | EC GEN2_Gen EC GEN2 ID 1 AND ML_BK81_Tran ML 500/230kV ck 2 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.4 | |
| | EC GEN1_Gen EC GEN1 ID 1 AND ML_BK81_Tran ML 500/230kV ck 2 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.3 | |
| | MEF_UNIT1_Gen MEF MR1 ID 1 AND ML_BK81_Tran ML 500/230kV ck 2 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.2 | |

| Overloaded Facility | Contingency (All and Worst P6) | Category | Category Description | Loading % (Baseline Scenarios) | | | | | | Loading % (Sensitivity Scenarios) | | | | Project & Potential Mitigation Solutions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2024 Summer Peak | 2027 Summer Peak | 2032 Summer Peak | 2024 Spring Off-Peak | 2027 Spring Off-Peak | 2032 Spring Off-Peak | 2024 Summer Peak Heavy Renewable & Minimum Gas Generation | 2024 Spring Off-Peak Storage charging in load pockets | 2027 Summer Peak High CEC forecasted load | 2035 Summer Peak with ATE load | |
| | MEF_UNIT2_Gen MEF MR2 ID 1 AND ML_BK81_Tran ML 500/230kV ck 2 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.2 | |
| | OY_GEN_Gen OY GEN ID 1 AND ML_BK81_Tran ML 500/230kV ck 2 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.2 | |
| | ES_GEN1_Gen ES GEN ID 1 AND ML_BK81_Tran ML 500/230kV ck 2 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.2 | |
| | PA_GEN1_Gen PA GEN1 ID 1 AND ML_BK81_Tran ML 500/230kV ck 2 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.2 | |
| | PA_GEN2_Gen PA GEN2 ID 1 AND ML_BK81_Tran ML 500/230kV ck 2 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.2 | |
| | ES_GEN2_Gen CALPK_ES ID 1 AND ML_BK81_Tran ML 500/230kV ck 2 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.2 | |
| | TL50003_Line OCO-SCR 500kV ck 1 AND ML_BK81_Tran ML 500/230kV ck 2 | P6 | N-1-1 | 122.6 | 140.3 | 136.1 | 106.7 | < 100 | < 100 | 126.1 | 135.0 | 143.2 | 151.3 | |
| | TL50003+GEN_DROP_RAS_Line OCO-SCR 500kV ck 1 + GEN DROP RAS AND ML_BK81_Tran ML 500/230kV ck 2 | P6 | N-1-1 | < 100 | 115.2 | 109.9 | < 100 | < 100 | < 100 | 101.1 | 107.6 | 118.4 | 124.3 | |
| 22430 SILVERGT 230 22596 OLD TOWN 230 1 1 | TL23028_Line SG-MS-OT 230kV ck 1 AND TL23071_Line SX-PQ 230kV ck 1 | P6 | N-1-1 | 101.2 | 110.0 | 120.3 | 114.1 | < 100 | < 100 | < 100 | < 100 | 109.5 | 123.8 | |
| 22430 SILVERGT 230 22597 OLDTWNTP 230 1 1 | SG-2T_SILVERGATE 230 kV 2T CB | P4 | Fault + Stuck Breaker | < 100 | < 100 | 100.9 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.1 | Rely on congestion management to protect against Silvergate 230 kV 2T CB stuck breaker (if necessary, the 2-hr emergency rating may also be utilized). Additional system adjustments can be used after the first contingency for P6 events, such as reducing generation output in Otay Mesa, Otay, and Border, while dispatching battery energy storage connected north of Old Town substation. The use of energy storage is subject to verification that it has sufficient MWh capability and can be fully charged when needed. |
| | TL23029_Line SG-OT 230kV ck 1 AND TL23071_Line SX-PQ 230kV ck 1 | P6 | N-1-1 | < 100 | 108.6 | 118.5 | 113.3 | < 100 | < 100 | < 100 | < 100 | 108.0 | 121.5 | |
| | TL23029_Line SG-OT 230kV ck 1 AND TL50003_Line OCO-SCR 500kV ck 1 | P6 | N-1-1 | < 100 | 109.1 | 117.6 | 111.7 | < 100 | < 100 | < 100 | < 100 | 108.1 | 119.8 | |
| | TL23071_Line SX-PQ 230kV ck 1 | P1 | N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 104.7 | |
| | TL50003_Line OCO-SCR 500kV ck 1 | P1 | N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 104.2 | |
| | TL50005_Line IV-OCO 500kV ck 1 | P1 | N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 102.6 | |
| | EA_ALL_Gen EAGEN1U6/U7/U8/U9/U10 ID 1 AND TL23071_Line SX-PQ 230kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | 103.8 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 110.8 | |
| | EA_ALL_Gen EAGEN1U6/U7/U8/U9/U10 ID 1 AND TL50003_Line OCO-SCR 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | 103.3 | < 100 | < 100 | < 100 | < 100 | 101.0 | < 100 | 110.0 | |
| | PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL50003_Line OCO-SCR 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | 102.8 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 109.6 | |
| | EA_ALL_Gen EAGEN1U6/U7/U8/U9/U10 ID 1 AND TL50005_Line IV-OCO 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | 101.7 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 108.3 | |
| | PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL50005_Line IV-OCO 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | 101.0 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 107.9 | |
| | PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL23071_Line SX-PQ 230kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | 100.4 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 107.4 | |
| | MEF_UNIT1_Gen MEF MR1 ID 1 AND TL23071_Line SX-PQ 230kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 105.2 | |

| Overloaded Facility | Contingency (All and Worst P6) | Category | Category Description | Loading % (Baseline Scenarios) | | | | | | Loading % (Sensitivity Scenarios) | | | | Project & Potential Mitigation Solutions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2024 Summer Peak | 2027 Summer Peak | 2032 Summer Peak | 2024 Spring Off-Peak | 2027 Spring Off-Peak | 2032 Spring Off-Peak | 2024 Summer Peak Heavy Renewable & Minimum Gas Generation | 2024 Spring Off-Peak Storage charging in load pockets | 2027 Summer Peak High CEC forecasted load | 2035 Summer Peak with ATE load | |
| 22430 SILVERGT 230 22771 BAY BLVD 230 1 1 | PSH_Gen PSH ID 1 AND TL50003_Line OCO-SCR 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 105.0 | Rely on congestion management to protect against P1 contingencies, P4 contingencies and P7 contingency (if necessary, the 2-hr emergency rating may also be utilized).<br><br>Summer Peak overloads can be eliminated by system adjustments after the first contingency for P3 and P6 events, such as reducing generation output in Otay Mesa or greater Imperial Valley area, while dispatching battery energy storage in San Diego area connected north of Bay Boulevard substation. The use of energy storage is subject to verification that it has sufficient MWh capability and can be fully charged when needed.<br><br>2024 Spring Off-Peak sensitivity case overloads can be eliminated by system adjustments after the first contingency for P3 and P6 events, such as curtailing the charging of battery energy storage in San Diego area. |
| | ECO GEN1_Gen ECO GEN1 G1 ID G1 AND TL23071_Line SX-PQ 230kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.9 | |
| | PSH_Gen PSH ID 1 AND TL50005_Line IV-OCO 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.7 | |
| | BUE_GEN1_Gen BUE GEN 1 ID G1/G2/G3/G4 AND TL23071_Line SX-PQ 230kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.7 | |
| | OCO_GEN1_Gen OCO GEN ID G1/G2 AND TL23071_Line SX-PQ 230kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.7 | |
| | BD_GEN1_Gen LRKSPBD1 ID 1 AND TL50003_Line OCO-SCR 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.7 | |
| | BD_GEN2_Gen LRKSPBD2 ID 1 AND TL50003_Line OCO-SCR 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.7 | |
| | SD_GIP_31_Gen SD_GIP_31_GEN ID 2 AND TL50003_Line OCO-SCR 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.6 | |
| | ECO GEN1_Gen ECO GEN1 G1 ID G1 AND TL50003_Line OCO-SCR 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.4 | |
| | OCO_GEN1_Gen OCO GEN ID G1/G2 AND TL50005_Line IV-OCO 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.3 | |
| | MEF_UNIT1_Gen MEF MR1 ID 1 AND TL50005_Line IV-OCO 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.2 | |
| | MEF_UNIT2_Gen MEF MR2 ID 1 AND TL50005_Line IV-OCO 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.2 | |
| | BUE_GEN1_Gen BUE GEN 1 ID G1/G2/G3/G4 AND TL50003_Line OCO-SCR 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.2 | |
| | PSH_Gen PSH ID 1 AND TL23071_Line SX-PQ 230kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.2 | |
| | OCO_GEN1_Gen OCO GEN ID G1/G2 AND TL50003_Line OCO-SCR 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.1 | |
| | PV_UNIT1_Gen PALOVRD1 ID 1 AND TL23071_Line SX-PQ 230kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 102.9 | |
| | EA_ALL_Gen EAGEN1U6/U7/U8/U9/U10 ID 1 AND TL23023_Line ML-MS 230kV ck 2 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 102.3 | |
| | PV_UNIT1_Gen PALOVRD1 ID 1 AND TL50003_Line OCO-SCR 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 102.1 | |
| | PPEC_1A_Gen PIO PICO 1A ID 1 AND TL23071_Line SX-PQ 230kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 102.1 | |
| | PPEC_1B_Gen PIO PICO 1B ID 1 AND TL23071_Line SX-PQ 230kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 102.1 | |
| | PPEC_1C_Gen PIO PICO 1C ID 1 AND TL23071_Line SX-PQ 230kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 102.1 | |
| | EA_ALL_Gen EAGEN1U6/U7/U8/U9/U10 ID 1 AND TL23022_Line ML-MS 230kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 102.0 | |
| | BUE_GEN1_Gen BUE GEN 1 ID G1/G2/G3/G4 AND TL50005_Line IV-OCO 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.9 | |

