Appendix E

Power Flow Analysis Results

Power Flow Results Table Heading Descriptions

Case Name	Description
08hs-pre	2008 Heavy Summer Commercial Operation Date Pre-Project Case
08hs-pst	2008 Heavy Summer Commercial Operation Date Post-Project Case
08lw-pre	2008/09 Light Winter Commercial Operation Date Pre-Project Case
08lw-pst	2008/09 Light Winter Commercial Operation Date Post-Project Case
12hs-pre	2012 Heavy Summer Future Year Pre-Project Case
12hs-pst	2012 Heavy Summer Future Year Post-Project Case

2008 Commercial Operation Date Thermal Loading

Category A MVA1 Per Unit Loading

2008 Commercial Operation Date Category A MVA1 pu Loading				Case Name			
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**08hs-pre**	**08hs-pst**	**08lw-pre**	**08lw-pst**
LINE BLYTHE 161kV-BUCKBLVD 161kV ck1	Base system (n-0)	400	440	1.17	1.17		
LINE CTRYCLUB 230kV-LINCSTRT 230kV ck1	Base system (n-0)	557	785	1.03	1.03		
LINE JOJOBA 500kV-KYRENE 500kV ck1	Base system (n-0)	1732	1905	1.05	1.05		
LINE LAGUNATP 69kV-LAGUNA 69kV ck1	Base system (n-0)	39	39	1.52	1.52		
LINE RUDD 230kV-WHITETNK 230kV ck1	Base system (n-0)	725	796	1.03	1.03		
LINE SHANDIN 115kV-TAP902 115kV ck1	Base system (n-0)	109	165	1.10	1.10		
LINE SYLMAR1 230kV-SYLMAR S 230kV ck1	Base system (n-0)	1100	1100			1.00	1.00
LINE SYLMAR1 230kV-SYLMAR S 230kV ck1	Base system (n-0)	1550	1550	1.05	1.05		
LINE SYLMAR2 230kV-SYLMARLA 230kV ck2	Base system (n-0)	1550	1550	1.02	1.02		
LINE YAVAPAI 230kV-VERDE 230kV ck1	Base system (n-0)	320	320	1.03	1.03		
TRAN BLKMSA34 69kV-BLK MESA 230kV ck1	Base system (n-0)	40	44	1.10	1.10		
TRAN BLKMSA34 69kV-BLK MESA 230kV ck2	Base system (n-0)	40	44	1.05	1.05		
TRAN DMP6 13.8kV-DMP 138kV ck1	Base system (n-0)	50	60	1.04	1.04		
TRAN INYO 115kV-INYO PS 115kV ck1	Base system (n-0)	56	62			1.20	1.20
TRAN TUCSON 138kV-TUCSON 47.200001kV ck1	Base system (n-0)	100	120	1.08	1.08		
TRAN VALNCIA1 13.2kV-VALNCIA 115kV ck1	Base system (n-0)	20	22	1.07	1.07		
TRAN VALNCIA2 13.2kV-VALNCIA 115kV ck1	Base system (n-0)	20	22	1.07	1.07		

Category B MVA1 Per Unit Loading

2008 Commercial Operation Date Category B MVA1 pu Loading				Case Name			
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**08hs-pre**	**08hs-pst**	**08lw-pre**	**08lw-pst**
LINE BERNARDO 69kV-FELCTATP 69kV ck1	line WIND-ML 500kV SPS6.2	102	108	0.99	1.05[1]		
LINE BERNARDO 69kV-FELCTATP 69kV ck1	line IV-WIND 500kV SPS6.2	102	108	0.98	1.04[1]		
LINE BERNARDO 69kV-FELCTATP 69kV ck1	line WIND-ML 500kV SPS6.2 trip ML-TJI	102	108	0.95	1.01[1]		
LINE BERNARDO 69kV-FELCTATP 69kV ck1	line IV-WIND 500kV SPS6.2 trip ML-TJI	102	108	0.95	1.00[1]		
LINE BLYTHE 161kV-NILAND 161kV ck1	line N.GILA to IMPRLVLY 500 ck 1	165	165	1.05	1.05		
LINE DIVISION 69kV-NAVSTMTR 69kV ck1	tran SOUTHBAY 69 to SOUTHBAY 138 ck 1	97	100	1.36	1.36[2]		
LINE DIVISION 69kV-NAVSTMTR 69kV ck1	tran MIGUEL 69 to MIGUEL 230 ck 1	97	100	1.12	1.12[2]		
LINE DIVISION 69kV-NAVSTMTR 69kV ck1	tran MIGUEL 69 to MIGUEL 230 ck 2	97	100	1.12	1.12[2]		
LINE DIVISION 69kV-NAVSTMTR 69kV ck1	line IV-WIND 500kV SPS6.2	97	100	1.06	1.06[2]		
LINE DIVISION 69kV-NAVSTMTR 69kV ck1	line WIND-ML 500kV SPS6.2	97	100	1.06	1.06[2]		
LINE DIVISION 69kV-NAVSTMTR 69kV ck1	line WABASH to MAIN ST 69 ck 1	97	100	1.02	1.02[2]		
LINE ELCENTRO 230kV-IMPRLVLY 230kV ck1	line IV-WIND 500kV	215	259	1.41	1.41		
LINE ELCENTRO 230kV-IMPRLVLY 230kV ck1	line WIND-ML 500kV	215	259	1.41	1.41		
LINE ELCENTRO 230kV-IMPRLVLY 230kV ck1	line IV - WIND	215	259	1.41	1.41		
LINE ELCENTRO 230kV-IMPRLVLY 230kV ck1	line WIND-ML 500kV SPS6.2	215	259	1.40	1.40		
LINE ELCENTRO 230kV-IMPRLVLY 230kV ck1	line IV-WIND 500kV SPS6.2	215	259	1.39	1.39		
LINE ELCENTRO 230kV-IMPRLVLY 230kV ck1	line IMPRLVLY to ROA-230 230 ck 1	215	259	1.15	1.14		
LINE ELCENTRO 230kV-IMPRLVLY 230kV ck1	tran IMPRLVLY 230 to IMPRLVLY 500 ck 1	215	259	1.12	1.11		
LINE ELCENTRO 230kV-IMPRLVLY 230kV ck1	line MIGUEL to TJI-230 230 ck 1	215	259	1.08	1.08		
LINE ELCENTRO 230kV-IMPRLVLY 230kV ck1	tran N.GILA 500 to N.GILA 69 ck 1	215	259	1.05	1.05		
LINE ELCENTRO 230kV-IMPRLVLY 230kV ck1	tran IMPRLVLY 230 to IMPRLVLY 500 ck 2	215	259	1.02	1.02		
LINE ELCENTRO 230kV-IMPRLVLY 230kV ck1	tran MIGUEL 230 to MIGUELMP 500 ck 1	215	259	1.03	1.02		
LINE ELCENTRO 230kV-IMPRLVLY 230kV ck1	tran MIGUEL 230 to MIGUEL 500 ck 2	215	259	1.02	1.02		
LINE ELCENTRO 230kV-IMPRLVLY 230kV ck1	line OTAYMESA to OLD TOWN 230	215	259	1.01	1.01		
LINE IMPRLVLY 230kV-ROA-230 230kV ck1	line IV-WIND 500kV	796	1036	1.31	1.31		

[1] No mitigation proposed because overload is less than MVA2.
[2] A project is planned for 2009 to eliminate the overload. A variation in generation dispatch will eliminate the overload until then. (The intent of these cases was to stress the northern area of SDG&E's system.)

2008 Commercial Operation Date Category B MVA1 pu Loading				Case Name			
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**08hs-pre**	**08hs-pst**	**08lw-pre**	**08lw-pst**
LINE IMPRLVLY 230kV-ROA-230 230kV ck1	line WIND-ML 500kV	796	1036	1.31	1.31		
LINE IMPRLVLY 230kV-ROA-230 230kV ck1	line IV - WIND	796	1036	1.31	1.31		
LINE JOJOBA 500kV-KYRENE 500kV ck1	line HASSYAMP to N.GILA 500 ck 1	1732	1905	1.11	1.11		
LINE JOJOBA 500kV-KYRENE 500kV ck1	line N.GILA to IMPRLVLY 500 ck 1	1732	1905	1.09	1.09		
LINE JOJOBA 500kV-KYRENE 500kV ck1	line IV-WIND 500kV	1732	1905	1.08	1.08		
LINE JOJOBA 500kV-KYRENE 500kV ck1	line WIND-ML 500kV	1732	1905	1.08	1.08		
LINE JOJOBA 500kV-KYRENE 500kV ck1	line IV - WIND	1732	1905	1.08	1.08		
LINE JOJOBA 500kV-KYRENE 500kV ck1	line IV-WIND 500kV SPS6.2	1732	1905	1.07	1.07		
LINE JOJOBA 500kV-KYRENE 500kV ck1	line WIND-ML 500kV SPS6.2	1732	1905	1.07	1.07		
LINE JOJOBA 500kV-KYRENE 500kV ck1	IMPRLVLY-EL CENTRO 230kV SPS6.5 c	1732	1905	1.03	1.03		
LINE JOJOBA 500kV-KYRENE 500kV ck1	IMPRLVLY-EL CENTRO 230kV SPS6.5 d	1732	1905	1.03	1.03		
LINE JOJOBA 500kV-KYRENE 500kV ck1	ML BK80/81 SPS6.6 c	1732	1905	1.03	1.03		
LINE JOJOBA 500kV-KYRENE 500kV ck1	ML BK80/81 SPS6.6 d	1732	1905	1.03	1.03		
LINE JOJOBA 500kV-KYRENE 500kV ck1	IMPRLVLY-EL CENTRO 230kV SPS6.5 e	1732	1905	1.02	1.02		
LINE JOJOBA 500kV-KYRENE 500kV ck1	IMPRLVLY-EL CENTRO 230kV SPS6.5 f	1732	1905	1.02	1.02		
LINE JOJOBA 500kV-KYRENE 500kV ck1	IMPRLVLY-EL CENTRO 230kV SPS6.5 g	1732	1905	1.02	1.02		
LINE JOJOBA 500kV-KYRENE 500kV ck1	ML BK80/81 SPS6.6 e	1732	1905	1.02	1.02		
LINE JOJOBA 500kV-KYRENE 500kV ck1	ML BK80/81 SPS6.6 f	1732	1905	1.02	1.02		
LINE KEARNY 69kV-MISSION 69kV ck1	line MESAHGTS to MISSION 69 ck 1	97	129	1.15	1.15		
LINE LAGUNATP 69kV-LAGUNA 69kV ck1	line HASSYAMP to N.GILA 500 ck 1	39	39	1.56	1.56		
LINE LAGUNATP 69kV-LAGUNA 69kV ck1	tran N.GILA 500 to N.GILA 69 ck 1	39	39	1.54	1.54		
LINE LAGUNATP 69kV-LAGUNA 69kV ck1	line IV-WIND 500kV SPS6.2	39	39	1.51	1.51		
LINE LAGUNATP 69kV-LAGUNA 69kV ck1	line WIND-ML 500kV SPS6.2	39	39	1.51	1.51		
LINE LAGUNATP 69kV-LAGUNA 69kV ck1	line IMPRLVLY to ELCENTRO 230 ck 1	39	39	1.51	1.51		
LINE LAGUNATP 69kV-LAGUNA 69kV ck1	IMPRLVLY-EL CENTRO 230kV SPS6.5 a	39	39	1.51	1.51		
LINE LAGUNATP 69kV-LAGUNA 69kV ck1	line N.GILA to IMPRLVLY 500 ck 1	39	39	1.50	1.50		
LINE LILAC 69kV-PALA 69kV ck1	line AVOCADO to MNSRATTP 69 ck 1	71	71	0.42	1.73	0.60	1.89
LINE LILAC 69kV-PALA 69kV ck1	line IV-WIND 500kV SPS6.2	71	71	0.47	1.15		
LINE LILAC 69kV-PALA 69kV ck1	line WIND-ML 500kV SPS6.2	71	71	0.47	1.15		
LINE LILAC 69kV-PALA 69kV ck1	line IV-WIND 500kV SPS6.2 trip ML-TJI	71	71	0.45	1.13		
LINE LILAC 69kV-PALA 69kV ck1	line WIND-ML 500kV SPS6.2 trip ML-TJI	71	71	0.46	1.13		
LINE LILAC 69kV-PALA 69kV ck1	line TL23011 trip SM load SPS a	71	71	0.41	1.07		

2008 Commercial Operation Date Category B MVA1 pu Loading				Case Name			
Monitored Element	Contingency Description	MVA1	MVA2	08hs-pre	08hs-pst	08lw-pre	08lw-pst
LINE LILAC 69kV-PALA 69kV ck1	line IV-WIND 500kV SPS6.1	71	71	0.39	1.06		
LINE LILAC 69kV-PALA 69kV ck1	line WIND-ML 500kV SPS6.1	71	71	0.39	1.06		
LINE LILAC 69kV-PALA 69kV ck1	gen PEN 1/2/3 18.00	71	71	0.38	1.05	0.36	1.02
LINE LILAC 69kV-PALA 69kV ck1	line IV-WIND 500kV	71	71	0.37	1.05		
LINE LILAC 69kV-PALA 69kV ck1	line WIND-ML 500kV	71	71	0.37	1.05		
LINE LILAC 69kV-PALA 69kV ck1	line N.GILA to IMPRLVLY 500 ck 1	71	71	0.35	1.02		
LINE LILAC 69kV-PALA 69kV ck1	line HASSYAMP to N.GILA 500 ck 1	71	71	0.36	1.02		
LINE LILAC 69kV-PALA 69kV ck1	tran ESCNDIDO 69 to ESCNDIDO 230 ck 1	71	71	0.36	1.02		
LINE LILAC 69kV-PALA 69kV ck1	tran ESCNDIDO 69 to ESCNDIDO 230 ck 2	71	71	0.36	1.02		
LINE LILAC 69kV-PALA 69kV ck1	tran ESCNDIDO 69 to ESCNDIDO 230 ck 3	71	71	0.36	1.02		
LINE LILAC 69kV-PALA 69kV ck1	line ASH to ASH TP 69 ck 1	71	71	0.37	1.01		
LINE LILAC 69kV-PALA 69kV ck1	line ESCNDIDO to LILAC 69 ck 1	71	71	0.57	1.01		
LINE LILAC 69kV-PALA 69kV ck1	line AVCADOTP to AVOCADO 69 ck 1	71	71			0.29	1.06
LINE LILAC 69kV-PALA 69kV ck1	line MONSRATE to MORHILTP 69 ck 1	71	71			0.28	1.05
LINE LILAC 69kV-PALA 69kV ck1	line PENDLETN to SANLUSRY 69 ck 1	71	71			0.25	1.02
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	line MELROSE to SANLUSRY 69 ck 1	97	111	1.09	1.09		
LINE MESAHGTS 69kV-MISSION 69kV ck1	line KEARNY to MISSION 69 ck 1	97	136	1.22	1.22		
LINE MIGUEL 230kV-TJI-230 230kV ck1	line IV-WIND 500kV	796	830	1.01	1.01		
LINE MIGUEL 230kV-TJI-230 230kV ck1	line WIND-ML 500kV	796	830	1.01	1.01		
LINE MIGUEL 230kV-TJI-230 230kV ck1	line IV - WIND	796	830	1.01	1.01		
LINE MONSRATE 69kV-AVCADOTP 69kV ck1	line LILAC to PALA 69 ck 1	51	51			0.29	1.10
LINE MONSRATE 69kV-MNSRATTP 69kV ck1	line LILAC to PALA 69 ck 1	77	77	0.21	1.36	0.47	1.60
LINE PALA 69kV-MNSRATTP 69kV ck1	line LILAC to PALA 69 ck 1	68	68	0.44	1.80	0.63	1.97
LINE PALA 69kV-MNSRATTP 69kV ck1	line ESCNDIDO to LILAC 69 ck 1	68	68			0.30	1.18
LINE PALA 69kV-MNSRATTP 69kV ck1	line RINCON to LILAC 69 ck 1	68	68			0.39	1.10
LINE PALA 69kV-MNSRATTP 69kV ck1	line PEN to ESCNDIDO 230	68	68			0.34	1.06
LINE PALA 69kV-MNSRATTP 69kV ck1	line TL23011 trip SM load SPS a	68	68			0.38	1.03
LINE PALA 69kV-MNSRATTP 69kV ck1	line ESCNDIDO to SANMRCOS 69 ck 1	68	68			0.38	1.03
LINE PALA 69kV-MNSRATTP 69kV ck1	tran SANLUSRY 69 to SANLUSRY 230 ck 1	68	68			0.39	1.03
LINE PALA 69kV-MNSRATTP 69kV ck1	tran SANLUSRY 69 to SANLUSRY 230 ck 2	68	68			0.39	1.03
LINE PALA 69kV-MNSRATTP 69kV ck1	line TL23011 trip SM load SPS b	68	68			0.38	1.03
LINE PALA 69kV-MNSRATTP 69kV ck1	line SYCAMORE to PEN 230 ck 1	68	68			0.36	1.02

