APPENDIX B
2024 LIMITED OPERATIONS STUDY POWER FLOW RESULTS

2024 Limited Operations Study - P0-P1-P2 Thermal Loadings

*Maximum top 10 worst outage conditions reported

Scenario	Event	Monitored Facility	Area	Cont Rate (MVA)	Contingency*	Impact	Max Base	Base Loading	Project Loading
24L	P0	300115 5STFRANB2 161.00 338202 5JIM HILL% 161.00 1	AECI/EES-EAI	247	BASE CASE	TRUE	92.0	92.0	100.4
24L	P0	300280 2MILAN 69.000 300287 2UNIONV 69.000 1	AECI	24	BASE CASE	FALSE	118.6	118.6	117.1
24L	P1	300069 5CHOTEAU1 161.00 512648 MAID 5 161.00 1	AECI/GRDA	858	OPEN BRANCH FROM BUS 300741 [5SPORTSMAN 161.00] TO BUS 301348 [5CHOTEAU2 161.00] CKT 1	FALSE	113.5	113.5	113.5
24L	P1	300069 5CHOTEAU1 161.00 512648 MAID 5 161.00 1	AECI/GRDA	858	OPEN LINE FROM BUS 300741 [5SPORTSMAN 161.00] TO BUS 301348 [5CHOTEAU2 161.00] CKT 1	FALSE	113.5	113.5	113.5
24L	P1	300071 5CLINTN 161.00 300124 5HOLDENB2 161.00 1	AECI	227	OPEN BRANCH FROM BUS 300110 [5PITTSV 161.00] TO BUS 300320 [5LEVASY 161.00] CKT 1	FALSE	120.4	120.4	120.1
24L	P1	300071 5CLINTN 161.00 300124 5HOLDENB2 161.00 1	AECI	227	OPEN BRANCH FROM BUS 300110 [5PITTSV 161.00] TO BUS 300320 [5LEVASY 161.00] CKT 1 OPEN BRANCH FROM BUS 300320 [5LEVASY 161.00] TO BUS 548808 [ECKLES-161 161.00] CKT 1	FALSE	120.4	120.4	120.1
24L	P1	300071 5CLINTN 161.00 300124 5HOLDENB2 161.00 1	AECI	227	OPEN BRANCH FROM BUS 300110 [5PITTSV 161.00] TO BUS 301561 [5HOLDENB1 161.00] CKT 1	FALSE	120.4	111.8	110.7
24L	P1	300071 5CLINTN 161.00 300124 5HOLDENB2 161.00 1	AECI	227	OPEN BRANCH FROM BUS 300320 [5LEVASY 161.00] TO BUS 548808 [ECKLES-161 161.00] CKT 1	FALSE	120.4	119.8	119.5
24L	P1	300071 5CLINTN 161.00 300124 5HOLDENB2 161.00 1	AECI	227	OPEN LINE FROM BUS 300110 [5PITTSV 161.00] TO BUS 300320 [5LEVASY 161.00] CKT 1	FALSE	120.4	120.4	120.1
24L	P1	300071 5CLINTN 161.00 300124 5HOLDENB2 161.00 1	AECI	227	OPEN LINE FROM BUS 300110 [5PITTSV 161.00] TO BUS 301561 [5HOLDENB1 161.00] CKT 1	FALSE	120.4	111.8	110.7
24L	P1	300071 5CLINTN 161.00 300124 5HOLDENB2 161.00 1	AECI	227	OPEN LINE FROM BUS 300320 [5LEVASY 161.00] TO BUS 548808 [ECKLES-161 161.00] CKT 1	FALSE	120.4	119.8	119.5
24L	P1	300073 5GENTRY 161.00 300076 5FAIRPTB2 161.00 1	AECI	372	OPEN BRANCH FROM BUS 300097 [5MARYVB2 161.00] TO BUS 541251 [MARYVLE5 161.00] CKT 1	FALSE	114.9	114.9	107.6
24L	P1	300073 5GENTRY 161.00 300076 5FAIRPTB2 161.00 1	AECI	372	OPEN LINE FROM BUS 300097 [5MARYVB2 161.00] TO BUS 541251 [MARYVLE5 161.00] CKT 1	FALSE	114.9	114.9	107.6
24L	P1	300097 5MARYVB2 161.00 652560 CRESTON5 161.00 1	AECI/WAPA	207	OPEN BRANCH FROM BUS 300097 [5MARYVB2 161.00] TO BUS 541251 [MARYVLE5 161.00] CKT 1	TRUE	115.3	115.3	127.1
24L	P1	300097 5MARYVB2 161.00 652560 CRESTON5 161.00 1	AECI/WAPA	207	OPEN BRANCH FROM BUS 541251 [MARYVLE5 161.00] TO BUS 635038 [BRADDYVILLE5161.00] CKT 1	TRUE	115.3	85.5	103.1
24L	P1	300097 5MARYVB2 161.00 652560 CRESTON5 161.00 1	AECI/WAPA	207	OPEN BRANCH FROM BUS 635034 [CLARINDA 5 161.00] TO BUS 635038 [BRADDYVILLE5161.00] CKT 1	TRUE	115.3	91.3	108.2
24L	P1	300097 5MARYVB2 161.00 652560 CRESTON5 161.00 1	AECI/WAPA	207	OPEN LINE FROM BUS 300097 [5MARYVB2 161.00] TO BUS 541251 [MARYVLE5 161.00] CKT 1	TRUE	115.3	115.3	127.1
24L	P1	300097 5MARYVB2 161.00 652560 CRESTON5 161.00 1	AECI/WAPA	207	OPEN LINE FROM BUS 541251 [MARYVLE5 161.00] TO BUS 635038 [BRADDYVILLE5161.00] CKT 1	TRUE	115.3	85.5	103.1
24L	P1	300097 5MARYVB2 161.00 652560 CRESTON5 161.00 1	AECI/WAPA	207	OPEN LINE FROM BUS 635034 [CLARINDA 5 161.00] TO BUS 635038 [BRADDYVILLE5161.00] CKT 1	TRUE	115.3	91.3	108.2
24L	P1	300110 5PITTSV 161.00 300320 5LEVASY 161.00 1	AECI	227	OPEN BRANCH FROM BUS 300071 [5CLINTN 161.00] TO BUS 300124 [5HOLDENB2 161.00] CKT 1	FALSE	117.9	117.9	118.3
24L	P1	300110 5PITTSV 161.00 300320 5LEVASY 161.00 1	AECI	227	OPEN LINE FROM BUS 300071 [5CLINTN 161.00] TO BUS 300124 [5HOLDENB2 161.00] CKT 1	FALSE	117.9	117.9	118.3
24L	P1	300110 5PITTSV 161.00 301561 5HOLDENB1 161.00 1	AECI	227	OPEN BRANCH FROM BUS 300071 [5CLINTN 161.00] TO BUS 300124 [5HOLDENB2 161.00] CKT 1	FALSE	113.9	113.9	114.1
24L	P1	300110 5PITTSV 161.00 301561 5HOLDENB1 161.00 1	AECI	227	OPEN LINE FROM BUS 300071 [5CLINTN 161.00] TO BUS 300124 [5HOLDENB2 161.00] CKT 1	FALSE	113.9	113.9	114.1
24L	P1	300115 5STFRANB2 161.00 338202 5JIM HILL% 161.00 1	AECI/EES-EAI	247	OPEN BRANCH FROM BUS 300046 [7NEWMAD 345.00] TO BUS 301418 [7WNWMADRID2 345.00] CKT 2	TRUE	125.6	109.2	124.3
24L	P1	300115 5STFRANB2 161.00 338202 5JIM HILL% 161.00 1	AECI/EES-EAI	247	OPEN BRANCH FROM BUS 300046 [7NEWMAD 345.00] TO BUS 301418 [7WNWMADRID2 345.00] CKT 2 OPEN BRANCH FROM BUS 300048 [7STFRAN 345.00] TO BUS 301418 [7WNWMADRID2 345.00] CKT 1	TRUE	125.6	109.3	124.4
24L	P1	300115 5STFRANB2 161.00 338202 5JIM HILL% 161.00 1	AECI/EES-EAI	247	OPEN BRANCH FROM BUS 300048 [7STFRAN 345.00] TO BUS 301418 [7WNWMADRID2 345.00] CKT 1	TRUE	125.6	109.3	124.4
24L	P1	300115 5STFRANB2 161.00 338202 5JIM HILL% 161.00 1	AECI/EES-EAI	247	OPEN BRANCH FROM BUS 300116 [5STFRNB3 161.00] TO BUS 300048 [7STFRAN 345.00] CKT 2	TRUE	125.6	125.6	132.7
24L	P1	300115 5STFRANB2 161.00 338202 5JIM HILL% 161.00 1	AECI/EES-EAI	247	OPEN BRANCH FROM BUS 301406 [8WNEWMADRID 500.00] TO BUS 338187 [8DELL% 500.00] CKT 1	TRUE	125.6	111.5	125.8
24L	P1	300115 5STFRANB2 161.00 338202 5JIM HILL% 161.00 1	AECI/EES-EAI	247	OPEN BRANCH FROM BUS 301406 [8WNEWMADRID 500.00] TO BUS 338187 [8DELL% 500.00] CKT 1 OPEN BRANCH FROM BUS 301416 [7WNWMADRID1B345.00] TO BUS 301406 [8WNEWMADRID 500.00] CKT 5 OPEN BRANCH FROM BUS 300035 [8NEWMAD 500.00] TO BUS 301406 [8WNEWMADRID 500.00] CKT 1	TRUE	125.6	111.5	125.8
24L	P1	300115 5STFRANB2 161.00 338202 5JIM HILL% 161.00 1	AECI/EES-EAI	247	OPEN LINE FROM BUS 300046 [7NEWMAD 345.00] TO BUS 301418 [7WNWMADRID2 345.00] CKT 2	TRUE	125.6	109.2	124.3
24L	P1	300115 5STFRANB2 161.00 338202 5JIM HILL% 161.00 1	AECI/EES-EAI	247	OPEN LINE FROM BUS 300048 [7STFRAN 345.00] TO BUS 300116 [5STFRNB3 161.00] CKT 2	TRUE	125.6	125.6	132.7
24L	P1	300115 5STFRANB2 161.00 338202 5JIM HILL% 161.00 1	AECI/EES-EAI	247	OPEN LINE FROM BUS 300048 [7STFRAN 345.00] TO BUS 301418 [7WNWMADRID2 345.00] CKT 1	TRUE	125.6	109.3	124.4