| Overloaded Facility | Contingency (All and Worst P6) | Category | Category Description | Loading % (Baseline Scenarios) | | | | | | Loading % (Sensitivity Scenarios) | | | | Project & Potential Mitigation Solutions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2024 Summer Peak | 2027 Summer Peak | 2032 Summer Peak | 2024 Spring Off-Peak | 2027 Spring Off-Peak | 2032 Spring Off-Peak | 2024 Summer Peak Heavy Renewable & Minimum Gas Generation | 2024 Spring Off-Peak Storage charging in load pockets | 2027 Summer Peak High CEC forecasted load | 2035 Summer Peak with ATE load | |
| | PPEC_1A_Gen PIO PICO 1A ID 1 AND TL50003_Line OCO-SCR 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.9 | |
| | PPEC_1B_Gen PIO PICO 1B ID 1 AND TL50003_Line OCO-SCR 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.9 | |
| | PPEC_1C_Gen PIO PICO 1C ID 1 AND TL50003_Line OCO-SCR 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.9 | |
| | ECO W _Gen ECO W1/W2 ID 1 AND TL23071_Line SX-PQ 230kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.7 | |
| | PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL23023_Line ML-MS 230kV ck 2 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.3 | |
| | ECO W _Gen ECO W1/W2 ID 1 AND TL50003_Line OCO-SCR 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.2 | |
| | PV_UNIT1_Gen PALOVRD1 ID 1 AND TL50005_Line IV-OCO 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.9 | |
| | IV_GEN2_ALL_Gen INTBST ID 1 AND TL23071_Line SX-PQ 230kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.9 | |
| | PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL23022_Line ML-MS 230kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.9 | |
| | PPEC_1A_Gen PIO PICO 1A ID 1 AND TL50005_Line IV-OCO 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.5 | |
| | PPEC_1B_Gen PIO PICO 1B ID 1 AND TL50005_Line IV-OCO 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.5 | |
| | PPEC_1C_Gen PIO PICO 1C ID 1 AND TL50005_Line IV-OCO 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.5 | |
| | IV_GEN2_ALL_Gen INTBST ID 1 AND TL50003_Line OCO-SCR 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.2 | |
| | MS-230-5T_CB MISSION 230KV 5T | P4 | Fault + Stuck Breaker | < 100 | < 100 | 107.9 | < 100 | < 100 | < 100 | < 100 | 101.1 | < 100 | 113.8 | |
| | SX-230-26T_CB SYCAMORE CANYON 230KV 26T | P4 | Fault + Stuck Breaker | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 106.1 | |
| | SCR-500-2T_CB SUNCREST 500KV 2T | P4 | Fault + Stuck Breaker | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 104.2 | |
| | OCO-500-2W_CB OCOTILLO 500KV 2W | P4 | Fault + Stuck Breaker | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.0 | |
| | OCO-500-2T_CB OCOTILLO 500KV 2T | P4 | Fault + Stuck Breaker | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.0 | |
| | OCO-500-1E_CB OCOTILLO 500KV 1E | P4 | Fault + Stuck Breaker | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 102.9 | |
| | ML-8T_Miguel 230 kV 8T CB | P4 | Fault + Stuck Breaker | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 102.0 | |
| | ML-6T_Miguel 230 kV 6T CB | P4 | Fault + Stuck Breaker | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.6 | |
| | TL23023_Line ML-MS 230kV ck 2 AND TL23071_Line SX-PQ 230kV ck 1 | P6 | N-1-1 | < 100 | 101.9 | 111.9 | < 100 | < 100 | < 100 | < 100 | 104.0 | 102.9 | 120.0 | |
| | TL23023_Line ML-MS 230kV ck 2 AND TL50003_Line OCO-SCR 500kV ck 1 | P6 | N-1-1 | < 100 | 102.0 | 111.0 | < 100 | < 100 | < 100 | < 100 | 107.1 | 102.6 | 118.5 | |

| Overloaded Facility | Contingency (All and Worst P6) | Category | Category Description | Loading % (Baseline Scenarios) | | | | | | Loading % (Sensitivity Scenarios) | | | | Project & Potential Mitigation Solutions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2024 Summer Peak | 2027 Summer Peak | 2032 Summer Peak | 2024 Spring Off-Peak | 2027 Spring Off-Peak | 2032 Spring Off-Peak | 2024 Summer Peak Heavy Renewable & Minimum Gas Generation | 2024 Spring Off-Peak Storage charging in load pockets | 2027 Summer Peak High CEC forecasted load | 2035 Summer Peak with ATE load | |
| | TL23041_Line SX-OM-ML 230kV ck 1 AND TL50003_Line OCO-SCR 500kV ck 1 | P6 | N-1-1 | < 100 | 101.8 | 110.7 | < 100 | < 100 | < 100 | < 100 | 107.9 | 102.2 | 117.7 | |
| | TL23022+23023_Lines ML-MS 230kV ck 1 + ML-MS 230kV ck 2 | P7 | DCTL | < 100 | < 100 | 107.9 | < 100 | < 100 | < 100 | < 100 | 101.1 | < 100 | 113.8 | |
| 22464 MIGUEL 230 22466 MLMS3TAP 230 1 1 | TL23041_Line SX-OM-ML 230kV ck 1 AND TL50001_Line ECO-ML 500kV ck 1 | P6 | N-1-1 | < 100 | < 100 | 107.3 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 112.2 | |
| 22464 MIGUEL 230 22467 MLSXTAP 230 1 1 | TL23042_Line BB-OM-ML 230kV ck 1 AND TL50001_Line ECO-ML 500kV ck 1 | P6 | N-1-1 | 104.6 | 105.1 | 132.5 | 106.7 | < 100 | < 100 | < 100 | 102.6 | 106.5 | 142.5 | |
| 22609 OTAYMESA 230 22466 MLMS3TAP 230 1 1 | TL23041_Line SX-OM-ML 230kV ck 1 | P1 | N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.4 | |
| | TL23041B_TL23041B OTAYMESA-MLSXTAP ck 1 | P2.1 | Line Section w/o Fault | < 100 | < 100 | 100.1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.9 | |
| | PV_UNIT1_Gen PALOVRD1 ID 1 AND TL23041_Line SX-OM-ML 230kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | 100.6 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 102.5 | |
| | IV_GEN1_ALL_Gen IV GEN1 STG ID 1 AND TL23041_Line SX-OM-ML 230kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | 100.1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.9 | |
| | PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL23041_Line SX-OM-ML 230kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | 100.0 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.9 | |
| | EA_ALL_Gen EAGEN1U6/U7/U8/U9/U10 ID 1 AND TL23041_Line SX-OM-ML 230kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.9 | |
| | SX-23T_SYCAMORE 230 kV 23T CB | P4 | Fault + Stuck Breaker | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.5 | |
| | ML-4T_Miguel 230 kV 4T CB | P4 | Fault + Stuck Breaker | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.3 | |
| | TL23041_Line SX-OM-ML 230kV ck 1 AND TL50001_Line ECO-ML 500kV ck 1 | P6 | N-1-1 | 103.9 | 102.8 | 135.1 | 111.1 | < 100 | < 100 | < 100 | 102.3 | 103.3 | 142.0 | Rely on existing TL23041/TL23042 RAS (if necessary, the 30-min emergency rating may also be utilized). If this is not enough to mitigate the overloads, congestion management and additional system adjustments can be used after the first contingency for P6 events, such as reducing remaining generation output in Otay Mesa. |
| | TL23021+23041_Lines SX-ML 230kV ck 1 + SX-OM-ML 230kV ck 1 | P7 | DCTL | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.6 | |
| 22609 OTAYMESA 230 22467 MLSXTAP 230 1 1 | TL23042_Line BB-OM-ML 230kV ck 1 | P1 | N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.2 | |
| | TL23042B_TL23042B OTAYMESA-MLMS3TAP ck 1 | P2.1 | Line Section w/o Fault | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.7 | |
| | PV_UNIT1_Gen PALOVRD1 ID 1 AND TL23042_Line BB-OM-ML 230kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | 100.6 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 102.3 | |
| | PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL23042_Line BB-OM-ML 230kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | 100.1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.8 | |
| | IV_GEN1_ALL_Gen IV GEN1 STG ID 1 AND TL23042_Line BB-OM-ML 230kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | 100.0 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.7 | |
| | EA_ALL_Gen EAGEN1U6/U7/U8/U9/U10 ID 1 AND TL23042_Line BB-OM-ML 230kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.7 | |
| | BB-230-4T_CB BAY BOULEVARD 230KV 4T | P4 | Fault + Stuck Breaker | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.3 | |
| | ML-7T_Miguel 230 kV 7T CB | P4 | Fault + Stuck Breaker | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.9 | |
| | TL23042_Line BB-OM-ML 230kV ck 1 AND TL50001_Line ECO-ML 500kV ck 1 | P6 | N-1-1 | 103.0 | 101.8 | 134.3 | 110.5 | < 100 | < 100 | < 100 | 101.6 | 102.3 | 140.7 | |

| Overloaded Facility | Contingency (All and Worst P6) | Category | Category Description | Loading % (Baseline Scenarios) | | | | | | Loading % (Sensitivity Scenarios) | | | | Project & Potential Mitigation Solutions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2024 Summer Peak | 2027 Summer Peak | 2032 Summer Peak | 2024 Spring Off-Peak | 2027 Spring Off-Peak | 2032 Spring Off-Peak | 2024 Summer Peak Heavy Renewable & Minimum Gas Generation | 2024 Spring Off-Peak Storage charging in load pockets | 2027 Summer Peak High CEC forecasted load | 2035 Summer Peak with ATE load | |
| | TL23042+13815_TC-GHL + ML-SG-OM | P7 | DCTL | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.0 | |
| 22832 SYCAMORE 230 22831 SYCAMORE 138 1 1 | TL50001_Line ECO-ML 500kV ck 1 AND TL23071_Line SX-PQ 230kV ck 1 | P6 | N-1-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.2 | Rely on system adjustments after the first contingency for the P6 event, such as dispatching battery energy storage in Sycamore Canyon connected to the 138 kV bus or reducing generation output of Sycamore Canyon pumped hydro storage connected to the 230 kV bus. The use of energy storage is subject to verification that it has sufficient MWh capability and can be fully charged when needed. |
| | TL50001_Line ECO-ML 500kV ck 1 AND TL23071_Line SX-PQ 230kV ck 1 | P6 | N-1-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 104.4 | < 100 | < 100 | Battery energy storage curtailment after P1 contingency or propose a new RAS to trip the battery energy storage (under charging mode) at Sycamore Canyon. |
| 22500 MISSION 138 22120 CARLTNHS 138 1 1 | TL13819_Line LC-SN 138kV ck 1 AND SX_BK60_Tran SX 230/138kV ck 1 | P6 | N-1-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.6 | < 100 | < 100 | |
| 19020 BLYTHE 161 21731 VEGA_3_SS 161 1 1 | TL50002_Line NG-IV 500kV ck 1 | P1 | N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 102.3 | < 100 | < 100 | < 100 | < 100 | Rely on congestion management to protect against the loss of TL50002 or IV-500-8022 stuck breaker. Additional system adjustments can be used after the first contingency for P3 events, such as the reduction or curtailment of renewable energy connected at Imperial Valley substation. |
| | SX BESSG_Gen SX BESS ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 106.9 | < 100 | < 100 | < 100 | < 100 | |
| | PV_UNIT1_Gen PALOVRD1 ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 106.0 | < 100 | < 100 | < 100 | < 100 | |
| | SG BESSG_Gen SG BESS ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 105.4 | < 100 | < 100 | < 100 | < 100 | |
| | ES BESS_Gen ES BESS ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 104.9 | < 100 | < 100 | < 100 | < 100 | |
| | OM_GEN4_Gen OM GEN4_BESS ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 104.8 | < 100 | < 100 | < 100 | < 100 | |
| | IV-500-8022_CB IMPERIAL VALLEY 500KV 8022 | P4 | Fault + Stuck Breaker | < 100 | < 100 | < 100 | < 100 | < 100 | 103.3 | < 100 | < 100 | < 100 | < 100 | |
| | TL50002_Line NG-IV 500kV ck 1 | P1 | N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 126.1 | < 100 | < 100 | < 100 | < 100 | |
| | PV_UNIT1_Gen PALOVRD1 ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 134.0 | < 100 | < 100 | < 100 | < 100 | |
| | SX BESSG_Gen SX BESS ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 133.1 | < 100 | < 100 | < 100 | < 100 | |
| | SG BESSG_Gen SG BESS ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 130.9 | < 100 | < 100 | < 100 | < 100 | |
| | ES BESS_Gen ES BESS ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 130.0 | < 100 | < 100 | < 100 | < 100 | |
| | OM_GEN4_Gen OM GEN4_BESS ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 129.9 | < 100 | < 100 | < 100 | < 100 | |
| | CP BESSG_Gen CP BESS ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 129.1 | < 100 | < 100 | < 100 | < 100 | |
| | VC GEN _Gen VC GEN1/GEN2 ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 128.3 | < 100 | < 100 | < 100 | < 100 | |
| | OCO_GEN1_Gen OCO GEN ID G1/G2 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 124.0 | < 100 | < 100 | < 100 | < 100 | |

