

**DOCKET****08-AFC-8**

DATE SEP 22 2009

RECD SEP 22 2009

September 22, 2009

Dockets Unit
California Energy Commission
1516 Ninth Street, MS 4
Sacramento, CA 95814

RE: Hydrogen Energy California Project
Application for Certification 08-AFC-8

On behalf of Hydrogen Energy International LLC, the applicant for the above-referenced Hydrogen Energy California AFC, we are pleased to submit the enclosed document:

- Appendix D Steady State Power Flow Plots

The enclosed document is being submitted to the CEC for docketing.

URS Corporation

Dale Shileikis
Vice President, Environmental Services

Enclosures

CC: Proof of Service List

Appendix D

Steady State Power Flow Plots

APPENDIX D - STEADY STATE POWER FLOW PLOTS

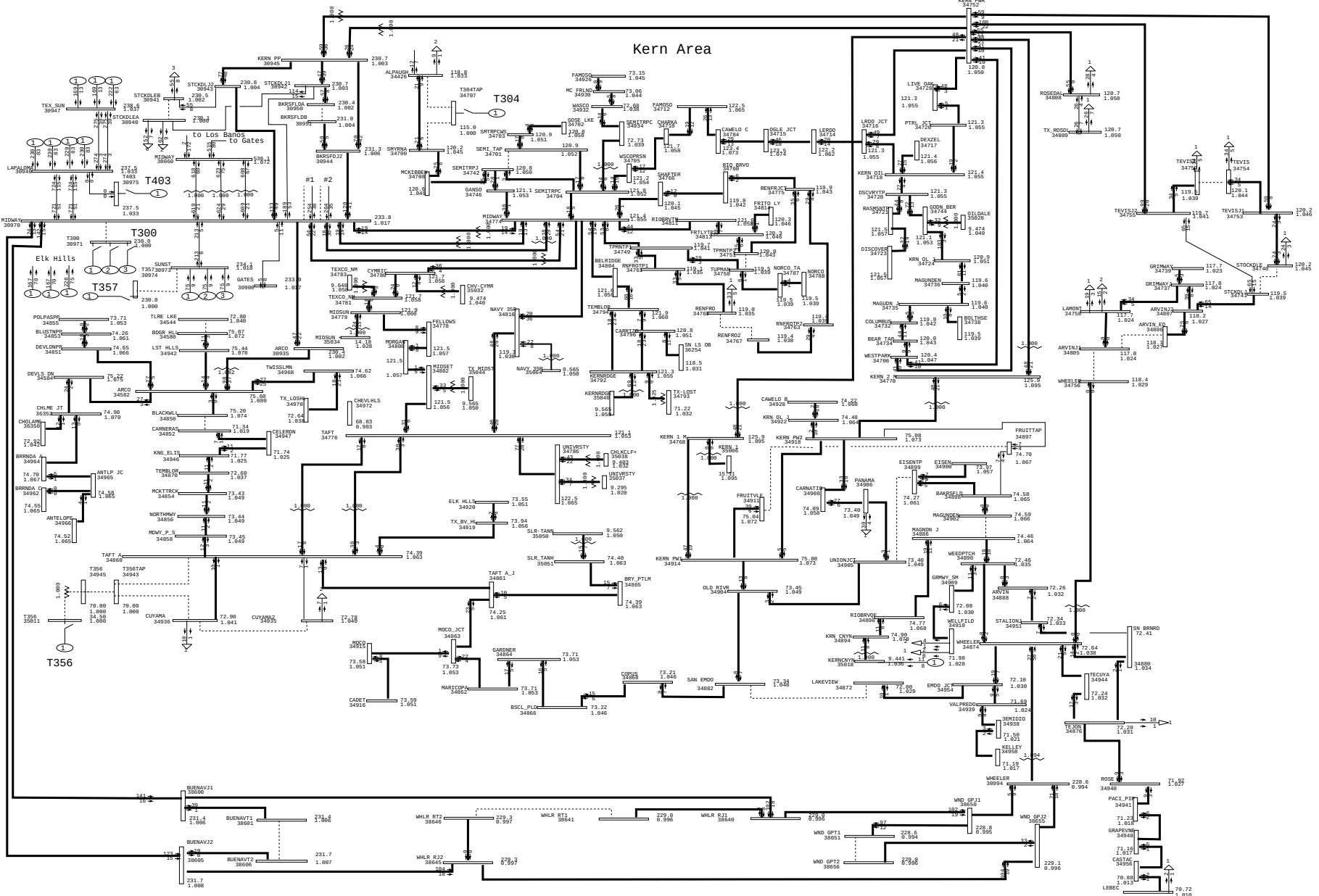
PG&E TCP1 Group 3 San Luis Obispo/Kern Area Power Flow Plots

Plot	Description
Plot #1	2013 Summer Peak Pre-Project Kern: Normal Conditions (MW/MVAr)
Plot #2	2013 Summer Peak Pre-Project Kern: Normal Conditions (Amps/% Rate)
Plot #3	2013 Summer Peak Pre-Project Los Padres: Normal Conditions (MW/MVAr)
Plot #4	2013 Summer Peak Pre-Project Los Padres: Normal Conditions (Amps/% Rate)
Plot #5	2013 Summer Peak Post-Project Kern: Normal Conditions (MW/MVAr)
Plot #6	2013 Summer Peak Post-Project Kern: Normal Conditions (Amps/% Rate)
Plot #7	2013 Summer Peak Post-Project Los Padres: Normal Conditions (MW/MVAr)
Plot #8	2013 Summer Peak Post-Project Los Padres: Normal Conditions (Amps/% Rate)
Plot #9	2013 Summer Off Peak Pre-Project Kern: Normal Conditions (MW/MVAr)
Plot #10	2013 Summer Off Peak Pre-Project Kern: Normal Conditions (Amps/% Rate)
Plot #11	2013 Summer Off Peak Pre-Project Los Padres: Normal Conditions (MW/MVAr)
Plot #12	2013 Summer Off Peak Pre-Project Los Padres: Normal Conditions (Amps/% Rate)
Plot #13	2013 Summer Off Peak Post-Project Kern: Normal Conditions (MW/MVAr)
Plot #14	2013 Summer Off Peak Post-Project Kern: Normal Conditions (Amps/% Rate)
Plot #15	2013 Summer Off Peak Post-Project Los Padres: Normal Conditions (MW/MVAr)
Plot #16	2013 Summer Off Peak Post-Project Los Padres: Normal Conditions (Amps/% Rate)
Plot #17	2013 Summer Peak Pre-Project Kern : Midway 500/230 kV Bank 12 Outage (MW/MVAr)
Plot #18	2013 Summer Peak Pre-Project Kern: Midway 500/230 kV Bank 12 Outage (Amps/% Rate)
Plot #19	2013 Summer Peak Post-Project Kern : Midway 500/230 kV Bank 12 Outage (MW/MVAr)
Plot #20	2013 Summer Peak Post-Project Kern: Midway 500/230 kV Bank 12 Outage (Amps/% Rate)
Plot #21	2013 Summer Peak Pre-Project Los Padres : T239 - Midway #1 230 kV Line Outage trip Q016 (MW/MVAr)
Plot #22	2013 Summer Peak Pre-Project Los Padres: T239 - Midway #1 230 kV Line Outage trip Q016 (Amps/% Rate)
Plot #23	2013 Summer Peak Post-Project Los Padres : T239 - Midway #1 230 kV Line Outage trip Q016 (MW/MVAr)
Plot #24	2013 Summer Peak Post-Project Los Padres: T239 - Midway #1 230 kV Line Outage trip Q016 (Amps/% Rate)
Plot #25	2013 Summer Peak Pre-Project Los Padres : T239 - Midway #2 230 kV Line Outage trip Q016/Q166 (MW/MVAr)
Plot #26	2013 Summer Peak Pre-Project Los Padres: T239 - Midway #2 230 kV Line Outage trip Q016/Q166 (Amps/% Rate)
Plot #27	2013 Summer Peak Post-Project Los Padres : T239 - Midway #2 230 kV Line Outage trip Q016/Q166 (MW/MVAr)
Plot #28	2013 Summer Peak Post-Project Los Padres: T239 - Midway #2 230 kV Line Outage trip Q016/Q166 (Amps/% Rate)
Plot #29	2013 Summer Peak Pre-Project Los Padres : Morro Bay - Templeton 230 kV Line Outage with Q016 SPS (MW/MVAr)
Plot #30	2013 Summer Peak Pre-Project Los Padres: Morro Bay - Templeton 230 kV Line Outage with Q016 SPS (Amps/% Rate)

APPENDIX D - STEADY STATE POWER FLOW PLOTS

Plot	Description
Plot #31	2013 Summer Peak Post-Project Los Padres : Morro Bay - Templeton 230 kV Line Outage with Q016 SPS (MW/MVAr)
Plot #32	2013 Summer Peak Post-Project Los Padres: Morro Bay - Templeton 230 kV Line Outage with Q016 SPS (Amps/% Rate)
Plot #33	2013 Summer Peak Pre-Project Los Padres : Morro Bay 230/115 kV Bank 6 Outage (MW/MVAr)
Plot #34	2013 Summer Peak Pre-Project Los Padres: Morro Bay 230/115 kV Bank 6 Outage (Amps/% Rate)
Plot #35	2013 Summer Peak Post-Project Los Padres : Morro Bay 230/115 kV Bank 6 Outage (MW/MVAr)
Plot #36	2013 Summer Peak Post-Project Los Padres: Morro Bay 230/115 kV Bank 6 Outage (Amps/% Rate)
Plot #37	2013 Summer Off Peak Pre-Project Los Padres : Morro Bay - Q166 #2 230 kV Line Outage (MW/MVAr)
Plot #38	2013 Summer Off Peak Pre-Project Los Padres: Morro Bay - Q166 #2 230 kV Line Outage (Amps/% Rate)
Plot #39	2013 Summer Off Peak Post-Project Los Padres : Morro Bay - Q166 #2 230 kV Line Outage (MW/MVAr)
Plot #40	2013 Summer Off Peak Post-Project Los Padres: Morro Bay - Q166 #2 230 kV Line Outage (Amps/% Rate)
Plot #41	2013 Summer Off Peak Pre-Project Los Padres : Midway - Taft 115 kV Line Outage (MW/MVAr)
Plot #42	2013 Summer Off Peak Pre-Project Los Padres: Midway - Taft 115 kV Line Outage (Amps/% Rate)
Plot #43	2013 Summer Off Peak Post-Project Los Padres : Midway - Taft 115 kV Line Outage (MW/MVAr)
Plot #44	2013 Summer Off Peak Post-Project Los Padres: Midway - Taft 115 kV Line Outage (Amps/% Rate)
Plot #45	2013 Summer Off Peak Pre-Project Los Padres : Gates - Midway 500 kV Line Outage (MW/MVAr)
Plot #46	2013 Summer Off Peak Pre-Project Los Padres: Gates - Midway 500 kV Line Outage (Amps/% Rate)
Plot #47	2013 Summer Off Peak Post-Project Los Padres : Gates - Midway 500 kV Line Outage (MW/MVAr)
Plot #48	2013 Summer Off Peak Post-Project Los Padres: Gates - Midway 500 kV Line Outage (Amps/% Rate)