24L	P1	300115 5STFRANB2 161.00 338202 5JIM HILL% 161.00 1	AECI/EES-EAI	247	OPEN LINE FROM BUS 301406 [8WNEWMADRID 500.00] TO BUS 338187 [8DELL% 500.00] CKT 1	TRUE	125.6	111.5	125.8
24L	P1	300120 5THMHILB1 161.00 301648 2TMHILLB2 69.000 2	AECI	143	OPEN LINE FROM BUS 300120 [5THMHILB1 161.00] TO BUS 300132 [5THMHLB2 161.00] CKT Z1	FALSE	121.8	121.8	122.0
24L	P1	300186 2ROCKPT 69.000 300241 2ATCHISN 69.000 1	AECI	46	OPEN LINE FROM BUS 300189 [2TARKIO 69.000] TO BUS 300241 [2ATCHISN 69.000] CKT 1	FALSE	105.5	105.5	105.5
24L	P1	300189 2TARKIO 69.000 300241 2ATCHISN 69.000 1	AECI	46	OPEN LINE FROM BUS 300186 [2ROCKPT 69.000] TO BUS 300241 [2ATCHISN 69.000] CKT 1	FALSE	105.8	105.8	105.8
24L	P1	300221 2CLEOPA 69.000 300230 2MERCER 69.000 1	AECI	35	OPEN LINE FROM BUS 300280 [2MILAN 69.000] TO BUS 300287 [2UNIONV 69.000] CKT 1	FALSE	108.7	108.7	109.0
24L	P1	300221 2CLEOPA 69.000 300279 2LUCERN 69.000 1	AECI	35	OPEN LINE FROM BUS 300280 [2MILAN 69.000] TO BUS 300287 [2UNIONV 69.000] CKT 1	FALSE	112.0	112.0	112.3
24L	P1	300224 2GOSHEN 69.000 300230 2MERCER 69.000 1	AECI	35	OPEN LINE FROM BUS 300280 [2MILAN 69.000] TO BUS 300287 [2UNIONV 69.000] CKT 1	FALSE	106.1	106.1	106.5
24L	P1	300246 2CONCPT 69.000 300266 2SKIDMR 69.000 1	AECI	35	OPEN LINE FROM BUS 300248 [2DRLNGT 69.000] TO BUS 300249 [2FAIRPT 69.000] CKT 1	FALSE	138.1	101.2	100.4
24L	P1	300246 2CONCPT 69.000 300266 2SKIDMR 69.000 1	AECI	35	OPEN LINE FROM BUS 300248 [2DRLNGT 69.000] TO BUS 300267 [2STANBR 69.000] CKT 1	FALSE	138.1	135.0	135.0
24L	P1	300246 2CONCPT 69.000 300266 2SKIDMR 69.000 1	AECI	35	OPEN LINE FROM BUS 300267 [2STANBR 69.000] TO BUS 300270 [2CLYDE 69.000] CKT 1	FALSE	138.1	138.1	138.0
24L	P1	300246 2CONCPT 69.000 300270 2CLYDE 69.000 1	AECI	35	OPEN LINE FROM BUS 300248 [2DRLNGT 69.000] TO BUS 300249 [2FAIRPT 69.000] CKT 1	FALSE	139.2	102.3	101.5
24L	P1	300246 2CONCPT 69.000 300270 2CLYDE 69.000 1	AECI	35	OPEN LINE FROM BUS 300248 [2DRLNGT 69.000] TO BUS 300267 [2STANBR 69.000] CKT 1	FALSE	139.2	136.1	136.1
24L	P1	300246 2CONCPT 69.000 300270 2CLYDE 69.000 1	AECI	35	OPEN LINE FROM BUS 300267 [2STANBR 69.000] TO BUS 300270 [2CLYDE 69.000] CKT 1	FALSE	139.2	139.2	139.1
24L	P1	300279 2LUCERN 69.000 300287 2UNIONV 69.000 1	AECI	35	OPEN LINE FROM BUS 300280 [2MILAN 69.000] TO BUS 300287 [2UNIONV 69.000] CKT 1	FALSE	115.4	115.4	115.7
24L	P1	300280 2MILAN 69.000 300287 2UNIONV 69.000 1	AECI	24	OPEN BRANCH FROM BUS 300039 [7FAIRPT 345.00] TO BUS 541199 [ST JOE 7 345.00] CKT 1 OPEN BRANCH FROM BUS 300039 [7FAIRPT 345.00] TO BUS 640139 [COOPER 3 345.00] CKT 1	FALSE	174.3	123.5	122.5
24L	P1	300280 2MILAN 69.000 300287 2UNIONV 69.000 1	AECI	24	OPEN BRANCH FROM BUS 301559 [5FAIRPTXF3 161.00] TO BUS 300039 [7FAIRPT 345.00] CKT 3 OPEN BRANCH FROM BUS 300076 [5FAIRPTB2 161.00] TO BUS 301559 [5FAIRPTXF3 161.00] CKT 1	FALSE	174.3	123.8	123.1
24L	P1	300280 2MILAN 69.000 300287 2UNIONV 69.000 1	AECI	24	OPEN LINE FROM BUS 300039 [7FAIRPT 345.00] TO BUS 301559 [5FAIRPTXF3 161.00] CKT 3	FALSE	174.3	123.8	123.1
24L	P1	300280 2MILAN 69.000 300287 2UNIONV 69.000 1	AECI	24	OPEN LINE FROM BUS 300076 [5FAIRPTB2 161.00] TO BUS 301559 [5FAIRPTXF3 161.00] CKT 1	FALSE	174.3	123.8	123.1
24L	P1	300280 2MILAN 69.000 300287 2UNIONV 69.000 1	AECI	24	OPEN LINE FROM BUS 300221 [2CLEOPA 69.000] TO BUS 300230 [2MERCER 69.000] CKT 1	FALSE	174.3	164.7	165.1
24L	P1	300280 2MILAN 69.000 300287 2UNIONV 69.000 1	AECI	24	OPEN LINE FROM BUS 300221 [2CLEOPA 69.000] TO BUS 300279 [2LUCERN 69.000] CKT 1	FALSE	174.3	169.2	170.8
24L	P1	300280 2MILAN 69.000 300287 2UNIONV 69.000 1	AECI	24	OPEN LINE FROM BUS 300224 [2GOSHEN 69.000] TO BUS 300230 [2MERCER 69.000] CKT 1	FALSE	174.3	160.1	159.6
24L	P1	300280 2MILAN 69.000 300287 2UNIONV 69.000 1	AECI	24	OPEN LINE FROM BUS 300224 [2GOSHEN 69.000] TO BUS 300237 [2TINDAL 69.000] CKT 1	FALSE	174.3	125.1	123.0
24L	P1	300280 2MILAN 69.000 300287 2UNIONV 69.000 1	AECI	24	OPEN LINE FROM BUS 300237 [2TINDAL 69.000] TO BUS 300239 [2TRENTN 69.000] CKT 1	FALSE	174.3	124.7	122.5
24L	P1	300280 2MILAN 69.000 300287 2UNIONV 69.000 1	AECI	24	OPEN LINE FROM BUS 300279 [2LUCERN 69.000] TO BUS 300287 [2UNIONV 69.000] CKT 1	FALSE	174.3	174.3	176.8
24L	P1	300320 5LEVASY 161.00 548808 ECKLES-161 161.00 1	AECI/INDN	227	OPEN BRANCH FROM BUS 300071 [5CLINTN 161.00] TO BUS 300124 [5HOLDENB2 161.00] CKT 1	FALSE	117.1	117.1	117.5
24L	P1	300320 5LEVASY 161.00 548808 ECKLES-161 161.00 1	AECI/INDN	227	OPEN LINE FROM BUS 300071 [5CLINTN 161.00] TO BUS 300124 [5HOLDENB2 161.00] CKT 1	FALSE	117.1	117.1	117.5
24S	P1	300050 7PALMYR_AI 345.00 300694 5PALMYR_AI 161.00 1	AECI	336	OPEN BRANCH FROM BUS 345435 [7MAYWOOD 345.00] TO BUS 347010 [7HERLEMAN 345.00] CKT 1	TRUE	88.7		100.1
24S	P1	300050 7PALMYR_AI 345.00 300694 5PALMYR_AI 161.00 1	AECI	336	OPEN LINE FROM BUS 345435 [7MAYWOOD 345.00] TO BUS 347010 [7HERLEMAN 345.00] CKT 1	TRUE	88.7		100.1
24S	P1	300069 5CHOTEAU1 161.00 512648 MAID 5 161.00 1	AECI/GRDA	858	OPEN BRANCH FROM BUS 300741 [5SPORTSMAN 161.00] TO BUS 301348 [5CHOTEAU2 161.00] CKT 1	FALSE	113.7	113.7	113.6
24S	P1	300069 5CHOTEAU1 161.00 512648 MAID 5 161.00 1	AECI/GRDA	858	OPEN LINE FROM BUS 300741 [5SPORTSMAN 161.00] TO BUS 301348 [5CHOTEAU2 161.00] CKT 1	FALSE	113.7	113.7	113.6
24S	P1	300071 5CLINTN 161.00 300124 5HOLDENB2 161.00 1	AECI	227	OPEN BRANCH FROM BUS 300110 [5PITTSV 161.00] TO BUS 300320 [5LEVASY 161.00] CKT 1	FALSE	112.7	112.7	112.2
24S	P1	300071 5CLINTN 161.00 300124 5HOLDENB2 161.00 1	AECI	227	OPEN BRANCH FROM BUS 300110 [5PITTSV 161.00] TO BUS 300320 [5LEVASY 161.00] CKT 1 OPEN BRANCH FROM BUS 300320 [5LEVASY 161.00] TO BUS 548808 [ECKLES-161 161.00] CKT 1	FALSE	112.7	112.7	112.2
24S	P1	300071 5CLINTN 161.00 300124 5HOLDENB2 161.00 1	AECI	227	OPEN BRANCH FROM BUS 300110 [5PITTSV 161.00] TO BUS 301561 [5HOLDENB1 161.00] CKT 1	FALSE	112.7	108.7	107.4
24S	P1	300071 5CLINTN 161.00 300124 5HOLDENB2 161.00 1	AECI	227	OPEN BRANCH FROM BUS 300320 [5LEVASY 161.00] TO BUS 548808 [ECKLES-161 161.00] CKT 1	FALSE	112.7	111.0	110.6
24S	P1	300071 5CLINTN 161.00 300124 5HOLDENB2 161.00 1	AECI	227	OPEN LINE FROM BUS 300110 [5PITTSV 161.00] TO BUS 300320 [5LEVASY 161.00] CKT 1	FALSE	112.7	112.7	112.2