| Overloaded Facility | Contingency (All and Worst P6) | Category | Category Description | Loading % (Baseline Scenarios) | | | | | | Loading % (Sensitivity Scenarios) | | | | Project & Potential Mitigation Solutions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2024 Summer Peak | 2027 Summer Peak | 2032 Summer Peak | 2024 Spring Off-Peak | 2027 Spring Off-Peak | 2032 Spring Off-Peak | 2024 Summer Peak Heavy Renewable & Minimum Gas Generation | 2024 Spring Off-Peak Storage charging in load pockets | 2027 Summer Peak High CEC forecasted load | 2035 Summer Peak with ATE load | |
| 21331 ELCENTSW 161 21059 PILOTKNB 161 1 1 | DW GEN5_Gen DW GEN5 ID G1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 122.5 | < 100 | < 100 | < 100 | < 100 | Rely on congestion management to protect against the loss of TL50002 or IV-500-8022 stuck breaker. Additional system adjustments can be used after the first contingency for P3 events, such as the reduction or curtailment of renewable energy connected at Imperial Valley substation. |
| | IV_GEN3_Gen IV GEN3 ID G1/G2 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 121.7 | < 100 | < 100 | < 100 | < 100 | |
| | DW GEN1_Gen DW GEN1 ID G1/G2 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 121.5 | < 100 | < 100 | < 100 | < 100 | |
| | DU_GEN1_Gen DU GEN1 ID G1/G2 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 121.1 | < 100 | < 100 | < 100 | < 100 | |
| | DW GEN6_Gen DW GEN6 ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 120.8 | < 100 | < 100 | < 100 | < 100 | |
| | ECO W _Gen ECO W1/W2 ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 120.8 | < 100 | < 100 | < 100 | < 100 | |
| | DW GEN3_Gen DW GEN3 ID 1/2 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 120.1 | < 100 | < 100 | < 100 | < 100 | |
| | DW GEN2_Gen DW GEN2 ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 118.8 | < 100 | < 100 | < 100 | < 100 | |
| | DW GEN4_Gen DW GEN2 ID 1/2 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 117.2 | < 100 | < 100 | < 100 | < 100 | |
| | IV PVG _Gen IV PV ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 115.3 | < 100 | < 100 | < 100 | < 100 | |
| | IV-500-8022_CB IMPERIAL VALLEY 500KV 8022 | P4 | Fault + Stuck Breaker | < 100 | < 100 | < 100 | < 100 | < 100 | 127.6 | < 100 | < 100 | < 100 | < 100 | |
| | TL50002_Line NG-IV 500kV ck 1 AND TL50003+GEN_DROP_RAS_Line OCO-SCR 500kV ck 1 + GEN DROP RAS | P6 | N-1-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 104.2 | 500 kV Gen Drop RAS should not be enabled for this P6 contingency. An erroneous operation of the RAS would create these overloads in IID area. |
| 21072 YUCCA161 161 21059 PILOTKNB 161 1 1 | TL50002_Line NG-IV 500kV ck 1 | P1 | N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 106.3 | < 100 | < 100 | < 100 | < 100 | Rely on congestion management to protect against the loss of TL50002 or IV-500-8022 stuck breaker. Additional system adjustments can be used after the first contingency for P3 events, such as the reduction or curtailment of renewable energy connected at Imperial Valley substation. |
| | PV_UNIT1_Gen PALOVRD1 ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 114.2 | < 100 | < 100 | < 100 | < 100 | |
| | SX BESSG_Gen SX BESS ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 110.6 | < 100 | < 100 | < 100 | < 100 | |
| | SG BESSG_Gen SG BESS ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 109.3 | < 100 | < 100 | < 100 | < 100 | |
| | ES BESS_Gen ES BESS ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 108.8 | < 100 | < 100 | < 100 | < 100 | |
| | OM_GEN4_Gen OM GEN4_BESS ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 108.6 | < 100 | < 100 | < 100 | < 100 | |
| | DW GEN5_Gen DW GEN5 ID G1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 104.1 | < 100 | < 100 | < 100 | < 100 | |
| | IV_GEN3_Gen IV GEN3 ID G1/G2 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.6 | < 100 | < 100 | < 100 | < 100 | |
| | DW GEN1_Gen DW GEN1 ID G1/G2 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.5 | < 100 | < 100 | < 100 | < 100 | |
| | DU_GEN1_Gen DU GEN1 ID G1/G2 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.2 | < 100 | < 100 | < 100 | < 100 | |
| | DW GEN6_Gen DW GEN6 ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.1 | < 100 | < 100 | < 100 | < 100 | |

| Overloaded Facility | Contingency (All and Worst P6) | Category | Category Description | Loading % (Baseline Scenarios) | | | | | | Loading % (Sensitivity Scenarios) | | | | Project & Potential Mitigation Solutions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2024 Summer Peak | 2027 Summer Peak | 2032 Summer Peak | 2024 Spring Off-Peak | 2027 Spring Off-Peak | 2032 Spring Off-Peak | 2024 Summer Peak Heavy Renewable & Minimum Gas Generation | 2024 Spring Off-Peak Storage charging in load pockets | 2027 Summer Peak High CEC forecasted load | 2035 Summer Peak with ATE load | |
| | ECO W _Gen ECO W1/W2 ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.0 | < 100 | < 100 | < 100 | < 100 | |
| | DW GEN3_Gen DW GEN3 ID 1/2 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 102.6 | < 100 | < 100 | < 100 | < 100 | |
| | DW GEN2_Gen DW GEN2 ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.8 | < 100 | < 100 | < 100 | < 100 | |
| | DW GEN4_Gen DW GEN2 ID 1/2 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.9 | < 100 | < 100 | < 100 | < 100 | |
| | IV-500-8022_CB IMPERIAL VALLEY 500KV 8022 | P4 | Fault + Stuck Breaker | < 100 | < 100 | < 100 | < 100 | < 100 | 107.2 | < 100 | < 100 | < 100 | < 100 | |
| | TL50002_Line NG-IV 500kV ck 1 AND TL50003+GEN_DROP_RAS_Line OCO-SCR 500kV ck 1 + GEN DROP RAS | P6 | N-1-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 105.3 | 500 kV Gen Drop RAS should not be enabled for this P6 contingency. An erroneous operation of the RAS would create these overloads in IID area. |
| 21072 YUCCA161 161 84846 YUCCA W 69.0 1 1 | TL50002_Line NG-IV 500kV ck 1 | P1 | N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 109.5 | < 100 | < 100 | < 100 | < 100 | Rely on congestion management to protect against the loss of TL50002 or IV-500-8022 stuck breaker. Additional system adjustments can be used after the first contingency for P3 events, such as the reduction or curtailment of renewable energy connected at Imperial Valley substation. |
| | PV_UNIT1_Gen PALOVRD1 ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 115.8 | < 100 | < 100 | < 100 | < 100 | |
| | SX BESSG_Gen SX BESS ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 113.0 | < 100 | < 100 | < 100 | < 100 | |
| | SG BESSG_Gen SG BESS ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 111.9 | < 100 | < 100 | < 100 | < 100 | |
| | ES BESS_Gen ES BESS ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 111.5 | < 100 | < 100 | < 100 | < 100 | |
| | IV_GEN3_Gen IV GEN3 ID G1/G2 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 107.3 | < 100 | < 100 | < 100 | < 100 | |
| | DW GEN1_Gen DW GEN1 ID G1/G2 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 107.2 | < 100 | < 100 | < 100 | < 100 | |
| | DU_GEN1_Gen DU GEN1 ID G1/G2 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 106.9 | < 100 | < 100 | < 100 | < 100 | |
| | DW GEN6_Gen DW GEN6 ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 106.8 | < 100 | < 100 | < 100 | < 100 | |
| | ECO W _Gen ECO W1/W2 ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 106.7 | < 100 | < 100 | < 100 | < 100 | |
| | DW GEN3_Gen DW GEN3 ID 1/2 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 106.4 | < 100 | < 100 | < 100 | < 100 | |
| | DW GEN2_Gen DW GEN2 ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 105.7 | < 100 | < 100 | < 100 | < 100 | |
| | DW GEN4_Gen DW GEN2 ID 1/2 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 104.9 | < 100 | < 100 | < 100 | < 100 | |
| | IV PVG _Gen IV PV ID 1 AND TL50002_Line NG-IV 500kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.9 | < 100 | < 100 | < 100 | < 100 | |
| | IV-500-8022_CB IMPERIAL VALLEY 500KV 8022 | P4 | Fault + Stuck Breaker | < 100 | < 100 | < 100 | < 100 | < 100 | 110.2 | < 100 | < 100 | < 100 | < 100 | |
| | TL50002_Line NG-IV 500kV ck 1 AND TL50003+GEN_DROP_RAS_Line OCO-SCR 500kV ck 1 + GEN DROP RAS | P6 | N-1-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 105.3 | 500 kV Gen Drop RAS should not be enabled for this P6 contingency. An erroneous operation of the RAS would create these overloads in IID area. |