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:44:33 2009 cases\sumpk\13sumpk-pge-tcp1-slok-pre.sav

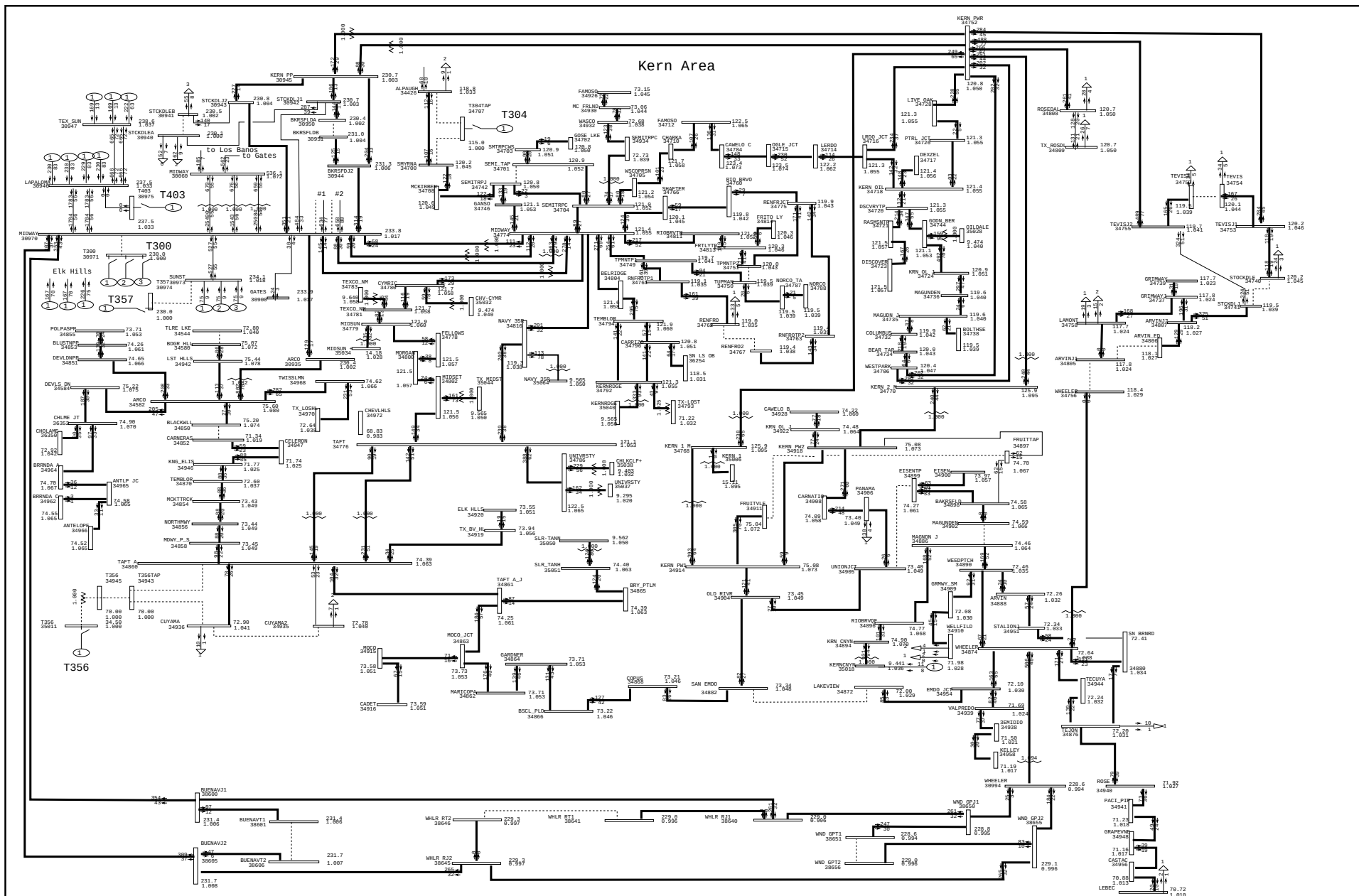


PG&E 2008 CASE SERIES: 2013 San Joaquin/Los Padres Summer Peak Case 1-in-10 lds
 PATH15= 434 MW(S-N) PATH26= 3952 MW(N-S) PDCI= 3099 MW(N-S) COI= 4761 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Peak Transition Pre-Cluster Case

Plot 001: Normal Conditions

MW/MVAR
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 Rating = 1

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:44:34 2009 cases\sumpk\13sumpk-pge-tcp1-slok-pre.sav

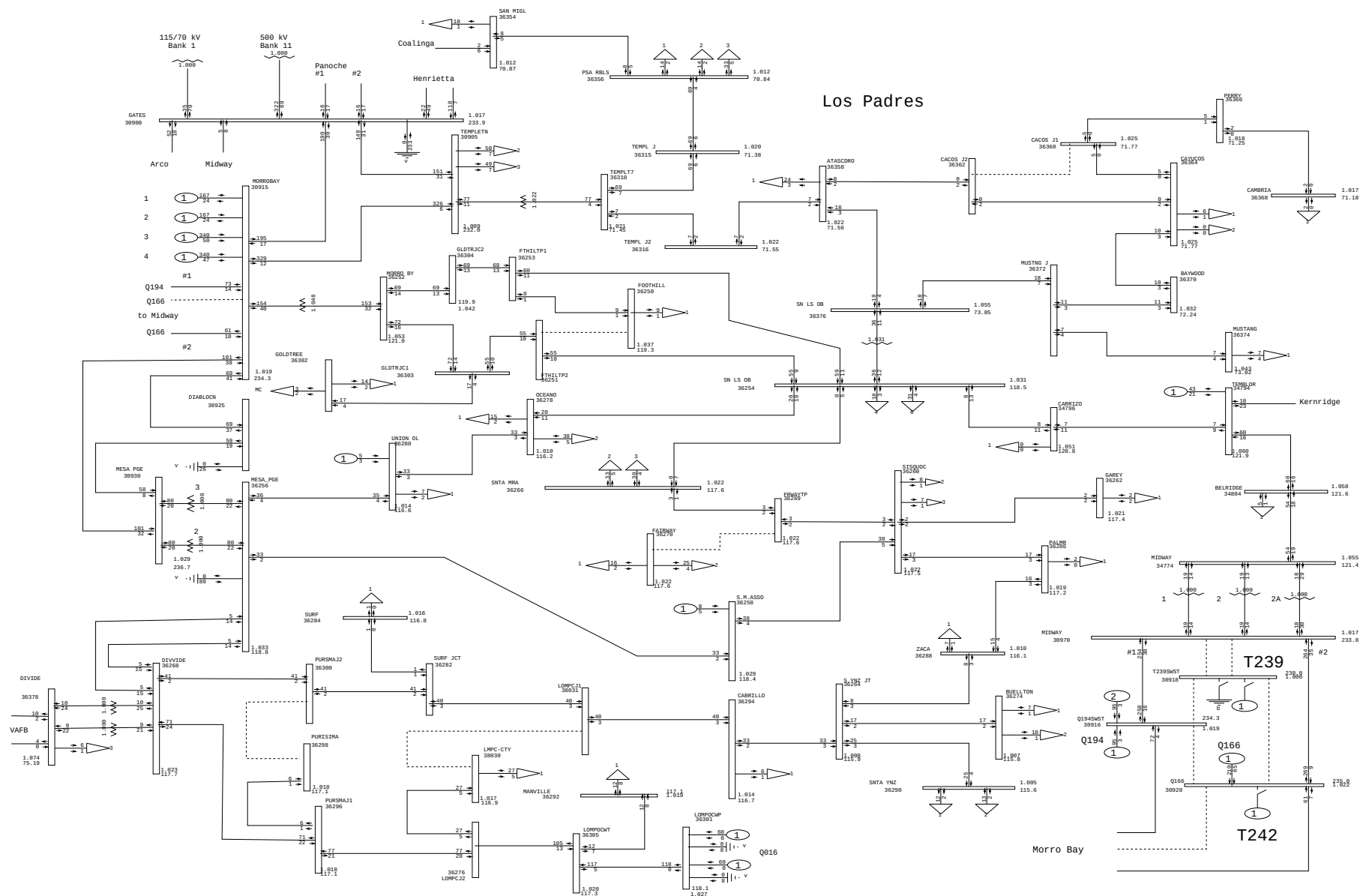


PG&E 2008 CASE SERIES: 2013 San Joaquin/Los Padres Summer Peak Case 1-in-10 lds
 PATH15= 434 MW(S-N) PATH26= 3952 MW(N-S) PDCI= 3099 MW(N-S) COI= 4761 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Peak Transition Pre-Cluster Case

Plot 002: Normal Conditions

amps/rate
 draw\slok\pge-tcp1-slok-
 Rating = 1

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:44:35 2009 cases\sumpk\13sumpk-pge-tcp1-slok-pre.sav



Pacific Gas and Electric Company¹

PG&E 2008 CASE SERIES: 2013 San Joaquin/Los Padres Summer Peak Case 1-in-10 lds

PATH15= 434 MW(S-N) PATH26= 3952 MW(N-S) PDCI= 3099 MW(N-S) COI= 4761 MW(N-S)