2008 Commercial Operation Date Category B MVA1 pu Loading				Case Name			
Monitored Element	Contingency Description	MVA1	MVA2	08hs-pre	08hs-pst	08lw-pre	08lw-pst
LINE PALA 69kV-MNSRATTP 69kV ck1	line WARNERS to RINCON 69 ck 1	68	68			0.36	1.02
LINE PALA 69kV-MNSRATTP 69kV ck1	line BERNARDO to BERNDOTP 69 ck 1	68	68			0.35	1.01
LINE PALA 69kV-MNSRATTP 69kV ck1	line BERNARDO to FELCTATP 69 ck 1	68	68			0.35	1.01
LINE PALA 69kV-MNSRATTP 69kV ck1	line WARNERS to SANTYSBL 69 ck 1	68	68			0.35	1.01
LINE PALA 69kV-MNSRATTP 69kV ck1	line RINCON to VALCNTR 69 ck 1	68	68			0.33	1.01
LINE PALA 69kV-MNSRATTP 69kV ck1	line SHADOWR to ESCNDO50 138 ck 1	68	68			0.34	1.00
LINE PALA 69kV-MNSRATTP 69kV ck1	tran ESCNDO50 138 to ESCNDIDO 69 ck 2	68	68			0.34	1.00
LINE PALOVRDE 500kV-DEVERS 500kV ck1	line HASSYAMP to N.GILA 500 ck 1	3420	4615	1.17	1.17		
LINE PALOVRDE 500kV-DEVERS 500kV ck1	line IV-WIND 500kV SPS6.2	3420	4615	1.13	1.13		
LINE PALOVRDE 500kV-DEVERS 500kV ck1	line WIND-ML 500kV SPS6.2	3420	4615	1.13	1.13		
LINE PALOVRDE 500kV-DEVERS 500kV ck1	line N.GILA to IMPRLVLY 500 ck 1	3420	4615	1.12	1.12		
LINE PALOVRDE 500kV-DEVERS 500kV ck1	line IV-WIND 500kV	3420	4615	1.10	1.10		
LINE PALOVRDE 500kV-DEVERS 500kV ck1	line WIND-ML 500kV	3420	4615	1.10	1.10		
LINE PALOVRDE 500kV-DEVERS 500kV ck1	line IV - WIND	3420	4615	1.10	1.10		
LINE PALOVRDE 500kV-RUDD 500kV ck1	line HASSYAMP to N.GILA 500 ck 1	1732	2217	1.08	1.08		
LINE PALOVRDE 500kV-RUDD 500kV ck1	line N.GILA to IMPRLVLY 500 ck 1	1732	2217	1.06	1.06		
LINE PALOVRDE 500kV-RUDD 500kV ck1	line IV-WIND 500kV	1732	2217	1.04	1.04		
LINE PALOVRDE 500kV-RUDD 500kV ck1	line WIND-ML 500kV	1732	2217	1.04	1.04		
LINE PALOVRDE 500kV-RUDD 500kV ck1	line IV - WIND	1732	2217	1.04	1.04		
LINE PALOVRDE 500kV-RUDD 500kV ck1	line IV-WIND 500kV SPS6.2	1732	2217	1.03	1.03		
LINE PALOVRDE 500kV-RUDD 500kV ck1	line WIND-ML 500kV SPS6.2	1732	2217	1.03	1.03		
LINE PENSQTOS 230kV-ENCINA 230kV ck1	line IV-WIND 500kV SPS6.2	691	912	1.41	1.45		
LINE PENSQTOS 230kV-ENCINA 230kV ck1	line WIND-ML 500kV SPS6.2	691	912	1.42	1.45		
LINE PENSQTOS 230kV-ENCINA 230kV ck1	line IV-WIND 500kV SPS6.1	691	912	1.05	1.08		
LINE PENSQTOS 230kV-ENCINA 230kV ck1	line WIND-ML 500kV SPS6.1	691	912	1.05	1.08		
LINE PENSQTOS 69kV-DELMARTP 69kV ck1	line PENSQTOS to TOREYPNS 69 ck 1	97	129	1.10	1.09		
LINE ROA-230 230kV-HRD-230 230kV ck1	line IV-WIND 500kV	388	430	1.16	1.16		
LINE ROA-230 230kV-HRD-230 230kV ck1	line WIND-ML 500kV	388	430	1.16	1.16		
LINE ROA-230 230kV-HRD-230 230kV ck1	line IV - WIND	388	430	1.16	1.16		
LINE ROA-230 230kV-RUM-230 230kV ck1	line IV-WIND 500kV	388	430	1.41	1.42		
LINE ROA-230 230kV-RUM-230 230kV ck1	line IV - WIND	388	430	1.41	1.42		
LINE ROA-230 230kV-RUM-230 230kV ck1	line WIND-ML 500kV	388	430	1.41	1.41		

2008 Commercial Operation Date Category B MVA1 pu Loading				Case Name			
Monitored Element	Contingency Description	MVA1	MVA2	08hs-pre	08hs-pst	08lw-pre	08lw-pst
LINE ROA-230 230kV-RUM-230 230kV ck1	line IV-WIND 500kV SPS6.1	388	430	1.07	1.07		
LINE ROA-230 230kV-RUM-230 230kV ck1	line WIND-ML 500kV SPS6.1	388	430	1.07	1.07		
LINE RUDD 230kV-WHITETNK 230kV ck1	line IV-WIND 500kV	725	796	1.05	1.05		
LINE RUDD 230kV-WHITETNK 230kV ck1	line WIND-ML 500kV	725	796	1.05	1.05		
LINE RUDD 230kV-WHITETNK 230kV ck1	line N.GILA to IMPRLVLY 500 ck 1	725	796	1.05	1.05		
LINE RUDD 230kV-WHITETNK 230kV ck1	line HASSYAMP to N.GILA 500 ck 1	725	796	1.05	1.05		
LINE RUDD 230kV-WHITETNK 230kV ck1	line IV - WIND	725	796	1.05	1.05		
LINE RUDD 230kV-WHITETNK 230kV ck1	line IV-WIND 500kV SPS6.2	725	796	1.04	1.04		
LINE RUDD 230kV-WHITETNK 230kV ck1	line WIND-ML 500kV SPS6.2	725	796	1.04	1.04		
LINE RUDD 230kV-WHITETNK 230kV ck1	ML BK80/81 SPS6.6 d	725	796	1.02	1.02		
LINE RUDD 230kV-WHITETNK 230kV ck1	IMPRLVLY-EL CENTRO 230kV SPS6.5 d	725	796	1.01	1.01		
LINE RUDD 230kV-WHITETNK 230kV ck1	IMPRLVLY-EL CENTRO 230kV SPS6.5 e	725	796	1.01	1.01		
LINE RUDD 230kV-WHITETNK 230kV ck1	IMPRLVLY-EL CENTRO 230kV SPS6.5 f	725	796	1.01	1.01		
LINE RUDD 230kV-WHITETNK 230kV ck1	IMPRLVLY-EL CENTRO 230kV SPS6.5 g	725	796	1.01	1.01		
LINE RUDD 230kV-WHITETNK 230kV ck1	ML BK80/81 SPS6.6 e	725	796	1.01	1.01		
LINE RUDD 230kV-WHITETNK 230kV ck1	ML BK80/81 SPS6.6 f	725	796	1.01	1.01		
LINE RUM-230 230kV-HRD-230 230kV ck1	line IV-WIND 500kV	388	430	1.24	1.24		
LINE RUM-230 230kV-HRD-230 230kV ck1	line WIND-ML 500kV	388	430	1.24	1.24		
LINE RUM-230 230kV-HRD-230 230kV ck1	line IV - WIND	388	430	1.24	1.24		
LINE SANLUSRY 230kV-MISSION 230kV ck1	line IV-WIND 500kV SPS6.2	456	557	1.08	1.10		
LINE SANLUSRY 230kV-MISSION 230kV ck1	line WIND-ML 500kV SPS6.2	456	557	1.08	1.10		
LINE SANLUSRY 230kV-MISSION 230kV ck2	line IV-WIND 500kV SPS6.2	456	557	1.08	1.10		
LINE SANLUSRY 230kV-MISSION 230kV ck2	line WIND-ML 500kV SPS6.2	456	557	1.08	1.10		
LINE SANLUSRY 230kV-S.ONOFRE 230kV ck3	line IV-WIND 500kV SPS6.2	912	1150	1.11	1.11		
LINE SANLUSRY 230kV-S.ONOFRE 230kV ck3	line WIND-ML 500kV SPS6.2	912	1150	1.11	1.11		
LINE SYCAMORE 69kV-SCRIPPS 69kV ck1	line PENSQTOS to MESA RIM 69 ck 1	102	136	1.06	1.08		
LINE SYLMAR1 230kV-SYLMAR S 230kV ck1	line IV-WIND 500kV SPS6.1	1550	1550	1.07	1.07		
LINE SYLMAR1 230kV-SYLMAR S 230kV ck1	line IV-WIND 500kV SPS6.2	1550	1550	1.07	1.07		
LINE SYLMAR1 230kV-SYLMAR S 230kV ck1	line WIND-ML 500kV SPS6.1	1550	1550	1.07	1.07		
LINE SYLMAR1 230kV-SYLMAR S 230kV ck1	line WIND-ML 500kV SPS6.2	1550	1550	1.07	1.07		
LINE SYLMAR2 230kV-SYLMARLA 230kV ck2	line IV-WIND 500kV SPS6.2	1550	1550	1.03	1.03		
LINE SYLMAR2 230kV-SYLMARLA 230kV ck2	line WIND-ML 500kV SPS6.2	1550	1550	1.03	1.03		

2008 Commercial Operation Date Category B MVA1 pu Loading				Case Name			
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**08hs-pre**	**08hs-pst**	**08lw-pre**	**08lw-pst**
LINE WARNERS 69kV-RINCON 69kV ck1	line WIND-ML 500kV SPS6.2	32	32	0.99	1.12[3]		
LINE WARNERS 69kV-RINCON 69kV ck1	line IV-WIND 500kV SPS6.2	32	32	0.99	1.11[3]		
LINE WARNERS 69kV-RINCON 69kV ck1	line WIND-ML 500kV SPS6.2 trip ML-TJI	32	32	0.96	1.09[3]		
LINE WARNERS 69kV-RINCON 69kV ck1	line IV-WIND 500kV SPS6.2 trip ML-TJI	32	32	0.95	1.08[3]		
LINE YAVAPAI 230kV-VERDE 230kV ck1	line IV-WIND 500kV SPS6.2	320	320	1.01	1.01		
LINE YAVAPAI 230kV-VERDE 230kV ck1	line WIND-ML 500kV SPS6.2	320	320	1.01	1.01		
TRAN ENCINA 5 24kV-ENCINA 230kV ck1	line WIND-ML 500kV SPS6.2	355	355	1.00	1.00		
TRAN HRD-230 230kV-HRD-69 69kV ck1	line IV-WIND 500kV	225	225	1.06	1.06		
TRAN HRD-230 230kV-HRD-69 69kV ck1	line WIND-ML 500kV	225	225	1.06	1.06		
TRAN HRD-230 230kV-HRD-69 69kV ck1	line IV - WIND	225	225	1.06	1.06		
TRAN MIGUEL 230kV-MIGUEL 500kV ck2	tran MIGUEL 230 to MIGUELMP 500 ck 1	1120	1344	1.16	1.16		
TRAN MIGUEL 230kV-MIGUEL 500kV ck2	ML BK80/81 SPS6.6 a	1120	1344	1.12	1.12		
TRAN MIGUEL 230kV-MIGUEL 500kV ck2	ML BK80/81 SPS6.6 b	1120	1344	1.09	1.09		
TRAN MIGUEL 230kV-MIGUEL 500kV ck2	ML BK80/81 SPS6.6 c	1120	1344	1.05	1.05		
TRAN MIGUEL 230kV-MIGUEL 500kV ck2	ML BK80/81 SPS6.6 d	1120	1344	1.00	1.01		
TRAN MIGUEL 230kV-MIGUELMP 500kV ck1	tran MIGUEL 230 to MIGUEL 500 ck 2	1120	1329	1.17	1.17		
TRAN MIGUEL 500kV-MIGUELMP 500kV ck1	tran MIGUEL 230 to MIGUEL 500 ck 2	1120	1329	1.17	1.17		
TRAN MIGUEL 69kV-MIGUEL 230kV ck1	tran MIGUEL 69 to MIGUEL 230 ck 2	224	305	1.11	1.11		
TRAN MIGUEL 69kV-MIGUEL 230kV ck2	tran MIGUEL 69 to MIGUEL 230 ck 1	224	305	1.11	1.11		
TRAN OLD TOWN 69kV-OLD TOWN 230kV ck1	tran OLD TOWN 69 to OLD TOWN 230 ck 2	224	263	1.00	1.00		
TRAN OLD TOWN 69kV-OLD TOWN 230kV ck2	tran OLD TOWN 69 to OLD TOWN 230 ck 1	224	239	1.00	1.00		
TRAN OTAY_93 69kV-OTAY_46A 13.8kV ck1	line OTAY - OTAY_93	150	150	4.16	4.16		
TRAN PENSQTOS 230kV-PENSQTOS 69kV ck2	tran PENSQTOS 230 to PENSQTOS 69 ck 1	224	269	0.99	1.01[4]		
TRAN SANLUSRY 69kV-SANLUSRY 230kV ck1	tran SANLUSRY 69 to SANLUSRY 230 ck 2	224	269	1.11	1.03		
TRAN SANLUSRY 69kV-SANLUSRY 230kV ck2	tran SANLUSRY 69 to SANLUSRY 230 ck 1	224	269	1.11	1.03		
TRAN SYCAMORE 230kV-SYCAMORE 69kV ck1	tran SYCAMORE 230 to SYCAMORE 69 ck 2	224	285	1.06	1.05		
TRAN SYCAMORE 230kV-SYCAMORE 69kV ck2	tran SYCAMORE 230 to SYCAMORE 69 ck 1	224	269	1.05	1.04		

[3] Most likely, this overload would not be evident when the system is properly re-dispatched with the tripping of the Imperial Valley generators.
[4] No mitigation proposed because overload is less than MVA2.