| Overloaded Facility | Contingency (All and Worst P6) | Category | Category Description | Loading % (Baseline Scenarios) | | | | | | Loading % (Sensitivity Scenarios) | | | | Project & Potential Mitigation Solutions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2024 Summer Peak | 2027 Summer Peak | 2032 Summer Peak | 2024 Spring Off-Peak | 2027 Spring Off-Peak | 2032 Spring Off-Peak | 2024 Summer Peak Heavy Renewable & Minimum Gas Generation | 2024 Spring Off-Peak Storage charging in load pockets | 2027 Summer Peak High CEC forecasted load | 2035 Summer Peak with ATE load | |
| | HAA-NG_Line HAA-NG 500kV ck 1 AND HAA-HDWSH_HASSYAMP to HDWSH 500 ck 1 | P6 | N-1-1 | < 100 | 105.3 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 107.6 | < 100 | Rely on system adjustments after the first contingency of the P6 event, such as dispatching battery energy storage connected at the Imperial Valley substation. The use of energy storage is subject to verification that it has sufficient MWh capability and can be fully charged when needed. |
| 21361 NILAND 92.0 21809 PRITP1 92.0 1 1 | TL50002_Line NG-IV 500kV ck 1 AND TL50003+GEN_DROP_RAS_Line OCO-SCR 500kV ck 1 + GEN DROP RAS | P6 | N-1-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 112.3 | 500 kV Gen Drop RAS should not be enabled for this P6 contingency. An erroneous operation of the RAS would create these overloads in IID area. |
| 21642 CALPTTAP 92.0 21697 CALIPAT 92.0 1 1 | TL50002_Line NG-IV 500kV ck 1 AND TL50003+GEN_DROP_RAS_Line OCO-SCR 500kV ck 1 + GEN DROP RAS | P6 | N-1-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 109.9 | |
| 21642 CALPTTAP 92.0 21870 CSF_TAP 92.0 1 1 | TL50002_Line NG-IV 500kV ck 1 AND TL50003+GEN_DROP_RAS_Line OCO-SCR 500kV ck 1 + GEN DROP RAS | P6 | N-1-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 109.9 | |
| 21809 PRITP1 92.0 21810 PRISON 92.0 1 1 | TL50002_Line NG-IV 500kV ck 1 AND TL50003+GEN_DROP_RAS_Line OCO-SCR 500kV ck 1 + GEN DROP RAS | P6 | N-1-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 112.2 | |
| 21810 PRISON 92.0 21811 PRITP2 92.0 1 1 | TL50002_Line NG-IV 500kV ck 1 AND TL50003+GEN_DROP_RAS_Line OCO-SCR 500kV ck 1 + GEN DROP RAS | P6 | N-1-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 109.9 | |
| 21870 CSF_TAP 92.0 21811 PRITP2 92.0 1 1 | TL50002_Line NG-IV 500kV ck 1 AND TL50003+GEN_DROP_RAS_Line OCO-SCR 500kV ck 1 + GEN DROP RAS | P6 | N-1-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 109.9 | |
| 20017 MEP-230 230 20238 HRA-230 230 1 1 | TL23042_Line BB-OM-ML 230kV ck 1 AND TL23041_Line SX-OM-ML 230kV ck 1 | P6 | N-1-1 | < 100 | < 100 | < 100 | Diverge | < 100 | < 100 | < 100 | 144.9 | < 100 | < 100 | Use of existing 230 kV Otay Mesa Gen Drop RAS or rely on congestion management after the first contingency for the P6 events. |
| | TL23041+23042_Lines SX-OM-ML 230kV ck 1 + BB-OM-ML 230kV ck 1 | P7 | DCTL | < 100 | < 100 | < 100 | Diverge | < 100 | < 100 | < 100 | 145.0 | < 100 | < 100 | |
| 20017 MEP-230 230 20392 TOY-230 230 1 1 | TL23042_Line BB-OM-ML 230kV ck 1 AND TL23041_Line SX-OM-ML 230kV ck 1 | P6 | N-1-1 | < 100 | < 100 | < 100 | Diverge | < 100 | < 100 | < 100 | 125.1 | < 100 | < 100 | |
| | TL23041+23042_Lines SX-OM-ML 230kV ck 1 + BB-OM-ML 230kV ck 1 | P7 | DCTL | < 100 | < 100 | < 100 | Diverge | < 100 | < 100 | < 100 | 125.2 | < 100 | < 100 | |
| 20238 HRA-230 230 20392 TOY-230 230 1 1 | TL23042_Line BB-OM-ML 230kV ck 1 AND TL23041_Line SX-OM-ML 230kV ck 1 | P6 | N-1-1 | < 100 | < 100 | < 100 | Diverge | < 100 | < 100 | < 100 | 123.2 | < 100 | < 100 | |
| | TL23041+23042_Lines SX-OM-ML 230kV ck 1 + BB-OM-ML 230kV ck 1 | P7 | DCTL | < 100 | < 100 | < 100 | Diverge | < 100 | < 100 | < 100 | 123.2 | < 100 | < 100 | |
| | ROA-HRA_ROA-230 to HRA-230 ck 1 | P1 | N-1 | < 100 | < 100 | < 100 | < 100 | 136.5 | < 100 | < 100 | < 100 | < 100 | < 100 | For the 2024 Summer Peak Base and Sensitivity Cases, rely on existing TL 23040 IV 500kV N-1 RAS or system adjustments after the first contingency of CENACE's TL La Rosita - Herradura ck 1 or ck 2, such as adjusting Imperial Valley phase shifting transformers or reducing generation output in the greater Imperial Valley area as |
| | TL50001_Line ECO-ML 500kV ck 1 | P1 | N-1 | < 100 | < 100 | < 100 | < 100 | 112.4 | < 100 | < 100 | < 100 | < 100 | < 100 | |
| | TL50004_Line IV-ECO 500kV ck 1 | P1 | N-1 | < 100 | < 100 | < 100 | < 100 | 109.4 | < 100 | < 100 | < 100 | < 100 | < 100 | |
| | ECO-4T_ECO 4T BK83 & TL50004 | P4 | Fault + Stuck Breaker | < 100 | < 100 | < 100 | < 100 | 111.3 | < 100 | < 100 | < 100 | < 100 | < 100 | |
| | IV-500-8022_CB IMPERIAL VALLEY 500KV 8022 | P4 | Fault + Stuck Breaker | < 100 | < 100 | < 100 | < 100 | 105.3 | < 100 | < 100 | < 100 | < 100 | < 100 | |
| | IV-500-8032_CB IMPERIAL VALLEY 500KV 8032 | P4 | Fault + Stuck Breaker | < 100 | < 100 | < 100 | < 100 | 111.3 | < 100 | < 100 | < 100 | < 100 | < 100 | |

| Overloaded Facility | Contingency (All and Worst P6) | Category | Category Description | Loading % (Baseline Scenarios) | | | | | | Loading % (Sensitivity Scenarios) | | | | Project & Potential Mitigation Solutions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2024 Summer Peak | 2027 Summer Peak | 2032 Summer Peak | 2024 Spring Off-Peak | 2027 Spring Off-Peak | 2032 Spring Off-Peak | 2024 Summer Peak Heavy Renewable & Minimum Gas Generation | 2024 Spring Off-Peak Storage charging in load pockets | 2027 Summer Peak High CEC forecasted load | 2035 Summer Peak with ATE load | |
| 20102 RUM-230 230 20118 ROA-230 230 1 1 | ML7013_ML 7013 CB - BK 80&81 | P4 | Fault + Stuck Breaker | < 100 | < 100 | < 100 | < 100 | 112.4 | < 100 | < 100 | < 100 | < 100 | < 100 | loading generation output in the greater Imperial Valley area as needed to limit southbound flow from SDGE to CENACE through TL23050 (Imperial Valley - La Rosita).<br><br>Since the WECC Seed Case used for the 2027 Spring Off-Peak Base Case is the WECC 2024 Light Spring 1 Case, it doesn't include TL La Rosita - Herradura ck 2, which is included in the WECC 2025 Heavy Summer 3 Case used for the 2024 Summer Peak Base Case. Thus, overloads for the 2027 Spring Off-Peak Base Case will not be present if TL La Rosita - Herradura ck 2 is in operation. |
| | ML8013_ML 8013 CB - BK 80&TL50001 | P4 | Fault + Stuck Breaker | < 100 | < 100 | < 100 | < 100 | 112.6 | < 100 | < 100 | < 100 | < 100 | < 100 | |
| | ML8023_ML 8023 CB - BK 81&TL50001 | P4 | Fault + Stuck Breaker | < 100 | < 100 | < 100 | < 100 | 112.5 | < 100 | < 100 | < 100 | < 100 | < 100 | |
| | OCO-1E_OCO 1E TL50003 & TL50005 | P4 | Fault + Stuck Breaker | < 100 | < 100 | < 100 | < 100 | 104.6 | < 100 | < 100 | < 100 | < 100 | < 100 | |
| | OCO-2T_OCO 2T TL50003 & TL50006 | P4 | Fault + Stuck Breaker | < 100 | < 100 | < 100 | < 100 | 104.6 | < 100 | < 100 | < 100 | < 100 | < 100 | |
| | SCR-2T_SUNCREST 2T BK81 & TL50003 | P4 | Fault + Stuck Breaker | < 100 | < 100 | < 100 | < 100 | 105.0 | < 100 | < 100 | < 100 | < 100 | < 100 | |
| | ROA-HRA_ROA-230 to HRA-230 ck 1 AND TL50001_Line ECO-ML 500kV ck 1 | P6 | N-1-1 | < 100 | < 100 | < 100 | < 100 | 171.9 | < 100 | 100.5 | < 100 | < 100 | < 100 | |
| | ROA-HRA2_ROA-230 to HRA-230 ck 2 AND TL50001_Line ECO-ML 500kV ck 1 | P6 | N-1-1 | 109.7 | < 100 | < 100 | < 100 | < 100 | < 100 | 111.5 | < 100 | < 100 | < 100 | |
| | TL23082_Line IV-IV PST 230kV ck 1 OR TL23050_Line IV PST-ROA 230kV ck 1 AND ROA-HRA_ROA-230 to HRA-230 ck 1 | P6 | N-1-1 | < 100 | < 100 | < 100 | 110.5 | 105.6 | < 100 | < 100 | 110.4 | < 100 | < 100 | CENACE would need to rely on system adjustments in their system after the first contingency for P6 events of TL's 23082/23050 Imperial Valley - La Rosita and TL La Rosita - Herradura ck 1 even if TL 23040 Otay Mesa - Tijuana is disconnected. |
| | TL23042_Line BB-OM-ML 230kV ck 1 AND TL23041_Line SX-OM-ML 230kV ck 1 | P6 | N-1-1 | < 100 | < 100 | < 100 | Diverge | < 100 | < 100 | < 100 | 144.1 | < 100 | < 100 | Use of existing 230 kV Otay Mesa Gen Drop RAS or rely on congestion management after the first contingency for the P6 events. |
| | TL23041+23042_Lines SX-OM-ML 230kV ck 1 + BB-OM-ML 230kV ck 1 | P7 | DCTL | < 100 | < 100 | < 100 | Diverge | < 100 | < 100 | < 100 | 144.2 | < 100 | < 100 | |
| 20238 HRA-230 230 20102 RUM-230 230 1 1 | ROA-HRA_ROA-230 to HRA-230 ck 1 | P1 | N-1 | < 100 | < 100 | < 100 | < 100 | 115.2 | < 100 | < 100 | < 100 | < 100 | < 100 | For the 2024 and 2027 Summer Peak Base and Sensitivity Cases, rely on existing TL 23040 IV 500kV N-1 RAS or system adjustments after the first contingency of CENACE's TL La Rosita - Herradura ck 2 or TL 50003 Ocotillo - Suncrest, such as adjusting Imperial Valley phase shifting transformers or reducing generation output in the greater Imperial Valley area as needed to limit southbound flow from SDGE to CENACE through TL23050 (Imperial Valley - La Rosita).<br><br>Since the WECC Seed Case used for the 2027 Spring Off-Peak Base Case is the WECC 2024 Light Spring 1 Case, it doesn't include TL La Rosita - Herradura ck 2, which is included in the WECC 2025 Heavy Summer 3 Case used for the 2024 Summer Peak Base Case. Thus, overloads for the 2027 Spring Off-Peak Base Case will not be present if TL La Rosita - Herradura ck 2 is in operation. |
| | ROA-HRA_ROA-230 to HRA-230 ck 1 AND TL50001_Line ECO-ML 500kV ck 1 | P6 | N-1-1 | < 100 | < 100 | < 100 | < 100 | 150.1 | < 100 | < 100 | < 100 | < 100 | < 100 | |
| | ROA-HRA2_ROA-230 to HRA-230 ck 2 AND TL50001_Line ECO-ML 500kV ck 1 | P6 | N-1-1 | 103.3 | < 100 | < 100 | < 100 | < 100 | < 100 | 105.1 | < 100 | < 100 | < 100 | |
| | TL50003_Line OCO-SCR 500kV ck 1 AND TL50001_Line ECO-ML 500kV ck 1 | P6 | N-1-1 | 100.7 | < 100 | < 100 | < 100 | 117.4 | < 100 | 101.4 | < 100 | 100.6 | < 100 | |
| | TL23082_Line IV-IV PST 230kV ck 1 OR TL23050_Line IV PST-ROA 230kV ck 1 AND ROA-HRA_ROA-230 to HRA-230 ck 1 | P6 | N-1-1 | < 100 | < 100 | < 100 | 123.2 | < 100 | < 100 | < 100 | 123.1 | < 100 | < 100 | CENACE would need to rely on system adjustments in their system after the first contingency for P6 events of TL's 23082/23050 Imperial Valley - La Rosita and TL La Rosita - Herradura ck 1 even if TL 23040 Otay Mesa - Tijuana is disconnected. |