PG&E 2008 Group 3 SLO/Kern Summer Peak Transition Pre-Cluster Case

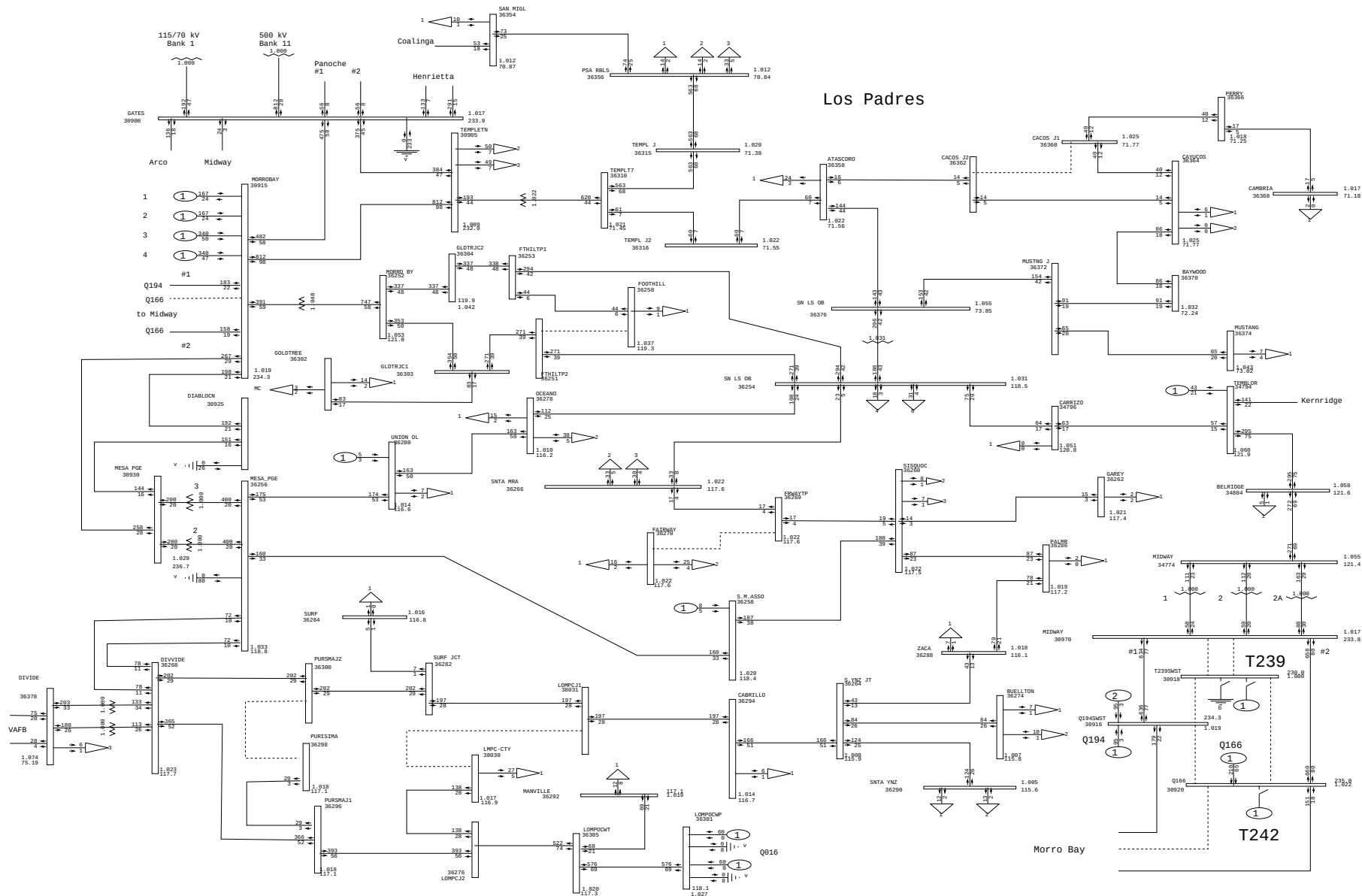
Plot 003: Normal Conditions

MW/MVAR

```
draw\slok\pge-tcp1-slok-
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Rating = 1

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:44:36 2009 cases\sumpk\13sumpk-pge-tcp1-slok-pre.sav

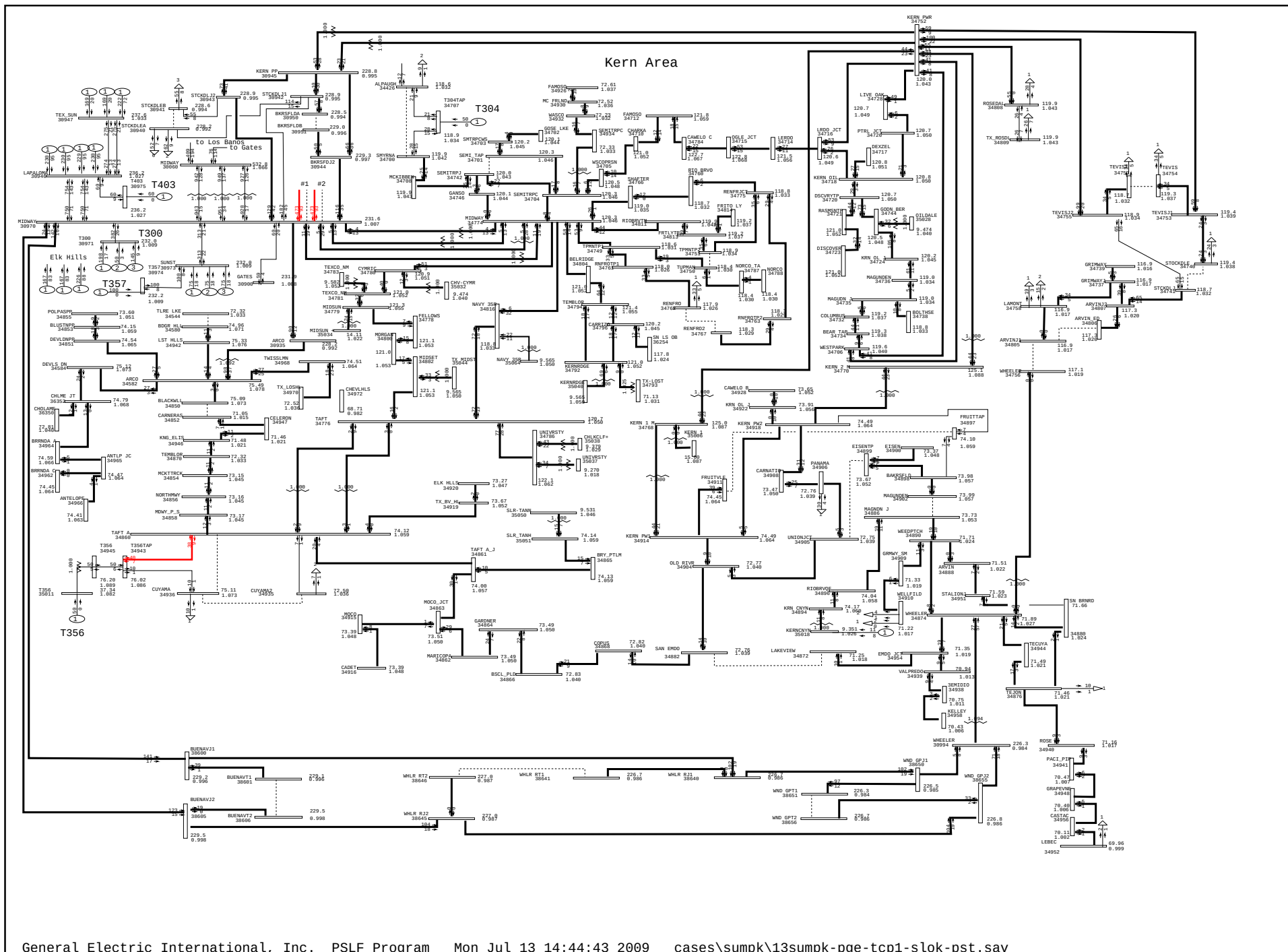


PG&E 2008 CASE SERIES: 2013 San Joaquin/Los Padres Summer Peak Case 1-in-10 lds
 PATH15= 434 MW(S-N) PATH26= 3952 MW(N-S) PDCI= 3099 MW(N-S) COI= 4761 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Peak Transition Pre-Cluster Case

Plot 004: Normal Conditions

amps/rate
 draw\slok\pge-tcp1-slok-
 Rating = 1

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:44:43 2009 cases\sumpk\13sumpk-pge-tcp1-slok-pst.sav

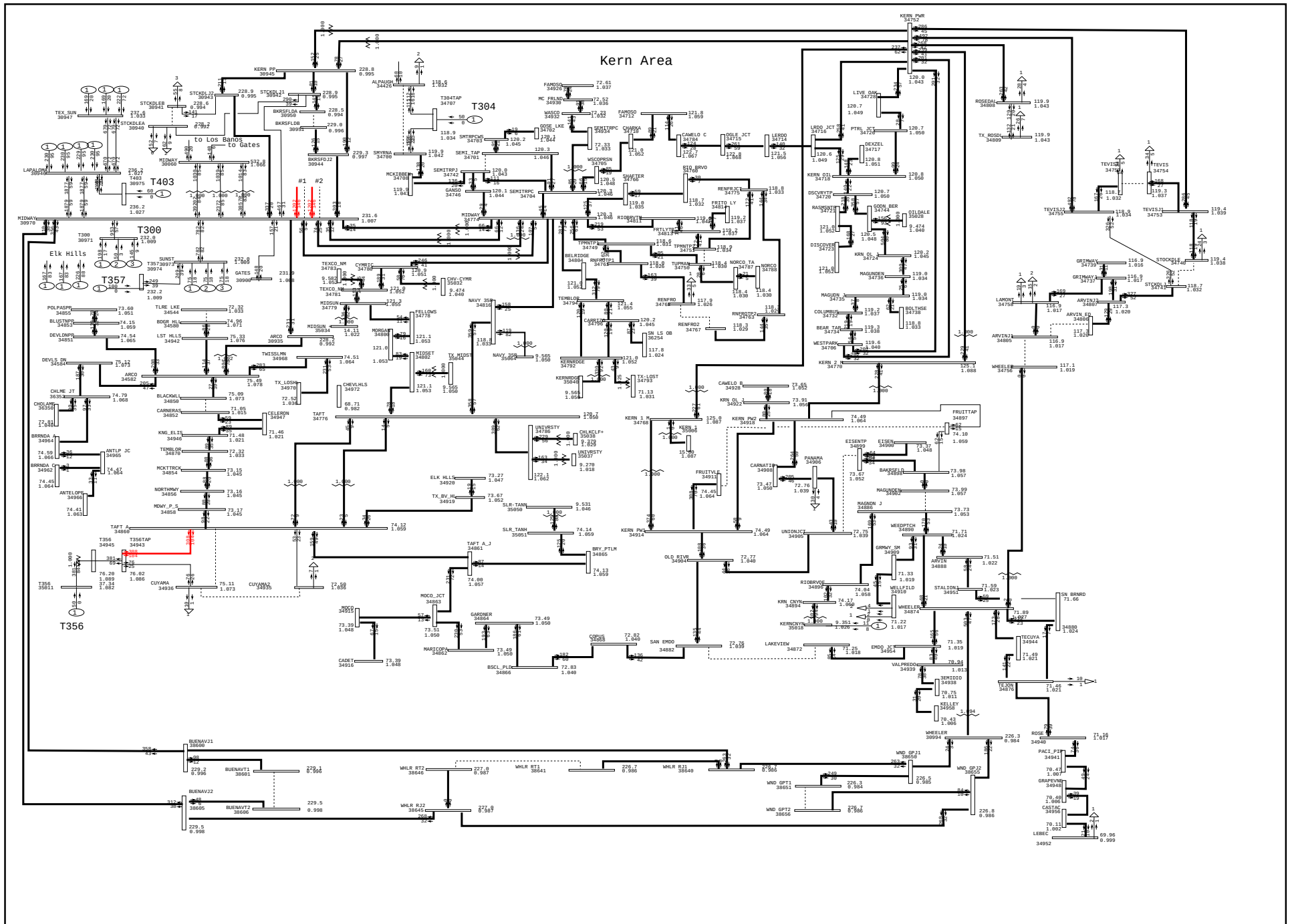


PG&E 2008 CASE SERIES: 2013 San Joaquin/Los Padres Summer Peak Case 1-in-10 lds
 PATH15= 1619 MW(S-N) PATH26= 3992 MW(N-S) PDCI= 3096 MW(N-S) COI= 4796 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Peak Transition Post-Cluster Case

Plot 005: Normal Conditions

MW/MVAR