Category B MVA2 Per Unit Loading

2008 Commercial Operation Date Category B MVA2 pu Loading				Case Name			
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**08hs-pre**	**08hs-pst**	**08lw-pre**	**08lw-pst**
LINE BLYTHE 161kV-NILAND 161kV ck1	line N.GILA to IMPRLVLY 500 ck 1	165	165	1.05	1.05		
LINE DIVISION 69kV-NAVSTMTR 69kV ck1	tran SOUTHBAY 69 to SOUTHBAY 138 ck 1	97	100	1.32	1.32[5]		
LINE DIVISION 69kV-NAVSTMTR 69kV ck1	tran MIGUEL 69 to MIGUEL 230 ck 1	97	100	1.09	1.09[5]		
LINE DIVISION 69kV-NAVSTMTR 69kV ck1	tran MIGUEL 69 to MIGUEL 230 ck 2	97	100	1.09	1.09[5]		
LINE DIVISION 69kV-NAVSTMTR 69kV ck1	line WIND-ML 500kV SPS6.2	97	100	1.03	1.03[5]		
LINE DIVISION 69kV-NAVSTMTR 69kV ck1	line IV-WIND 500kV SPS6.2	97	100	1.03	1.02[5]		
LINE ELCENTRO 230kV-IMPRLVLY 230kV ck1	line IV-WIND 500kV	215	259	1.17	1.17		
LINE ELCENTRO 230kV-IMPRLVLY 230kV ck1	line WIND-ML 500kV	215	259	1.17	1.17		
LINE ELCENTRO 230kV-IMPRLVLY 230kV ck1	line IV - WIND	215	259	1.17	1.17		
LINE ELCENTRO 230kV-IMPRLVLY 230kV ck1	line WIND-ML 500kV SPS6.2	215	259	1.16	1.16		
LINE ELCENTRO 230kV-IMPRLVLY 230kV ck1	line IV-WIND 500kV SPS6.2	215	259	1.15	1.15		
LINE IMPRLVLY 230kV-ROA-230 230kV ck1	line IV-WIND 500kV	796	1036	1.01	1.01		
LINE IMPRLVLY 230kV-ROA-230 230kV ck1	line WIND-ML 500kV	796	1036	1.00	1.01		
LINE IMPRLVLY 230kV-ROA-230 230kV ck1	line IV - WIND	796	1036	1.01	1.01		
LINE JOJOBA 500kV-KYRENE 500kV ck1	line HASSYAMP to N.GILA 500 ck 1	1732	1905	1.00	1.00		
LINE LAGUNATP 69kV-LAGUNA 69kV ck1	line HASSYAMP to N.GILA 500 ck 1	39	39	1.56	1.56		
LINE LAGUNATP 69kV-LAGUNA 69kV ck1	tran N.GILA 500 to N.GILA 69 ck 1	39	39	1.54	1.54		
LINE LAGUNATP 69kV-LAGUNA 69kV ck1	line IV-WIND 500kV SPS6.2	39	39	1.51	1.51		
LINE LAGUNATP 69kV-LAGUNA 69kV ck1	line WIND-ML 500kV SPS6.2	39	39	1.51	1.51		
LINE LAGUNATP 69kV-LAGUNA 69kV ck1	line IMPRLVLY to ELCENTRO 230 ck 1	39	39	1.51	1.51		
LINE LAGUNATP 69kV-LAGUNA 69kV ck1	IMPRLVLY-EL CENTRO 230kV SPS6.5 a	39	39	1.51	1.51		
LINE LAGUNATP 69kV-LAGUNA 69kV ck1	line N.GILA to IMPRLVLY 500 ck 1	39	39	1.50	1.50		
LINE LILAC 69kV-PALA 69kV ck1	line AVOCADO to MNSRATTP 69 ck 1	71	71	0.42	1.73	0.60	1.89
LINE LILAC 69kV-PALA 69kV ck1	line IV-WIND 500kV SPS6.2	71	71	0.47	1.15		
LINE LILAC 69kV-PALA 69kV ck1	line WIND-ML 500kV SPS6.2	71	71	0.47	1.15		

[5] A project is planned for 2009 to eliminate the overload. A variation in generation dispatch will eliminate the overload until then. (The intent of these cases was to stress the northern area of SDG&E's system.)

2008 Commercial Operation Date Category B MVA2 pu Loading				Case Name			
Monitored Element	Contingency Description	MVA1	MVA2	08hs-pre	08hs-pst	08lw-pre	08lw-pst
LINE LILAC 69kV-PALA 69kV ck1	line IV-WIND 500kV SPS6.2 trip ML-TJI	71	71	0.45	1.13		
LINE LILAC 69kV-PALA 69kV ck1	line WIND-ML 500kV SPS6.2 trip ML-TJI	71	71	0.46	1.13		
LINE LILAC 69kV-PALA 69kV ck1	line TL23011 trip SM load SPS a	71	71	0.41	1.07		
LINE LILAC 69kV-PALA 69kV ck1	line IV-WIND 500kV SPS6.1	71	71	0.39	1.06		
LINE LILAC 69kV-PALA 69kV ck1	line WIND-ML 500kV SPS6.1	71	71	0.39	1.06		
LINE LILAC 69kV-PALA 69kV ck1	gen PEN 1/2/3 18.00	71	71	0.38	1.05	0.36	1.02
LINE LILAC 69kV-PALA 69kV ck1	line IV-WIND 500kV	71	71	0.37	1.05		
LINE LILAC 69kV-PALA 69kV ck1	line WIND-ML 500kV	71	71	0.37	1.05		
LINE LILAC 69kV-PALA 69kV ck1	line N.GILA to IMPRLVLY 500 ck 1	71	71	0.35	1.02		
LINE LILAC 69kV-PALA 69kV ck1	line HASSYAMP to N.GILA 500 ck 1	71	71	0.36	1.02		
LINE LILAC 69kV-PALA 69kV ck1	tran ESCNDIDO 69 to ESCNDIDO 230 ck 1	71	71	0.36	1.02		
LINE LILAC 69kV-PALA 69kV ck1	tran ESCNDIDO 69 to ESCNDIDO 230 ck 2	71	71	0.36	1.02		
LINE LILAC 69kV-PALA 69kV ck1	tran ESCNDIDO 69 to ESCNDIDO 230 ck 3	71	71	0.36	1.02		
LINE LILAC 69kV-PALA 69kV ck1	line ASH to ASH TP 69 ck 1	71	71	0.37	1.01		
LINE LILAC 69kV-PALA 69kV ck1	line ESCNDIDO to LILAC 69 ck 1	71	71	0.57	1.01		
LINE LILAC 69kV-PALA 69kV ck1	line AVCADOTP to AVOCADO 69 ck 1	71	71			0.29	1.06
LINE LILAC 69kV-PALA 69kV ck1	line MONSRATE to MORHILTP 69 ck 1	71	71			0.28	1.05
LINE LILAC 69kV-PALA 69kV ck1	line PENDLETN to SANLUSRY 69 ck 1	71	71			0.25	1.02
LINE MONSRATE 69kV-AVCADOTP 69kV ck1	line LILAC to PALA 69 ck 1	51	51			0.29	1.10
LINE MONSRATE 69kV-MNSRATTP 69kV ck1	line LILAC to PALA 69 ck 1	77	77	0.21	1.36	0.47	1.60
LINE PALA 69kV-MNSRATTP 69kV ck1	line LILAC to PALA 69 ck 1	68	68	0.44	1.80	0.63	1.97
LINE PALA 69kV-MNSRATTP 69kV ck1	line ESCNDIDO to LILAC 69 ck 1	68	68			0.30	1.18
LINE PALA 69kV-MNSRATTP 69kV ck1	line RINCON to LILAC 69 ck 1	68	68			0.39	1.10
LINE PALA 69kV-MNSRATTP 69kV ck1	line PEN to ESCNDIDO 230	68	68			0.34	1.06
LINE PALA 69kV-MNSRATTP 69kV ck1	line TL23011 trip SM load SPS a	68	68			0.38	1.03
LINE PALA 69kV-MNSRATTP 69kV ck1	line ESCNDIDO to SANMRCOS 69 ck 1	68	68			0.38	1.03
LINE PALA 69kV-MNSRATTP 69kV ck1	tran SANLUSRY 69 to SANLUSRY 230 ck 1	68	68			0.39	1.03
LINE PALA 69kV-MNSRATTP 69kV ck1	tran SANLUSRY 69 to SANLUSRY 230 ck 2	68	68			0.39	1.03
LINE PALA 69kV-MNSRATTP 69kV ck1	line TL23011 trip SM load SPS b	68	68			0.38	1.03
LINE PALA 69kV-MNSRATTP 69kV ck1	line SYCAMORE to PEN 230 ck 1	68	68			0.36	1.02
LINE PALA 69kV-MNSRATTP 69kV ck1	line WARNERS to RINCON 69 ck 1	68	68			0.36	1.02
LINE PALA 69kV-MNSRATTP 69kV ck1	line BERNARDO to BERNDOTP 69 ck 1	68	68			0.35	1.01

2008 Commercial Operation Date Category B MVA2 pu Loading				Case Name			
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**08hs-pre**	**08hs-pst**	**08lw-pre**	**08lw-pst**
LINE PALA 69kV-MNSRATTP 69kV ck1	line BERNARDO to FELCTATP 69 ck 1	68	68			0.35	1.01
LINE PALA 69kV-MNSRATTP 69kV ck1	line WARNERS to SANTYSBL 69 ck 1	68	68			0.35	1.01
LINE PALA 69kV-MNSRATTP 69kV ck1	line RINCON to VALCNTR 69 ck 1	68	68			0.33	1.01
LINE PALA 69kV-MNSRATTP 69kV ck1	line SHADOWR to ESCNDO50 138 ck 1	68	68			0.34	1.00
LINE PALA 69kV-MNSRATTP 69kV ck1	tran ESCNDO50 138 to ESCNDIDO 69 ck 2	68	68			0.34	1.00
LINE PENSQTOS 230kV-ENCINA 230kV ck1	line IV-WIND 500kV SPS6.2	691	912	1.07	1.10		
LINE PENSQTOS 230kV-ENCINA 230kV ck1	line WIND-ML 500kV SPS6.2	691	912	1.07	1.10		
LINE ROA-230 230kV-HRD-230 230kV ck1	line IV-WIND 500kV	388	430	1.05	1.05		
LINE ROA-230 230kV-HRD-230 230kV ck1	line WIND-ML 500kV	388	430	1.05	1.05		
LINE ROA-230 230kV-HRD-230 230kV ck1	line IV - WIND	388	430	1.05	1.05		
LINE ROA-230 230kV-RUM-230 230kV ck1	line IV-WIND 500kV	388	430	1.27	1.28		
LINE ROA-230 230kV-RUM-230 230kV ck1	line WIND-ML 500kV	388	430	1.27	1.28		
LINE ROA-230 230kV-RUM-230 230kV ck1	line IV - WIND	388	430	1.27	1.28		
LINE RUM-230 230kV-HRD-230 230kV ck1	line IV-WIND 500kV	388	430	1.12	1.12		
LINE RUM-230 230kV-HRD-230 230kV ck1	line WIND-ML 500kV	388	430	1.12	1.12		
LINE RUM-230 230kV-HRD-230 230kV ck1	line IV - WIND	388	430	1.12	1.12		
LINE SYLMAR1 230kV-SYLMAR S 230kV ck1	line IV-WIND 500kV SPS6.1	1550	1550	1.07	1.07		
LINE SYLMAR1 230kV-SYLMAR S 230kV ck1	line IV-WIND 500kV SPS6.2	1550	1550	1.07	1.07		
LINE SYLMAR1 230kV-SYLMAR S 230kV ck1	line WIND-ML 500kV SPS6.1	1550	1550	1.07	1.07		
LINE SYLMAR1 230kV-SYLMAR S 230kV ck1	line WIND-ML 500kV SPS6.2	1550	1550	1.07	1.07		
LINE SYLMAR2 230kV-SYLMARLA 230kV ck2	line IV-WIND 500kV SPS6.2	1550	1550	1.03	1.03		
LINE SYLMAR2 230kV-SYLMARLA 230kV ck2	line WIND-ML 500kV SPS6.2	1550	1550	1.03	1.03		
LINE WARNERS 69kV-RINCON 69kV ck1	line WIND-ML 500kV SPS6.2	32	32	0.99	1.12[6]		
LINE WARNERS 69kV-RINCON 69kV ck1	line IV-WIND 500kV SPS6.2	32	32	0.99	1.11[6]		
LINE WARNERS 69kV-RINCON 69kV ck1	line WIND-ML 500kV SPS6.2 trip ML-TJI	32	32	0.96	1.09[6]		
LINE WARNERS 69kV-RINCON 69kV ck1	line IV-WIND 500kV SPS6.2 trip ML-TJI	32	32	0.95	1.08[6]		
LINE YAVAPAI 230kV-VERDE 230kV ck1	line IV-WIND 500kV SPS6.2	320	320	1.01	1.01		
LINE YAVAPAI 230kV-VERDE 230kV ck1	line WIND-ML 500kV SPS6.2	320	320	1.01	1.01		
TRAN ENCINA 5 24kV-ENCINA 230kV ck1	line WIND-ML 500kV SPS6.2	355	355	1.00	1.00		

[6] Most likely, this overload would not be evident when the system is properly re-dispatched with the tripping of the Imperial Valley generators.

2008 Commercial Operation Date Category B MVA2 pu Loading				Case Name			
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**08hs-pre**	**08hs-pst**	**08lw-pre**	**08lw-pst**
TRAN HRD-230 230kV-HRD-69 69kV ck1	line IV-WIND 500kV	225	225	1.06	1.06		
TRAN HRD-230 230kV-HRD-69 69kV ck1	line WIND-ML 500kV	225	225	1.06	1.06		
TRAN HRD-230 230kV-HRD-69 69kV ck1	line IV - WIND	225	225	1.06	1.06		
TRAN OTAY_93 69kV-OTAY_46A 13.8kV ck1	line OTAY - OTAY_93	150	150	4.16	4.16		

Category C MVA1 Per Unit Loading

2008 Commercial Operation Date Category C MVA1 pu Loading				Case Name			
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**08hs-pre**	**08hs-pst**	**08lw-pre**	**08lw-pst**
LINE BERNARDO 69kV-FELCTATP 69kV ck1	Poway 69kV Bus	102	108	1.00	1.05[7]		
LINE BERNARDO 69kV-R.CARMEL 69kV ck1	Poway 69kV Bus	68	76	1.55	1.54[8]		
LINE BERNARDO 69kV-R.CARMEL 69kV ck1	POM-SX 1 + 2 69KV	68	76	1.23	1.21[8]		
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	CH-SX-SN+LC-EL 138/69 KV	71	71	1.01	1.00		
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	Los Coches 69kV W Bus	71	71	1.01	0.98		
LINE DEL MAR 69kV-DELMARTP 69kV ck1	Del Mar 69kV E Bus	50	54	1.09	1.09		
LINE DIVISION 69kV-NAVSTMTR 69kV ck1	Miguel 69kV S Bus	97	100	1.46	1.45[9]		
LINE DIVISION 69kV-NAVSTMTR 69kV ck1	ML BK71 & Miguel - Mission #1 230 kV f	97	100	1.16	1.15[9]		
LINE DIVISION 69kV-NAVSTMTR 69kV ck1	ML BK71 & Miguel - Mission #1 230 kV d	97	100	1.14	1.14[9]		
LINE DIVISION 69kV-NAVSTMTR 69kV ck1	ML BK71 & Miguel - Mission #1 230 kV e	97	100	1.14	1.14[9]		
LINE DIVISION 69kV-NAVSTMTR 69kV ck1	ML BK71 & Miguel - Mission #1 230 kV b	97	100	1.13	1.13[9]		
LINE DIVISION 69kV-NAVSTMTR 69kV ck1	ML BK71 & Miguel - Mission #1 230 kV c	97	100	1.14	1.13[9]		
LINE DIVISION 69kV-NAVSTMTR 69kV ck1	BK71	97	100	1.12	1.12[9]		
LINE DIVISION 69kV-NAVSTMTR 69kV ck1	ML BK71 & Miguel - Mission #1 230 kV a	97	100	1.13	1.12[9]		
LINE DIVISION 69kV-NAVSTMTR 69kV ck1	Murray 69kV N Bus	97	100	1.06	1.06[9]		
LINE DIVISION 69kV-NAVSTMTR 69kV ck1	Sweetwater 69kV Bus	97	100	1.01	1.01[9]		
LINE EL CAJON 69kV-LOSCOCHS 69kV ck1	Murray 69kV N Bus	55	59	1.31	1.31		
LINE ELCENTRO 230kV-IMPRLVLY 230kV ck1	line ML-MS 1&2 230kV	215	259	1.01	1.01		
LINE ELCENTRO 230kV-IMPRLVLY 230kV ck1	line ML-MS&ML-SX 230kV	215	259	1.01	1.00		
LINE ELCENTRO 230kV-IMPRLVLY 230kV ck1	ML-SX + ML-MS 230KV SPS aa	215	259	1.01	1.00		
LINE ELCENTRO 230kV-IMPRLVLY 230kV ck1	ML-SX + ML-MS 230KV SPS ab	215	259	1.01	1.00		
LINE ELCENTRO 230kV-IMPRLVLY 230kV ck1	ML-SX + ML-MS 230KV SPS ac	215	259	1.01	1.00		
LINE ELCENTRO 230kV-IMPRLVLY 230kV ck1	Proctor Valley 138kV Bus	215	259	1.00	1.00		
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	Felicita 69kV S Bus	102	113	1.05	1.09		

[7] No mitigation proposed because overload is less than MVA2.
[8] The existing Overload System (OLS) 9.4 will eliminate this potential overload.
[9] A project is planned for 2009 to eliminate the overload. A variation in generation dispatch will eliminate the overload until then. (The intent of these cases was to stress the northern area of SDG&E's system.)