| Overloaded Facility | Contingency (All and Worst P6) | Category | Category Description | Loading % (Baseline Scenarios) | | | | | | Loading % (Sensitivity Scenarios) | | | | Project & Potential Mitigation Solutions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2024 Summer Peak | 2027 Summer Peak | 2032 Summer Peak | 2024 Spring Off-Peak | 2027 Spring Off-Peak | 2032 Spring Off-Peak | 2024 Summer Peak Heavy Renewable & Minimum Gas Generation | 2024 Spring Off-Peak Storage charging in load pockets | 2027 Summer Peak High CEC forecasted load | 2035 Summer Peak with ATE load | |
| | TL23042_Line BB-OM-ML 230kV ck 1 AND TL23041_Line SX-OM-ML 230kV ck 1 | P6 | N-1-1 | < 100 | < 100 | < 100 | Diverge | < 100 | < 100 | < 100 | 157.4 | < 100 | < 100 | Use of existing 230 kV Otay Mesa Gen Drop RAS or rely on congestion management after the first contingency for the P6 events. |
| | TL23041+23042_Lines SX-OM-ML 230kV ck 1 + BB-OM-ML 230kV ck 1 | P7 | DCTL | < 100 | < 100 | < 100 | Diverge | < 100 | < 100 | < 100 | 157.6 | < 100 | < 100 | |
| 20238 HRA-230 230 20118 ROA-230 230 1 1 | ROA-RUM_ROA-230 to RUM-230 ck 1 | P1 | N-1 | < 100 | < 100 | < 100 | < 100 | 128.4 | < 100 | < 100 | < 100 | < 100 | < 100 | For the 2024 Summer Peak Base and Sensitivity Cases, rely on existing TL 23040 IV 500kV N-1 RAS or system adjustments after the first contingency of CENACE's TL La Rosita - Herradura ck 2, such as adjusting Imperial Valley phase shifting transformers or reducing generation output in the greater Imperial Valley area as needed to limit southbound flow from SDGE to CENACE through TL23050 (Imperial Valley - La Rosita).<br><br>Since the WECC Seed Case used for the 2027 Spring Off-Peak Base Case is the WECC 2024 Light Spring 1 Case, it doesn't include TL La Rosita - Herradura ck 2, which is included in the WECC 2025 Heavy Summer 3 Case used for the 2024 Summer Peak Base Case. Thus, overloads for the 2027 Spring Off-Peak Base Case will not be present if TL La Rosita - Herradura ck 2 is in operation. |
| | RUM-HRA_RUM-230 to HRA-230 ck 1 | P1 | N-1 | < 100 | < 100 | < 100 | < 100 | 119.2 | < 100 | < 100 | < 100 | < 100 | < 100 | |
| | ROA-RUM_ROA-230 to RUM-230 ck 1 AND TL50001_Line ECO-ML 500kV ck 1 | P6 | N-1-1 | < 100 | < 100 | < 100 | < 100 | 164.6 | < 100 | < 100 | < 100 | < 100 | < 100 | |
| | ROA-HRA2_ROA-230 to HRA-230 ck 2 AND TL50001_Line ECO-ML 500kV ck 1 | P6 | N-1-1 | 106.5 | < 100 | < 100 | < 100 | < 100 | < 100 | 108.3 | < 100 | < 100 | < 100 | |
| | TL23082_Line IV-IV PST 230kV ck 1 OR TL23050_Line IV PST-ROA 230kV ck 1 AND RUM-HRA_RUM-230 to HRA-230 ck 1 | P6 | N-1-1 | < 100 | < 100 | < 100 | 123.0 | < 100 | < 100 | < 100 | 122.9 | < 100 | < 100 | CENACE would need to rely on system adjustments in their system after the first contingency for P6 events of TL's 23082/23050 Imperial Valley - La Rosita and TL La Rosita - Herradura ck 1 even if TL 23040 Otay Mesa - Tijuana is disconnected. |
| | TL23042_Line BB-OM-ML 230kV ck 1 AND TL23041_Line SX-OM-ML 230kV ck 1 | P6 | N-1-1 | < 100 | < 100 | < 100 | Diverge | < 100 | < 100 | < 100 | 156.7 | < 100 | < 100 | Use of existing 230 kV Otay Mesa Gen Drop RAS or rely on congestion management after the first contingency for the P6 events. |
| | TL23041+23042_Lines SX-OM-ML 230kV ck 1 + BB-OM-ML 230kV ck 1 | P7 | DCTL | < 100 | < 100 | < 100 | Diverge | < 100 | < 100 | < 100 | 156.9 | < 100 | < 100 | |
| 22609 OTAYMESA 230 20149 TJI-230 230 1 1 | TL23042_Line BB-OM-ML 230kV ck 1 AND TL23041_Line SX-OM-ML 230kV ck 1 | P6 | N-1-1 | 102.2 | < 100 | 102.4 | Diverge | < 100 | < 100 | < 100 | < 100 | < 100 | 104.8 | Use of existing 230 kV Otay Mesa Gen Drop RAS or rely on congestion management after the first contingency for the P6 events. |
| | TL23041+23042_Lines SX-OM-ML 230kV ck 1 + BB-OM-ML 230kV ck 1 | P7 | DCTL | 102.2 | < 100 | 102.4 | Diverge | < 100 | < 100 | < 100 | < 100 | < 100 | 104.8 | |
| | TL50003_Line OCO-SCR 500kV ck 1 AND TL50001_Line ECO-ML 500kV ck 1 | P6 | N-1-1 | < 100 | 103.0 | 144.9 | < 100 | < 100 | < 100 | < 100 | 108.8 | 105.0 | 158.1 | Rely on existing TL50003 Gen Drop RAS or TL50001 Gen Drop RAS. If this is not enough to mitigate the overloads, congestion management and additional system adjustments can be used after the first contingency for the P6 events, such as reducing generation output in the greater Imperial Valley area while dispatching conventional gas units, preferred resources, and battery energy storage in the San Diego area, and adjusting the Imperial Valley phase shifting transformers if needed. The use of energy storage is subject to verification that it has sufficient MWh capability and can be fully charged when needed. |
| 22356 IMPRLVLY 230 22357 IV PFC1 230 1 1 | TL50003_Line OCO-SCR 500kV ck 1 AND TL50001_Line ECO-ML 500kV ck 1 | P6 | N-1-1 | < 100 | < 100 | 109.5 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 120.4 | |
| 22357 IV PFC1 230 22358 IV PFC 230 1 1 | TL50003_Line OCO-SCR 500kV ck 1 AND TL50001_Line ECO-ML 500kV ck 1 | P6 | N-1-1 | 110.9 | < 100 | 124.9 | < 100 | < 100 | < 100 | 110.3 | 101.3 | < 100 | 138.3 | |
| 22357 IV PFC1 230 22358 IV PFC 230 2 1 | TL50003_Line OCO-SCR 500kV ck 1 AND TL50001_Line ECO-ML 500kV ck 1 | P6 | N-1-1 | 110.9 | < 100 | 124.9 | < 100 | < 100 | < 100 | 110.3 | 101.8 | < 100 | 138.3 | |
| 22358 IV PFC 230 20118 ROA-230 230 1 1 | TL50003_Line OCO-SCR 500kV ck 1 AND TL50001_Line ECO-ML 500kV ck 1 | P6 | N-1-1 | < 100 | < 100 | 109.5 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 120.4 | |