 draw\slok\pge-tcp1-slok-
 Rating = 1

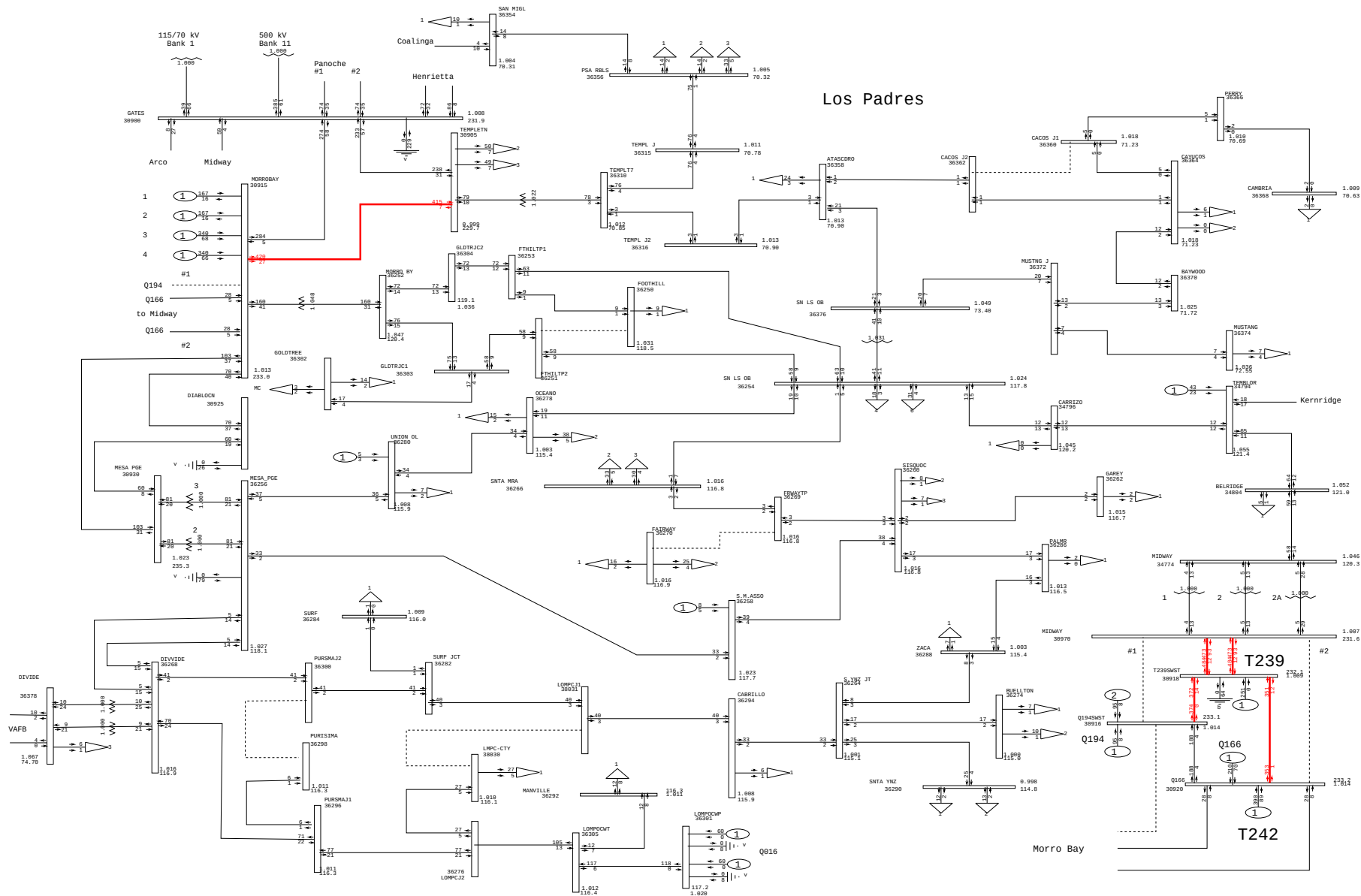
APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:44:44 2009 cases\sumpk\13sumpk-pge-tcp1-slok-pst.sav

	PG&E 2008 CASE SERIES: 2013 San Joaquin/Los Padres Summer Peak Case 1-in-10 lds PATH15= 1619 MW(S-N) PATH26= 3992 MW(N-S) PDCI= 3096 MW(N-S) COI= 4796 MW(N-S) PG&E 2008 Group 3 SLO/Kern Summer Peak Transition Post-Cluster Case	Plot 006: Normal Conditions	amps/rate draw\slok\pge-tcp1-slok- Rating = 1
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APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:44:45 2009 cases\sumpk\13sumpk-pge-tcp1-slok-pst.sav

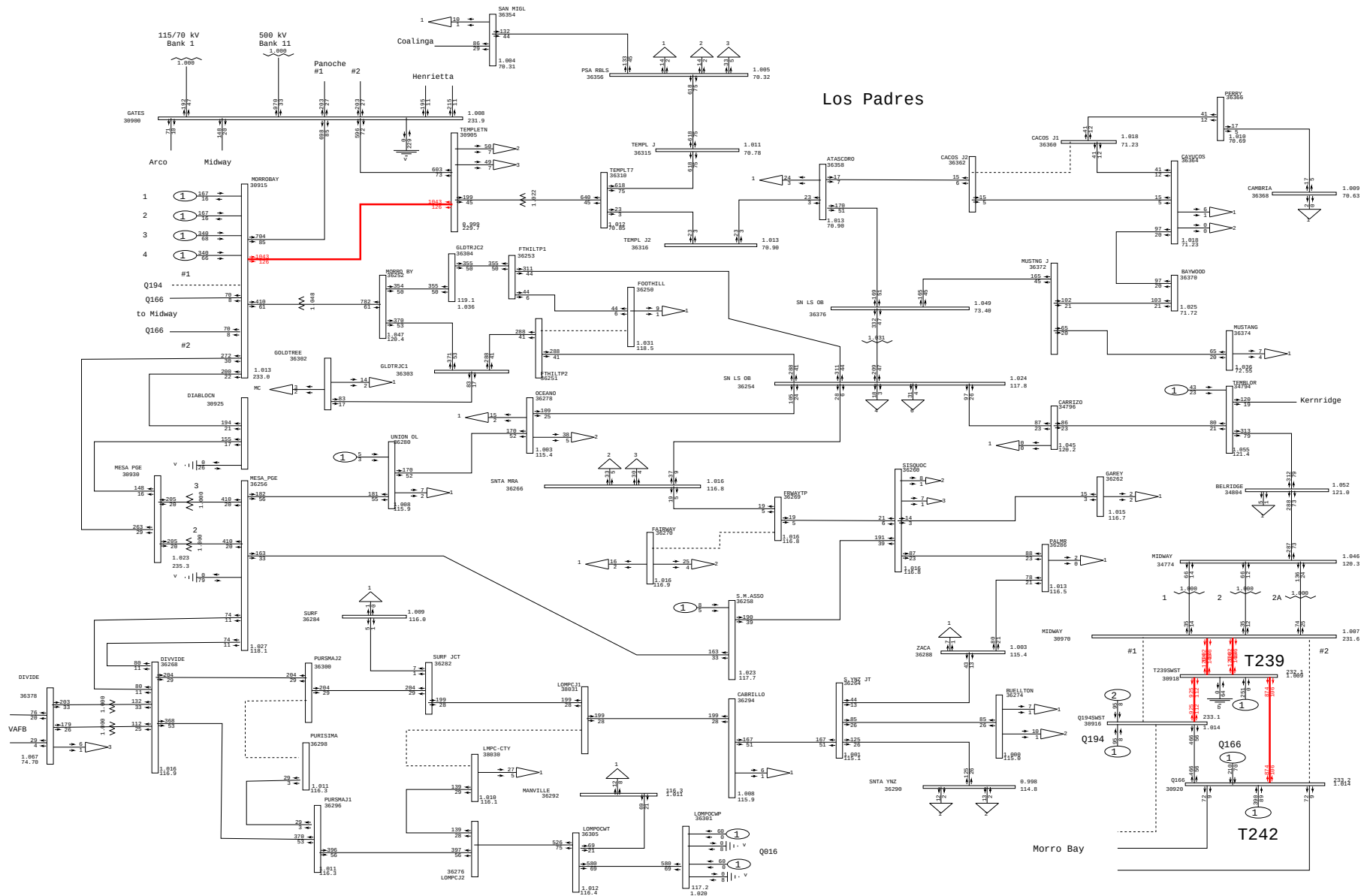


PG&E 2008 CASE SERIES: 2013 San Joaquin/Los Padres Summer Peak Case 1-in-10 lds
 PATH15= 1619 MW(S-N) PATH26= 3992 MW(N-S) PDCI= 3096 MW(N-S) COI= 4796 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Peak Transition Post-Cluster Case

Plot 007: Normal Conditions

MW/MVAR
 draw\slok\pge-tcp1-slok-
 Rating = 1

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:44:46 2009 cases\sumpk\13sumpk-pge-tcp1-slok-pst.sav

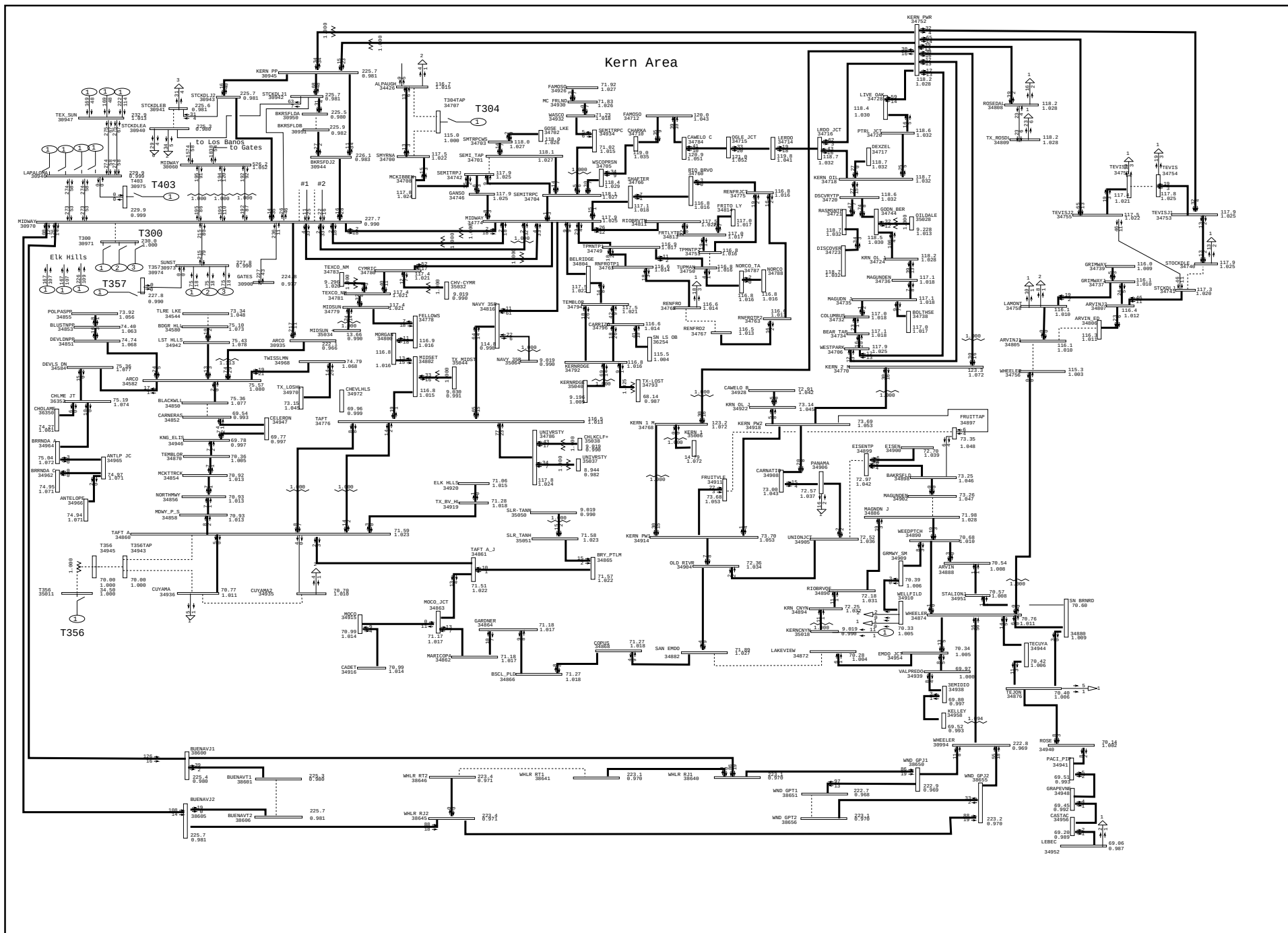