2008 Commercial Operation Date Category C MVA1 pu Loading				Case Name			
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**08hs-pre**	**08hs-pst**	**08lw-pre**	**08lw-pst**
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	Escondido 69kV SE Bus	102	113	1.04	1.03		
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	Escondido 69kV SW Bus	102	113	1.05	1.01		
LINE ESCNDIDO 69kV-SANMRCOS 69kV ck1	SA5W TRIP TL695 SPS7	97	129	1.74	1.66[10]		
LINE ESCNDIDO 69kV-SANMRCOS 69kV ck1	SA5W TRIPS LI LOAD SPS6	97	129	1.60	1.53[10]		
LINE ESCNDIDO 69kV-SANMRCOS 69kV ck1	SA5W TRIPS SA LOAD SPS2	97	129	1.30	1.23[10]		
LINE ESCO 69kV-WARCYNTP 69kV ck1	POM-SX 1 + 2 69KV	86	86	0.99	1.01[11]		
LINE GARFIELD 69kV-EL CAJON 69kV ck1	Murray 69kV N Bus	97	102	1.26	1.26		
LINE GRANITE 69kV-GRANITTP 69kV ck1	Murray 69kV N Bus	97	130	1.23	1.24		
LINE JAP MESA 69kV-TALEGATP 69kV ck1	SA5W TRIPS LI LOAD SPS6	24	24	1.19	1.11[10]		
LINE JAP MESA 69kV-TALEGATP 69kV ck1	SA5W TRIPS SM LOAD SPS5	24	24	1.12	1.03[10]		
LINE JOJOBA 500kV-KYRENE 500kV ck1	line ML-MS&ML-SX 230kV SPS6.3 c	1732	1905	1.03	1.03		
LINE JOJOBA 500kV-KYRENE 500kV ck1	line ML-MS 1&2 230kV SPS6.4 c	1732	1905	1.03	1.03		
LINE JOJOBA 500kV-KYRENE 500kV ck1	ML BK71 & Miguel - Mission #1 230 kV c	1732	1905	1.03	1.03		
LINE JOJOBA 500kV-KYRENE 500kV ck1	line ML-MS&ML-SX 230kV SPS6.3 d	1732	1905	1.02	1.02		
LINE JOJOBA 500kV-KYRENE 500kV ck1	line ML-MS&ML-SX 230kV SPS6.3 e	1732	1905	1.02	1.02		
LINE JOJOBA 500kV-KYRENE 500kV ck1	line ML-MS 1&2 230kV SPS6.4 d	1732	1905	1.02	1.02		
LINE JOJOBA 500kV-KYRENE 500kV ck1	line ML-MS 1&2 230kV SPS6.4 e	1732	1905	1.02	1.02		
LINE JOJOBA 500kV-KYRENE 500kV ck1	ML BK71 & Miguel - Mission #1 230 kV d	1732	1905	1.02	1.02		
LINE JOJOBA 500kV-KYRENE 500kV ck1	ML BK71 & Miguel - Mission #1 230 kV e	1732	1905	1.02	1.02		
LINE JOJOBA 500kV-KYRENE 500kV ck1	line ML-MS&ML-SX 230kV SPS6.3 f	1732	1905	1.01	1.01		
LINE JOJOBA 500kV-KYRENE 500kV ck1	line ML-MS 1&2 230kV SPS6.4 f	1732	1905	1.01	1.01		
LINE JOJOBA 500kV-KYRENE 500kV ck1	ML BK71 & Miguel - Mission #1 230 kV f	1732	1905	1.01	1.01		
LINE KEARNY 69kV-MISSION 69kV ck1	Mission 69kV S Bus	97	129	1.17	1.18		
LINE LILAC 69kV-PALA 69kV ck1	PEN-ES #1+ PEN-ES #2 230KV	71	71	0.61	1.25	0.40	1.04
LINE LILAC 69kV-PALA 69kV ck1	Monserate 69kV S Bus	71	71	0.18	1.05	0.33	1.20
LINE LILAC 69kV-PALA 69kV ck1	TA-SO 1 + 2 230KV SPS	71	71	0.38	1.04		
LINE LILAC 69kV-PALA 69kV ck1	Avocado 69kV Bus	71	71	0.37	1.04		

[10] SDG&E is evaluating a project to re-arrange the San Luis Rey Substation to eliminate the issues associated with the stuck breaker condition and loss of two 230/69 kV banks.
[11] The existing Overload System (OLS) 9.4 will eliminate this potential overload.

2008 Commercial Operation Date Category C MVA1 pu Loading				Case Name			
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**08hs-pre**	**08hs-pst**	**08lw-pre**	**08lw-pst**
LINE LILAC 69kV-PALA 69kV ck1	TA-SO 1 + 2 230KV	71	71	0.36	1.03		
LINE LILAC 69kV-PALA 69kV ck1	Escondido 69kV SW Bus	71	71	0.59	1.02		
LINE LILAC 69kV-PALA 69kV ck1	ML BK71 & Miguel - Mission #1 230 kV f	71	71	0.29	1.00		
LINE LILAC 69kV-PALA 69kV ck1	San Luis Rey 69kV N Bus	71	71			0.26	1.03
LINE LILAC 69kV-PALA 69kV ck1	San Luis Rey 69kV S Bus	71	71			0.27	1.03
LINE MELROSE 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV S Bus	97	102	1.11	1.09		
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV N Bus	97	111	1.12	1.10		
LINE MESAHGTS 69kV-MISSION 69kV ck1	Mission 69kV N Bus	97	136	1.43	1.44		
LINE MESAHGTS 69kV-MISSION 69kV ck1	Kearny 69kV E Bus	97	136	1.22	1.22		
LINE MIGUEL 69kV-JAMACHA 69kV ck1	Miguel 69kV N Bus	97	143	1.22	1.22		
LINE MIGUEL 69kV-JAMACHA 69kV ck2	Miguel 69kV S Bus	136	143	1.10	1.10		
LINE MONSRATE 69kV-AVCADOTP 69kV ck1	Lilac 69kV S Bus	51	51			0.16	1.00
LINE MONSRATE 69kV-MNSRATTP 69kV ck1	SA5W TRIPS LI LOAD SPS6	77	77	0.64	1.17[12]		
LINE MONSRATE 69kV-MNSRATTP 69kV ck1	SA5W TRIP TL695 SPS7	77	77	0.61	1.13[12]		
LINE MONSRATE 69kV-MNSRATTP 69kV ck1	SA5W TRIPS SM LOAD SPS5	77	77	0.49	1.02[12]		
LINE MONSRATE 69kV-MNSRATTP 69kV ck1	Lilac 69kV S Bus	77	77			0.34	1.47
LINE OLD TOWN 69kV-KETTNER 69kV ck1	MI51-SY + MI50-SY	215	239	1.08	1.08		
LINE OLD TOWN 69kV-KETTNER 69kV ck1	MI51-SY + MI50-SY SPS a	215	239	1.08	1.08		
LINE OLD TOWN 69kV-KETTNER 69kV ck1	MI51-SY + MI50-SY SPS b	215	239	1.08	1.08		
LINE OLD TOWN 69kV-KETTNER 69kV ck1	MI51-SY + MI50-SY SPS c	215	239	1.08	1.08		
LINE PALA 69kV-MNSRATTP 69kV ck1	SA5W TRIPS LI LOAD SPS6	68	68	0.96	1.59[12]	0.58	1.19[12]
LINE PALA 69kV-MNSRATTP 69kV ck1	SA5W TRIP TL695 SPS7	68	68	0.93	1.55[12]	0.58	1.18[12]
LINE PALA 69kV-MNSRATTP 69kV ck1	SA5W TRIPS SM LOAD SPS5	68	68	0.79	1.42[12]	0.50	1.14[12]
LINE PALA 69kV-MNSRATTP 69kV ck1	SA5W TRIPS SA LOAD SPS2	68	68	0.64	1.27[12]	0.49	1.09[12]
LINE PALA 69kV-MNSRATTP 69kV ck1	Lilac 69kV S Bus	68	68	0.17	1.22	0.47	1.81
LINE PALA 69kV-MNSRATTP 69kV ck1	SX-PEN + PEN-EA-SA 230KV	68	68			0.636	1.20
LINE PALA 69kV-MNSRATTP 69kV ck1	Escondido 69kV SW Bus	68	68			0.29	1.18
LINE PALA 69kV-MNSRATTP 69kV ck1	Rincon 69kV N Bus	68	68			0.40	1.10

[12] SDG&E is evaluating a project to re-arrange the San Luis Rey Substation to eliminate the issues associated with the stuck breaker condition and loss of two 230/69 kV banks.

2008 Commercial Operation Date Category C MVA1 pu Loading				Case Name			
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**08hs-pre**	**08hs-pst**	**08lw-pre**	**08lw-pst**
LINE PALA 69kV-MNSRATTP 69kV ck1	ES-EA-SA 230KV + BQ-CC-ES-NCM 138KV	68	68			0.40	1.06
LINE PALA 69kV-MNSRATTP 69kV ck1	Escondido 69kV NW Bus	68	68			0.38	1.03
LINE PALA 69kV-MNSRATTP 69kV ck1	SX-PEN 230KV + BE-AR 69KV	68	68			0.37	1.02
LINE PALA 69kV-MNSRATTP 69kV ck1	SX-PEN 230KV + AR-SX 69KV	68	68			0.36	1.02
LINE PALA 69kV-MNSRATTP 69kV ck1	SA-EA 230KV + SA-ES-EA 230KV	68	68			0.36	1.02
LINE PALA 69kV-MNSRATTP 69kV ck1	Warners 69kV Bus	68	68			0.36	1.02
LINE PALA 69kV-MNSRATTP 69kV ck1	Santa Ysabel 69kV Bus	68	68			0.35	1.01
LINE PALA 69kV-MNSRATTP 69kV ck1	Valycntr 69kV Bus	68	68			0.33	1.01
LINE PALA 69kV-MNSRATTP 69kV ck1	Poway 69kV Bus SPS	68	68			0.35	1.00
LINE PALA 69kV-MNSRATTP 69kV ck1	SA-SO 2 + SO-SA 3 230KV	68	68			0.35	1.00
LINE PENSQTOS 69kV-DELMARTP 69kV ck1	Del Mar 69kV E Bus	97	129	1.12	1.12		
LINE PENSQTOS 69kV-DELMARTP 69kV ck1	Penasquitos 69kV SE Bus	97	129	1.11	1.10		
LINE PENSQTOS 69kV-MIRAMRTP 69kV ck1	MR-PQ 69KV + PQ-MRM 69KV	98	102	1.18	1.16		
LINE POMERADO 69kV-SYCAMORE 69kV ck2	Sycamore 69kV S Bus	97	136	1.30	1.26		
LINE RUDD 230kV-WHITETNK 230kV ck1	line ML-MS&ML-SX 230kV SPS6.3 d	725	797	1.01	1.01		
LINE RUDD 230kV-WHITETNK 230kV ck1	line ML-MS&ML-SX 230kV SPS6.3 e	725	797	1.01	1.01		
LINE RUDD 230kV-WHITETNK 230kV ck1	line ML-MS&ML-SX 230kV SPS6.3 f	725	797	1.01	1.01		
LINE RUDD 230kV-WHITETNK 230kV ck1	line ML-MS 1&2 230kV SPS6.4 d	725	797	1.01	1.01		
LINE RUDD 230kV-WHITETNK 230kV ck1	line ML-MS 1&2 230kV SPS6.4 e	725	797	1.01	1.01		
LINE RUDD 230kV-WHITETNK 230kV ck1	line ML-MS 1&2 230kV SPS6.4 f	725	797	1.01	1.01		
LINE RUDD 230kV-WHITETNK 230kV ck1	ML BK71 & Miguel - Mission #1 230 kV d	725	797	1.01	1.01		
LINE RUDD 230kV-WHITETNK 230kV ck1	ML BK71 & Miguel - Mission #1 230 kV e	725	797	1.01	1.01		
LINE RUDD 230kV-WHITETNK 230kV ck1	ML BK71 & Miguel - Mission #1 230 kV f	725	797	1.01	1.01		
LINE SOUTHBAY 69kV-IMPRLBCH 69kV ck1	Otay 69kV Bus	55	55	1.27	1.27		
LINE SOUTHBAY 69kV-OTAY 69kV ck2	Southbay 69kV N Bus	100	100	1.11	1.11		
LINE SYCAMORE 69kV-SCRIPPS 69kV ck1	MR-PQ 69KV + PQ-MRM 69KV	102	136	1.37	1.39		
LINE SYCAMORE 69kV-SCRIPPS 69kV ck1	Penasquitos 69kV SE Bus	102	136	1.06	1.08		
LINE TALEGA 138kV-SANMATEO 138kV ck1	TA-TB + TA-PI 138KV	136	136	1.11	1.11		

2008 Commercial Operation Date Category C MVA1 pu Loading				Case Name			
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**08hs-pre**	**08hs-pst**	**08lw-pre**	**08lw-pst**
LINE TALEGA 69kV-TALEGATP 69kV ck1	SA5W TRIPS LI LOAD SPS6	24	24	1.33	1.25[13]		
LINE TALEGA 69kV-TALEGATP 69kV ck1	SA5W TRIPS SM LOAD SPS5	24	24	1.26	1.17[13]		
LINE TALEGA 69kV-TALEGATP 69kV ck1	SA5W TRIPS SA LOAD SPS2	24	24	1.12	1.04[13]		
TRAN MIGUEL 69kV-MIGUEL 230kV ck1	BK71	224	305	1.14	1.14		
TRAN MIGUEL 69kV-MIGUEL 230kV ck1	ML BK71 & Miguel - Mission #1 230 kV a	224	305	1.13	1.13		
TRAN MIGUEL 69kV-MIGUEL 230kV ck1	ML BK71 & Miguel - Mission #1 230 kV b	224	305	1.12	1.12		
TRAN MIGUEL 69kV-MIGUEL 230kV ck1	ML BK71 & Miguel - Mission #1 230 kV c	224	305	1.11	1.11		
TRAN MIGUEL 69kV-MIGUEL 230kV ck1	ML BK71 & Miguel - Mission #1 230 kV d	224	305	1.09	1.09		
TRAN MIGUEL 69kV-MIGUEL 230kV ck1	ML BK71 & Miguel - Mission #1 230 kV e	224	305	1.09	1.09		
TRAN SANLUSRY 138kV-SANLUSRY 69kV ck1	SA5W TRIP TL695 SPS7	140	160	1.41	1.16[13]		
TRAN SANLUSRY 138kV-SANLUSRY 69kV ck1	SA5W TRIPS LI LOAD SPS6	140	160	1.24	1.01[13]		
TRAN SANLUSRY 138kV-SANLUSRY 69kV ck1	SA5W TRIPS SM LOAD SPS5	140	160	1.15	0.91[13]		
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	MI51-SY + MI50-SY	140	143	1.25	1.25		
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	MI51-SY + MI50-SY SPS a	140	143	1.25	1.25		
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	MI51-SY + MI50-SY SPS b	140	143	1.25	1.25		
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	MI51-SY + MI50-SY SPS c	140	143	1.25	1.25		
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	MI51-SY + GH-SY 138KV	140	143	1.10	1.10		
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	Miguel 69kV S Bus	140	143	1.08	1.08		
TRAN TALEGA 69kV-TALEGA 138kV ck1	SA5W TRIPS SM LOAD SPS5	25	37	1.24	1.24[13]		
TRAN TALEGA 69kV-TALEGA 138kV ck1	SA5W TRIPS LI LOAD SPS6	25	37	1.31	1.23[13]		

[13] SDG&E is evaluating a project to re-arrange the San Luis Rey Substation to eliminate the issues associated with the stuck breaker condition and loss of two 230/69 kV banks.