| Overloaded Facility | Contingency (All and Worst P6) | Category | Category Description | Loading % (Baseline Scenarios) | | | | | | Loading % (Sensitivity Scenarios) | | | | Project & Potential Mitigation Solutions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2024 Summer Peak | 2027 Summer Peak | 2032 Summer Peak | 2024 Spring Off-Peak | 2027 Spring Off-Peak | 2032 Spring Off-Peak | 2024 Summer Peak Heavy Renewable & Minimum Gas Generation | 2024 Spring Off-Peak Storage charging in load pockets | 2027 Summer Peak High CEC forecasted load | 2035 Summer Peak with ATE load | |
| 22024 B 69.0 22420 SILVERGT 69.0 1 1 | Bus_OT230_NS_Old Town 230kV N+S Bus | P5 | Non-Redundant Relay | 100.6 | 102.7 | 117.8 | < 100 | < 100 | < 100 | < 100 | < 100 | 105.5 | 135.1 | Add redundancy to protection systems at Old Town 230 kV buses. |
| 22024 B 69.0 22420 SILVERGT 69.0 2 1 | Bus_OT230_NS_Old Town 230kV N+S Bus | P5 | Non-Redundant Relay | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 112.0 | |
| 22380 KETTNER 69.0 22024 B 69.0 1 1 | Bus_OT230_NS_Old Town 230kV N+S Bus | P5 | Non-Redundant Relay | 108.9 | 112.7 | 132.2 | < 100 | < 100 | < 100 | < 100 | < 100 | 116.4 | 151.0 | |
| 22420 SILVERGT 69.0 22868 URBAN 69.0 1 1 | Bus_OT230_NS_Old Town 230kV N+S Bus | P5 | Non-Redundant Relay | < 100 | < 100 | 114.1 | < 100 | < 100 | < 100 | < 100 | < 100 | 102.1 | 130.4 | |
| 22871 VINE SUB 69.0 22380 KETTNER 69.0 1 1 | Bus_OT230_NS_Old Town 230kV N+S Bus | P5 | Non-Redundant Relay | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 105.1 | |
| 22556 NAVSTMTR 69.0 22824 SWTWTRTP 69.0 1 1 | Bus_SG230_SILVERGATE-SG 230kV Bus | P5 | Non-Redundant Relay | 101.0 | 103.9 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 105.8 | < 100 | Add redundancy to protection systems at Silvergate 230 kV buses.<br><br>Sweetwater Reliability Enhancement project (ISD December 2027) would also help mitigate these overloads for the 2032 Summer Peak base case, but additional overloads would appear in 2035 Summer Peak even with this project. |
| 22820 SWEETWTR 69.0 22824 SWTWTRTP 69.0 1 1 | Bus_SG230_SILVERGATE-SG 230kV Bus | P5 | Non-Redundant Relay | 106.8 | 110.2 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 112.3 | < 100 | |
| 22592 OLD TOWN 69.0 22871 VINE SUB 69.0 1 1 | Bus_SG230_SILVERGATE-SG 230kV Bus | P5 | Non-Redundant Relay | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 110.0 | |
| 22556 NAVSTMTR 69.0 22820 SWEETWTR 69.0 1 1 | Bus_SG230_SILVERGATE-SG 230kV Bus | P5 | Non-Redundant Relay | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 104.4 | |
| 22046 BASILONE 69.0 22848 TALEGATP 69.0 1 1 | TL23052_TALEGA - S.ONOFRE ck 1 AND TL23007_TL23007 CAPSTRNO - SONGS ck 1 | P6 | N-1-1 | < 100 | < 100 | < 100 | 107.2 | < 100 | < 100 | < 100 | 193.8 | < 100 | < 100 | Rely on system adjustments after the first contingency for the P6 event, such as opening any segment of the 69 kV transmission lines from Oceanside Tap to Talega in the short-term.<br><br>TL695B Japanese Mesa-Talega Tap Reconductor project (ISD October 2025) mitigates the overload in the long term. |
| 22808 STUARTTP 69.0 22400 LASPULGS 69.0 1 1 | TL23052_TALEGA - S.ONOFRE ck 1 AND TL23007_TL23007 CAPSTRNO - SONGS ck 1 | P6 | N-1-1 | 151.3 | < 100 | < 100 | 102.5 | < 100 | < 100 | < 100 | 167.8 | < 100 | < 100 | Rely on system adjustments after the first contingency for the P6 event, such as opening any segment of the 69 kV transmission lines from Oceanside Tap to Talega in the short-term.<br><br>TL690E, Stuart Tap-Las Pulgas 69 kV Reconductor project (ISD November 2026) mitigates the overload in the long term. |
| 22208 EL CAJON 69.0 22408 LOSCOCHS 69.0 1 1 | TL632_TL632 GR-LC ck 2 | P1 | N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 115.2 | < 100 | < 100 | < 100 | Rely on pre-contingency congestion management by dispatching an El Cajon gas fired unit. |
| | KU_GEN_Gen KUMEYAAY ID 1 AND TL632_TL632 GR-LC ck 2 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 108.7 | < 100 | < 100 | < 100 | |
| | EC GEN1_Gen EC GEN1 ID 1 AND TL632_TL632 GR-LC ck 2 | P3 | G-1/N-1 | 106.1 | 108.0 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 113.7 | < 100 | Rely on system adjustments after the first contingency for the P3 events by dispatching El Cajon battery energy storage. The use of energy storage is subject to verification that it has sufficient MWh capability and can be fully charged when needed.<br>TL632 Granite Loop-In and TL6914 Reconfiguration project (ISD May 2026) mitigates the overload in the long-term. |
| | EC GEN2_Gen EC GEN2 ID 1 AND TL632_TL632 GR-LC ck 2 | P3 | G-1/N-1 | 106.5 | 107.3 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 112.9 | < 100 | |

| Overloaded Facility | Contingency (All and Worst P6) | Category | Category Description | Loading % (Baseline Scenarios) | | | | | | Loading % (Sensitivity Scenarios) | | | | Project & Potential Mitigation Solutions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2024 Summer Peak | 2027 Summer Peak | 2032 Summer Peak | 2024 Spring Off-Peak | 2027 Spring Off-Peak | 2032 Spring Off-Peak | 2024 Summer Peak Heavy Renewable & Minimum Gas Generation | 2024 Spring Off-Peak Storage charging in load pockets | 2027 Summer Peak High CEC forecasted load | 2035 Summer Peak with ATE load | |
| 22604 OTAY 69.0 22616 OTAYLKTP 69.0 1 1 | TL0649D_TL0649D OTAYLKTP-SANYSDRO ck 1 | P2.1 | Line Section w/o Fault | 102.0 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | Rely on existing TL649 RAS to curtail Border gas generation unit 3. |
| | BD_GEN3_Gen CALPK_BD ID 1 AND TL6935_Line BD-BD GEN1&2 69kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.4 | Rely on system adjustments after the first contingency for the P3 event, such as curtailing gas generation in Otay substation. |
| 22740 SANYSDRO 69.0 22616 OTAYLKTP 69.0 1 1 | TL623_Line OY-IB-SYO 69kV ck 1 | P1 | N-1 | 102.8 | < 100 | 111.2 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.4 | 127.9 | Model the ISO approved "Reconductor TL649D and TL623C (San Ysidro - Otay Lake Tap - Otay)" project (ISD August 2024). |
| | TL6910_Line BD-SLT 69kV ck 1 | P1 | N-1 | 101.0 | < 100 | 100.6 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 105.6 | |
| | TL0623A_TL0623A OTAY-OTAY TP ck 1 | P2.1 | Line Section w/o Fault | 104.1 | 101.1 | 108.7 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.9 | 121.1 | |
| | TL0623C_TL0623C OTAY TP-SANYSDRO ck 1 | P2.1 | Line Section w/o Fault | 102.8 | < 100 | 111.2 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.4 | 128.0 | |
| | TL23042_Line BB-OM-ML 230kV ck 1 AND TL23020_Line BB-ML 230kV ck 1 | P6 | N-1-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 102.5 | |
| 22740 SANYSDRO 69.0 22608 OTAY TP 69.0 1 1 | TL649_Line OY-OL-SYO-BD 69kV ck 1 | P1 | N-1 | 103.4 | < 100 | 111.6 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.9 | 128.9 | |
| | TL0649D_TL0649D OTAYLKTP-SANYSDRO ck 1 | P2.1 | Line Section w/o Fault | 103.4 | < 100 | 111.7 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.9 | 128.7 | |
| 22612 OTAYLAKE 69.0 22080 BORDERTP 69.0 1 1 | Base Case | P0 | Base Case | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 106.4 | Change 50 amp fuse at Otay Lakes substation. |
| 22768 BAY BLVD 69.0 22352 IMPRLBCH 69.0 1 1 | TL0623A_TL0623A OTAY-OTAY TP ck 1 | P2.1 | Line Section w/o Fault | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.4 | Reconductor LT647 Bay Boulevard - Imperial Beach. |
| 22768 BAY BLVD 69.0 22516 MONTGMRY 69.0 1 1 | TL0642A_TL0642A MONTGYTP-BAY BLVD ck 1 | P2.1 | Line Section w/o Fault | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 111.4 | New RAS to open TL642B and TL642C after TL642A contingency. |
| 22884 WARNERS 69.0 22688 RINCON 69.0 1 1 | TL637_Line ST-CRE 69kV ck 1 | P1 | N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 105.2 | Change Current Transformer at Warners substation. |
| 22688 RINCON 69.0 22404 LILAC 69.0 1 1 | TL681_Line AS-VC-FE 69kV ck 1 | P1 | N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.5 | < 100 | < 100 | Congestion management to protect against the overloading of TL683 Rincon - Lilac which currently is not monitored by the existing Valley Center RAS. |
| | TL0681B_TL0681B ASH TP-VALCNTR ck 1 | P2.1 | Line Section w/o Fault | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.5 | < 100 | < 100 | |
| | PA_GEN1_Gen PA GEN1 ID 1 AND TL681_Line AS-VC-FE 69kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.8 | < 100 | < 100 | |
| | PA_GEN2_Gen PA GEN2 ID 1 AND TL681_Line AS-VC-FE 69kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.8 | < 100 | < 100 | |
| 22688 RINCON 69.0 22870 VALCNTR 69.0 1 1 | TL681_Line AS-VC-FE 69kV ck 1 | P1 | N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 120.4 | < 100 | < 100 | Use existing Valley Center RAS to trip the battery energy storage (under charging mode) at Valley Center. |
| | TL0681B_TL0681B ASH TP-VALCNTR ck 1 | P2.1 | Line Section w/o Fault | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 120.4 | < 100 | < 100 | |
| 22870 VALCNTR 69.0 22012 ASH TP 69.0 1 1 | TL683_Line RIN-LI 69kV ck 1 | P1 | N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 118.1 | < 100 | < 100 | |
| | TL6926_Line RIN-VC 69kV ck 1 | P1 | N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 119.0 | < 100 | < 100 | |
| | PA_GEN1_Gen PA GEN1 ID 1 AND TL637_Line ST-CRE 69kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 106.7 | < 100 | < 100 | |
| | PA_GEN1_Gen PA GEN1 ID 1 AND TL685_Line WR-ST 69kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.1 | < 100 | < 100 | |