PG&E 2008 CASE SERIES: 2013 San Joaquin/Los Padres Summer Peak Case 1-in-10 lds
 PATH15= 1619 MW(S-N) PATH26= 3992 MW(N-S) PDCI= 3096 MW(N-S) COI= 4796 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Peak Transition Post-Cluster Case

Plot 008: Normal Conditions

amps/rate
 draw\slok\pge-tcp1-slok-
 Rating = 1

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:44:48 2009 cases\sumop\13sumop-pge-tcp1-slok-pre.sav

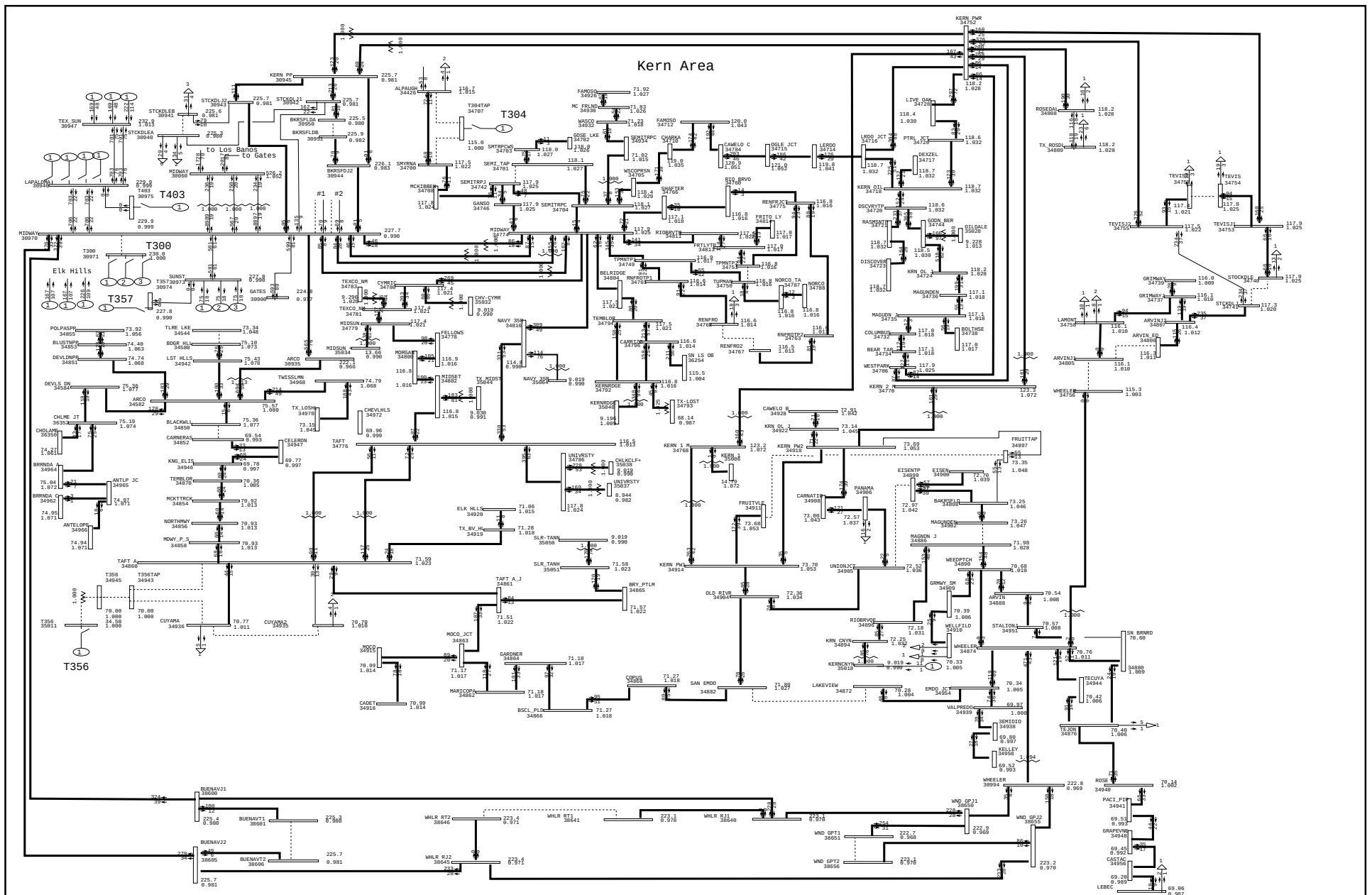


PG&E 2008 CASE SERIES: 2013 Summer Off Peak Case
 PATH15= 4932 MW(S-N) PATH26=-1657 MW(N-S) PDCI=-1846 MW(N-S) COI=-3603 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Off Peak Transition Pre-Cluster Case

Plot 009: Normal Conditions

MW/MVAR
 draw\slok\pge-tcp1-slok-
 Rating = 1

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:44:49 2009 cases\sumop\13sumop-pge-tcp1-slok-pre.sav

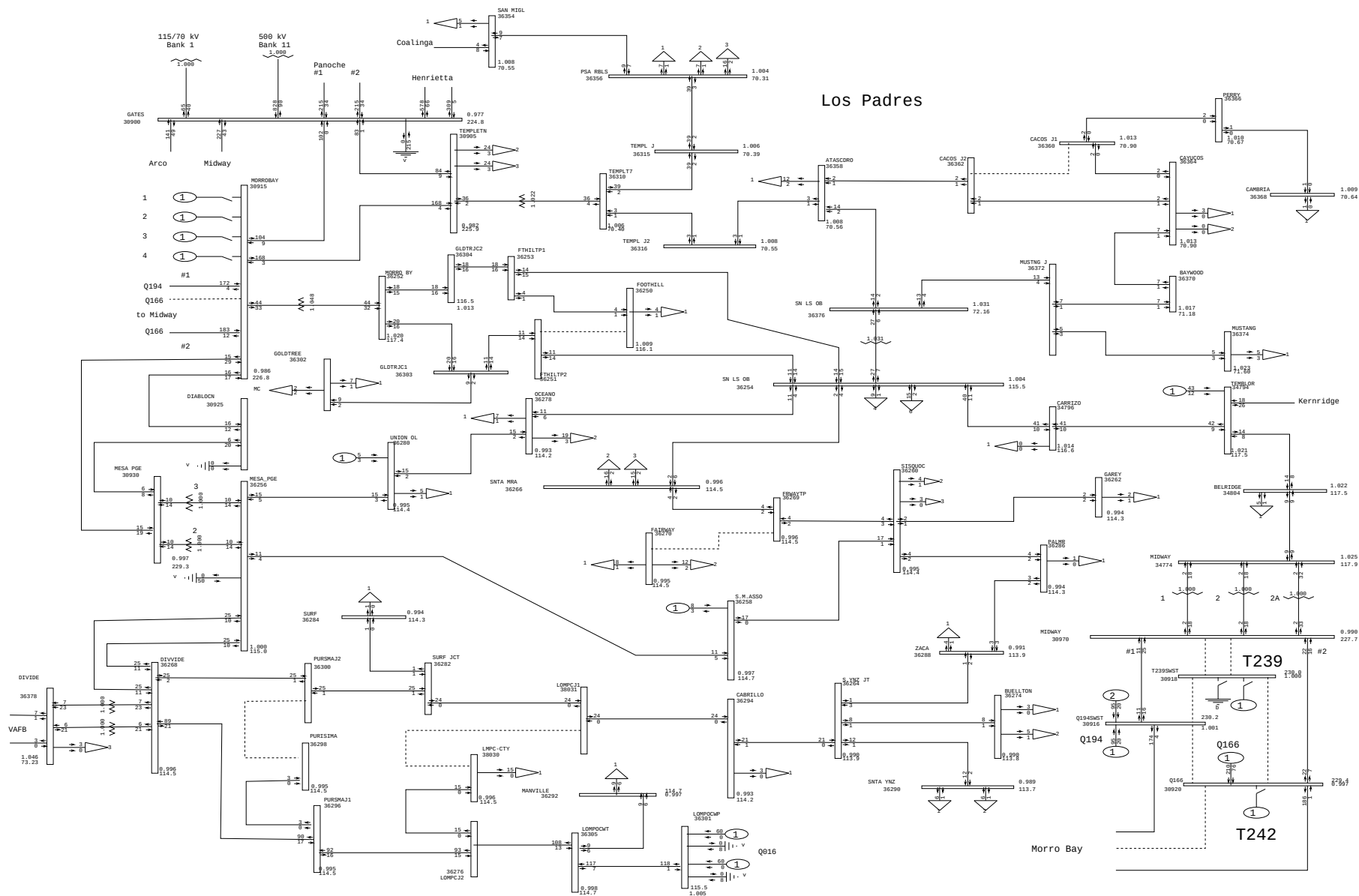


PG&E 2008 CASE SERIES: 2013 Summer Off Peak Case
 PATH15= 4932 MW(S-N) PATH26=-1657 MW(N-S) PDCI=-1846 MW(N-S) COI=-3603 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Off Peak Transition Pre-Cluster Case