24S	P1	300071 5CLINTN 161.00 300124 5HOLDENB2 161.00 1	AECI	227	OPEN LINE FROM BUS 300110 [5PITTSV 161.00] TO BUS 301561 [5HOLDENB1 161.00] CKT 1	FALSE	112.7	108.7	107.4
24S	P1	300071 5CLINTN 161.00 300124 5HOLDENB2 161.00 1	AECI	227	OPEN LINE FROM BUS 300320 [5LEVASY 161.00] TO BUS 548808 [ECKLES-161 161.00] CKT 1	FALSE	112.7	111.0	110.6
24S	P1	300073 5GENTRY 161.00 300076 5FAIRPTB2 161.00 1	AECI	372	OPEN BRANCH FROM BUS 300097 [5MARYVB2 161.00] TO BUS 541251 [MARYVLE5 161.00] CKT 1	FALSE	110.1	110.1	104.0
24S	P1	300073 5GENTRY 161.00 300076 5FAIRPTB2 161.00 1	AECI	372	OPEN LINE FROM BUS 300097 [5MARYVB2 161.00] TO BUS 541251 [MARYVLE5 161.00] CKT 1	FALSE	110.1	110.1	104.0
24S	P1	300097 5MARYVB2 161.00 652560 CRESTON5 161.00 1	AECI/WAPA	207	OPEN BRANCH FROM BUS 300097 [5MARYVB2 161.00] TO BUS 541251 [MARYVLE5 161.00] CKT 1	TRUE	117.7	117.7	125.8
24S	P1	300097 5MARYVB2 161.00 652560 CRESTON5 161.00 1	AECI/WAPA	207	OPEN LINE FROM BUS 300097 [5MARYVB2 161.00] TO BUS 541251 [MARYVLE5 161.00] CKT 1	TRUE	117.7	117.7	125.8
24S	P1	300110 5PITTSV 161.00 300320 5LEVASY 161.00 1	AECI	227	OPEN BRANCH FROM BUS 300071 [5CLINTN 161.00] TO BUS 300124 [5HOLDENB2 161.00] CKT 1	FALSE	108.8	108.8	109.4
24S	P1	300110 5PITTSV 161.00 301561 5HOLDENB1 161.00 1	AECI	227	OPEN BRANCH FROM BUS 300071 [5CLINTN 161.00] TO BUS 300124 [5HOLDENB2 161.00] CKT 1	FALSE	108.9	108.9	109.3
24S	P1	300115 5STFRANB2 161.00 338202 5JIM HILL% 161.00 1	AECI/EES-EAI	247	OPEN BRANCH FROM BUS 300116 [5STFRNB3 161.00] TO BUS 300048 [7STFRAN 345.00] CKT 2	TRUE	104.4	104.4	110.7
24S	P1	300115 5STFRANB2 161.00 338202 5JIM HILL% 161.00 1	AECI/EES-EAI	247	OPEN LINE FROM BUS 300048 [7STFRAN 345.00] TO BUS 300116 [5STFRNB3 161.00] CKT 2	TRUE	104.4	104.4	110.7
24S	P1	300120 5THMHILB1 161.00 301648 2TMHILLB2 69.000 2	AECI	143	OPEN LINE FROM BUS 300120 [5THMHILB1 161.00] TO BUS 300132 [5THMHLB2 161.00] CKT Z1	FALSE	117.4	117.4	117.4
24S	P1	300123 5WPLAINW 161.00 301123 2WSTPL3 69.000 1	AECI	56	OPEN BRANCH FROM BUS 301123 [2WSTPL3 69.000] TO BUS 301549 [5WPLAINE 161.00] CKT 2	FALSE	119.8	119.8	121.6
24S	P1	300123 5WPLAINW 161.00 301123 2WSTPL3 69.000 1	AECI	56	OPEN LINE FROM BUS 301123 [2WSTPL3 69.000] TO BUS 301549 [5WPLAINE 161.00] CKT 2	FALSE	119.8	119.8	121.6
24S	P1	300186 2ROCKPT 69.000 300241 2ATCHISN 69.000 1	AECI	46	OPEN LINE FROM BUS 300189 [2TARKIO 69.000] TO BUS 300241 [2ATCHISN 69.000] CKT 1	FALSE	105.4	105.4	105.4
24S	P1	300189 2TARKIO 69.000 300241 2ATCHISN 69.000 1	AECI	46	OPEN LINE FROM BUS 300186 [2ROCKPT 69.000] TO BUS 300241 [2ATCHISN 69.000] CKT 1	FALSE	105.4	105.4	105.4
24S	P1	300246 2CONCPT 69.000 300266 2SKIDMR 69.000 1	AECI	35	OPEN LINE FROM BUS 300248 [2DRLNGT 69.000] TO BUS 300267 [2STANBR 69.000] CKT 1	FALSE	136.7	126.3	126.3
24S	P1	300246 2CONCPT 69.000 300266 2SKIDMR 69.000 1	AECI	35	OPEN LINE FROM BUS 300267 [2STANBR 69.000] TO BUS 300270 [2CLYDE 69.000] CKT 1	FALSE	136.7	136.7	136.7
24S	P1	300246 2CONCPT 69.000 300270 2CLYDE 69.000 1	AECI	35	OPEN LINE FROM BUS 300248 [2DRLNGT 69.000] TO BUS 300267 [2STANBR 69.000] CKT 1	FALSE	139.0	128.6	128.6
24S	P1	300246 2CONCPT 69.000 300270 2CLYDE 69.000 1	AECI	35	OPEN LINE FROM BUS 300267 [2STANBR 69.000] TO BUS 300270 [2CLYDE 69.000] CKT 1	FALSE	139.0	139.0	139.0
24S	P1	300280 2MILAN 69.000 300287 2UNIONV 69.000 1	AECI	24	OPEN LINE FROM BUS 300221 [2CLEOPA 69.000] TO BUS 300230 [2MERCER 69.000] CKT 1	FALSE	141.5	112.5	113.3
24S	P1	300280 2MILAN 69.000 300287 2UNIONV 69.000 1	AECI	24	OPEN LINE FROM BUS 300221 [2CLEOPA 69.000] TO BUS 300279 [2LUCERN 69.000] CKT 1	FALSE	141.5	128.2	128.0
24S	P1	300280 2MILAN 69.000 300287 2UNIONV 69.000 1	AECI	24	OPEN LINE FROM BUS 300224 [2GOSHEN 69.000] TO BUS 300230 [2MERCER 69.000] CKT 1	FALSE	141.5	100.3	101.2
24S	P1	300280 2MILAN 69.000 300287 2UNIONV 69.000 1	AECI	24	OPEN LINE FROM BUS 300278 [2LOCUST 69.000] TO BUS 300283 [2PSF 69.000] CKT 1	FALSE	141.5	105.3	101.4
24S	P1	300280 2MILAN 69.000 300287 2UNIONV 69.000 1	AECI	24	OPEN LINE FROM BUS 300279 [2LUCERN 69.000] TO BUS 300287 [2UNIONV 69.000] CKT 1	FALSE	141.5	141.5	142.4
24S	P1	300320 5LEVASY 161.00 548808 ECKLES-161 161.00 1	AECI/INDN	227	OPEN BRANCH FROM BUS 300071 [5CLINTN 161.00] TO BUS 300124 [5HOLDENB2 161.00] CKT 1	FALSE	106.9	106.9	107.5
24S	P1	300380 2PERRYNE 69.000 301650 2CANDAMNEP 69.000 1	AECI	46	OPEN LINE FROM BUS 300376 [2HASSRD 69.000] TO BUS 301650 [2CANDAMNEP 69.000] CKT 1	FALSE	119.1	119.1	107.9
24S	P1	300400 2MACNLK 69.000 301623 2BEVIERTP 69.000 1	AECI	46	OPEN BRANCH FROM BUS 300044 [7MCCRED 345.00] TO BUS 300049 [7THOMHL 345.00] CKT 1	TRUE	97.5		104.1
24S	P1	300400 2MACNLK 69.000 301623 2BEVIERTP 69.000 1	AECI	46	OPEN LINE FROM BUS 300044 [7MCCRED 345.00] TO BUS 300049 [7THOMHL 345.00] CKT 1	TRUE	97.5	97.5	104.1
24S	P1	300400 2MACNLK 69.000 301623 2BEVIERTP 69.000 1	AECI	46	OPEN LINE FROM BUS 300392 [2HART 69.000] TO BUS 300398 [2LOVELK 69.000] CKT 1	TRUE	97.5		100.3
24S	P1	300400 2MACNLK 69.000 301623 2BEVIERTP 69.000 1	AECI	46	OPEN LINE FROM BUS 345435 [7MAYWOOD 345.00] TO BUS 345992 [7SPENCER 345.00] CKT 1	TRUE	97.5		107.9
24S	P1	300517 2KINGDM 69.000 301497 5KINGDMB2 161.00 2	AECI	25	OPEN LINE FROM BUS 300492 [2ASHLND 69.000] TO BUS 300493 [2BOONE 69.000] CKT 1	TRUE	102.7		101.1
24S	P1	300517 2KINGDM 69.000 301497 5KINGDMB2 161.00 2	AECI	25	OPEN LINE FROM BUS 300517 [2KINGDM 69.000] TO BUS 301497 [5KINGDMB2 161.00] CKT 3	TRUE	102.7	102.7	118.6
24S	P1	300517 2KINGDM 69.000 301497 5KINGDMB2 161.00 3	AECI	25	OPEN LINE FROM BUS 300492 [2ASHLND 69.000] TO BUS 300493 [2BOONE 69.000] CKT 1	TRUE	102.6		101.0
24S	P1	300517 2KINGDM 69.000 301497 5KINGDMB2 161.00 3	AECI	25	OPEN LINE FROM BUS 300517 [2KINGDM 69.000] TO BUS 301497 [5KINGDMB2 161.00] CKT 2	TRUE	102.6	102.6	118.4
24S	P1	300780 2KNOBBY 69.000 301401 2TURKEYCRK 69.000 1	AECI	35	OPEN BRANCH FROM BUS 300034 [5EDMONS 161.00] TO BUS 300555 [5GRAVOIB1 161.00] CKT 1	FALSE	113.3	111.6	101.0
24S	P1	300780 2KNOBBY 69.000 301401 2TURKEYCRK 69.000 1	AECI	35	OPEN BRANCH FROM BUS 300034 [5EDMONS 161.00] TO BUS 300555 [5GRAVOIB1 161.00] CKT 1 OPEN BRANCH FROM BUS 300034 [5EDMONS 161.00] TO BUS 301402 [5LOSTVALY 161.00] CKT 1	FALSE	113.3	112.7	102.1