Category C MVA2 Per Unit Loading

2008 Commercial Operation Date Category C MVA2 pu Loading				Case Name			
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**08hs-pre**	**08hs-pst**	**08lw-pre**	**08lw-pst**
LINE BERNARDO 69kV-R.CARMEL 69kV ck1	Poway 69kV Bus	68	76	1.38	1.38[14]		
LINE BERNARDO 69kV-R.CARMEL 69kV ck1	POM-SX 1 + 2 69KV	68	76	1.10	1.08[14]		
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	CH-SX-SN+LC-EL 138/69 KV	71	71	1.01	1.00		
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	Los Coches 69kV W Bus	71	71	1.01	0.98		
LINE DEL MAR 69kV-DELMARTP 69kV ck1	Del Mar 69kV E Bus	50	54	1.01	1.01		
LINE DIVISION 69kV-NAVSTMTR 69kV ck1	Miguel 69kV S Bus	97	100	1.41	1.41[15]		
LINE DIVISION 69kV-NAVSTMTR 69kV ck1	ML BK71 & Miguel - Mission #1 230 kV f	97	100	1.12	1.12[15]		
LINE DIVISION 69kV-NAVSTMTR 69kV ck1	ML BK71 & Miguel - Mission #1 230 kV d	97	100	1.11	1.11[15]		
LINE DIVISION 69kV-NAVSTMTR 69kV ck1	ML BK71 & Miguel - Mission #1 230 kV e	97	100	1.11	1.11[15]		
LINE DIVISION 69kV-NAVSTMTR 69kV ck1	ML BK71 & Miguel - Mission #1 230 kV c	97	100	1.10	1.10[15]		
LINE DIVISION 69kV-NAVSTMTR 69kV ck1	ML BK71 & Miguel - Mission #1 230 kV a	97	100	1.09	1.09[15]		
LINE DIVISION 69kV-NAVSTMTR 69kV ck1	ML BK71 & Miguel - Mission #1 230 kV b	97	100	1.10	1.09[15]		
LINE DIVISION 69kV-NAVSTMTR 69kV ck1	BK71	97	100	1.09	1.08[15]		
LINE DIVISION 69kV-NAVSTMTR 69kV ck1	Murray 69kV N Bus	97	100	1.03	1.03[15]		
LINE EL CAJON 69kV-LOSCOCHS 69kV ck1	Murray 69kV N Bus	55	59	1.22	1.22		
LINE ESCNDIDO 69kV-SANMRCOS 69kV ck1	SA5W TRIP TL695 SPS7	97	129	1.31	1.25[16]		
LINE ESCNDIDO 69kV-SANMRCOS 69kV ck1	SA5W TRIPS LI LOAD SPS6	97	129	1.20	1.15[16]		
LINE ESCO 69kV-WARCYNTP 69kV ck1	POM-SX 1 + 2 69KV	86	86	0.99	1.01[14]		
LINE GARFIELD 69kV-EL CAJON 69kV ck1	Murray 69kV N Bus	97	102	1.20	1.20		
LINE JAP MESA 69kV-TALEGATP 69kV ck1	SA5W TRIPS LI LOAD SPS6	24	24	1.19	1.11[16]		
LINE JAP MESA 69kV-TALEGATP 69kV ck1	SA5W TRIPS SM LOAD SPS5	24	24	1.12	1.03[16]		
LINE LILAC 69kV-PALA 69kV ck1	PEN-ES #1+ PEN-ES #2 230KV	71	71	0.61	1.25	0.40	1.04

[14] The existing Overload System (OLS) 9.4 will eliminate this potential overload.
[15] A project is planned for 2009 to eliminate the overload. A variation in generation dispatch will eliminate the overload until then. (The intent of these cases was to stress the northern area of SDG&E's system.)
[16] SDG&E is evaluating a project to re-arrange the San Luis Rey Substation to eliminate the issues associated with the stuck breaker condition and loss of two 230/69 kV banks.

2008 Commercial Operation Date Category C MVA2 pu Loading				Case Name			
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**08hs-pre**	**08hs-pst**	**08lw-pre**	**08lw-pst**
LINE LILAC 69kV-PALA 69kV ck1	Monserate 69kV S Bus	71	71	0.18	1.05	0.33	1.20
LINE LILAC 69kV-PALA 69kV ck1	Avocado 69kV Bus	71	71	0.37	1.04		
LINE LILAC 69kV-PALA 69kV ck1	TA-SO 1 + 2 230KV SPS	71	71	0.38	1.04		
LINE LILAC 69kV-PALA 69kV ck1	TA-SO 1 + 2 230KV	71	71	0.36	1.03		
LINE LILAC 69kV-PALA 69kV ck1	Escondido 69kV SW Bus	71	71	0.59	1.02		
LINE LILAC 69kV-PALA 69kV ck1	ML BK71 & Miguel - Mission #1 230 kV f	71	71	0.28	1.00		
LINE LILAC 69kV-PALA 69kV ck1	San Luis Rey 69kV N Bus	71	71			0.26	1.03
LINE LILAC 69kV-PALA 69kV ck1	San Luis Rey 69kV S Bus	71	71			0.27	1.03
LINE MELROSE 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV S Bus	97	102	1.06	1.04		
LINE MESAHGTS 69kV-MISSION 69kV ck1	Mission 69kV N Bus	97	136	1.02	1.03		
LINE MIGUEL 69kV-JAMACHA 69kV ck2	Miguel 69kV S Bus	136	143	1.04	1.04		
LINE MONSRATE 69kV-AVCADOTP 69kV ck1	Lilac 69kV S Bus	51	51			0.16	1.00
LINE MONSRATE 69kV-MNSRATTP 69kV ck1	SA5W TRIPS LI LOAD SPS6	77	77	0.64	1.17[17]		
LINE MONSRATE 69kV-MNSRATTP 69kV ck1	SA5W TRIP TL695 SPS7	77	77	0.61	1.13[17]		
LINE MONSRATE 69kV-MNSRATTP 69kV ck1	SA5W TRIPS SM LOAD SPS5	77	77	0.49	1.02[17]		
LINE MONSRATE 69kV-MNSRATTP 69kV ck1	Lilac 69kV S Bus	77	77			0.34	1.47
LINE PALA 69kV-MNSRATTP 69kV ck1	SA5W TRIPS LI LOAD SPS6	68	68	0.96	1.59[17]	0.58	1.19[17]
LINE PALA 69kV-MNSRATTP 69kV ck1	SA5W TRIP TL695 SPS7	68	68	0.93	1.55[17]	0.58	1.18[17]
LINE PALA 69kV-MNSRATTP 69kV ck1	SA5W TRIPS SM LOAD SPS5	68	68	0.79	1.42[17]	0.50	1.14[17]
LINE PALA 69kV-MNSRATTP 69kV ck1	SA5W TRIPS SA LOAD SPS2	68	68	0.64	1.27[17]	0.49	1.09[17]
LINE PALA 69kV-MNSRATTP 69kV ck1	Lilac 69kV S Bus	68	68	0.17	1.22	0.47	1.81
LINE PALA 69kV-MNSRATTP 69kV ck1	SX-PEN + PEN-EA-SA 230KV	68	68			0.36	1.20
LINE PALA 69kV-MNSRATTP 69kV ck1	Escondido 69kV SW Bus	68	68			0.29	1.18
LINE PALA 69kV-MNSRATTP 69kV ck1	Rincon 69kV N Bus	68	68			0.40	1.10
LINE PALA 69kV-MNSRATTP 69kV ck1	ES-EA-SA 230KV + BQ-CC-ES-NCM 138KV	68	68			0.40	1.06
LINE PALA 69kV-MNSRATTP 69kV ck1	Escondido 69kV NW Bus	68	68			0.38	1.03
LINE PALA 69kV-MNSRATTP 69kV ck1	SA-EA 230KV + SA-ES-EA 230KV	68	68			0.37	1.02
LINE PALA 69kV-MNSRATTP 69kV ck1	SX-PEN 230KV + AR-SX 69KV	68	68			0.36	1.02

[17] SDG&E is evaluating a project to re-arrange the San Luis Rey Substation to eliminate the issues associated with the stuck breaker condition and loss of two 230/69 kV banks.

2008 Commercial Operation Date Category C MVA2 pu Loading				Case Name			
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**08hs-pre**	**08hs-pst**	**08lw-pre**	**08lw-pst**
LINE PALA 69kV-MNSRATTP 69kV ck1	SX-PEN 230KV + BE-AR 69KV	68	68			0.36	1.02
LINE PALA 69kV-MNSRATTP 69kV ck1	Warners 69kV Bus	68	68			0.36	1.02
LINE PALA 69kV-MNSRATTP 69kV ck1	Santa Ysabel 69kV Bus	68	68			0.35	1.01
LINE PALA 69kV-MNSRATTP 69kV ck1	Valycntr 69kV Bus	68	68			0.33	1.01
LINE PALA 69kV-MNSRATTP 69kV ck1	Poway 69kV Bus SPS	68	68			0.35	1.00
LINE PALA 69kV-MNSRATTP 69kV ck1	SA-SO 2 + SO-SA 3 230KV	68	68			0.35	1.00
LINE PENSQTOS 69kV-MIRAMRTP 69kV ck1	MR-PQ 69KV + PQ-MRM 69KV	98	102	1.13	1.11		
LINE SOUTHBAY 69kV-IMPRLBCH 69kV ck1	Otay 69kV Bus	55	55	1.27	1.27		
LINE SOUTHBAY 69kV-OTAY 69kV ck2	Southbay 69kV N Bus	100	100	1.11	1.11		
LINE SYCAMORE 69kV-SCRIPPS 69kV ck1	MR-PQ 69KV + PQ-MRM 69KV	102	136	1.03	1.04		
LINE TALEGA 138kV-SANMATEO 138kV ck1	TA-TB + TA-PI 138KV	136	136	1.11	1.11		
LINE TALEGA 69kV-TALEGATP 69kV ck1	SA5W TRIPS LI LOAD SPS6	24	24	1.33	1.25[18]		
LINE TALEGA 69kV-TALEGATP 69kV ck1	SA5W TRIPS SM LOAD SPS5	24	24	1.26	1.17[18]		
LINE TALEGA 69kV-TALEGATP 69kV ck1	SA5W TRIPS SA LOAD SPS2	24	24	1.12	1.04[18]		
TRAN SANLUSRY 138kV-SANLUSRY 69kV ck1	SA5W TRIP TL695 SPS7	140	160	1.24	1.01[18]		
TRAN SANLUSRY 138kV-SANLUSRY 69kV ck1	SA5W TRIPS LI LOAD SPS6	140	160	1.08	0.88[18]		
TRAN SANLUSRY 138kV-SANLUSRY 69kV ck1	SA5W TRIPS SM LOAD SPS5	140	160	1.00	0.80[18]		
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	MI51-SY + MI50-SY	140	143	1.23	1.23		
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	MI51-SY + MI50-SY SPS a	140	143	1.23	1.23		
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	MI51-SY + MI50-SY SPS b	140	143	1.23	1.23		
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	MI51-SY + MI50-SY SPS c	140	143	1.23	1.23		
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	MI51-SY + GH-SY 138KV	140	143	1.08	1.08		
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	Miguel 69kV S Bus	140	143	1.05	1.05		

[18] SDG&E is evaluating a project to re-arrange the San Luis Rey Substation to eliminate the issues associated with the stuck breaker condition and loss of two 230/69 kV banks.

2012 Future Year Thermal Loading

Category A MVA1 Per Unit Loading

2012 Future Year Category A MVA1 pu Loading				Case Name	
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**12hs-pre**	**12hs-pst**
LINE ARABY S 69kV-AR FH TP 69kV ck1	Base system (n-0)	79	79	1.02	1.02
LINE BLYTHE 161kV-BUCKBLVD 161kV ck1	Base system (n-0)	400	440	1.15	1.15
LINE YAVAPAI 230kV-VERDE N 230kV ck1	Base system (n-0)	319	398	1.02	1.02
TRAN BLKMSA34 69kV-BLK MESA 230kV ck1	Base system (n-0)	40	45	1.10	1.10
TRAN BLKMSA34 69kV-BLK MESA 230kV ck2	Base system (n-0)	40	45	1.05	1.05
TRAN GILA 161kV-GILA 69kV ck1	Base system (n-0)	100	120	1.27	1.27
TRAN SUN ARIZ 230kV-SUN G9 13.8kV ck1	Base system (n-0)	115	138	1.05	1.05
TRAN VALNCIA1 13.2kV-VALNCIA 115kV ck1	Base system (n-0)	20	22	1.06	1.06
TRAN VALNCIA2 13.2kV-VALNCIA 115kV ck1	Base system (n-0)	20	22	1.06	1.06

Category B MVA1 Per Unit Loading

2012 Future Year Category B MVA1 pu Loading				Case Name	
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**12hs-pre**	**12hs-pst**
LINE ARABY S 69kV-AR FH TP 69kV ck1	line HASSYAMP to N.GILA 500 ck 1	79	79	1.12	1.13
LINE ARABY S 69kV-AR FH TP 69kV ck1	tran N.GILA 500 to N.GILA 69 ck 1	79	79	1.03	1.03
LINE ARABY S 69kV-AR FH TP 69kV ck1	tran N.GILA 500 to N.GILA 69 ck 2	79	79	1.03	1.03
LINE BERNARDO 69kV-FELCTATP 69kV ck1	line BRND-BRNDTP-RSF-LKHDG 69 ck 1	102	108	0.96	1.01[19]
LINE BLYTHE 161kV-BUCKBLVD 161kV ck1	line N.GILA to IMPRLVLY 500 ck 1	400	440	1.16	1.16
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line CARLTNHS-SANTEE-SX 138	71	71	1.11	1.10
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line WIND-ML 500kV SPS6.2	71	71	1.10	1.08
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line WIND-ML 500kV	71	71	1.08	1.06
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line WIND-ML 500kV SPS6.1	71	71	1.06	1.04
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line IV-WIND 500kV SPS6.2	71	71	1.05	1.03
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line IV-WIND 500kV	71	71	1.03	1.02
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line CREELMAN to LOSCOCHS 69 ck 1	71	71	1.03	1.00
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line IV-WIND 500kV SPS6.1	71	71	1.02	1.00
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line SANTEE to LOSCOCHS 138 ck 1	71	71	1.01	1.00
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	tran SYCAMORE 230 to SYCAMORE 138 ck 1	71	71	1.01	1.00
LINE EL CAJON 69kV-GRANITE 69kV ck1	line GRANITE to GRANITTP 69 ck 1	97	114	1.02	1.01
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	line ESCNDIDO to ASH 69 ck 1	102	113	1.34	1.32
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	line ESCNDIDO to FELICITA 69 ck 1	102	113	1.29	1.29
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	line WIND-ML 500kV SPS6.2	102	113	1.08	1.08
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	line BRND-BRNDTP-RSF-LKHDG 69 ck 1	102	113	1.06	1.06
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	line IV-WIND 500kV SPS6.2	102	113	1.05	1.04
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	line WIND-ML 500kV SPS6.1	102	113	1.04	1.04
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	line N.GILA to IMPRLVLY 500 ck 1	102	113	1.02	1.03
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	line POWAY to R.CARMEL 69 ck 1	102	113	1.03	1.03
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	line ESCNDIDO to ESCO 69 ck 1	102	113	1.01	1.02
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	line HASSYAMP to N.GILA 500 ck 1	102	113	1.02	1.02

[19] No mitigation proposed because overload is less than MVA2.