Plot 010: Normal Conditions

amps/rate
 draw\slok\pge-tcp1-slok-
 Rating = 1

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:44:50 2009 cases\sumop\13sumop-pge-tcp1-slok-pre.sav

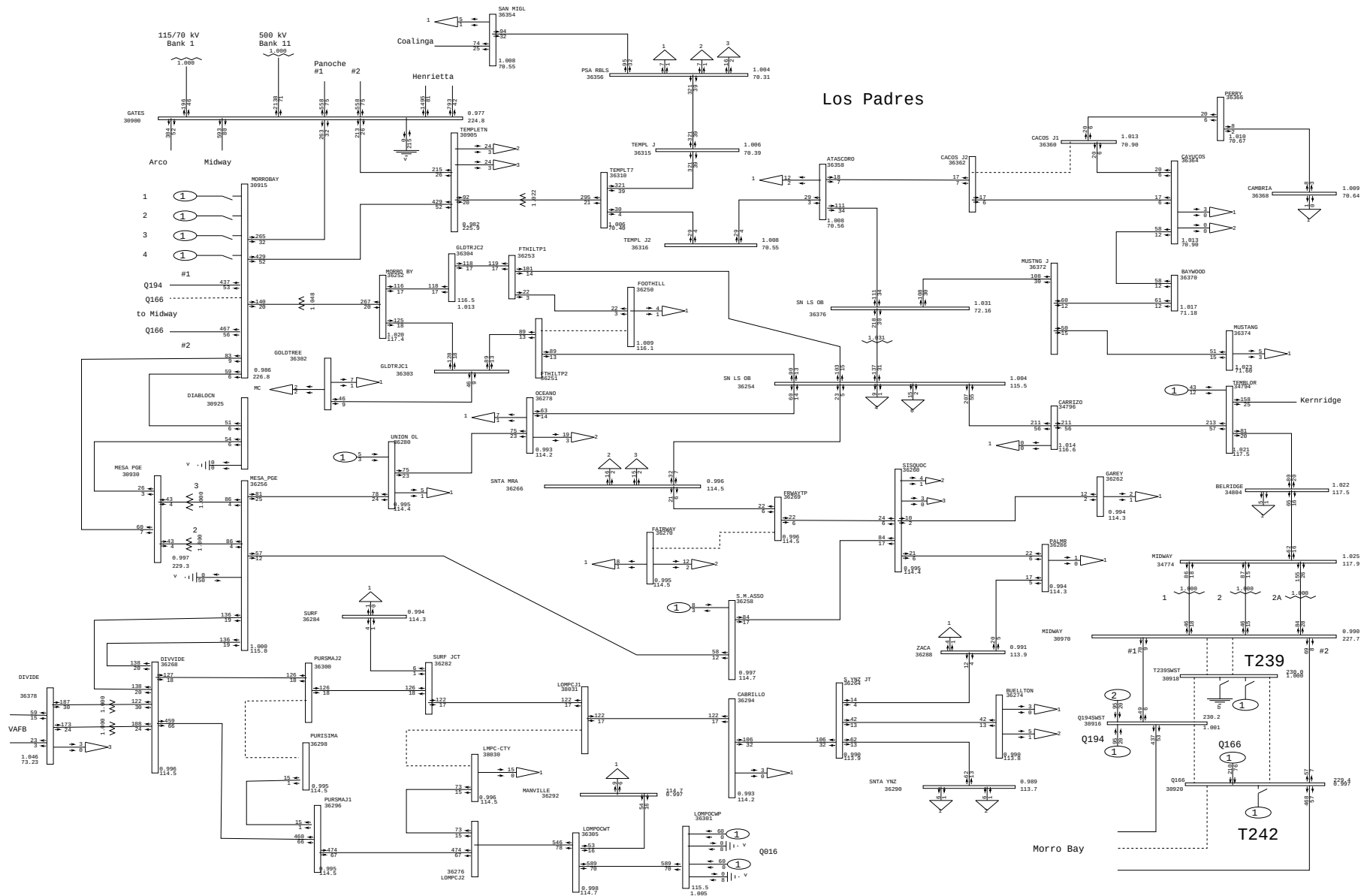


PG&E 2008 CASE SERIES: 2013 Summer Off Peak Case
 PATH15= 4932 MW(S-N) PATH26=-1657 MW(N-S) PDCI=-1846 MW(N-S) COI=-3603 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Off Peak Transition Pre-Cluster Case

Plot 011: Normal Conditions

MW/MVAR
 draw\slok\pge-tcp1-slok-
 Rating = 1

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:44:51 2009 cases\sumop\13sumop-pge-tcp1-slok-pre.sav

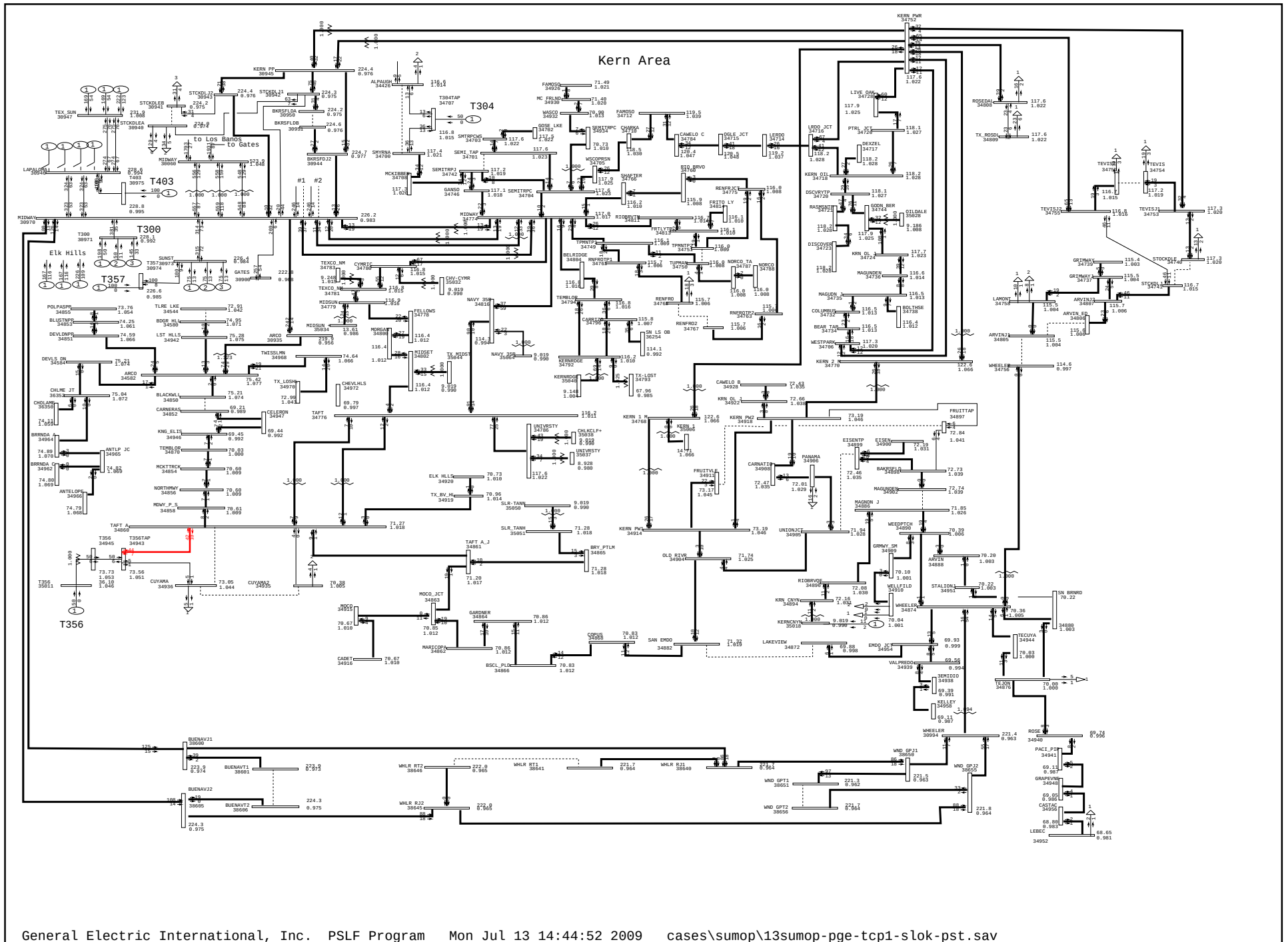


PG&E 2008 CASE SERIES: 2013 Summer Off Peak Case
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 PG&E 2008 Group 3 SLO/Kern Summer Off Peak Transition Pre-Cluster Case

Plot 012: Normal Conditions

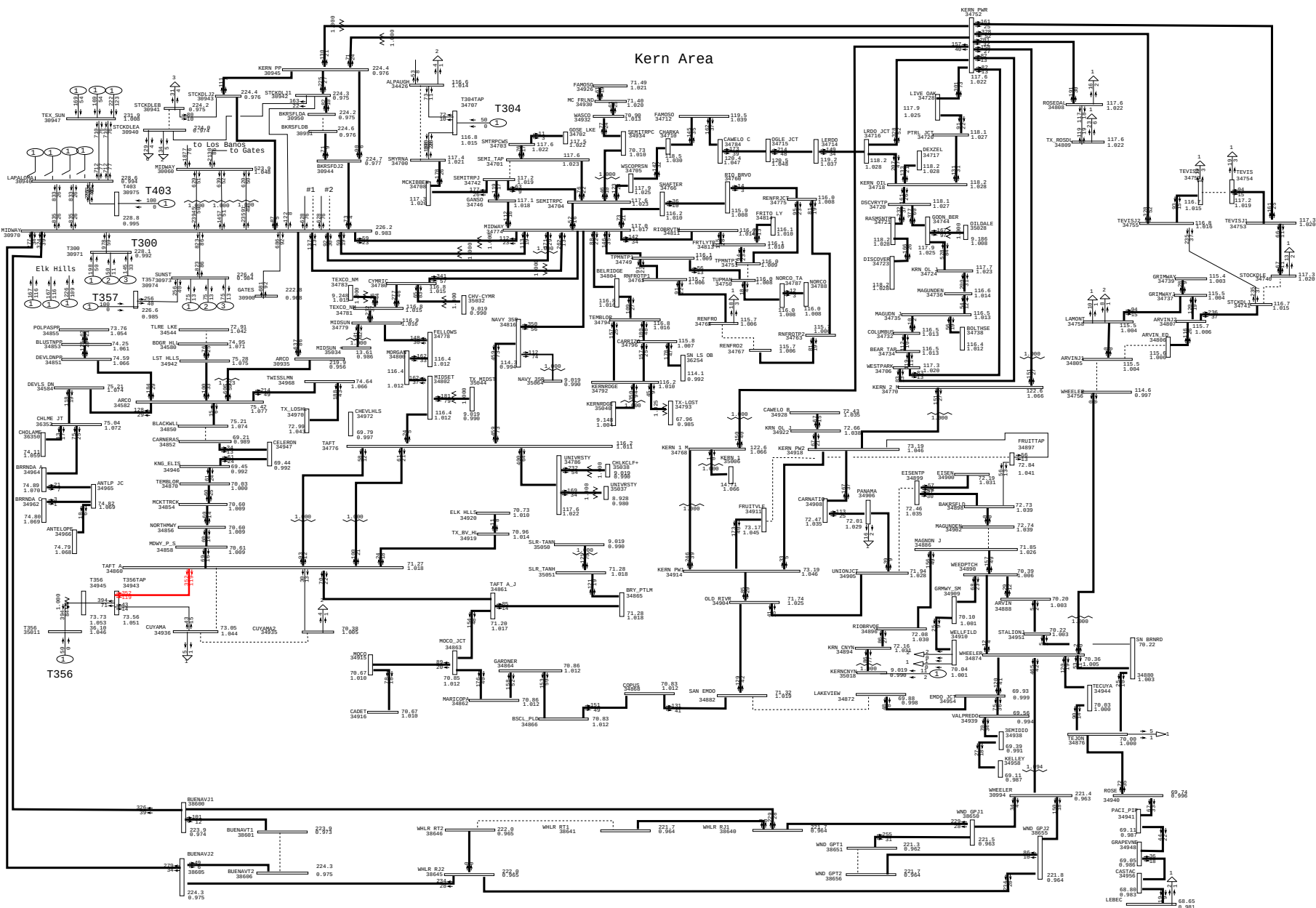
amps/rate
 draw\slok\pge-tcp1-slok-
 Rating = 1

APPENDIX D - STEADY STATE POWER FLOW PLOTS



	PG&E 2008 CASE SERIES: 2013 Summer Off Peak Case PATH15= 5357 MW(S-N) PATH26= -815 MW(N-S) PDCI=-1846 MW(N-S) COI=-3609 MW(N-S) PG&E 2008 Group 3 SLO/Kern Summer Off Peak Transition Post-Cluster Case	Plot 013: Normal Conditions	MW/MVAR draw\slok\pge-tcp1-slok- Rating = 1