2024 Limited Operations Study - P0-P1-P2 Thermal Loadings

*Maximum top 10 worst outage conditions reported

Scenario	Event	Monitored Facility	Area	Cont Rate (MVA)	Contingency*	Impact	Max Base	Base Loading	Project Loading
24S	P1	300780 2KNOBBY 69.000 301401 2TURKEYCRK 69.000 1	AECI	35	OPEN BRANCH FROM BUS 300034 [5EDMONS 161.00] TO BUS 301402 [5LOSTVALY 161.00] CKT 1	FALSE	113.3	113.3	102.6
24S	P1	300780 2KNOBBY 69.000 301401 2TURKEYCRK 69.000 1	AECI	35	OPEN LINE FROM BUS 300034 [5EDMONS 161.00] TO BUS 300555 [5GRAVOIB1 161.00] CKT 1	FALSE	113.3	111.6	101.0
24S	P1	300780 2KNOBBY 69.000 301401 2TURKEYCRK 69.000 1	AECI	35	OPEN LINE FROM BUS 300034 [5EDMONS 161.00] TO BUS 301402 [5LOSTVALY 161.00] CKT 1	FALSE	113.3	113.3	102.6
24S	P1	301121 2WSTPL1 69.000 301123 2WSTPL3 69.000 1	AECI	35	OPEN LINE FROM BUS 301121 [2WSTPL1 69.000] TO BUS 301123 [2WSTPL3 69.000] CKT 2	FALSE	119.9	119.9	119.1
24S	P1	301121 2WSTPL1 69.000 301123 2WSTPL3 69.000 1	AECI	35	OPEN LINE FROM BUS 301122 [2WSTPL2 69.000] TO BUS 301123 [2WSTPL3 69.000] CKT 1	FALSE	119.9	101.2	100.6
24S	P1	301121 2WSTPL1 69.000 301123 2WSTPL3 69.000 2	AECI	35	OPEN LINE FROM BUS 301121 [2WSTPL1 69.000] TO BUS 301123 [2WSTPL3 69.000] CKT 1	FALSE	119.9	119.9	119.1
24S	P1	301121 2WSTPL1 69.000 301123 2WSTPL3 69.000 2	AECI	35	OPEN LINE FROM BUS 301122 [2WSTPL2 69.000] TO BUS 301123 [2WSTPL3 69.000] CKT 1	FALSE	119.9	101.2	100.6
24S	P1	301122 2WSTPL2 69.000 301123 2WSTPL3 69.000 1	AECI	35	OPEN LINE FROM BUS 301118 [2WPLCTY 69.000] TO BUS 301692 [2MDWVSTP 69.000] CKT 1	FALSE	178.7	132.2	131.9
24S	P1	301122 2WSTPL2 69.000 301123 2WSTPL3 69.000 1	AECI	35	OPEN LINE FROM BUS 301121 [2WSTPL1 69.000] TO BUS 301688 [22NDSTWYE1 69.000] CKT 1	FALSE	178.7	178.7	178.5
24S	P1	301122 2WSTPL2 69.000 301123 2WSTPL3 69.000 1	AECI	35	OPEN LINE FROM BUS 301689 [22NDSTWYE2 69.000] TO BUS 301692 [2MDWVSTP 69.000] CKT 1	FALSE	178.7	156.2	155.9
24S	P1	301122 2WSTPL2 69.000 301697 2LANTONRDTP 69.000 1	AECI	51	OPEN LINE FROM BUS 301121 [2WSTPL1 69.000] TO BUS 301688 [22NDSTWYE1 69.000] CKT 1	FALSE	109.8	109.8	109.8
24S	P1	301123 2WSTPL3 69.000 301549 5WPLAINE 161.00 2	AECI	56	OPEN BRANCH FROM BUS 301123 [2WSTPL3 69.000] TO BUS 300123 [5WPLAINW 161.00] CKT 1	FALSE	125.6	118.2	124.3
24S	P1	301123 2WSTPL3 69.000 301549 5WPLAINE 161.00 2	AECI	56	OPEN LINE FROM BUS 300123 [5WPLAINW 161.00] TO BUS 301123 [2WSTPL3 69.000] CKT 1	FALSE	125.6	118.2	124.3
24S	P1	301123 2WSTPL3 69.000 301549 5WPLAINE 161.00 2	AECI	56	OPEN LINE FROM BUS 300123 [5WPLAINW 161.00] TO BUS 301549 [5WPLAINE 161.00] CKT Z1	FALSE	125.6	125.6	118.2
24S	P1	301201 2DONIPH 69.000 505440 DONIPHN5 161.00 1	AECI/SWPA	18	OPEN BRANCH FROM BUS 301201 [2DONIPH 69.000] TO BUS 505440 [DONIPHN5 161.00] CKT 2	TRUE	118.7	118.7	122.2
24S	P1	301201 2DONIPH 69.000 505440 DONIPHN5 161.00 1	AECI/SWPA	18	OPEN LINE FROM BUS 301201 [2DONIPH 69.000] TO BUS 505440 [DONIPHN5 161.00] CKT 2	TRUE	118.7	118.7	122.2
24W	P1	300069 5CHOTEAU1 161.00 512648 MAID 5 161.00 1	AECI/GRDA	972	OPEN BRANCH FROM BUS 300741 [5SPORTSMAN 161.00] TO BUS 301348 [5CHOTEAU2 161.00] CKT 1	FALSE	102.2	102.2	102.2
24W	P1	300069 5CHOTEAU1 161.00 512648 MAID 5 161.00 1	AECI/GRDA	972	OPEN LINE FROM BUS 300741 [5SPORTSMAN 161.00] TO BUS 301348 [5CHOTEAU2 161.00] CKT 1	FALSE	102.2	102.2	102.2
24W	P1	300073 5GENTRY 161.00 300076 5FAIRPTB2 161.00 1	AECI	446	OPEN BRANCH FROM BUS 300097 [5MARYVB2 161.00] TO BUS 541251 [MARYVLE5 161.00] CKT 1	FALSE	108.2	108.2	101.7
24W	P1	300073 5GENTRY 161.00 300076 5FAIRPTB2 161.00 1	AECI	446	OPEN LINE FROM BUS 300097 [5MARYVB2 161.00] TO BUS 541251 [MARYVLE5 161.00] CKT 1	FALSE	108.2	108.2	101.7
24W	P1	300120 5THMHILB1 161.00 301648 2TMHILLB2 69.000 2	AECI	143	OPEN LINE FROM BUS 300120 [5THMHILB1 161.00] TO BUS 300132 [5THMHLB2 161.00] CKT Z1	FALSE	118.1	118.1	118.1
24W	P1	300189 2TARKIO 69.000 300241 2ATCHISN 69.000 1	AECI	47	OPEN LINE FROM BUS 300186 [2ROCKPT 69.000] TO BUS 300241 [2ATCHISN 69.000] CKT 1	FALSE	103.5	103.5	103.4
24W	P1	300517 2KINGDM 69.000 301497 5KINGDMB2 161.00 2	AECI	29	OPEN BRANCH FROM BUS 300090 [5KINGDMB1 161.00] TO BUS 300523 [5WLMSBG 161.00] CKT 1	TRUE	103.7		101.8
24W	P1	300517 2KINGDM 69.000 301497 5KINGDMB2 161.00 2	AECI	29	OPEN BRANCH FROM BUS 300090 [5KINGDMB1 161.00] TO BUS 300523 [5WLMSBG 161.00] CKT 1 OPEN BRANCH FROM BUS 300099 [5MONTCT 161.00] TO BUS 300523 [5WLMSBG 161.00] CKT 1 REMOVE LOAD 1 FROM BUS 300523 [5WLMSBG 161.00]	TRUE	103.7		101.6
24W	P1	300517 2KINGDM 69.000 301497 5KINGDMB2 161.00 2	AECI	29	OPEN BRANCH FROM BUS 300099 [5MONTCT 161.00] TO BUS 300523 [5WLMSBG 161.00] CKT 1	TRUE	103.7		101.3
24W	P1	300517 2KINGDM 69.000 301497 5KINGDMB2 161.00 2	AECI	29	OPEN LINE FROM BUS 300090 [5KINGDMB1 161.00] TO BUS 300523 [5WLMSBG 161.00] CKT 1	TRUE	103.7		101.8
24W	P1	300517 2KINGDM 69.000 301497 5KINGDMB2 161.00 2	AECI	29	OPEN LINE FROM BUS 300099 [5MONTCT 161.00] TO BUS 300523 [5WLMSBG 161.00] CKT 1	TRUE	103.7		101.3
24W	P1	300517 2KINGDM 69.000 301497 5KINGDMB2 161.00 2	AECI	29	OPEN LINE FROM BUS 300492 [2ASHLND 69.000] TO BUS 300493 [2BOONE 69.000] CKT 1	TRUE	103.7		102.9
24W	P1	300517 2KINGDM 69.000 301497 5KINGDMB2 161.00 2	AECI	29	OPEN LINE FROM BUS 300517 [2KINGDM 69.000] TO BUS 301497 [5KINGDMB2 161.00] CKT 3	TRUE	103.7	103.7	115.5
24W	P1	300517 2KINGDM 69.000 301497 5KINGDMB2 161.00 3	AECI	29	OPEN BRANCH FROM BUS 300090 [5KINGDMB1 161.00] TO BUS 300523 [5WLMSBG 161.00] CKT 1	TRUE	103.7		101.7
24W	P1	300517 2KINGDM 69.000 301497 5KINGDMB2 161.00 3	AECI	29	OPEN BRANCH FROM BUS 300090 [5KINGDMB1 161.00] TO BUS 300523 [5WLMSBG 161.00] CKT 1 OPEN BRANCH FROM BUS 300099 [5MONTCT 161.00] TO BUS 300523 [5WLMSBG 161.00] CKT 1 REMOVE LOAD 1 FROM BUS 300523 [5WLMSBG 161.00]	TRUE	103.7		101.5
24W	P1	300517 2KINGDM 69.000 301497 5KINGDMB2 161.00 3	AECI	29	OPEN BRANCH FROM BUS 300099 [5MONTCT 161.00] TO BUS 300523 [5WLMSBG 161.00] CKT 1	TRUE	103.7		101.2
24W	P1	300517 2KINGDM 69.000 301497 5KINGDMB2 161.00 3	AECI	29	OPEN LINE FROM BUS 300090 [5KINGDMB1 161.00] TO BUS 300523 [5WLMSBG 161.00] CKT 1	TRUE	103.7		101.7
24W	P1	300517 2KINGDM 69.000 301497 5KINGDMB2 161.00 3	AECI	29	OPEN LINE FROM BUS 300099 [5MONTCT 161.00] TO BUS 300523 [5WLMSBG 161.00] CKT 1	TRUE	103.7		101.2
24W	P1	300517 2KINGDM 69.000 301497 5KINGDMB2 161.00 3	AECI	29	OPEN LINE FROM BUS 300492 [2ASHLND 69.000] TO BUS 300493 [2BOONE 69.000] CKT 1	TRUE	103.7		102.8
24W	P1	300517 2KINGDM 69.000 301497 5KINGDMB2 161.00 3	AECI	29	OPEN LINE FROM BUS 300517 [2KINGDM 69.000] TO BUS 301497 [5KINGDMB2 161.00] CKT 2	TRUE	103.7	103.7	115.4
24W	P1	300780 2KNOBBY 69.000 301401 2TURKEYCRK 69.000 1	AECI	49	OPEN BRANCH FROM BUS 300034 [5EDMONS 161.00] TO BUS 300555 [5GRAVOIB1 161.00] CKT 1	FALSE	119.3	117.6	108.6
24W	P1	300780 2KNOBBY 69.000 301401 2TURKEYCRK 69.000 1	AECI	49	OPEN BRANCH FROM BUS 300034 [5EDMONS 161.00] TO BUS 300555 [5GRAVOIB1 161.00] CKT 1 OPEN BRANCH FROM BUS 300034 [5EDMONS 161.00] TO BUS 301402 [5LOSTVALY 161.00] CKT 1	FALSE	119.3	118.8	109.8
24W	P1	300780 2KNOBBY 69.000 301401 2TURKEYCRK 69.000 1	AECI	49	OPEN BRANCH FROM BUS 300034 [5EDMONS 161.00] TO BUS 301402 [5LOSTVALY 161.00] CKT 1	FALSE	119.3	119.3	110.4
24W	P1	300780 2KNOBBY 69.000 301401 2TURKEYCRK 69.000 1	AECI	49	OPEN LINE FROM BUS 300034 [5EDMONS 161.00] TO BUS 300555 [5GRAVOIB1 161.00] CKT 1	FALSE	119.3	117.6	108.6
24W	P1	300780 2KNOBBY 69.000 301401 2TURKEYCRK 69.000 1	AECI	49	OPEN LINE FROM BUS 300034 [5EDMONS 161.00] TO BUS 301402 [5LOSTVALY 161.00] CKT 1	FALSE	119.3	119.3	110.4
24W	P1	301122 2WSTPL2 69.000 301123 2WSTPL3 69.000 1	AECI	49	OPEN LINE FROM BUS 301121 [2WSTPL1 69.000] TO BUS 301688 [22NDSTWYE1 69.000] CKT 1	FALSE	124.6	124.6	124.3
24W	P1	301122 2WSTPL2 69.000 301123 2WSTPL3 69.000 1	AECI	49	OPEN LINE FROM BUS 301689 [22NDSTWYE2 69.000] TO BUS 301692 [2MDWVSTP 69.000] CKT 1	FALSE	124.6	109.6	109.2
24W	P1	301201 2DONIPH 69.000 505440 DONIPHN5 161.00 1	AECI/SWPA	22	OPEN BRANCH FROM BUS 301201 [2DONIPH 69.000] TO BUS 505440 [DONIPHN5 161.00] CKT 2	TRUE	110.3	110.3	119.5
24W	P1	301201 2DONIPH 69.000 505440 DONIPHN5 161.00 1	AECI/SWPA	22	OPEN LINE FROM BUS 301201 [2DONIPH 69.000] TO BUS 505440 [DONIPHN5 161.00] CKT 2	TRUE	110.3	110.3	119.5