2012 Future Year Category B MVA1 pu Loading				Case Name	
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**12hs-pre**	**12hs-pst**
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	line PENSQTOS to ENCINA 230 ck 1	102	113	1.02	1.02
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	line WIND-ML 500kV	102	113	1.03	1.02
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	tran SYCAMORE 230 to SYCAMORE 69 ck 1	102	113	1.02	1.02
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	tran SYCAMORE 230 to SYCAMORE 69 ck 2	102	113	1.02	1.02
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	line ESCO-WARCYNTP-POW-WC 69 ck 1	102	113	1.01	1.01
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	line IV-WIND 500kV SPS6.1	102	113	1.02	1.01
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	line OMWD to ESCNDIDO 69 ck 1	102	113	1.00	1.01
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	line RINCON to LILAC 69 ck 1	102	113	0.98	1.00
LINE KEARNY 69kV-MISSION 69kV ck1	line MESAHGTS to MISSION 69 ck 1	97	129	1.16	1.15
LINE KNOB 161kV-PILOTKNB 161kV ck1	line N.GILA to IMPRLVLY 500 ck 1	165	165	1.00	1.02
LINE LILAC 69kV-PALA 69kV ck1	line AVCDO-MNSRTP-MNSR-PALA 69 ck 1	71	71	0.40	1.71
LINE LILAC 69kV-PALA 69kV ck1	line WIND-ML 500kV SPS6.2	71	71	0.39	1.05
LINE LILAC 69kV-PALA 69kV ck1	gen PEN PLANT 18.00	71	71	0.38	1.04
LINE LILAC 69kV-PALA 69kV ck1	line N.GILA to IMPRLVLY 500 ck 1	71	71	0.36	1.04
LINE LILAC 69kV-PALA 69kV ck1	line ESCNDIDO to LILAC 69 ck 1	71	71	0.60	1.03
LINE LILAC 69kV-PALA 69kV ck1	line HASSYAMP to N.GILA 500 ck 1	71	71	0.36	1.03
LINE LILAC 69kV-PALA 69kV ck1	line IV-WIND 500kV SPS6.2	71	71	0.36	1.03
LINE LILAC 69kV-PALA 69kV ck1	line WIND-ML 500kV SPS6.1	71	71	0.36	1.03
LINE LILAC 69kV-PALA 69kV ck1	tran ESCNDIDO 69 to ESCNDIDO 230 ck 1	71	71	0.37	1.03
LINE LILAC 69kV-PALA 69kV ck1	tran ESCNDIDO 69 to ESCNDIDO 230 ck 2	71	71	0.37	1.03
LINE LILAC 69kV-PALA 69kV ck1	tran ESCNDIDO 69 to ESCNDIDO 230 ck 3	71	71	0.37	1.03
LINE LILAC 69kV-PALA 69kV ck1	line ASH-ASHTP-FELICITA-VC 69 ck 1	71	71	0.39	1.02
LINE LILAC 69kV-PALA 69kV ck1	line CANNON-SANLUSRY-SHADOWR 138	71	71	0.35	1.02
LINE LILAC 69kV-PALA 69kV ck1	line IMPRLVLY to CENTRALX 500 ck 1	71	71	0.35	1.01
LINE LILAC 69kV-PALA 69kV ck1	line IV-WIND 500kV SPS6.1	71	71	0.34	1.01
LINE LILAC 69kV-PALA 69kV ck1	line ESCNDIDO to ASH 69 ck 1	71	71	0.34	1.00
LINE LILAC 69kV-PALA 69kV ck1	line PENSQTOS to ENCINA 230 ck 1	71	71	0.33	1.00
LINE LILAC 69kV-PALA 69kV ck1	line WIND-ML 500kV	71	71	0.34	1.00
LINE MELROSE 69kV-SANLUSRY 69kV ck1	line ESCNDIDO to SANMRCOS 69 ck 1	97	102	1.00	1.00
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	line MELROSE to SANLUSRY 69 ck 1	97	111	1.15	1.15
LINE MESAHGTS 69kV-MISSION 69kV ck1	line KEARNY to MISSION 69 ck 1	97	136	1.23	1.22
LINE MIGUELTP 69kV-MIGUEL 69kV ck1	line PARADISE to MIGUEL 69 ck 1	97	136	1.19	1.19

2012 Future Year Category B MVA1 pu Loading				Case Name	
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**12hs-pre**	**12hs-pst**
LINE MONSRATE 69kV-MNSRATTP 69kV ck1	line LILAC to PALA 69 ck 1	77	77	0.19	1.33
LINE NILAND 161kV-BLYTHE 161kV ck1	line N.GILA to IMPRLVLY 500 ck 1	165	165	1.11	1.12
LINE NILAND 161kV-BLYTHE 161kV ck1	line HASSYAMP to N.GILA 500 ck 1	165	165	1.00	1.01
LINE PALA 69kV-MNSRATTP 69kV ck1	line LILAC to PALA 69 ck 1	68	68	0.42	1.78
LINE PENSQTOS 230kV-ENCINA 230kV ck1	line WIND-ML 500kV SPS6.2	691	912	1.06	0.99
LINE PENSQTOS 69kV-DELMARTP 69kV ck1	line PENSQTOS to TOREYPNS 69 ck 1	97	129	1.13	1.12
LINE RINCON 69kV-LILAC 69kV ck1	line ASH-ASHTP-FELICITA-VC 69 ck 1	55	55	0.95	1.06
LINE RTAP2 92kV-RTP1 92kV ck1	line WIND-ML 500kV	57	57	1.06	1.04
LINE RTAP2 92kV-RTP1 92kV ck1	line IV-WIND 500kV	57	57	1.04	1.03
LINE RTAP2 92kV-RTP1 92kV ck1	line IMPRLVLY to CENTRALX 500 ck 1	57	57	1.03	1.02
LINE SAMPSON 69kV-MAIN ST 69kV ck1	line SAMPSON to MAIN ST 69 ck 2	129	129	1.15	1.15
LINE SAMPSON 69kV-MAIN ST 69kV ck2	line SAMPSON to MAIN ST 69 ck 1	129	129	1.16	1.16
LINE SHADOWR 138kV-ESCNDO50 138kV ck1	line CANNON-SANLUSRY-SHADOWR 138	63	73	1.22	1.22
LINE SYCAMORE 138kV-CARLTHTP 138kV ck1	line WIND-ML 500kV SPS6.2	247	247	1.08	1.07
LINE SYCAMORE 138kV-CARLTHTP 138kV ck1	line WIND-ML 500kV	247	247	1.05	1.03
LINE SYCAMORE 138kV-CARLTHTP 138kV ck1	line IV-WIND 500kV SPS6.2	247	247	1.01	1.00
LINE SYCAMORE 138kV-CARLTHTP 138kV ck1	line WIND-ML 500kV SPS6.1	247	247	1.00	1.00
LINE SYCAMORE 69kV-ELLIOTT 69kV ck1	line WIND-ML 500kV SPS6.2	68	68	1.07	1.07
LINE SYCAMORE 69kV-ELLIOTT 69kV ck1	line WIND-ML 500kV	68	68	1.01	1.01
LINE WARNERS 69kV-RINCON 69kV ck1	line CREELMAN to SYCAMORE 69 ck 1	32	32	0.98	1.10
LINE WARNERS 69kV-RINCON 69kV ck1	line WIND-ML 500kV SPS6.2	32	32	0.98	1.09[20]
LINE WARNERS 69kV-RINCON 69kV ck1	line IV-WIND 500kV SPS6.2	32	32	0.93	1.04[20]
LINE WARNERS 69kV-RINCON 69kV ck1	line WIND-ML 500kV SPS6.1	32	32	0.92	1.04[20]
LINE WARNERS 69kV-RINCON 69kV ck1	line WIND-ML 500kV	32	32	0.89	1.01[20]
LINE WLTNMOHK 161kV-GILA 161kV ck1	line N.GILA to IMPRLVLY 500 ck 1	112	120	1.10	1.10
LINE WLTNMOHK 161kV-GILA 161kV ck1	line HASSYAMP to N.GILA 500 ck 1	112	120	1.01	1.02
TRAN ENCINA 5 24kV-ENCINA 230kV ck1	line WIND-ML 500kV SPS6.2	355	355	1.02	1.02
TRAN ESCNDIDO 69kV-ESCNDIDO 230kV ck1	tran ESCNDIDO 69 to ESCNDIDO 230 ck 2	224	239	1.04	0.98
TRAN ESCNDIDO 69kV-ESCNDIDO 230kV ck1	tran ESCNDIDO 69 to ESCNDIDO 230 ck 3	224	239	1.04	0.98

[20] Most likely, this overload would not be evident when the system is properly re-dispatched with the tripping of the Imperial Valley generators.

2012 Future Year Category B MVA1 pu Loading				Case Name	
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**12hs-pre**	**12hs-pst**
TRAN ESCNDIDO 69kV-ESCNDIDO 230kV ck2	tran ESCNDIDO 69 to ESCNDIDO 230 ck 1	224	239	1.04	0.98
TRAN ESCNDIDO 69kV-ESCNDIDO 230kV ck2	tran ESCNDIDO 69 to ESCNDIDO 230 ck 3	224	239	1.04	0.98
TRAN ESCNDIDO 69kV-ESCNDIDO 230kV ck3	tran ESCNDIDO 69 to ESCNDIDO 230 ck 1	224	239	1.04	0.98
TRAN ESCNDIDO 69kV-ESCNDIDO 230kV ck3	tran ESCNDIDO 69 to ESCNDIDO 230 ck 2	224	239	1.04	0.98
TRAN ESCNDO50 138kV-ESCNDIDO 69kV ck2	line CANNON-SANLUSRY-SHADOWR 138	63	73	1.21	1.22
TRAN GILA 161kV-GILA 69kV ck1	line HASSYAMP to N.GILA 500 ck 1	100	120	2.06	2.07
TRAN GILA 161kV-GILA 69kV ck1	tran N.GILA 500 to N.GILA 69 ck 1	100	120	1.34	1.34
TRAN GILA 161kV-GILA 69kV ck1	tran N.GILA 500 to N.GILA 69 ck 2	100	120	1.34	1.34
TRAN GILA 161kV-GILA 69kV ck1	ML BK80 SPS6.6 f	100	120	1.31	1.31
TRAN GILA 161kV-GILA 69kV ck1	ML BK81 SPS6.6 f	100	120	1.31	1.31
TRAN GILA 161kV-GILA 69kV ck1	gen PEN PLANT 18.00	100	120	1.30	1.30
TRAN GILA 161kV-GILA 69kV ck1	gen ENCINA 5 24.00 5	100	120	1.29	1.29
TRAN GILA 161kV-GILA 69kV ck1	gen INTBCT 16.00 1	100	120	1.28	1.29
TRAN GILA 161kV-GILA 69kV ck1	gen WND160MW 230.00 Q	100	120	1.29	1.29
TRAN GILA 161kV-GILA 69kV ck1	line LEAPS-MP to CMPNL500 500 ck 1	100	120	1.29	1.29
TRAN GILA 161kV-GILA 69kV ck1	line PENSQTOS to ENCINA 230 ck 1	100	120	1.28	1.29
TRAN GILA 161kV-GILA 69kV ck1	line WND160MW to WNDFARMS 230 ck 1	100	120	1.29	1.29
TRAN GILA 161kV-GILA 69kV ck1	tran IMPRLVLY 230 to IMPRLVLY 500 ck 1	100	120	1.29	1.29
TRAN GILA 161kV-GILA 69kV ck1	tran IMPRLVLY 230 to IMPRLVLY 500 ck 3	100	120	1.29	1.29
TRAN GILA 161kV-GILA 69kV ck1	tran WNDFARMS 230 to WNDFARMS 500 ck 1	100	120	1.29	1.29
TRAN GILA 161kV-GILA 69kV ck1	gen IV GEN2 21.00 2	100	120	1.28	1.28
TRAN GILA 161kV-GILA 69kV ck1	gen IV GEN3 21.00 3	100	120	1.28	1.28
TRAN GILA 161kV-GILA 69kV ck1	gen PEN_ST 18.00 3	100	120	1.28	1.28
TRAN GILA 161kV-GILA 69kV ck1	line CENTRALX to SYCAMORE 230 ck 1	100	120	1.26	1.26
TRAN GILA 161kV-GILA 69kV ck1	line CENTRALX to SYCAMORE 230 ck 2	100	120	1.26	1.26
TRAN GILA 161kV-GILA 69kV ck1	line IMPRLVLY to DIXIE230 230 ck 1	100	120	1.25	1.26
TRAN GILA 161kV-GILA 69kV ck1	line IV-WIND 500kV SPS6.2	100	120	1.26	1.26
TRAN GILA 161kV-GILA 69kV ck1	line IMPRLVLY to ELCENTSW 230 ck 1	100	120	1.24	1.25
TRAN GILA 161kV-GILA 69kV ck1	line WIND-ML 500kV SPS6.1	100	120	1.26	1.25
TRAN GILA 161kV-GILA 69kV ck1	line WIND-ML 500kV SPS6.2	100	120	1.25	1.25
TRAN GILA 161kV-GILA 69kV ck1	line IMPRLVLY to CENTRALX 500 ck 1	100	120	1.22	1.22
TRAN GILA 161kV-GILA 69kV ck1	line IV-WIND 500kV	100	120	1.21	1.21

2012 Future Year Category B MVA1 pu Loading				Case Name	
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**12hs-pre**	**12hs-pst**
TRAN GILA 161kV-GILA 69kV ck1	line WIND-ML 500kV	100	120	1.20	1.20
TRAN MIGUEL 69kV-MIGUEL 230kV ck1	tran MIGUEL 69 to MIGUEL 230 ck 2	224	305	1.22	1.21
TRAN MIGUEL 69kV-MIGUEL 230kV ck2	tran MIGUEL 69 to MIGUEL 230 ck 1	224	305	1.22	1.21
TRAN OLD TOWN 69kV-OLD TOWN 230kV ck1	tran OLD TOWN 69 to OLD TOWN 230 ck 2	224	263	1.08	1.08
TRAN OLD TOWN 69kV-OLD TOWN 230kV ck2	tran OLD TOWN 69 to OLD TOWN 230 ck 1	224	239	1.08	1.08
TRAN PEN_ST 18kV-PEN 230kV ck1	line WIND-ML 500kV SPS6.2	235	235	1.02	1.00
TRAN PENSQTOS 230kV-PENSQTOS 69kV ck2	tran PENSQTOS 230 to PENSQTOS 69 ck 1	224	269	1.03	1.02
TRAN PENSQTOS 230kV-PENSQTOS 69kV ck2	tran PENSQTOS 230 to PENSQTOS 138 ck 1	224	269	1.01	1.00
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	tran MIGUEL 69 to MIGUEL 230 ck 1	140	143	1.05	1.05
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	tran MIGUEL 69 to MIGUEL 230 ck 2	140	143	1.05	1.05
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	line OLD TOWN to KETTNER 69 ck 1	140	143	1.03	1.03
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	line SAMPSON to DIVISION 69 ck 1	140	143	1.02	1.02
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	tran SILVERGT 230/69	140	143	1.01	1.01
TRAN SYCAMORE 230kV-SYCAMORE 69kV ck1	tran SYCAMORE 230 to SYCAMORE 69 ck 2	224	285	1.21	1.19
TRAN SYCAMORE 230kV-SYCAMORE 69kV ck2	tran SYCAMORE 230 to SYCAMORE 69 ck 1	224	269	1.19	1.17

Category B MVA2 Per Unit Loading

2012 Future Year Category B MVA2 pu Loading				Case Name	
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**12hs-pre**	**12hs-pst**
LINE ARABY S 69kV-AR FH TP 69kV ck1	line HASSYAMP to N.GILA 500 ck 1	79	79	1.12	1.13
LINE ARABY S 69kV-AR FH TP 69kV ck1	tran N.GILA 500 to N.GILA 69 ck 1	79	79	1.03	1.03
LINE ARABY S 69kV-AR FH TP 69kV ck1	tran N.GILA 500 to N.GILA 69 ck 2	79	79	1.03	1.03
LINE BLYTHE 161kV-BUCKBLVD 161kV ck1	line N.GILA to IMPRLVLY 500 ck 1	400	440	1.05	1.05
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line CARLTNHS-SANTEE-SX 138	71	71	1.11	1.10
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line WIND-ML 500kV SPS6.2	71	71	1.10	1.08
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line WIND-ML 500kV	71	71	1.08	1.06
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line WIND-ML 500kV SPS6.1	71	71	1.06	1.04
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line IV-WIND 500kV SPS6.2	71	71	1.05	1.03
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line IV-WIND 500kV	71	71	1.03	1.02
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line CREELMAN to LOSCOCHS 69 ck 1	71	71	1.03	1.00
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line IV-WIND 500kV SPS6.1	71	71	1.02	1.00
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	line SANTEE to LOSCOCHS 138 ck 1	71	71	1.01	1.00
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	tran SYCAMORE 230 to SYCAMORE 138 ck 1	71	71	1.01	1.00
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	line ESCNDIDO to ASH 69 ck 1	102	113	1.21	1.19
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	line ESCNDIDO to FELICITA 69 ck 1	102	113	1.16	1.16
LINE KNOB 161kV-PILOTKNB 161kV ck1	line N.GILA to IMPRLVLY 500 ck 1	165	165	1.00	1.02
LINE LILAC 69kV-PALA 69kV ck1	line AVCDO-MNSRTP-MNSR-PALA 69 ck 1	71	71	0.40	1.71
LINE LILAC 69kV-PALA 69kV ck1	line WIND-ML 500kV SPS6.2	71	71	0.39	1.05
LINE LILAC 69kV-PALA 69kV ck1	gen PEN PLANT 18.00	71	71	0.38	1.04
LINE LILAC 69kV-PALA 69kV ck1	line N.GILA to IMPRLVLY 500 ck 1	71	71	0.36	1.04
LINE LILAC 69kV-PALA 69kV ck1	line ESCNDIDO to LILAC 69 ck 1	71	71	0.60	1.03
LINE LILAC 69kV-PALA 69kV ck1	line HASSYAMP to N.GILA 500 ck 1	71	71	0.36	1.03
LINE LILAC 69kV-PALA 69kV ck1	line IV-WIND 500kV SPS6.2	71	71	0.36	1.03
LINE LILAC 69kV-PALA 69kV ck1	line WIND-ML 500kV SPS6.1	71	71	0.36	1.03
LINE LILAC 69kV-PALA 69kV ck1	tran ESCNDIDO 69 to ESCNDIDO 230 ck 1	71	71	0.37	1.03
LINE LILAC 69kV-PALA 69kV ck1	tran ESCNDIDO 69 to ESCNDIDO 230 ck 2	71	71	0.37	1.03
LINE LILAC 69kV-PALA 69kV ck1	tran ESCNDIDO 69 to ESCNDIDO 230 ck 3	71	71	0.37	1.03
LINE LILAC 69kV-PALA 69kV ck1	line ASH-ASHTP-FELICITA-VC 69 ck 1	71	71	0.39	1.02