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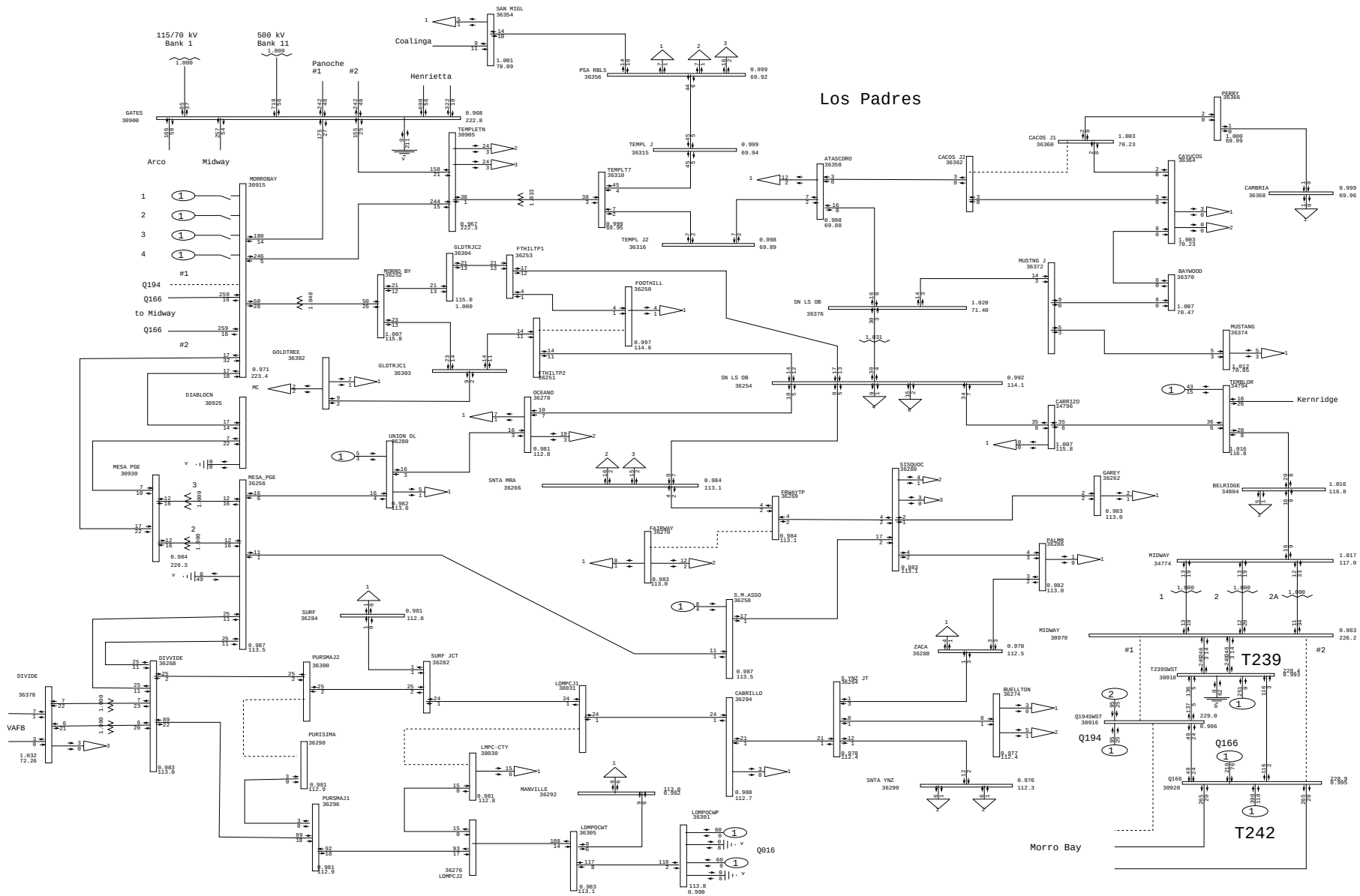
APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:44:53 2009 cases\sumop\13sumop-pge-tcp1-slok-pst.sav

	PG&E 2008 CASE SERIES: 2013 Summer Off Peak Case PATH15= 5357 MW(S-N) PATH26= -815 MW(N-S) PDCI=-1846 MW(N-S) COI=-3609 MW(N-S) PG&E 2008 Group 3 SLO/Kern Summer Off Peak Transition Post-Cluster Case	Plot 014: Normal Conditions	amps/rate draw\slok\pge-tcp1-slok- Rating = 1
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APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:44:54 2009 cases\sumop\13sumop-pge-tcp1-slok-pst.sav



Pacific Gas and
Electric Company[®]

PG&E 2008 CASE SERIES: 2013 Summer Off Peak Case

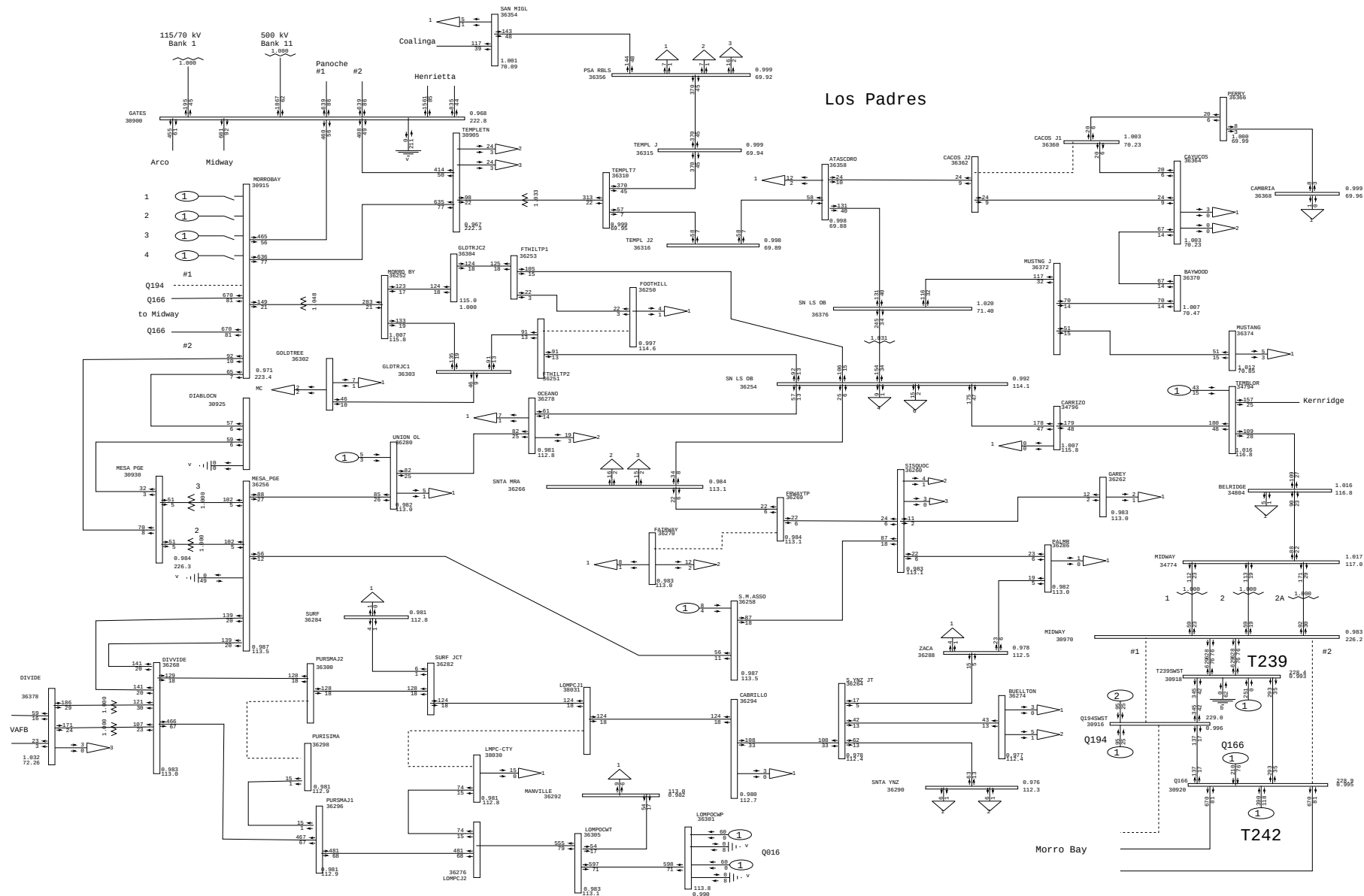
PATH15= 5357 MW(S-N) PATH26= -815 MW(N-S) PDCI=-1846 MW(N-S) COI=-3609 MW(N-S)

PG&E 2008 Group 3 SLO/Kern Summer Off Peak Transition Post-Cluster Case

Plot 015: Normal Conditions

MW/MVAR	
draw\slok\pge-tcp1-slok-	
Rating =	1