24L	P2EHV	300115 5STFRANB2 161.00 338202 5JIM HILL% 161.00 1	AECI/EES-EAI	247	OPEN BRANCH FROM BUS 300035 [8NEWMAD 500.00] TO BUS 301406 [8WNEWMADRID 500.00] CKT 1 OPEN BRANCH FROM BUS 300035 [8NEWMAD 500.00] TO BUS 301528 [8NEWMADXF34 500.00] CKT Z1	TRUE	126.2	96.3	105.9
24L	P2EHV	300115 5STFRANB2 161.00 338202 5JIM HILL% 161.00 1	AECI/EES-EAI	247	OPEN BRANCH FROM BUS 300035 [8NEWMAD 500.00] TO BUS 301406 [8WNEWMADRID 500.00] CKT 1 OPEN BRANCH FROM BUS 301406 [8WNEWMADRID 500.00] TO BUS 338187 [8DELL% 500.00] CKT 1 OPEN BRANCH FROM BUS 301416 [7WNWMADRID1B345.00] TO BUS 301406 [8WNEWMADRID 500.00] CKT 5	TRUE	126.2	111.5	125.8
24L	P2EHV	300115 5STFRANB2 161.00 338202 5JIM HILL% 161.00 1	AECI/EES-EAI	247	OPEN BRANCH FROM BUS 300046 [7NEWMAD 345.00] TO BUS 301418 [7WNWMADRID2 345.00] CKT 2 OPEN BRANCH FROM BUS 300048 [7STFRAN 345.00] TO BUS 301418 [7WNWMADRID2 345.00] CKT 1	TRUE	126.2	109.3	124.4
24L	P2EHV	300115 5STFRANB2 161.00 338202 5JIM HILL% 161.00 1	AECI/EES-EAI	247	OPEN BRANCH FROM BUS 300046 [7NEWMAD 345.00] TO BUS 301418 [7WNWMADRID2 345.00] CKT 2 OPEN BRANCH FROM BUS 300048 [7STFRAN 345.00] TO BUS 301418 [7WNWMADRID2 345.00] CKT 1 OPEN BRANCH FROM BUS 300046 [7NEWMAD 345.00] TO BUS 301529 [7NEWMADXF34 345.00] CKT Z1 OPEN BRANCH FROM BUS 301529 [7NEWMADXF34 345.00] TO BUS 301528 [8NEWMADXF34 500.00] CKT 3 OPEN BRANCH FROM BUS 301529 [7NEWMADXF34 345.00] TO BUS 301528 [8NEWMADXF34 500.00] CKT 4 OPEN BRANCH FROM BUS 300035 [8NEWMAD 500.00] TO BUS 301528 [8NEWMADXF34 500.00] CKT Z1 OPEN BRANCH FROM BUS 300035 [8NEWMAD 500.00] TO BUS 301406 [8WNEWMADRID 500.00] CKT 1	TRUE	126.2	108.8	123.8
24L	P2EHV	300115 5STFRANB2 161.00 338202 5JIM HILL% 161.00 1	AECI/EES-EAI	247	OPEN BRANCH FROM BUS 300046 [7NEWMAD 345.00] TO BUS 301529 [7NEWMADXF34 345.00] CKT Z1 OPEN BRANCH FROM BUS 301529 [7NEWMADXF34 345.00] TO BUS 301528 [8NEWMADXF34 500.00] CKT 3 OPEN BRANCH FROM BUS 301529 [7NEWMADXF34 345.00] TO BUS 301528 [8NEWMADXF34 500.00] CKT 4 OPEN BRANCH FROM BUS 300035 [8NEWMAD 500.00] TO BUS 301528 [8NEWMADXF34 500.00] CKT Z1 OPEN BRANCH FROM BUS 300035 [8NEWMAD 500.00] TO BUS 301406 [8WNEWMADRID 500.00] CKT 1	TRUE	126.2	96.3	105.9
24L	P2EHV	300115 5STFRANB2 161.00 338202 5JIM HILL% 161.00 1	AECI/EES-EAI	247	OPEN BRANCH FROM BUS 300048 [7STFRAN 345.00] TO BUS 301418 [7WNWMADRID2 345.00] CKT 1 OPEN BRANCH FROM BUS 300046 [7NEWMAD 345.00] TO BUS 301418 [7WNWMADRID2 345.00] CKT 2 OPEN BRANCH FROM BUS 300048 [7STFRAN 345.00] TO BUS 300054 [7GOBKNOB 345.00] CKT 1	TRUE	126.2	126.2	134.4
24L	P2EHV	300115 5STFRANB2 161.00 338202 5JIM HILL% 161.00 1	AECI/EES-EAI	247	OPEN BRANCH FROM BUS 301406 [8WNEWMADRID 500.00] TO BUS 338187 [8DELL% 500.00] CKT 1 OPEN BRANCH FROM BUS 301416 [7WNWMADRID1B345.00] TO BUS 301406 [8WNEWMADRID 500.00] CKT 5 OPEN BRANCH FROM BUS 300035 [8NEWMAD 500.00] TO BUS 301406 [8WNEWMADRID 500.00] CKT 1 OPEN BRANCH FROM BUS 300035 [8NEWMAD 500.00] TO BUS 301528 [8NEWMADXF34 500.00] CKT Z1 OPEN BRANCH FROM BUS 301529 [7NEWMADXF34 345.00] TO BUS 301528 [8NEWMADXF34 500.00] CKT 3 OPEN BRANCH FROM BUS 301529 [7NEWMADXF34 345.00] TO BUS 301528 [8NEWMADXF34 500.00] CKT 4 OPEN BRANCH FROM BUS 300046 [7NEWMAD 345.00] TO BUS 301529 [7NEWMADXF34 345.00] CKT Z1	TRUE	126.2	111.5	125.8
24L	P2EHV	300115 5STFRANB2 161.00 338202 5JIM HILL% 161.00 1	AECI/EES-EAI	247	OPEN BRANCH FROM BUS 301407 [7WNWMADRID1A345.00] TO BUS 301416 [7WNWMADRID1B345.00] CKT Z1 OPEN BRANCH FROM BUS 300038 [7ESSEX 345.00] TO BUS 301407 [7WNWMADRID1A345.00] CKT 1 OPEN BRANCH FROM BUS 300038 [7ESSEX 345.00] TO BUS 344974 [7LUTESVIL 345.00] CKT 1 OPEN BRANCH FROM BUS 301416 [7WNWMADRID1B345.00] TO BUS 301406 [8WNEWMADRID 500.00] CKT 5 OPEN BRANCH FROM BUS 301416 [7WNWMADRID1B345.00] TO BUS 301417 [7WNWMADRID1C345.00] CKT Z1	TRUE	126.2	93.9	102.3
24L	P2EHV	300115 5STFRANB2 161.00 338202 5JIM HILL% 161.00 1	AECI/EES-EAI	247	OPEN BRANCH FROM BUS 301416 [7WNWMADRID1B345.00] TO BUS 301406 [8WNEWMADRID 500.00] CKT 5 OPEN BRANCH FROM BUS 301406 [8WNEWMADRID 500.00] TO BUS 338187 [8DELL% 500.00] CKT 1	TRUE	126.2	111.5	125.8
24L	P2EHV	300115 5STFRANB2 161.00 338202 5JIM HILL% 161.00 1	AECI/EES-EAI	247	OPEN BRANCH FROM BUS 344000 [7ZACHARY 345.00] TO BUS 345438 [7FABIUS 345.00] CKT 1 OPEN BRANCH FROM BUS 345438 [7FABIUS 345.00] TO BUS 345435 [7MAYWOOD 345.00] CKT 1 OPEN BRANCH FROM BUS 345992 [7SPENCER 345.00] TO BUS 345435 [7MAYWOOD 345.00] CKT 1	TRUE	126.2	92.7	102.7
24L	P2EHV	300280 2MILAN 69.000 300287 2UNIONV 69.000 1	AECI	24	OPEN BRANCH FROM BUS 300045 [7MORGAN 345.00] TO BUS 300949 [7JASPER 345.00] CKT 1 OPEN BRANCH FROM BUS 300739 [7BLACKBERRY 345.00] TO BUS 300949 [7JASPER 345.00] CKT 1	FALSE	121.3	119.0	117.4
24L	P2EHV	300280 2MILAN 69.000 300287 2UNIONV 69.000 1	AECI	24	OPEN BRANCH FROM BUS 300739 [7BLACKBERRY 345.00] TO BUS 300740 [7SPORTSMAN 345.00] CKT 1 OPEN BRANCH FROM BUS 300739 [7BLACKBERRY 345.00] TO BUS 532793 [NEOSHO 7 345.00] CKT 1	FALSE	121.3	118.9	117.4
24L	P2EHV	300280 2MILAN 69.000 300287 2UNIONV 69.000 1	AECI	24	OPEN BRANCH FROM BUS 300739 [7BLACKBERRY 345.00] TO BUS 300949 [7JASPER 345.00] CKT 1 OPEN BRANCH FROM BUS 300739 [7BLACKBERRY 345.00] TO BUS 300740 [7SPORTSMAN 345.00] CKT 1	FALSE	121.3	118.9	117.4
24L	P2EHV	300280 2MILAN 69.000 300287 2UNIONV 69.000 1	AECI	24	OPEN BRANCH FROM BUS 300739 [7BLACKBERRY 345.00] TO BUS 300949 [7JASPER 345.00] CKT 1 OPEN BRANCH FROM BUS 300739 [7BLACKBERRY 345.00] TO BUS 300740 [7SPORTSMAN 345.00] CKT 1 OPEN BRANCH FROM BUS 300739 [7BLACKBERRY 345.00] TO BUS 532793 [NEOSHO 7 345.00] CKT 1	FALSE	121.3	118.9	117.4
24L	P2EHV	300280 2MILAN 69.000 300287 2UNIONV 69.000 1	AECI	24	OPEN BRANCH FROM BUS 300739 [7BLACKBERRY 345.00] TO BUS 532793 [NEOSHO 7 345.00] CKT 1 OPEN BRANCH FROM BUS 300739 [7BLACKBERRY 345.00] TO BUS 300949 [7JASPER 345.00] CKT 1	FALSE	121.3	118.9	117.4
24L	P2EHV	300280 2MILAN 69.000 300287 2UNIONV 69.000 1	AECI	24	OPEN BRANCH FROM BUS 344000 [7ZACHARY 345.00] TO BUS 345438 [7FABIUS 345.00] CKT 1 OPEN BRANCH FROM BUS 344000 [7ZACHARY 345.00] TO BUS 345455 [7J1182 SUB 345.00] CKT 1	FALSE	121.3	118.5	117.5
24L	P2EHV	300280 2MILAN 69.000 300287 2UNIONV 69.000 1	AECI	24	OPEN BRANCH FROM BUS 345230 [7MONTGMRY 345.00] TO BUS 43524 [J1352 POI 345.00] CKT 1 OPEN BRANCH FROM BUS 345435 [7MAYWOOD 345.00] TO BUS 345992 [7SPENCER 345.00] CKT 1	FALSE	121.3		118.3
24L	P2EHV	300280 2MILAN 69.000 300287 2UNIONV 69.000 1	AECI	24	OPEN BRANCH FROM BUS 541199 [ST JOE 7 345.00] TO BUS 541400 [EASTOWN7 345.00] CKT 1 OPEN BRANCH FROM BUS 300039 [7FAIRPT 345.00] TO BUS 541199 [ST JOE 7 345.00] CKT 1	FALSE	121.3	121.3	118.8
24L	P2EHV	300280 2MILAN 69.000 300287 2UNIONV 69.000 1	AECI	24	OPEN BRANCH FROM BUS 635017 [ATCHISON 3 345.00] TO BUS 635018 [NORTHBORO 3 345.00] CKT 1 OPEN BRANCH FROM BUS 635017 [ATCHISON 3 345.00] TO BUS 640139 [COOPER 3 345.00] CKT 1 REMOVE SWSHUNT FROM BUS 635017 [ATCHISON 3 345.00]	FALSE	121.3	118.9	117.6
24L	P2EHV	300280 2MILAN 69.000 300287 2UNIONV 69.000 1	AECI	24	OPEN BRANCH FROM BUS 635017 [ATCHISON 3 345.00] TO BUS 635018 [NORTHBORO 3 345.00] CKT 1 OPEN BRANCH FROM BUS 635018 [NORTHBORO 3 345.00] TO BUS 635570 [ORIENT 3 345.00] CKT 1 OPEN BRANCH FROM BUS 635018 [NORTHBORO 3 345.00] TO BUS 637084 [J476 SHENHLL345.00] CKT 1	FALSE	121.3	118.8	117.5
24S	P2EHV	300115 5STFRANB2 161.00 338202 5JIM HILL% 161.00 1	AECI/EES-EAI	247	OPEN BRANCH FROM BUS 300048 [7STFRAN 345.00] TO BUS 301418 [7WNWMADRID2 345.00] CKT 1 OPEN BRANCH FROM BUS 300046 [7NEWMAD 345.00] TO BUS 301418 [7WNWMADRID2 345.00] CKT 2 OPEN BRANCH FROM BUS 300048 [7STFRAN 345.00] TO BUS 300054 [7GOBKNOB 345.00] CKT 1	TRUE	100.2	100.2	107.5
24S	P2EHV	300400 2MACNLK 69.000 301623 2BEVIERTP 69.000 1	AECI	46	OPEN BRANCH FROM BUS 300044 [7MCCRED 345.00] TO BUS 345408 [7OVERTON 345.00] CKT 1 OPEN BRANCH FROM BUS 300044 [7MCCRED 345.00] TO BUS 300049 [7THOMHL 345.00] CKT 1	TRUE	97.8	97.8	102.3
24S	P2EHV	300400 2MACNLK 69.000 301623 2BEVIERTP 69.000 1	AECI	46	OPEN BRANCH FROM BUS 344000 [7ZACHARY 345.00] TO BUS 345438 [7FABIUS 345.00] CKT 1 OPEN BRANCH FROM BUS 345438 [7FABIUS 345.00] TO BUS 345435 [7MAYWOOD 345.00] CKT 1 OPEN BRANCH FROM BUS 345992 [7SPENCER 345.00] TO BUS 345435 [7MAYWOOD 345.00] CKT 1	TRUE	97.8	87.6	107.9