2012 Future Year Category B MVA2 pu Loading				Case Name	
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**12hs-pre**	**12hs-pst**
LINE LILAC 69kV-PALA 69kV ck1	line CANNON-SANLUSRY-SHADOWR 138	71	71	0.35	1.02
LINE LILAC 69kV-PALA 69kV ck1	line IMPRLVLY to CENTRALX 500 ck 1	71	71	0.35	1.01
LINE LILAC 69kV-PALA 69kV ck1	line IV-WIND 500kV SPS6.1	71	71	0.34	1.01
LINE LILAC 69kV-PALA 69kV ck1	line ESCNDIDO to ASH 69 ck 1	71	71	0.34	1.00
LINE LILAC 69kV-PALA 69kV ck1	line PENSQTOS to ENCINA 230 ck 1	71	71	0.33	1.00
LINE LILAC 69kV-PALA 69kV ck1	line WIND-ML 500kV	71	71	0.34	1.00
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	line MELROSE to SANLUSRY 69 ck 1	97	111	1.01	1.01
LINE MONSRATE 69kV-MNSRATTP 69kV ck1	line LILAC to PALA 69 ck 1	77	77	0.19	1.33
LINE NILAND 161kV-BLYTHE 161kV ck1	line N.GILA to IMPRLVLY 500 ck 1	165	165	1.11	1.12
LINE NILAND 161kV-BLYTHE 161kV ck1	line HASSYAMP to N.GILA 500 ck 1	165	165	1.00	1.01
LINE PALA 69kV-MNSRATTP 69kV ck1	line LILAC to PALA 69 ck 1	68	68	0.42	1.78
LINE RINCON 69kV-LILAC 69kV ck1	line ASH-ASHTP-FELICITA-VC 69 ck 1	55	55	0.95	1.06
LINE RTAP2 92kV-RTP1 92kV ck1	line WIND-ML 500kV	57	57	1.06	1.04
LINE RTAP2 92kV-RTP1 92kV ck1	line IV-WIND 500kV	57	57	1.04	1.03
LINE RTAP2 92kV-RTP1 92kV ck1	line IMPRLVLY to CENTRALX 500 ck 1	57	57	1.03	1.02
LINE SAMPSON 69kV-MAIN ST 69kV ck1	line SAMPSON to MAIN ST 69 ck 2	129	129	1.15	1.15
LINE SAMPSON 69kV-MAIN ST 69kV ck2	line SAMPSON to MAIN ST 69 ck 1	129	129	1.16	1.16
LINE SHADOWR 138kV-ESCNDO50 138kV ck1	line CANNON-SANLUSRY-SHADOWR 138	63	73	1.06	1.05
LINE SYCAMORE 138kV-CARLTHTP 138kV ck1	line WIND-ML 500kV SPS6.2	247	247	1.08	1.07
LINE SYCAMORE 138kV-CARLTHTP 138kV ck1	line WIND-ML 500kV	247	247	1.05	1.03
LINE SYCAMORE 138kV-CARLTHTP 138kV ck1	line IV-WIND 500kV SPS6.2	247	247	1.01	1.00
LINE SYCAMORE 138kV-CARLTHTP 138kV ck1	line WIND-ML 500kV SPS6.1	247	247	1.00	1.00
LINE SYCAMORE 69kV-ELLIOTT 69kV ck1	line WIND-ML 500kV SPS6.2	68	68	1.07	1.07
LINE SYCAMORE 69kV-ELLIOTT 69kV ck1	line WIND-ML 500kV	68	68	1.01	1.01
LINE WARNERS 69kV-RINCON 69kV ck1	line CREELMAN to SYCAMORE 69 ck 1	32	32	0.98	1.10
LINE WARNERS 69kV-RINCON 69kV ck1	line WIND-ML 500kV SPS6.2	32	32	0.98	1.09[21]
LINE WARNERS 69kV-RINCON 69kV ck1	line IV-WIND 500kV SPS6.2	32	32	0.93	1.04[21]
LINE WARNERS 69kV-RINCON 69kV ck1	line WIND-ML 500kV SPS6.1	32	32	0.92	1.04[21]
LINE WARNERS 69kV-RINCON 69kV ck1	line WIND-ML 500kV	32	32	0.89	1.01[21]

[21] Most likely, this overload would not be evident when the system is properly re-dispatched with the tripping of the Imperial Valley generators.

2012 Future Year Category B MVA2 pu Loading				Case Name	
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**12hs-pre**	**12hs-pst**
LINE WLTNMOHK 161kV-GILA 161kV ck1	line N.GILA to IMPRLVLY 500 ck 1	112	120	1.02	1.03
TRAN ENCINA 5 24kV-ENCINA 230kV ck1	line WIND-ML 500kV SPS6.2	355	355	1.02	1.02
TRAN ESCNDO50 138kV-ESCNDIDO 69kV ck2	line CANNON-SANLUSRY-SHADOWR 138	63	73	1.05	1.05
TRAN GILA 161kV-GILA 69kV ck1	line HASSYAMP to N.GILA 500 ck 1	100	120	1.72	1.73
TRAN GILA 161kV-GILA 69kV ck1	tran N.GILA 500 to N.GILA 69 ck 1	100	120	1.12	1.12
TRAN GILA 161kV-GILA 69kV ck1	tran N.GILA 500 to N.GILA 69 ck 2	100	120	1.12	1.12
TRAN GILA 161kV-GILA 69kV ck1	ML BK80 SPS6.6 f	100	120	1.09	1.09
TRAN GILA 161kV-GILA 69kV ck1	ML BK81 SPS6.6 f	100	120	1.09	1.09
TRAN GILA 161kV-GILA 69kV ck1	gen PEN PLANT 18.00	100	120	1.08	1.08
TRAN GILA 161kV-GILA 69kV ck1	gen WND160MW 230.00 Q	100	120	1.07	1.08
TRAN GILA 161kV-GILA 69kV ck1	line LEAPS-MP to CMPNL500 500 ck 1	100	120	1.08	1.08
TRAN GILA 161kV-GILA 69kV ck1	line WND160MW to WNDFARMS 230 ck 1	100	120	1.07	1.08
TRAN GILA 161kV-GILA 69kV ck1	tran IMPRLVLY 230 to IMPRLVLY 500 ck 1	100	120	1.08	1.08
TRAN GILA 161kV-GILA 69kV ck1	tran IMPRLVLY 230 to IMPRLVLY 500 ck 3	100	120	1.08	1.08
TRAN GILA 161kV-GILA 69kV ck1	tran WNDFARMS 230 to WNDFARMS 500 ck 1	100	120	1.07	1.08
TRAN GILA 161kV-GILA 69kV ck1	gen ENCINA 5 24.00 5	100	120	1.07	1.07
TRAN GILA 161kV-GILA 69kV ck1	gen INTBCT 16.00 1	100	120	1.07	1.07
TRAN GILA 161kV-GILA 69kV ck1	gen IV GEN2 21.00 2	100	120	1.07	1.07
TRAN GILA 161kV-GILA 69kV ck1	gen IV GEN3 21.00 3	100	120	1.07	1.07
TRAN GILA 161kV-GILA 69kV ck1	gen PEN_ST 18.00 3	100	120	1.07	1.07
TRAN GILA 161kV-GILA 69kV ck1	line PENSQTOS to ENCINA 230 ck 1	100	120	1.07	1.07
TRAN GILA 161kV-GILA 69kV ck1	line CENTRALX to SYCAMORE 230 ck 1	100	120	1.05	1.05
TRAN GILA 161kV-GILA 69kV ck1	line CENTRALX to SYCAMORE 230 ck 2	100	120	1.05	1.05
TRAN GILA 161kV-GILA 69kV ck1	line IMPRLVLY to DIXIE230 230 ck 1	100	120	1.04	1.05
TRAN GILA 161kV-GILA 69kV ck1	line IV-WIND 500kV SPS6.2	100	120	1.05	1.05
TRAN GILA 161kV-GILA 69kV ck1	line WIND-ML 500kV SPS6.1	100	120	1.05	1.05
TRAN GILA 161kV-GILA 69kV ck1	line IMPRLVLY to ELCENTSW 230 ck 1	100	120	1.04	1.04
TRAN GILA 161kV-GILA 69kV ck1	line WIND-ML 500kV SPS6.2	100	120	1.04	1.04
TRAN GILA 161kV-GILA 69kV ck1	line IMPRLVLY to CENTRALX 500 ck 1	100	120	1.01	1.02
TRAN GILA 161kV-GILA 69kV ck1	line IV-WIND 500kV	100	120	1.01	1.01
TRAN GILA 161kV-GILA 69kV ck1	line WIND-ML 500kV	100	120	1.00	1.00
TRAN OLD TOWN 69kV-OLD TOWN 230kV ck2	tran OLD TOWN 69 to OLD TOWN 230 ck 1	224	239	1.01	1.01

2012 Future Year Category B MVA2 pu Loading				Case Name	
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**12hs-pre**	**12hs-pst**
TRAN PEN_ST 18kV-PEN 230kV ck1	line WIND-ML 500kV SPS6.2	235	235	1.02	1.00
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	tran MIGUEL 69 to MIGUEL 230 ck 1	140	143	1.03	1.03
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	tran MIGUEL 69 to MIGUEL 230 ck 2	140	143	1.03	1.03
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	line OLD TOWN to KETTNER 69 ck 1	140	143	1.01	1.01

Category C MVA1 Per Unit Loading

2012 Future Year Category C MVA1 pu Loading				Case Name	
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**12hs-pre**	**12hs-pst**
LINE BERNARDO 69kV-FELCTATP 69kV ck1	Poway 69kV Bus	102	108	1.14	1.18[22]
LINE BERNARDO 69kV-R.CARMEL 69kV ck1	Poway 69kV Bus	68	76	1.59	1.59[22]
LINE BERNARDO 69kV-R.CARMEL 69kV ck1	line POMERADO-SYCAMORE 69 ck 1/2	68	76	1.25	1.23[22]
LINE BERNARDO 69kV-R.CARMEL 69kV ck1	POM-SX 1 + 2 69KV	68	76	1.25	1.23[22]
LINE CAPSTRNO 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	157	157	1.18	1.18
LINE CMPNL230 230kV-TALEGA 230kV ck1	TA-SO 1 + 2 230KV *assoc SPS	456	456	1.02	1.02
LINE CMPNL230 230kV-TALEGA 230kV ck1	TA-SO 1 + 2 230KV SPS	456	456	1.00	1.00
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	CH-SX-SN+LC-EL 138/69 KV	71	71	1.17	1.16
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	CH-SX-SN 138KV + SAN VCNT-EL 69KV	71	71	1.11	1.10
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	LC-SN + LC-EL 138/69 KV	71	71	1.07	1.05
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	Elliot 69kV S Bus	71	71	1.05	1.04
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	Murray 69kV N Bus	71	71	1.05	1.04
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	LC-SY+ML-LC 138/69KV	71	71	1.02	1.01
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	Los Coches 69kV W Bus	71	71	1.04	1.01
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	Creelman 69kV E Bus	71	71	1.00	1.00
LINE DEL MAR 69kV-DELMARTP 69kV ck1	Del Mar 69kV E Bus	50	54	1.16	1.16
LINE EL CAJON 69kV-LOSCOCHS 69kV ck1	Murray 69kV N Bus	55	59	1.44	1.44
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	Escondido 69kV SE Bus	102	113	1.43	1.41
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	Escondido 69kV SW Bus	102	113	1.37	1.31
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	Felicita 69kV S Bus	102	113	1.27	1.30
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	Poway 69kV Bus	102	113	1.15	1.15
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	SX-PEN + PEN-EA-SA 230KV	102	113	1.04	1.06
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	line POMERADO-SYCAMORE 69 ck 1/2	102	113	1.05	1.04
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	POM-SX 1 + 2 69KV	102	113	1.05	1.04
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	SX-PEN 230KV + AR-SX 69KV	102	113	1.02	1.03
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	Bernardo 69kV E Bus	102	113	1.03	1.02

[22] The existing Overload System (OLS) 9.4 will eliminate this potential overload.

2012 Future Year Category C MVA1 pu Loading				Case Name	
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**12hs-pre**	**12hs-pst**
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	Poway 69kV Bus SPS	102	113	1.02	1.02
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	PQ-EA 230KV + EA-NCW 138KV	102	113	1.01	1.02
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	ENCINA 2T Breaker	102	113	1.01	1.01
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	PQ-EA 230KV + NCW-PQ 138KV	102	113	1.01	1.01
LINE ESCO 69kV-WARCYNTP 69kV ck1	line POMERADO-SYCAMORE 69 ck 1/2	86	86	1.03	1.04[23]
LINE ESCO 69kV-WARCYNTP 69kV ck1	POM-SX 1 + 2 69KV	86	86	1.03	1.04[23]
LINE GARFIELD 69kV-EL CAJON 69kV ck1	Murray 69kV N Bus	97	102	1.35	1.35
LINE GRANITE 69kV-GRANITTP 69kV ck1	Murray 69kV N Bus	97	130	1.33	1.32
LINE GRANITE 69kV-GRANITTP 69kV ck1	El Cajon 69kV N Bus	97	130	1.14	1.14
LINE GRANITE 69kV-GRANITTP 69kV ck1	ML-JM 1 + 2 69KV	97	130	1.12	1.12
LINE GRANITE 69kV-GRANITTP 69kV ck1	Miguel 69kV S Bus	97	130	1.09	1.09
LINE KEARNY 69kV-MISSION 69kV ck1	Mission 69kV S Bus	97	129	1.17	1.17
LINE LILAC 69kV-PALA 69kV ck1	PEN-ES #1+ PEN-ES #2 230KV	71	71	0.53	1.18
LINE LILAC 69kV-PALA 69kV ck1	Monserate 69kV S Bus	71	71	0.17	1.05
LINE LILAC 69kV-PALA 69kV ck1	Avocado 69kV Bus	71	71	0.37	1.04
LINE LILAC 69kV-PALA 69kV ck1	Escondido 69kV SW Bus	71	71	0.61	1.04
LINE LILAC 69kV-PALA 69kV ck1	CAN-SA-SH + EA-CAN 138KV	71	71	0.35	1.02
LINE LILAC 69kV-PALA 69kV ck1	SA-MS 1 + SA-MS 2 230KV	71	71	0.31	1.01
LINE MELROSE 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV S Bus	97	102	1.17	1.15
LINE MELROSE 69kV-SANLUSRY 69kV ck1	Escondido 69kV NW Bus	97	102	1.00	1.00
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV N Bus	97	111	1.18	1.16
LINE MESAHGTS 69kV-MISSION 69kV ck1	Mission 69kV N Bus	97	136	1.44	1.43
LINE MESAHGTS 69kV-MISSION 69kV ck1	Kearny 69kV E Bus	97	136	1.23	1.22
LINE MIGUEL 69kV-JAMACHA 69kV ck1	Miguel 69kV N Bus	97	143	1.31	1.30
LINE MIGUEL 69kV-JAMACHA 69kV ck2	Miguel 69kV S Bus	136	143	1.21	1.20
LINE MIGUELTP 69kV-MIGUEL 69kV ck1	ML-JM 1 + 2 69KV	97	136	1.20	1.19
LINE MURRAY 69kV-GARFIELD 69kV ck1	Murray 69kV N Bus	97	103	1.07	1.07
LINE PALA 69kV-MNSRATTP 69kV ck1	Lilac 69kV S Bus	68	68	0.21	1.18

[23] The existing Overload System (OLS) 9.4 will eliminate this potential overload.