| Overloaded Facility | Contingency (All and Worst P6) | Category | Category Description | Loading % (Baseline Scenarios) | | | | | | Loading % (Sensitivity Scenarios) | | | | Project & Potential Mitigation Solutions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2024 Summer Peak | 2027 Summer Peak | 2032 Summer Peak | 2024 Spring Off-Peak | 2027 Spring Off-Peak | 2032 Spring Off-Peak | 2024 Summer Peak Heavy Renewable & Minimum Gas Generation | 2024 Spring Off-Peak Storage charging in load pockets | 2027 Summer Peak High CEC forecasted load | 2035 Summer Peak with ATE load | |
| 22670 VALCNTR 69.0 22612 ASH 1T 69.0 1 1 | PA_GEN1_Gen PA GEN1 ID 1 AND TL688_Line ES-LI 69kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 110.1 | < 100 | < 100 | |
| | PA_GEN2_Gen PA GEN2 ID 1 AND TL637_Line ST-CRE 69kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 106.7 | < 100 | < 100 | |
| | PA_GEN2_Gen PA GEN2 ID 1 AND TL685_Line WR-ST 69kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.1 | < 100 | < 100 | |
| | PA_GEN2_Gen PA GEN2 ID 1 AND TL688_Line ES-LI 69kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 110.1 | < 100 | < 100 | |
| 22256 ESCNDIDO 69.0 22260 ESCNDIDO 230 2 1 | ES2-2N_ESCNDIDO 230KV 2N CB | P4 | Fault + Stuck Breaker | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 108.8 | Rely on congestion management to protect against the P4 contingency by dispatching battery energy storage installed in the 69 kV grid of San Diego area or reducing the generation output of Palomar Energy Center. The use of energy storage is subject to verification that it has sufficient MWh capability and can be fully charged when needed. |
| 22592 OLD TOWN 69.0 22596 OLD TOWN 230 1 1 | OT_BK71_Tran OT 230/69kV ck 2 | P1 | N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 112.5 | Add a third 230/69 kV transformer in Old Town substation. |
| | OT-2S_OLD TOWN 230 kV 2S CB | P4 | Fault + Stuck Breaker | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 112.7 | |
| | OT-1S_OLD TOWN 230 kV 1S CB | P4 | Fault + Stuck Breaker | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 111.3 | |
| 22592 OLD TOWN 69.0 22596 OLD TOWN 230 2 1 | OT_BK70_Tran OT 230/69kV ck 1 | P1 | N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 112.5 | |
| | OT-2N_OLD TOWN 230 kV 2N CB | P4 | Fault + Stuck Breaker | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 111.6 | |
| | OT-1N_OLD TOWN 230 kV 1N CB | P4 | Fault + Stuck Breaker | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 111.0 | |
| 22672 PRCTRVLY 138 22460 MIGUEL 138 1 1 | TL23026_Line SG-BB 230kV ck 1 AND ML_BK60_Tran ML 230/138kV ck 1 | P6 | N-1-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.3 | Rely on system adjustments after the first contingency for the P6 event (if necessary, the 30-min emergency rating may also be utilized), such as reducing generation output in Otay Mesa. |
| 22408 LOSCOCHS 69.0 22216 ELLIOTT 69.0 1 1 | TL13821_Line SX-SN 138kV ck 1 AND TL13824_Line ML-TC-LC 138kV ck 1 | P6 | N-1-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 107.5 | Rely on system adjustments after the first contingency for the P6 event, such as dispatching battery energy storage in El Cajon, Otay Mesa, and Valley Center substations and curtailing gas generation in Miramar GT substation. The use of energy storage is subject to verification that it has sufficient MWh capability and can be fully charged when needed. |
| | TL693_Line ME-SA 69kV ck 1 | P1 | N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 104.0 | |
| | PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL693_Line ME-SA 69kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 112.3 | |
| | PA_GEN1_Gen PA GEN1 ID 1 AND TL693_Line ME-SA 69kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 111.2 | |

| Overloaded Facility | Contingency (All and Worst P6) | Category | Category Description | Loading % (Baseline Scenarios) | | | | | | Loading % (Sensitivity Scenarios) | | | | Project & Potential Mitigation Solutions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2024 Summer Peak | 2027 Summer Peak | 2032 Summer Peak | 2024 Spring Off-Peak | 2027 Spring Off-Peak | 2032 Spring Off-Peak | 2024 Summer Peak Heavy Renewable & Minimum Gas Generation | 2024 Spring Off-Peak Storage charging in load pockets | 2027 Summer Peak High CEC forecasted load | 2035 Summer Peak with ATE load | |
| 22708 SANLUSRY 69.0 22582 OCEAN RANCH 69.0 1 1 | PA_GEN2_Gen PA GEN2 ID 1 AND TL693_Line ME-SA 69kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 111.2 | |
| | ES_GEN1_Gen ES GEN ID 1 AND TL693_Line ME-SA 69kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 106.0 | Rely on congestion management to protect against the P1 contingency. Additional system adjustments can be used after the first contingency for P3 events, like dispatching battery energy storage in Melrose and Avocado substations. The use of energy storage is subject to verification that it has sufficient MWh capability and can be fully charged when needed. |
| | ES_GEN2_Gen CALPK_ES ID 1 AND TL693_Line ME-SA 69kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 106.0 | |
| | PA_GEN1_Gen PA GEN1 ID 1 AND TL6912_Line PN-SA 69kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.1 | |
| | PA_GEN2_Gen PA GEN2 ID 1 AND TL6912_Line PN-SA 69kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.1 | |
| | PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL6912_Line PN-SA 69kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.2 | |
| | PA_GEN1_Gen PA GEN1 ID 1 AND TL680_Line SA-ME-SM 69kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.0 | |
| | PA_GEN2_Gen PA GEN2 ID 1 AND TL680_Line SA-ME-SM 69kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.0 | |
| 22708 SANLUSRY 69.0 22584 OCEANSDE 69.0 1 1 | TL23007_TL23007 CAPSTRNO - SONGS ck 1 AND TL23052_TALEGA - S.ONOFRE ck 1 | P6 | N-1-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 102.6 | |
| 22588 OCNSDETP 69.0 22808 STUARTTP 69.0 1 1 | TL23007_TL23007 CAPSTRNO - SONGS ck 1 AND TL23052_TALEGA - S.ONOFRE ck 1 | P6 | N-1-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 112.9 | Rely on system adjustments after the first contingency for the P3 and P6 events, such as dispatching battery energy storage in San Diego area, mainly in Capistrano, Talega, and Escondido substations. The use of energy storage is subject to verification that it has sufficient MWh capability and can be fully charged when needed. |
| 22844 TALEGA 230 24131 S.ONOFRE 230 1 1 | PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL23007_TL23007 CAPSTRNO - SONGS ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 101.3 | |
| | TL23007_TL23007 CAPSTRNO - SONGS ck 1 AND TL50002_Line NG-IV 500kV ck 1 | P6 | N-1-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 105.6 | |
| 22840 TALEGA 138 22656 PICO 138 1 1 | TL23007_TL23007 CAPSTRNO - SONGS ck 1 AND TL23030_TL23030 ESCNDIDO-TALEGA-CAPSTR ck 1 | P6 | N-1-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 120.0 | Rely on congestion management to protect against the P4 contingency. Additional system adjustments can be used after the first contingency for the P6 events, such as dispatching battery energy storage in Capistrano substation. The use of energy storage is subject to verification that it has sufficient MWh capability and can be fully charged when needed. |
| 22840 TALEGA 138 22720 SANMATEO 138 1 1 | TA1-8T_TALEGA 138KV 8T CB | P4 | Fault + Stuck Breaker | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.7 | |
| | TL13831_Line TA-RMV 138kV ck 1 AND TL13836_Line TA-PI 138kV ck 1 | P6 | N-1-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 103.7 | |
| 22476 MIGUELTP 69.0 22456 MIGUEL 69.0 1 1 | OY_GEN_Gen OY GEN ID 1 AND TL621_Line PD-ML 69kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.1 | Rely on system adjustments after the first contingency for the P3 event, such curtailing gas generation in Border and El Cajon substations. |
| 22828 SYCAMORE 69.0 22756 SCRIPPS 69.0 1 1 | MEF_UNIT1_Gen MEF MR1 ID 1 AND TL23071_Line SX-PQ 230kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.9 | |
| | MEF_UNIT2_Gen MEF MR2 ID 1 AND TL23071_Line SX-PQ 230kV ck 1 | P3 | G-1/N-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.8 | Rely on congestion management to protect against the P7 contingency (if necessary, the 30-min emergency rating may also be utilized). Additional system adjustments can be used after the first contingency for the P3 and P6 events, such as dispatching battery energy storage in Miramar GT, Kearny West, Encina, and Silvergate substations and |
| | TL23071_Line SX-PQ 230kV ck 1 AND TL23026_Line SG-BB 230kV ck 1 | P6 | N-1-1 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 108.7 | |

| Overloaded Facility | Contingency (All and Worst P6) | Category | Category Description | Loading % (Baseline Scenarios) | | | | | | Loading % (Sensitivity Scenarios) | | | | Project & Potential Mitigation Solutions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2024 Summer Peak | 2027 Summer Peak | 2032 Summer Peak | 2024 Spring Off-Peak | 2027 Spring Off-Peak | 2032 Spring Off-Peak | 2024 Summer Peak Heavy Renewable & Minimum Gas Generation | 2024 Spring Off-Peak Storage charging in load pockets | 2027 Summer Peak High CEC forecasted load | 2035 Summer Peak with ATE load | |
| [illegible] | TL23013+23071_Lines PQ-OT 230kV ck 1 + SX-PQ 230kV ck 1 | P7 | DCTL | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | < 100 | 100.6 | reducing gas generation output in Escondido substation, pumped hydro storage in Sycamore Canyon substation, or renewable and gas generation in the greater Imperial Valley area. The use of energy storage is subject to verification that it has sufficient MWh capability and can be fully charged when needed. |

| Substation | Contingency (All and Worst P6) | Category | Category Description | High/Low Voltage | Voltage PU (Baseline Scenarios) | | | | | | Voltage PU (Sensitivity Scenarios) | | | | Project & Potential Mitigation Solutions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 2024 Summer Peak | 2027 Summer Peak | 2032 Summer Peak | 2024 Spring Off-Peak | 2027 Spring Off-Peak | 2032 Spring Off-Peak | 2024 Summer Peak Heavy Renewable & Minimum Gas Generation | 2024 Spring Off-Peak Storage charging in load pockets | 2027 Summer Peak High CEC forecasted load | 2035 Summer Peak with ATE load | |
| RUM-230 230 kV | TL23042_Line BB-OM-ML 230kV ck 1 AND TL23041_Line SX-OM-ML 230kV ck 1 | P6 | N-1-1 | Low | 0.9 < V < 1.1 | 0.9 < V < 1.1 | 0.9 < V < 1.1 | Diverge | 0.9 < V < 1.1 | 0.9 < V < 1.1 | 0.9 < V < 1.1 | 0.88 | 0.9 < V < 1.1 | 0.9 < V < 1.1 | Use of existing 230 kV Otay Mesa Gen Drop RAS or rely on congestion management after the first contingency for the P6 events. |
| | TL23041+23042_Lines SX-OM-ML 230kV ck 1 + BB-OM-ML 230kV ck 1 | P7 | DCTL | Low | 0.9 < V < 1.1 | 0.9 < V < 1.1 | 0.9 < V < 1.1 | Diverge | 0.9 < V < 1.1 | 0.9 < V < 1.1 | 0.9 < V < 1.1 | 0.88 | 0.9 < V < 1.1 | 0.9 < V < 1.1 | |