2024 Limited Operations Study - P0-P1-P2 Low Voltages

*Maximum top 10 worst outage conditions reported based on Vcont (p.u.)

Scenario	Event	Monitored Facility	Area	Min Volt Limit (p.u.)	Max Volt Limit (p.u.)	Contingency*	Impact	Min Base Vcont (p.u.)	Base Vcont (p.u.)	Project Vcont (p.u.)
24L	P1	301552 5PLATCTY 161.00	AECI	0.9	1.05	OPEN LINE FROM BUS 301552 [5PLATCTY 161.00] TO BUS 541221 [PLTCTY 5 161.00] CKT Z1	FALSE	0.886	0.886	0.8856
24S	P1	300062 5CROSSWAY 161.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300062 [5CROSSWAY 161.00] TO BUS 301159 [5HOLMAN 161.00] CKT 1	FALSE	0.8925	0.8925	0.8923
24S	P1	300062 5CROSSWAY 161.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300062 [5CROSSWAY 161.00] TO BUS 301159 [5HOLMAN 161.00] CKT 1	FALSE	0.8925	0.8925	0.8923
24S	P1	300063 5CALIF 161.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300063 [5CALIF 161.00] TO BUS 344234 [5CALIF UE 2 161.00] CKT 1	FALSE	0.871	0.871	0.8709
24S	P1	300063 5CALIF 161.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300063 [5CALIF 161.00] TO BUS 344234 [5CALIF UE 2 161.00] CKT 1	FALSE	0.871	0.871	0.8709
24S	P1	300135 4LUTHER 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300135 [4LUTHER 138.00] TO BUS 300136 [4MEMORALT 138.00] CKT 1	FALSE	0.8734	0.8804	0.8797
24S	P1	300135 4LUTHER 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300135 [4LUTHER 138.00] TO BUS 300136 [4MEMORALT 138.00] CKT 1 OPEN BRANCH FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1 OPEN BRANCH FROM BUS 300136 [4MEMORALT 138.00] TO BUS 301541 [4MEMORAL 138.00] CKT 1 REMOVE LOAD 1 FROM BUS 301541 [4MEMORAL 138.00]	FALSE	0.8734	0.8804	0.8797
24S	P1	300135 4LUTHER 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1	FALSE	0.8734	0.8734	0.8731
24S	P1	300135 4LUTHER 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300135 [4LUTHER 138.00] TO BUS 300136 [4MEMORALT 138.00] CKT 1	FALSE	0.8734	0.8804	0.8797
24S	P1	300135 4LUTHER 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1	FALSE	0.8734	0.8734	0.8731
24S	P1	300136 4MEMORALT 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1	FALSE	0.8722	0.8722	0.8719
24S	P1	300136 4MEMORALT 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1	FALSE	0.8722	0.8722	0.8719
24S	P1	300145 4FISHER 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300131 [4FISHERTP 138.00] TO BUS 300145 [4FISHER 138.00] CKT 1	FALSE	0.8777	0.8777	0.8786
24S	P1	300145 4FISHER 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300131 [4FISHERTP 138.00] TO BUS 300145 [4FISHER 138.00] CKT 1	FALSE	0.8777	0.8777	0.8786
24S	P1	300165 4SFORKK 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300165 [4SFORKK 138.00] TO BUS 301339 [4SFORKKTP 138.00] CKT 1	FALSE	0.8981	0.8981	0.8997
24S	P1	300165 4SFORKK 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300165 [4SFORKK 138.00] TO BUS 301339 [4SFORKKTP 138.00] CKT 1	FALSE	0.8981	0.8981	0.8997
24S	P1	300219 2BETHCT 69.000	AECI	0.9	1.05	OPEN LINE FROM BUS 300249 [2FAIRPT 69.000] TO BUS 301632 [2FAIRPTLD 69.000] CKT 1	FALSE	0.8982	0.8982	0.8995
24S	P1	300399 2MACN3E 69.000	AECI	0.9	1.05	OPEN LINE FROM BUS 300399 [2MACN3E 69.000] TO BUS 300401 [2MACNTP 69.000] CKT 1	FALSE	0.8965	0.8965	0.8933
24S	P1	300411 2TENMILETP 69.000	AECI	0.9	1.05	OPEN LINE FROM BUS 300399 [2MACN3E 69.000] TO BUS 300401 [2MACNTP 69.000] CKT 1	FALSE	0.9028	0.9028	0.8995
24S	P1	300456 2TENMILE 69.000	AECI	0.9	1.05	OPEN LINE FROM BUS 300399 [2MACN3E 69.000] TO BUS 300401 [2MACNTP 69.000] CKT 1	FALSE	0.9018	0.9018	0.8986
24S	P1	300508 5STURGN 161.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300508 [5STURGN 161.00] TO BUS 301494 [5HIGBEEB2 161.00] CKT 1	FALSE	0.8929	0.8929	0.8935
24S	P1	300508 5STURGN 161.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300508 [5STURGN 161.00] TO BUS 301494 [5HIGBEEB2 161.00] CKT 1	FALSE	0.8929	0.8929	0.8935
24S	P1	300690 2BUTLERE 69.000	AECI	0.9	1.05	OPEN LINE FROM BUS 300689 [2BUTLER 69.000] TO BUS 300690 [2BUTLERE 69.000] CKT 1	FALSE	0.9029	0.9029	0.898
24S	P1	300832 5RGRSVL2 161.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300832 [5RGRSVL2 161.00] TO BUS 301159 [5HOLMAN 161.00] CKT 1	FALSE	0.8999	0.8999	0.8997
24S	P1	300832 5RGRSVL2 161.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300832 [5RGRSVL2 161.00] TO BUS 301159 [5HOLMAN 161.00] CKT 1	FALSE	0.8999	0.8999	0.8997
24S	P1	300838 4STROUDDIST 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300135 [4LUTHER 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1	FALSE	0.8466	0.8466	0.847
24S	P1	300838 4STROUDDIST 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300135 [4LUTHER 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1 OPEN BRANCH FROM BUS 300915 [4WARWICK 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1 OPEN BRANCH FROM BUS 300914 [4STROUD138 138.00] TO BUS 300915 [4WARWICK 138.00] CKT 1 REMOVE LOAD 1 FROM BUS 301372 [4LUTHERD 138.00] REMOVE LOAD 1 FROM BUS 300915 [4WARWICK 138.00]	FALSE	0.8466	0.87	0.8707
24S	P1	300838 4STROUDDIST 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1	FALSE	0.8466	0.8718	0.8717
24S	P1	300838 4STROUDDIST 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300914 [4STROUD138 138.00] TO BUS 300915 [4WARWICK 138.00] CKT 1	FALSE	0.8466	0.8699	0.8706
24S	P1	300838 4STROUDDIST 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300915 [4WARWICK 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1	FALSE	0.8466	0.8646	0.8659
24S	P1	300838 4STROUDDIST 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300135 [4LUTHER 138.00] TO BUS 300136 [4MEMORALT 138.00] CKT 1	FALSE	0.8466	0.8778	0.8774
24S	P1	300838 4STROUDDIST 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300135 [4LUTHER 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1	FALSE	0.8466	0.8466	0.847
24S	P1	300838 4STROUDDIST 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1	FALSE	0.8466	0.8718	0.8717
24S	P1	300838 4STROUDDIST 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300914 [4STROUD138 138.00] TO BUS 300915 [4WARWICK 138.00] CKT 1	FALSE	0.8466	0.8699	0.8706
24S	P1	300838 4STROUDDIST 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300915 [4WARWICK 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1	FALSE	0.8466	0.8646	0.8659
24S	P1	300888 2BIXBY 69.000	AECI	0.9	1.05	OPEN LINE FROM BUS 300901 [2KELYVIL 69.000] TO BUS 300902 [2KIEFER 69.000] CKT 1	FALSE	0.8965	0.8965	0.8974
24S	P1	300896 2CHEROKE 69.000	AECI	0.9	1.05	OPEN LINE FROM BUS 300897 [2GLENPOL 69.000] TO BUS 513092 [BEGGS 2 69.000] CKT 1	FALSE	0.8955	0.8955	0.8968
24S	P1	300897 2GLENPOL 69.000	AECI	0.9	1.05	OPEN LINE FROM BUS 300897 [2GLENPOL 69.000] TO BUS 513092 [BEGGS 2 69.000] CKT 1	FALSE	0.8981	0.8981	0.8994
24S	P1	300902 2KIEFER 69.000	AECI	0.9	1.05	OPEN LINE FROM BUS 300901 [2KELYVIL 69.000] TO BUS 300902 [2KIEFER 69.000] CKT 1	FALSE	0.8854	0.8854	0.8863
24S	P1	300904 2MORRIS 69.000	AECI	0.9	1.05	OPEN LINE FROM BUS 513089 [BALDHILL 2 69.000] TO BUS 513092 [BEGGS 2 69.000] CKT 1	FALSE	0.8987	0.8987	0.8999
24S	P1	300914 4STROUD138 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300135 [4LUTHER 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1	FALSE	0.8466	0.8466	0.847
24S	P1	300914 4STROUD138 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300135 [4LUTHER 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1 OPEN BRANCH FROM BUS 300915 [4WARWICK 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1 OPEN BRANCH FROM BUS 300914 [4STROUD138 138.00] TO BUS 300915 [4WARWICK 138.00] CKT 1 REMOVE LOAD 1 FROM BUS 301372 [4LUTHERD 138.00] REMOVE LOAD 1 FROM BUS 300915 [4WARWICK 138.00]	FALSE	0.8466	0.87	0.8707
24S	P1	300914 4STROUD138 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1	FALSE	0.8466	0.8718	0.8718
24S	P1	300914 4STROUD138 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300914 [4STROUD138 138.00] TO BUS 300915 [4WARWICK 138.00] CKT 1	FALSE	0.8466	0.8699	0.8706
24S	P1	300914 4STROUD138 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300915 [4WARWICK 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1	FALSE	0.8466	0.8646	0.866
24S	P1	300914 4STROUD138 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300135 [4LUTHER 138.00] TO BUS 300136 [4MEMORALT 138.00] CKT 1	FALSE	0.8466	0.8778	0.8774
24S	P1	300914 4STROUD138 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300135 [4LUTHER 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1	FALSE	0.8466	0.8466	0.847
24S	P1	300914 4STROUD138 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1	FALSE	0.8466	0.8718	0.8718
24S	P1	300914 4STROUD138 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300914 [4STROUD138 138.00] TO BUS 300915 [4WARWICK 138.00] CKT 1	FALSE	0.8466	0.8699	0.8706
24S	P1	300914 4STROUD138 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300915 [4WARWICK 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1	FALSE	0.8466	0.8646	0.866
24S	P1	300915 4WARWICK 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300135 [4LUTHER 138.00] TO BUS 300136 [4MEMORALT 138.00] CKT 1	FALSE	0.8441	0.8791	0.8785
24S	P1	300915 4WARWICK 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300135 [4LUTHER 138.00] TO BUS 300136 [4MEMORALT 138.00] CKT 1 OPEN BRANCH FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1 OPEN BRANCH FROM BUS 300136 [4MEMORALT 138.00] TO BUS 301541 [4MEMORAL 138.00] CKT 1 REMOVE LOAD 1 FROM BUS 301541 [4MEMORAL 138.00]	FALSE	0.8441	0.8791	0.8786
24S	P1	300915 4WARWICK 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300135 [4LUTHER 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1	FALSE	0.8441	0.8441	0.8446
24S	P1	300915 4WARWICK 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1	FALSE	0.8441	0.8725	0.8724
24S	P1	300915 4WARWICK 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300915 [4WARWICK 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1	FALSE	0.8441	0.8638	0.8652
24S	P1	300915 4WARWICK 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300135 [4LUTHER 138.00] TO BUS 300136 [4MEMORALT 138.00] CKT 1	FALSE	0.8441	0.8791	0.8785
24S	P1	300915 4WARWICK 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300135 [4LUTHER 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1	FALSE	0.8441	0.8441	0.8446
24S	P1	300915 4WARWICK 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1	FALSE	0.8441	0.8725	0.8724
24S	P1	300915 4WARWICK 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300915 [4WARWICK 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1	FALSE	0.8441	0.8638	0.8652
24S	P1	301171 2MTNGRV2 69.000	AECI	0.9	1.05	OPEN LINE FROM BUS 301171 [2MTNGRV2 69.000] TO BUS 301513 [2MTNGRV3 69.000] CKT 1	FALSE	0.8881	0.8881	0.8884
24S	P1	301267 2MARQUA 69.000	AECI	0.9	1.05	OPEN LINE FROM BUS 301267 [2MARQUA 69.000] TO BUS 301283 [2FREDTN 69.000] CKT 1	FALSE	0.8881	0.8881	0.8848
24S	P1	301276 2SDGWKV 69.000	AECI	0.9	1.05	OPEN LINE FROM BUS 301267 [2MARQUA 69.000] TO BUS 301283 [2FREDTN 69.000] CKT 1	FALSE	0.895	0.895	0.8918
24S	P1	301278 2SCOPUS 69.000	AECI	0.9	1.05	OPEN LINE FROM BUS 301267 [2MARQUA 69.000] TO BUS 301283 [2FREDTN 69.000] CKT 1	FALSE	0.8987	0.8987	0.8956
24S	P1	301282 2BRFRDVL 69.000	AECI	0.9	1.05	OPEN LINE FROM BUS 301267 [2MARQUA 69.000] TO BUS 301283 [2FREDTN 69.000] CKT 1	FALSE	0.8882	0.8882	0.8851
24S	P1	301338 2TILSIT 69.000	AECI	0.9	1.05	OPEN LINE FROM BUS 301267 [2MARQUA 69.000] TO BUS 301283 [2FREDTN 69.000] CKT 1	FALSE	0.8857	0.8857	0.8825
24S	P1	301372 4LUTHERD 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300135 [4LUTHER 138.00] TO BUS 300136 [4MEMORALT 138.00] CKT 1	FALSE	0.8424	0.8804	0.8797
24S	P1	301372 4LUTHERD 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300135 [4LUTHER 138.00] TO BUS 300136 [4MEMORALT 138.00] CKT 1 OPEN BRANCH FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1 OPEN BRANCH FROM BUS 300136 [4MEMORALT 138.00] TO BUS 301541 [4MEMORAL 138.00] CKT 1 REMOVE LOAD 1 FROM BUS 301541 [4MEMORAL 138.00]	FALSE	0.8424	0.8804	0.8797
24S	P1	301372 4LUTHERD 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300135 [4LUTHER 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1	FALSE	0.8424	0.8424	0.8429
24S	P1	301372 4LUTHERD 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1	FALSE	0.8424	0.8734	0.8731
24S	P1	301372 4LUTHERD 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300135 [4LUTHER 138.00] TO BUS 300136 [4MEMORALT 138.00] CKT 1	FALSE	0.8424	0.8804	0.8797
24S	P1	301372 4LUTHERD 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300135 [4LUTHER 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1	FALSE	0.8424	0.8424	0.8429
24S	P1	301372 4LUTHERD 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1	FALSE	0.8424	0.8734	0.8731
24S	P1	301497 5KINGDMB2 161.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300090 [5KINGDMB1 161.00] TO BUS 301497 [5KINGDMB2 161.00] CKT Z1	FALSE	0.8891	0.8891	0.8889
24S	P1	301541 4MEMORAL 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1	FALSE	0.8722	0.8722	0.8719
24S	P1	301541 4MEMORAL 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1	FALSE	0.8722	0.8722	0.8719
24S	P1	301552 5PLATCTY 161.00	AECI	0.9	1.05	OPEN LINE FROM BUS 301552 [5PLATCTY 161.00] TO BUS 541221 [PLTCTY 5 161.00] CKT Z1	FALSE	0.8368	0.8368	0.8397