2012 Future Year Category C MVA1 pu Loading				Case Name	
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**12hs-pre**	**12hs-pst**
LINE PALA 69kV-MNSRATTP 69kV ck1	SA5W TRIPS LI LOAD SPS6	68	68	0.53	1.17[24]
LINE PALA 69kV-MNSRATTP 69kV ck1	SA5W TRIP TL695 SPS7	68	68	0.42	1.06[24]
LINE PALA 69kV-MNSRATTP 69kV ck1	SA5W TRIPS SM LOAD SPS5	68	68	0.39	1.03[24]
LINE PENSQTOS 69kV-DELMARTP 69kV ck1	Del Mar 69kV E Bus	97	129	1.18	1.18
LINE PENSQTOS 69kV-DELMARTP 69kV ck1	Penasquitos 69kV SE Bus	97	129	1.14	1.13
LINE PENSQTOS 69kV-MIRAMRTP 69kV ck1	Penasquitos 69kV SE Bus	98	102	1.07	1.07
LINE POMERADO 69kV-SYCAMORE 69kV ck2	Sycamore 69kV S Bus	97	136	1.20	1.15
LINE SAMPSON 69kV-MAIN ST 69kV ck2	Main St 69kV E Bus	129	129	1.13	1.13
LINE SAMPSON 69kV-MAIN ST 69kV ck2	Miguel 69kV S Bus	129	129	1.02	1.02
LINE SANMATEO 138kV-LAGNA NL 138kV ck1	TA-TB + TA-PI 138KV	136	136	1.03	1.03
LINE SHADOWR 138kV-ESCNDO50 138kV ck1	CAN-SA-SH + EA-CAN 138KV	63	73	1.22	1.22
LINE TALEGA 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	204	204	1.13	1.13
LINE TALEGA 138kV-SANMATEO 138kV ck1	TA-TB + TA-PI 138KV	136	136	1.29	1.29
LINE TALEGA 138kV-SANMATEO 138kV ck1	PI-CP + TA-TB 138KV	136	136	1.15	1.15
LINE WABASH 69kV-MAIN ST 69kV ck1	line DIVISION-NAVSTMTR 69 ck 1/2	101	101	1.10	1.10
LINE WARNERS 69kV-RINCON 69kV ck1	CH-SX-SN+LC-EL 138/69 KV	32	32	0.90	1.02
TRAN ESCNDO50 138kV-ESCNDIDO 69kV ck2	CAN-SA-SH + EA-CAN 138KV	63	73	1.21	1.22
TRAN GILA 161kV-GILA 69kV ck1	line ML-MS 1&2 230kV SPS6.4 e	100	120	1.31	1.31
TRAN GILA 161kV-GILA 69kV ck1	line ML-MS&ML-SX 230kV SPS6.3 e	100	120	1.32	1.31
TRAN GILA 161kV-GILA 69kV ck1	ENCINA 2T Breaker	100	120	1.30	1.30
TRAN GILA 161kV-GILA 69kV ck1	line ML-MS 1&2 230kV SPS6.4 d	100	120	1.30	1.30
TRAN GILA 161kV-GILA 69kV ck1	line ML-MS&ML-SX 230kV SPS6.3 d	100	120	1.31	1.30
TRAN GILA 161kV-GILA 69kV ck1	ENCINA 2W Breaker	100	120	1.29	1.29
TRAN GILA 161kV-GILA 69kV ck1	line ML-MS 1&2 230kV SPS6.4 b	100	120	1.28	1.29
TRAN GILA 161kV-GILA 69kV ck1	line ML-MS 1&2 230kV SPS6.4 c	100	120	1.29	1.29
TRAN GILA 161kV-GILA 69kV ck1	line ML-MS&ML-SX 230kV SPS6.3 b	100	120	1.29	1.29
TRAN GILA 161kV-GILA 69kV ck1	line ML-MS&ML-SX 230kV SPS6.3 c	100	120	1.30	1.29
TRAN GILA 161kV-GILA 69kV ck1	PQ-EA 230KV + EA-NCW 138KV	100	120	1.28	1.29

[24] SDG&E is evaluating a project to re-arrange the San Luis Rey Substation to eliminate the issues associated with the stuck breaker condition and loss of two 230/69 kV banks.

2012 Future Year Category C MVA1 pu Loading				Case Name	
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**12hs-pre**	**12hs-pst**
TRAN GILA 161kV-GILA 69kV ck1	PQ-EA 230KV + NCW-PQ 138KV	100	120	1.28	1.29
TRAN GILA 161kV-GILA 69kV ck1	SA-MS 1 + SA-MS 2 230KV	100	120	1.28	1.29
TRAN GILA 161kV-GILA 69kV ck1	SA-SO 2 + SO-SA 3 230KV	100	120	1.28	1.28
TRAN GILA 161kV-GILA 69kV ck1	line ML-MS 1&2 230kV	100	120	1.26	1.26
TRAN MIGUEL 69kV-MIGUEL 230kV ck1	ML BK71 & Miguel - SXCC #1 230 kV aa	224	305	1.34	1.33
TRAN SANLUSRY 69kV-SANLUSRY 230kV ck3	SA5W TRIP TL695 SPS7	224	301	1.35	1.23[25]
TRAN SANLUSRY 69kV-SANLUSRY 230kV ck3	SA5W TRIPS LI LOAD SPS6	224	301	1.27	1.15[25]
TRAN SANLUSRY 69kV-SANLUSRY 230kV ck3	SA5W TRIPS SM LOAD SPS5	224	301	1.20	1.08[25]
TRAN SANLUSRY 69kV-SANLUSRY 230kV ck3	SA5W TRIPS SA LOAD SPS2	224	301	1.08	0.96[25]
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	Miguel 69kV S Bus	140	143	1.22	1.22
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	line DIVISION-NAVSTMTR 69 ck 1/2	140	143	1.09	1.09
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	ML BK71 & Miguel - SXCC #1 230 kV aa	140	143	1.08	1.08
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	Main St 69kV E Bus	140	143	1.03	1.03
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	Main St 69kV W Bus	140	143	1.01	1.01

[25] SDG&E is evaluating a project to re-arrange the San Luis Rey Substation to eliminate the issues associated with the stuck breaker condition and loss of two 230/69 kV banks.

Category C MVA2 Per Unit Loading

2012 Future Year Category C MVA2 pu Loading				Case Name	
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**12hs-pre**	**12hs-pst**
LINE BERNARDO 69kV-FELCTATP 69kV ck1	Poway 69kV Bus	102	108	1.07	1.11[26]
LINE BERNARDO 69kV-R.CARMEL 69kV ck1	Poway 69kV Bus	68	76	1.43	1.42[26]
LINE BERNARDO 69kV-R.CARMEL 69kV ck1	line POMERADO-SYCAMORE 69 ck 1/2	68	76	1.12	1.10[26]
LINE BERNARDO 69kV-R.CARMEL 69kV ck1	POM-SX 1 + 2 69KV	68	76	1.12	1.10[26]
LINE CAPSTRNO 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	157	157	1.18	1.18
LINE CMPNL230 230kV-TALEGA 230kV ck1	TA-SO 1 + 2 230KV *assoc SPS	456	456	1.02	1.02
LINE CMPNL230 230kV-TALEGA 230kV ck1	TA-SO 1 + 2 230KV SPS	456	456	1.00	1.00
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	CH-SX-SN+LC-EL 138/69 KV	71	71	1.17	1.16
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	CH-SX-SN 138KV + SAN VCNT-EL 69KV	71	71	1.11	1.10
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	LC-SN + LC-EL 138/69 KV	71	71	1.07	1.05
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	Elliot 69kV S Bus	71	71	1.05	1.04
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	Murray 69kV N Bus	71	71	1.05	1.04
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	LC-SY+ML-LC 138/69KV	71	71	1.02	1.01
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	Los Coches 69kV W Bus	71	71	1.04	1.01
LINE CREELMAN 69kV-SYCAMORE 69kV ck1	Creelman 69kV E Bus	71	71	1.00	1.00
LINE DEL MAR 69kV-DELMARTP 69kV ck1	Del Mar 69kV E Bus	50	54	1.07	1.07
LINE EL CAJON 69kV-LOSCOCHS 69kV ck1	Murray 69kV N Bus	55	59	1.34	1.35
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	Escondido 69kV SE Bus	102	113	1.29	1.27
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	Escondido 69kV SW Bus	102	113	1.23	1.18
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	Felicita 69kV S Bus	102	113	1.15	1.18
LINE ESCNDIDO 69kV-FELCTATP 69kV ck1	Poway 69kV Bus	102	113	1.04	1.04
LINE ESCO 69kV-WARCYNTP 69kV ck1	line POMERADO-SYCAMORE 69 ck 1/2	86	86	1.03	1.04[26]
LINE ESCO 69kV-WARCYNTP 69kV ck1	POM-SX 1 + 2 69KV	86	86	1.03	1.04[26]
LINE GARFIELD 69kV-EL CAJON 69kV ck1	Murray 69kV N Bus	97	102	1.29	1.28
LINE LILAC 69kV-PALA 69kV ck1	PEN-ES #1+ PEN-ES #2 230KV	71	71	0.53	1.18
LINE LILAC 69kV-PALA 69kV ck1	Monserate 69kV S Bus	71	71	0.17	1.05

[26] The existing Overload System (OLS) 9.4 will eliminate this potential overload.

2012 Future Year Category C MVA2 pu Loading				Case Name	
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**12hs-pre**	**12hs-pst**
LINE LILAC 69kV-PALA 69kV ck1	Avocado 69kV Bus	71	71	0.37	1.04
LINE LILAC 69kV-PALA 69kV ck1	Escondido 69kV SW Bus	71	71	0.61	1.04
LINE LILAC 69kV-PALA 69kV ck1	CAN-SA-SH + EA-CAN 138KV	71	71	0.35	1.02
LINE LILAC 69kV-PALA 69kV ck1	SA-MS 1 + SA-MS 2 230KV	71	71	0.31	1.01
LINE MELROSE 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV S Bus	97	102	1.11	1.10
LINE MELRSETP 69kV-SANLUSRY 69kV ck1	San Luis Rey 69kV N Bus	97	111	1.03	1.02
LINE MESAHGTS 69kV-MISSION 69kV ck1	Mission 69kV N Bus	97	136	1.03	1.02
LINE MIGUEL 69kV-JAMACHA 69kV ck2	Miguel 69kV S Bus	136	143	1.15	1.14
LINE MURRAY 69kV-GARFIELD 69kV ck1	Murray 69kV N Bus	97	103	1.01	1.01
LINE PALA 69kV-MNSRATTP 69kV ck1	Lilac 69kV S Bus	68	68	0.21	1.18
LINE PALA 69kV-MNSRATTP 69kV ck1	SA5W TRIPS LI LOAD SPS6	68	68	0.53	1.17[27]
LINE PALA 69kV-MNSRATTP 69kV ck1	SA5W TRIP TL695 SPS7	68	68	0.42	1.06[27]
LINE PALA 69kV-MNSRATTP 69kV ck1	SA5W TRIPS SM LOAD SPS5	68	68	0.39	1.03[27]
LINE PENSQTOS 69kV-MIRAMRTP 69kV ck1	Penasquitos 69kV SE Bus	98	102	1.02	1.02
LINE SAMPSON 69kV-MAIN ST 69kV ck2	Main St 69kV E Bus	129	129	1.13	1.13
LINE SAMPSON 69kV-MAIN ST 69kV ck2	Miguel 69kV S Bus	129	129	1.02	1.02
LINE SANMATEO 138kV-LAGNA NL 138kV ck1	TA-TB + TA-PI 138KV	136	136	1.03	1.03
LINE SHADOWR 138kV-ESCNDO50 138kV ck1	CAN-SA-SH + EA-CAN 138KV	63	73	1.06	1.05
LINE TALEGA 138kV-PICO 138kV ck1	TA-TB + LNL-SMO 138KV	204	204	1.13	1.13
LINE TALEGA 138kV-SANMATEO 138kV ck1	TA-TB + TA-PI 138KV	136	136	1.29	1.29
LINE TALEGA 138kV-SANMATEO 138kV ck1	PI-CP + TA-TB 138KV	136	136	1.15	1.15
LINE WABASH 69kV-MAIN ST 69kV ck1	line DIVISION-NAVSTMTR 69 ck 1/2	101	101	1.10	1.10
LINE WARNERS 69kV-RINCON 69kV ck1	CH-SX-SN+LC-EL 138/69 KV	32	32	0.90	1.02
TRAN ESCNDO50 138kV-ESCNDIDO 69kV ck2	CAN-SA-SH + EA-CAN 138KV	63	73	1.05	1.05
TRAN GILA 161kV-GILA 69kV ck1	line ML-MS 1&2 230kV SPS6.4 e	100	120	1.09	1.09
TRAN GILA 161kV-GILA 69kV ck1	line ML-MS&ML-SX 230kV SPS6.3 d	100	120	1.09	1.09
TRAN GILA 161kV-GILA 69kV ck1	line ML-MS&ML-SX 230kV SPS6.3 e	100	120	1.10	1.09
TRAN GILA 161kV-GILA 69kV ck1	ENCINA 2T Breaker	100	120	1.08	1.08

[27] SDG&E is evaluating a project to re-arrange the San Luis Rey Substation to eliminate the issues associated with the stuck breaker condition and loss of two 230/69 kV banks.

2012 Future Year Category C MVA2 pu Loading				Case Name	
Monitored Element	**Contingency Description**	**MVA1**	**MVA2**	**12hs-pre**	**12hs-pst**
TRAN GILA 161kV-GILA 69kV ck1	line ML-MS 1&2 230kV SPS6.4 d	100	120	1.09	1.08
TRAN GILA 161kV-GILA 69kV ck1	line ML-MS&ML-SX 230kV SPS6.3 b	100	120	1.07	1.08
TRAN GILA 161kV-GILA 69kV ck1	line ML-MS&ML-SX 230kV SPS6.3 c	100	120	1.08	1.08
TRAN GILA 161kV-GILA 69kV ck1	ENCINA 2W Breaker	100	120	1.07	1.07
TRAN GILA 161kV-GILA 69kV ck1	line ML-MS 1&2 230kV SPS6.4 b	100	120	1.07	1.07
TRAN GILA 161kV-GILA 69kV ck1	line ML-MS 1&2 230kV SPS6.4 c	100	120	1.08	1.07
TRAN GILA 161kV-GILA 69kV ck1	PQ-EA 230KV + EA-NCW 138KV	100	120	1.07	1.07
TRAN GILA 161kV-GILA 69kV ck1	PQ-EA 230KV + NCW-PQ 138KV	100	120	1.07	1.07
TRAN GILA 161kV-GILA 69kV ck1	SA-MS 1 + SA-MS 2 230KV	100	120	1.07	1.07
TRAN GILA 161kV-GILA 69kV ck1	SA-SO 2 + SO-SA 3 230KV	100	120	1.07	1.07
TRAN GILA 161kV-GILA 69kV ck1	line ML-MS 1&2 230kV	100	120	1.05	1.05
TRAN SANLUSRY 69kV-SANLUSRY 230kV ck3	SA5W TRIP TL695 SPS7	224	301	1.01	0.91
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	Miguel 69kV S Bus	140	143	1.20	1.20
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	line DIVISION-NAVSTMTR 69 ck 1/2	140	143	1.07	1.07
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	ML BK71 & Miguel - SXCC #1 230 kV aa	140	143	1.06	1.06
TRAN SOUTHBAY 69kV-SOUTHBAY 138kV ck1	Main St 69kV E Bus	140	143	1.01	1.01