| 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2024 Summer Peak | 2027 Summer Peak | 2032 Summer Peak | 2024 Spring Off-Peak | 2027 Spring Off-Peak | 2032 Spring Off-Peak | 2024 Summer Peak Heavy Renewable & Minimum Gas Generation | 2024 Spring Off-Peak Storage charging in load pockets | 2027 Summer Peak High CEC forecasted load | 2035 Summer Peak with ATE load | |
| HRA-230 230 kV | TL23042_Line BB-OM-ML 230kV ck 1 AND TL23041_Line SX-OM-ML 230kV ck 1 | P6 | N-1-1 | < 8 | < 8 | < 8 | Diverge | < 8 | < 8 | < 8 | 10.17 | < 8 | < 8 | Use of existing 230 kV Otay Mesa Gen Drop RAS or rely on congestion management after the first contingency for the P6 events. |
| | TL23041+23042_Lines SX-OM-ML 230kV ck 1 + BB-OM-ML 230kV ck 1 | P7 | DCTL | < 8 | < 8 | < 8 | Diverge | < 8 | < 8 | < 8 | 10.20 | < 8 | < 8 | |
| RUM-230 230 kV | TL23042_Line BB-OM-ML 230kV ck 1 AND TL23041_Line SX-OM-ML 230kV ck 1 | P6 | N-1-1 | < 8 | < 8 | < 8 | Diverge | < 8 | < 8 | < 8 | 11.34 | < 8 | < 8 | |
| | TL23041+23042_Lines SX-OM-ML 230kV ck 1 + BB-OM-ML 230kV ck 1 | P7 | DCTL | < 8 | < 8 | < 8 | Diverge | < 8 | < 8 | < 8 | 11.42 | < 8 | < 8 | |
| TOY-230 230 kV | TL23042_Line BB-OM-ML 230kV ck 1 AND TL23041_Line SX-OM-ML 230kV ck 1 | P6 | N-1-1 | < 8 | < 8 | < 8 | Diverge | < 8 | < 8 | < 8 | 9.12 | < 8 | < 8 | |
| | TL23041+23042_Lines SX-OM-ML 230kV ck 1 + BB-OM-ML 230kV ck 1 | P7 | DCTL | < 8 | < 8 | < 8 | Diverge | < 8 | < 8 | < 8 | 9.14 | < 8 | < 8 | |
| BARRETT 69 kV | KU_GEN_Gen KUMEYAAY ID 1 AND TL6957_Line BAR-LL 69kV ck 1 | P3 | G-1/N-1 | < 8 | < 8 | < 8 | < 8 | < 8 | < 8 | < 8 | < 8 | < 8 | 8.05 | Add a switched shunt capacitor at Crestwood. |

| Contingency | Category | Category Description | Transient Stability Performance | | | | | | Potential Mitigation Solutions |
|---|---|---|---|---|---|---|---|---|---|
| | | | Baseline Scenarios | | | | Sensitivity Scenarios | | |
| | | | 2027 Summer Peak | 2032 Summer Peak | 2024 Spring Off-Peak | 2032 Spring Off-Peak | 2024 Spring Off-Peak Storage charging in load pockets | 2027 Summer Peak High CEC forecasted load | |
| SLO Fault at DEVERS 500, trip DEVERS to VALLEYSC 500kV ck 1 | P1 | N-1 | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| SLO Fault at PALO VERDE 500kV, trip PALO VERDE to COLRIVER 500kV ck 1 | P1 | N-1 | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| 3PH Fault at IV 500kV, trip IMPRLVLY to ECO 500kV ck 1 | P1 | N-1 | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| 3PH Fault at IV 500kV, trip IMPRLVLY to N.GILA 500kV ck 1 | P1 | N-1 | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| SLO 3PH Fault at HAA 500kV, trip HAA - HDWSH 500kV ck 1 | P1 | N-1 | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| SLO 3PH Fault at NG 500kV, trip NG - HAA 500kV ck 1 | P1 | N-1 | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| SLO 3PH Fault at HDWSH 500kV, trip HDWSH-NG 500kV ck 1 | P1 | N-1 | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| SLO at MIGUEL 500kV, trip MIGUEL to ECO 500kV ck 1 | P1 | N-1 | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| 3PH Fault at IV 500kV, trip IMPRLVLY to OCOTILLO 500kV ck 1 | P1 | N-1 | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| SLO Fault at PEN 230KV, trip PEN to ES 230kV ck 1 | P1 | N-1 | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| 3PH Fault at PQ 230kV, trip PQ to OLD TOWN 230kV ck 1 | P1 | N-1 | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| 3PH Fault at SANLUSRY 230kV, trip SA to EA 230kV ck 1 | P1 | N-1 | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| 3PH Fault at TALEGA 230kV, trip S.ONOFRE to TALEGA 230kV ck 1 | P1 | N-1 | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| SLO Fault at PQ 230kV, trip PQ to SX 230kV ck 1 | P1 | N-1 | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| 3PH Fault at SILVERGT 230kV, trip SILVERGT to BAY BLVD 230kV ck 1 | P1 | N-1 | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| SLO Fault at IV 230kV, trip IMPRLVLY PFC to ROA 230kV ck 1 | P1 | N-1 | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| 3PH Fault at SILVERGT 230kV, trip SILVERGT to BAY BLVD 230kV ck 1 | P1 | N-1 | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| SLO Fault at IV 230kV, trip IMPRLVLY PFC to ROA 230kV ck 1 | P1 | N-1 | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| SLO Fault at TA 230kV, trip TA-ESC-CP 230kV ck 1 | P1 | N-1 | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| 3PH Fault at MIGUEL 230, trip MIGUEL to BAY BLVD to OTAY MESA 230kV | P1 | N-1 | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| 3PH Fault at OLD TOWN 230kV, trip OT-MS-SG 500kV ck 1 | P1 | N-1 | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| 3PH Fault at ML230, trip ML230 bus | P2 | Bus | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| BQ-138 Bus BATIQUITOS 138kV E+W | P5.5 | Non-Redundant Relay | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| BUE-138 BUS BUE 138kV N+S | P5.5 | Non-Redundant Relay | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| CAN-138 BUS CANNON 138kV E+W | P5.5 | Non-Redundant Relay | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| CP-138 Bus CAPISTRANO 138kV N+S | P5.5 | Non-Redundant Relay | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| ECO-138 BUS EAST COUNTY 138kv E+W | P5.5 | Non-Redundant Relay | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| FR-138 BUS FRIARS 138kV E+W | P5.5 | Non-Redundant Relay | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| GHL-138 BUS GRANT HILL 138kV N+S | P5.5 | Non-Redundant Relay | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| MS-230 Bus MISSION 230kV N+S | P5.5 | Non-Redundant Relay | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| MS-138 Bus MISSION 138kV N+S | P5.5 | Non-Redundant Relay | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| PAR-138 BUS PALOMAR AIRPORT 138kV E+W | P5.5 | Non-Redundant Relay | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| PEN-230 BUS PALOMAR ENERGY 230kV E+W | P5.5 | Non-Redundant Relay | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| PI-138 BUS PICO 138kV E+W | P5.5 | Non-Redundant Relay | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| PV-138 BUS PROCTAR VALLEY 138kV E+W | P5.5 | Non-Redundant Relay | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| RMV-138 BUS RANCHO MISSION VIEJO 138kV E+W | P5.5 | Non-Redundant Relay | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| SA-230 BUS SAN LUIS REY 230KV E+W | P5.5 | Non-Redundant Relay | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| SN-138 BUS SANTEE 138kV E+W | P5.5 | Non-Redundant Relay | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| SH-138 BUS SHADOW RIDGE 138kV E+W | P5.5 | Non-Redundant Relay | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| SG-230 BUS SILVERGATE 230KV E+W | P5.5 | Non-Redundant Relay | No issues | No issues | No issues | No issues | No issues | No issues | No violation |

| Contingency | Category | Category Description | Transient Stability Performance | | | | | | Potential Mitigation Solutions |
|---|---|---|---|---|---|---|---|---|---|
| | | | Baseline Scenarios | | | | Sensitivity Scenarios | | |
| | | | 2027 Summer Peak | 2032 Summer Peak | 2024 Spring Off-Peak | 2032 Spring Off-Peak | 2024 Spring Off-Peak Storage charging in load pockets | 2027 Summer Peak High CEC forecasted load | |
| SX-138 BUS SYCAMORE CANYON 138kV N+S | P5.5 | Non-Redundant Relay | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| TA-138 BUS TALEGA 138kV E+W | P5.5 | Non-Redundant Relay | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| TC-138 BUS TELEGRAPH CANYON 138kV N+S | P5.5 | Non-Redundant Relay | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| 3PH Fault at MIGUEL 230, trip both lines MIGUEL to MISSION 230kV | P7 | DCTL | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| DLO Fault at SANLUSRY 230, trip TL23002 AND TL23006 SANLUSRY to S.ONOFRE 230kV | P7 | DCTL | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| DLO Fault at S.ONOFRE 230, trip SO-SANTIAGO 230kV | P7 | DCTL | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| 3PH Fault at SANLUSRY 230kV, trip SANLUSRY to MISSION 230kV 1 & 2 | P7 | DCTL | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| Fault at OTAYMESA 230kV, trip TL23041 AND TL23042 | P7 | DCTL | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| DLO Fault at MIGUEL 230, trip MIGUEL to SYCAMORE and MIGUEL to SYCAMORE to OTAYMESA 230kV | P7 | DCTL | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| DLO Fault at SANLUSRY 230kV, trip SA-EA AND SA-EATAP 230kV | P7 | DCTL | No issues | No issues | No issues | No issues | No issues | No issues | No violation |
| DLO Fault at PEN230, trip PEN-AR 230kV AND PEN-ENCINATP 230kV | P7 | DCTL | No issues | No issues | No issues | No issues | No issues | No issues | No violation |

**2022-2023 ISO Reliability Assessment - Final Study Results**
**Study Area:** San Diego Area
***Single Contingency Load Drop***

| Worst Contingency | Category | Category Description | Amount of Load Drop (MW) | | | | | | | | | | Potential Mitigation Solutions |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2024 Summer Peak | 2027 Summer Peak | 2032 Summer Peak | 2024 Spring Off-Peak | 2027 Spring Off-Peak | 2032 Spring Off-Peak | 2024 Summer Peak Heavy Renewable & Minimum Gas Generation | 2024 Spring Off-Peak Storage charging in load pockets | 2027 Summer Peak High CEC forecasted load | 2035 Summer Peak with ATE load | |
| | | | | | | | | | | | | | |

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

| Substation | Load Served (MW) | | | | | | | | | | Potential Mitigation Solutions |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2024 Summer Peak | 2027 Summer Peak | 2032 Summer Peak | 2024 Spring Off-Peak | 2027 Spring Off-Peak | 2032 Spring Off-Peak | 2024 Summer Peak Heavy Renewable & Minimum Gas Generation | 2024 Spring Off-Peak Storage charging in load pockets | 2027 Summer Peak High CEC forecasted load | 2035 Summer Peak with ATE load | |
| | | | | | | | | | | | |

No single source substation with more than 100 MW