2024 Limited Operations Study - P0-P1-P2 Low Voltages

*Maximum top 10 worst outage conditions reported based on Vcont (p.u.)

Scenario	Event	Monitored Facility	Area	Min Volt Limit (p.u.)	Max Volt Limit (p.u.)	Contingency*	Impact	Min Base Vcont (p.u.)	Base Vcont (p.u.)	Project Vcont (p.u.)
24S	P1	301586 2PEORIA 69.000	AECI	0.9	1.05	OPEN LINE FROM BUS 300897 [2GLENPOL 69.000] TO BUS 513092 [BEGGS 2 69.000] CKT 1	FALSE	0.8961	0.8961	0.8974
24S	P1	301587 2PEORITP 69.000	AECI	0.9	1.05	OPEN LINE FROM BUS 300897 [2GLENPOL 69.000] TO BUS 513092 [BEGGS 2 69.000] CKT 1	FALSE	0.8961	0.8961	0.8975
24S	P1	301632 2FAIRPTLD 69.000	AECI	0.9	1.05	OPEN LINE FROM BUS 300249 [2FAIRPT 69.000] TO BUS 301632 [2FAIRPTLD 69.000] CKT 1	FALSE	0.8961	0.8961	0.8974
24S	P1	301687 5LEE 161.00	AECI	0.9	1.05	OPEN LINE FROM BUS 301687 [5LEE 161.00] TO BUS 631216 [WEVER5 161.00] CKT Z1	FALSE	0.8977	0.8977	0.8993
24W	P1	300062 5CROSSWAY 161.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300062 [5CROSSWAY 161.00] TO BUS 301159 [5HOLMAN 161.00] CKT 1	FALSE	0.8923	0.8923	0.8921
24W	P1	300062 5CROSSWAY 161.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300062 [5CROSSWAY 161.00] TO BUS 301159 [5HOLMAN 161.00] CKT 1	FALSE	0.8923	0.8923	0.8921
24W	P1	300063 5CALIF 161.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300063 [5CALIF 161.00] TO BUS 344234 [5CALIF UE 2 161.00] CKT 1	FALSE	0.873	0.873	0.8753
24W	P1	300063 5CALIF 161.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300063 [5CALIF 161.00] TO BUS 344234 [5CALIF UE 2 161.00] CKT 1	FALSE	0.873	0.873	0.8753
24W	P1	300135 4LUTHER 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300135 [4LUTHER 138.00] TO BUS 300136 [4MEMORALT 138.00] CKT 1	FALSE	0.8756	0.8842	0.886
24W	P1	300135 4LUTHER 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300135 [4LUTHER 138.00] TO BUS 300136 [4MEMORALT 138.00] CKT 1 OPEN BRANCH FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1 OPEN BRANCH FROM BUS 300136 [4MEMORALT 138.00] TO BUS 301541 [4MEMORAL 138.00] CKT 1 REMOVE LOAD 1 FROM BUS 301541 [4MEMORAL 138.00]	FALSE	0.8756	0.8842	0.886
24W	P1	300135 4LUTHER 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1	FALSE	0.8756	0.8756	0.8761
24W	P1	300135 4LUTHER 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300135 [4LUTHER 138.00] TO BUS 300136 [4MEMORALT 138.00] CKT 1	FALSE	0.8756	0.8842	0.886
24W	P1	300135 4LUTHER 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1	FALSE	0.8756	0.8756	0.8761
24W	P1	300136 4MEMORALT 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1	FALSE	0.8743	0.8743	0.8747
24W	P1	300136 4MEMORALT 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1	FALSE	0.8743	0.8743	0.8747
24W	P1	300145 4FISHER 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300131 [4FISHERTP 138.00] TO BUS 300145 [4FISHER 138.00] CKT 1	FALSE	0.8882	0.8882	0.8884
24W	P1	300145 4FISHER 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300131 [4FISHERTP 138.00] TO BUS 300145 [4FISHER 138.00] CKT 1	FALSE	0.8882	0.8882	0.8884
24W	P1	300165 4SFORKK 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300138 [4CLEVLND 138.00] TO BUS 301640 [4HOMNYTP 138.00] CKT 1 OPEN BRANCH FROM BUS 300996 [4JAVINE 138.00] TO BUS 301640 [4HOMNYTP 138.00] CKT 1 OPEN BRANCH FROM BUS 300996 [4JAVINE 138.00] TO BUS 301339 [4SFORKKTP 138.00] CKT 1 OPEN BRANCH FROM BUS 300146 [4SKIAETP 138.00] TO BUS 301339 [4SFORKKTP 138.00] CKT 1 OPEN BRANCH FROM BUS 300165 [4SFORKK 138.00] TO BUS 301339 [4SFORKKTP 138.00] CKT 1 OPEN BRANCH FROM BUS 300146 [4SKIAETP 138.00] TO BUS 512649 [SKIAEAS4 138.00] CKT 1 OPEN BRANCH FROM BUS 300146 [4SKIAETP 138.00] TO BUS 512705 [COLLINS4 138.00] CKT 1 OPEN THREEWINDING AT BUS 512627 [COLINS 5 161.00] TO BUS 512705 [COLLINS4 138.00] TO BUS 512838 [COLLIN1 1 13.800] CKT 1 OPEN THREEWINDING AT BUS 512705 [COLLINS4 138.00] TO BUS 512627 [COLINS 5 161.00] TO BUS 512838 [COLLIN1 1 13.800] CKT 1 OPEN THREEWINDING AT BUS 512838 [COLLIN1 1 13.800] TO BUS 512627 [COLINS 5 161.00] TO BUS 512705 [COLLINS4 138.00] CKT 1 REMOVE LOAD 1 FROM BUS 300996 [4JAVINE 138.00] REMOVE LOAD 2 FROM BUS 300996 [4JAVINE 138.00] REMOVE LOAD 1 FROM BUS 512705 [COLLINS4 138.00]	FALSE	0.8975	0.8975	0.8986
24W	P1	300165 4SFORKK 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300165 [4SFORKK 138.00] TO BUS 301339 [4SFORKKTP 138.00] CKT 1	FALSE	0.8975	0.8976	0.8986
24W	P1	300165 4SFORKK 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300165 [4SFORKK 138.00] TO BUS 301339 [4SFORKKTP 138.00] CKT 1	FALSE	0.8975	0.8976	0.8986
24W	P1	300838 4STROUDDIST 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300135 [4LUTHER 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1	FALSE	0.8594	0.8594	0.8592
24W	P1	300838 4STROUDDIST 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300135 [4LUTHER 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1 OPEN BRANCH FROM BUS 300915 [4WARWICK 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1 OPEN BRANCH FROM BUS 300914 [4STROUD138 138.00] TO BUS 300915 [4WARWICK 138.00] CKT 1 REMOVE LOAD 1 FROM BUS 301372 [4LUTHERD 138.00] REMOVE LOAD 1 FROM BUS 300915 [4WARWICK 138.00]	FALSE	0.8594	0.8829	0.8857
24W	P1	300838 4STROUDDIST 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1	FALSE	0.8594	0.8763	0.8771
24W	P1	300838 4STROUDDIST 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300914 [4STROUD138 138.00] TO BUS 300915 [4WARWICK 138.00] CKT 1	FALSE	0.8594	0.8828	0.8856
24W	P1	300838 4STROUDDIST 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300915 [4WARWICK 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1	FALSE	0.8594	0.8776	0.8805
24W	P1	300838 4STROUDDIST 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300135 [4LUTHER 138.00] TO BUS 300136 [4MEMORALT 138.00] CKT 1	FALSE	0.8594	0.8835	0.8859
24W	P1	300838 4STROUDDIST 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300135 [4LUTHER 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1	FALSE	0.8594	0.8594	0.8592
24W	P1	300838 4STROUDDIST 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1	FALSE	0.8594	0.8763	0.8771
24W	P1	300838 4STROUDDIST 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300914 [4STROUD138 138.00] TO BUS 300915 [4WARWICK 138.00] CKT 1	FALSE	0.8594	0.8828	0.8856
24W	P1	300838 4STROUDDIST 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300915 [4WARWICK 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1	FALSE	0.8594	0.8776	0.8805
24W	P1	300914 4STROUD138 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300135 [4LUTHER 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1	FALSE	0.8594	0.8594	0.8592
24W	P1	300914 4STROUD138 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300135 [4LUTHER 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1 OPEN BRANCH FROM BUS 300915 [4WARWICK 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1 OPEN BRANCH FROM BUS 300914 [4STROUD138 138.00] TO BUS 300915 [4WARWICK 138.00] CKT 1 REMOVE LOAD 1 FROM BUS 301372 [4LUTHERD 138.00] REMOVE LOAD 1 FROM BUS 300915 [4WARWICK 138.00]	FALSE	0.8594	0.8829	0.8857
24W	P1	300914 4STROUD138 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1	FALSE	0.8594	0.8763	0.8772
24W	P1	300914 4STROUD138 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300914 [4STROUD138 138.00] TO BUS 300915 [4WARWICK 138.00] CKT 1	FALSE	0.8594	0.8828	0.8856
24W	P1	300914 4STROUD138 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300915 [4WARWICK 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1	FALSE	0.8594	0.8776	0.8805
24W	P1	300914 4STROUD138 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300135 [4LUTHER 138.00] TO BUS 300136 [4MEMORALT 138.00] CKT 1	FALSE	0.8594	0.8835	0.8859
24W	P1	300914 4STROUD138 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300135 [4LUTHER 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1	FALSE	0.8594	0.8594	0.8592
24W	P1	300914 4STROUD138 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1	FALSE	0.8594	0.8763	0.8772
24W	P1	300914 4STROUD138 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300914 [4STROUD138 138.00] TO BUS 300915 [4WARWICK 138.00] CKT 1	FALSE	0.8594	0.8828	0.8856
24W	P1	300914 4STROUD138 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300915 [4WARWICK 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1	FALSE	0.8594	0.8776	0.8805
24W	P1	300915 4WARWICK 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300135 [4LUTHER 138.00] TO BUS 300136 [4MEMORALT 138.00] CKT 1	FALSE	0.8574	0.8838	0.8859
24W	P1	300915 4WARWICK 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300135 [4LUTHER 138.00] TO BUS 300136 [4MEMORALT 138.00] CKT 1 OPEN BRANCH FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1 OPEN BRANCH FROM BUS 300136 [4MEMORALT 138.00] TO BUS 301541 [4MEMORAL 138.00] CKT 1 REMOVE LOAD 1 FROM BUS 301541 [4MEMORAL 138.00]	FALSE	0.8574	0.8839	0.8859
24W	P1	300915 4WARWICK 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300135 [4LUTHER 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1	FALSE	0.8574	0.8574	0.8571
24W	P1	300915 4WARWICK 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1	FALSE	0.8574	0.8759	0.8765
24W	P1	300915 4WARWICK 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300915 [4WARWICK 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1	FALSE	0.8574	0.8771	0.8799
24W	P1	300915 4WARWICK 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300135 [4LUTHER 138.00] TO BUS 300136 [4MEMORALT 138.00] CKT 1	FALSE	0.8574	0.8838	0.8859
24W	P1	300915 4WARWICK 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300135 [4LUTHER 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1	FALSE	0.8574	0.8574	0.8571
24W	P1	300915 4WARWICK 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1	FALSE	0.8574	0.8759	0.8765
24W	P1	300915 4WARWICK 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300915 [4WARWICK 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1	FALSE	0.8574	0.8771	0.8799
24W	P1	301266 2LUTSVL 69.000	AECI	0.9	1.05	OPEN LINE FROM BUS 301267 [2MARQUA 69.000] TO BUS 301283 [2FREDTN 69.000] CKT 1	FALSE	0.8902	0.8902	0.8898
24W	P1	301267 2MARQUA 69.000	AECI	0.9	1.05	OPEN LINE FROM BUS 301267 [2MARQUA 69.000] TO BUS 301283 [2FREDTN 69.000] CKT 1	FALSE	0.8512	0.8512	0.8507
24W	P1	301276 2SDGWKV 69.000	AECI	0.9	1.05	OPEN LINE FROM BUS 301267 [2MARQUA 69.000] TO BUS 301283 [2FREDTN 69.000] CKT 1	FALSE	0.8604	0.8604	0.8599
24W	P1	301278 2SCOPUS 69.000	AECI	0.9	1.05	OPEN LINE FROM BUS 301267 [2MARQUA 69.000] TO BUS 301283 [2FREDTN 69.000] CKT 1	FALSE	0.8705	0.8705	0.87
24W	P1	301282 2BRFRDVL 69.000	AECI	0.9	1.05	OPEN LINE FROM BUS 301267 [2MARQUA 69.000] TO BUS 301283 [2FREDTN 69.000] CKT 1	FALSE	0.8602	0.8602	0.8598
24W	P1	301338 2TILSIT 69.000	AECI	0.9	1.05	OPEN LINE FROM BUS 301267 [2MARQUA 69.000] TO BUS 301283 [2FREDTN 69.000] CKT 1	FALSE	0.8582	0.8582	0.8577
24W	P1	301370 5TURKEYCRK 161.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 301370 [5TURKEYCRK 161.00] TO BUS 301402 [5LOSTVALY 161.00] CKT 1	FALSE	0.8954	0.8954	0.8973
24W	P1	301370 5TURKEYCRK 161.00	AECI	0.9	1.05	OPEN LINE FROM BUS 301370 [5TURKEYCRK 161.00] TO BUS 301402 [5LOSTVALY 161.00] CKT 1	FALSE	0.8954	0.8954	0.8973
24W	P1	301372 4LUTHERD 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300135 [4LUTHER 138.00] TO BUS 300136 [4MEMORALT 138.00] CKT 1	FALSE	0.8559	0.8842	0.886
24W	P1	301372 4LUTHERD 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300135 [4LUTHER 138.00] TO BUS 300136 [4MEMORALT 138.00] CKT 1 OPEN BRANCH FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1 OPEN BRANCH FROM BUS 300136 [4MEMORALT 138.00] TO BUS 301541 [4MEMORAL 138.00] CKT 1 REMOVE LOAD 1 FROM BUS 301541 [4MEMORAL 138.00]	FALSE	0.8559	0.8842	0.886
24W	P1	301372 4LUTHERD 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300135 [4LUTHER 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1	FALSE	0.8559	0.8559	0.8557
24W	P1	301372 4LUTHERD 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1	FALSE	0.8559	0.8756	0.8761
24W	P1	301372 4LUTHERD 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300135 [4LUTHER 138.00] TO BUS 300136 [4MEMORALT 138.00] CKT 1	FALSE	0.8559	0.8842	0.886
24W	P1	301372 4LUTHERD 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300135 [4LUTHER 138.00] TO BUS 301372 [4LUTHERD 138.00] CKT 1	FALSE	0.8559	0.8559	0.8557
24W	P1	301372 4LUTHERD 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1	FALSE	0.8559	0.8756	0.8761
24W	P1	301497 5KINGDMB2 161.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300090 [5KINGDMB1 161.00] TO BUS 301497 [5KINGDMB2 161.00] CKT Z1	FALSE	0.8868	0.8868	0.8871

2024 Limited Operations Study - P0-P1-P2 Low Voltages

*Maximum top 10 worst outage conditions reported based on Vcont (p.u.)

Scenario	Event	Monitored Facility	Area	Min Volt Limit (p.u.)	Max Volt Limit (p.u.)	Contingency*	Impact	Min Base Vcont (p.u.)	Base Vcont (p.u.)	Project Vcont (p.u.)
24W	P1	301541 4MEMORAL 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1	FALSE	0.8743	0.8743	0.8747
24W	P1	301541 4MEMORAL 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300136 [4MEMORALT 138.00] TO BUS 514906 [JNSKAMO4 138.00] CKT 1	FALSE	0.8743	0.8743	0.8747
24W	P1	301552 5PLATCTY 161.00	AECI	0.9	1.05	OPEN LINE FROM BUS 301552 [5PLATCTY 161.00] TO BUS 541221 [PLTCTY 5 161.00] CKT Z1	FALSE	0.8449	0.8449	0.8488

2024 Limited Operations Study - P0-P1-P2 High Voltages

*Maximum top 10 worst outage conditions reported based on Vcont (p.u.)

Scenario	Event	Monitored Facility	Area	Min Volt Limit (p.u.)	Max Volt Limit (p.u.)	Contingency*	Impact	Max Base Vcont (p.u.)	Base Vcont (p.u.)	Project Vcont (p.u.)
24L	P1	300241 2ATCHISN 69.000	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300049 [7THOMHL 345.00] TO BUS 301503 [7THOMHLGSU3 345.00] CKT 1 OPEN BRANCH FROM BUS 300003 [1THLG3 24.000] TO BUS 301503 [7THOMHLGSU3 345.00] CKT 3 REMOVE LOAD P3 FROM BUS 300003 [1THLG3 24.000] REMOVE MACHINE 1 FROM BUS 300003 [1THLG3 24.000]	FALSE	1.068		1.055
24L	P1	300241 2ATCHISN 69.000	AECI	0.9	1.05	OPEN LINE FROM BUS 300049 [7THOMHL 345.00] TO BUS 301503 [7THOMHLGSU3 345.00] CKT 1	FALSE	1.068		1.055
24L	P1	300241 2ATCHISN 69.000	AECI	0.9	1.05	OPEN LINE FROM BUS 300073 [5GENTRY 161.00] TO BUS 300076 [5FAIRPTB2 161.00] CKT 1	FALSE	1.068		1.056
24L	P1	300241 2ATCHISN 69.000	AECI	0.9	1.05	OPEN LINE FROM BUS 301503 [7THOMHLGSU3 345.00] TO BUS 300003 [1THLG3 24.000] CKT 3	FALSE	1.068		1.055
24L	P1	300241 2ATCHISN 69.000	AECI	0.9	1.05	OPEN LINE FROM BUS 532772 [STRANGR7 345.00] TO BUS 532779 [SLDR_CK_WF7 345.00] CKT 1	FALSE	1.068		1.055
24L	P1	300267 2STANBR 69.000	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300039 [7FAIRPT 345.00] TO BUS 541199 [ST JOE 7 345.00] CKT 1 OPEN BRANCH FROM BUS 300039 [7FAIRPT 345.00] TO BUS 640139 [COOPER 3 345.00] CKT 1	FALSE	1.069		1.051
24L	P1	300270 2CLYDE 69.000	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300039 [7FAIRPT 345.00] TO BUS 541199 [ST JOE 7 345.00] CKT 1 OPEN BRANCH FROM BUS 300039 [7FAIRPT 345.00] TO BUS 640139 [COOPER 3 345.00] CKT 1	FALSE	1.070	1.053	1.056
24L	P1	301476 4OLDMARS 138.00	AECI	0.9	1.05	OPEN BRANCH FROM BUS 300049 [7THOMHL 345.00] TO BUS 301503 [7THOMHLGSU3 345.00] CKT 1 OPEN BRANCH FROM BUS 300003 [1THLG3 24.000] TO BUS 301503 [7THOMHLGSU3 345.00] CKT 3 REMOVE LOAD P3 FROM BUS 300003 [1THLG3 24.000] REMOVE MACHINE 1 FROM BUS 300003 [1THLG3 24.000]	FALSE	1.089	1.055	1.053
24L	P1	301476 4OLDMARS 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 300049 [7THOMHL 345.00] TO BUS 301503 [7THOMHLGSU3 345.00] CKT 1	FALSE	1.089	1.055	1.053
24L	P1	301476 4OLDMARS 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 301503 [7THOMHLGSU3 345.00] TO BUS 300003 [1THLG3 24.000] CKT 3	FALSE	1.089	1.055	1.053
24L	P1	301476 4OLDMARS 138.00	AECI	0.9	1.05	OPEN LINE FROM BUS 532772 [STRANGR7 345.00] TO BUS 532779 [SLDR_CK_WF7 345.00] CKT 1	FALSE	1.089		1.052