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:44:55 2009 cases\sumop\13sumop-pge-tcp1-slok-pst.sav

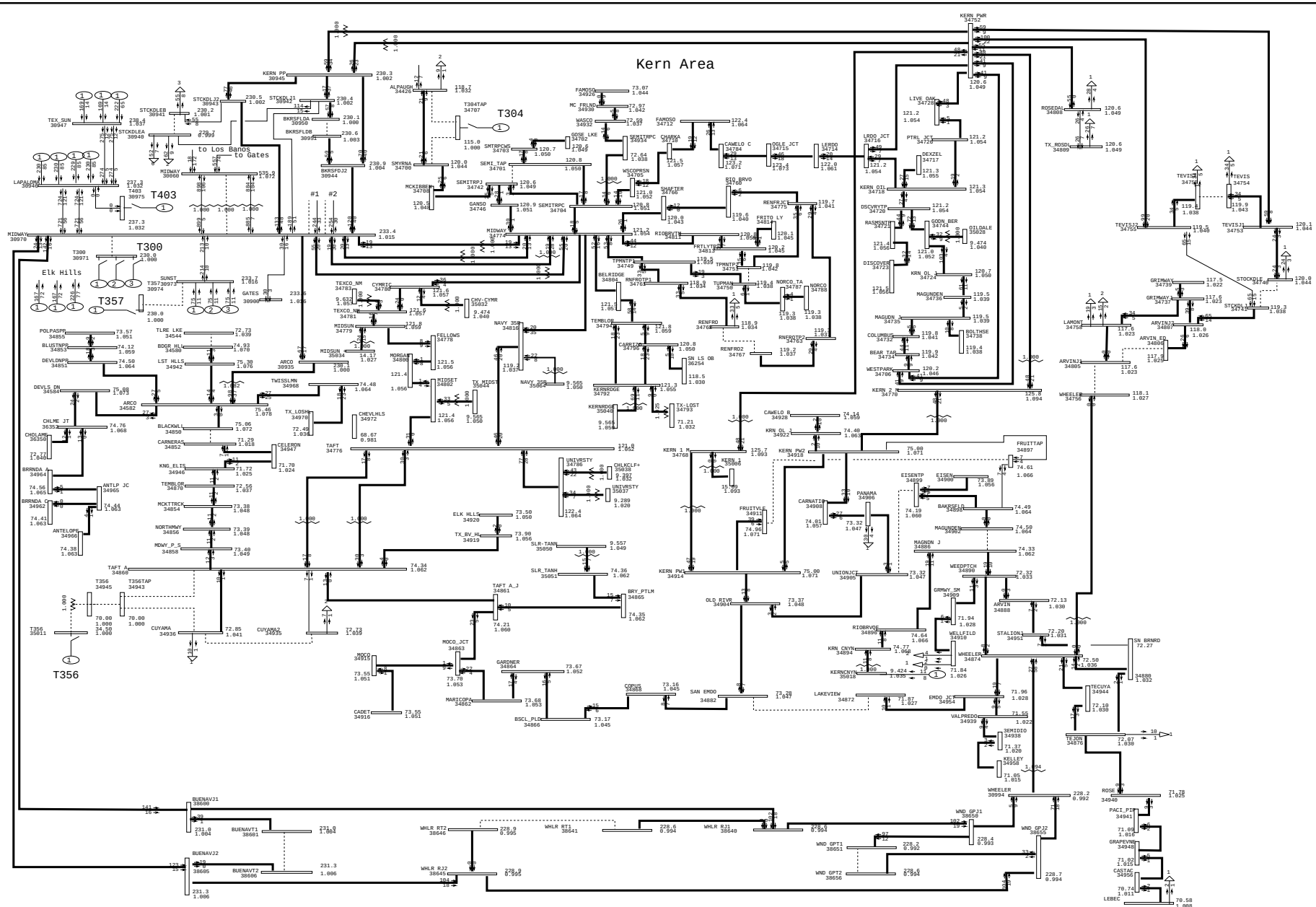


PG&E 2008 CASE SERIES: 2013 Summer Off Peak Case
 PATH15= 5357 MW(S-N) PATH26= -815 MW(N-S) PDCI=-1846 MW(N-S) COI=-3609 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Off Peak Transition Post-Cluster Case

Plot 016: Normal Conditions

amps/rate
 draw\slok\pge-tcp1-slok-
 Rating = 1

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:44:58 2009 cases\sumpk\13sumpk-pge-tcp1-slok-pre.sav



Pacific Gas and Electric Company¹

PG&E 2008 CASE SERIES: 2013 San Joaquin/Los Padres Summer Peak Case 1-in-10 lds

PATH15= 434 MW(S-N) PATH26= 3952 MW(N-S) PDCI= 3099 MW(N-S) COI= 4761 MW(N-S)

PG&E 2008 Group 3 SLO/Kern Summer Peak Transition Pre-Cluster Case

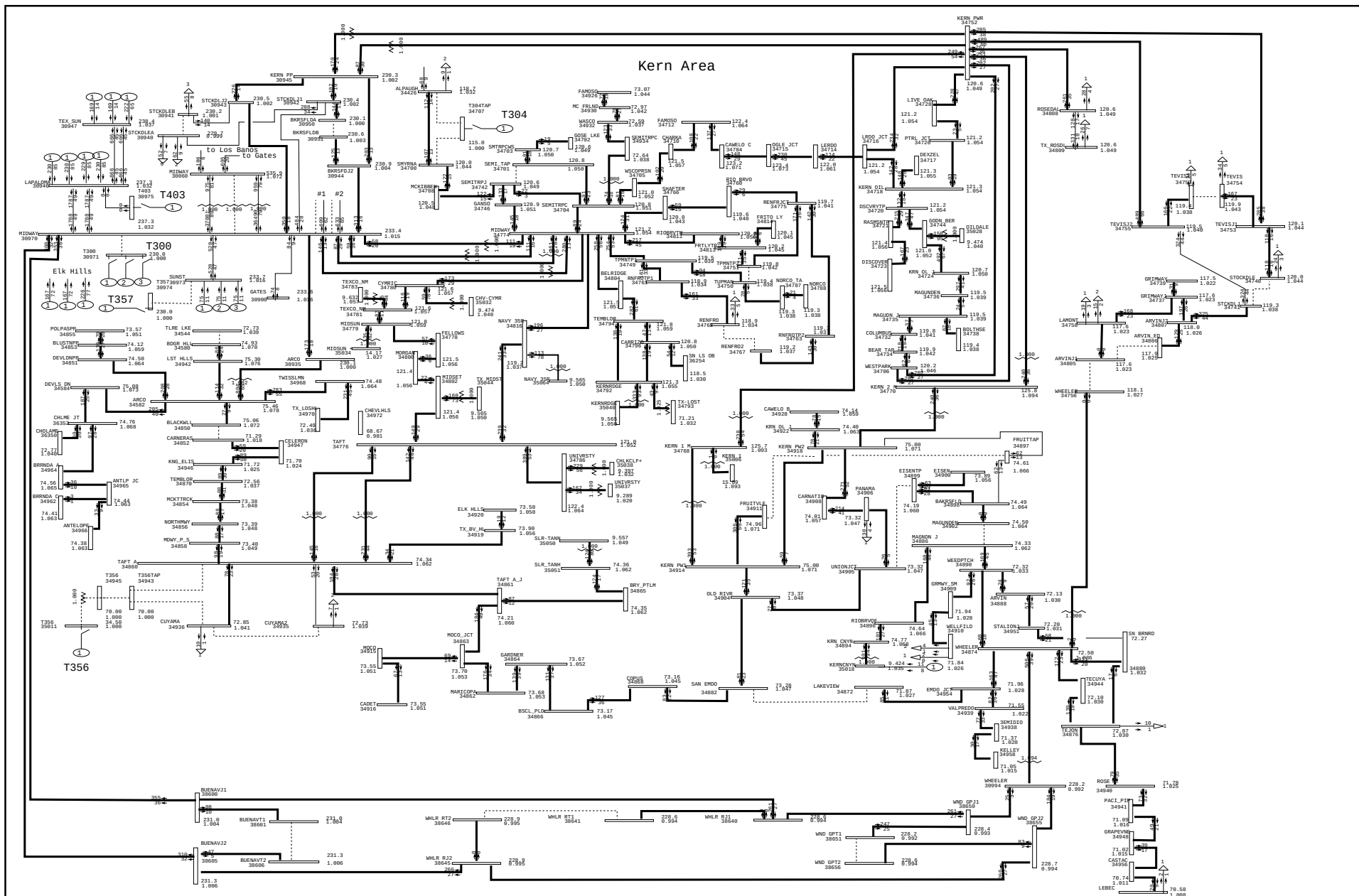
Plot 017: Midway 500/230 kV Bank 12 Outage

MW/MVAR

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draw\slok\pge-tcp1-slok-
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Rating = 2

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:44:59 2009 cases\sumpk\13sumpk-pge-tcp1-slok-pre.sav

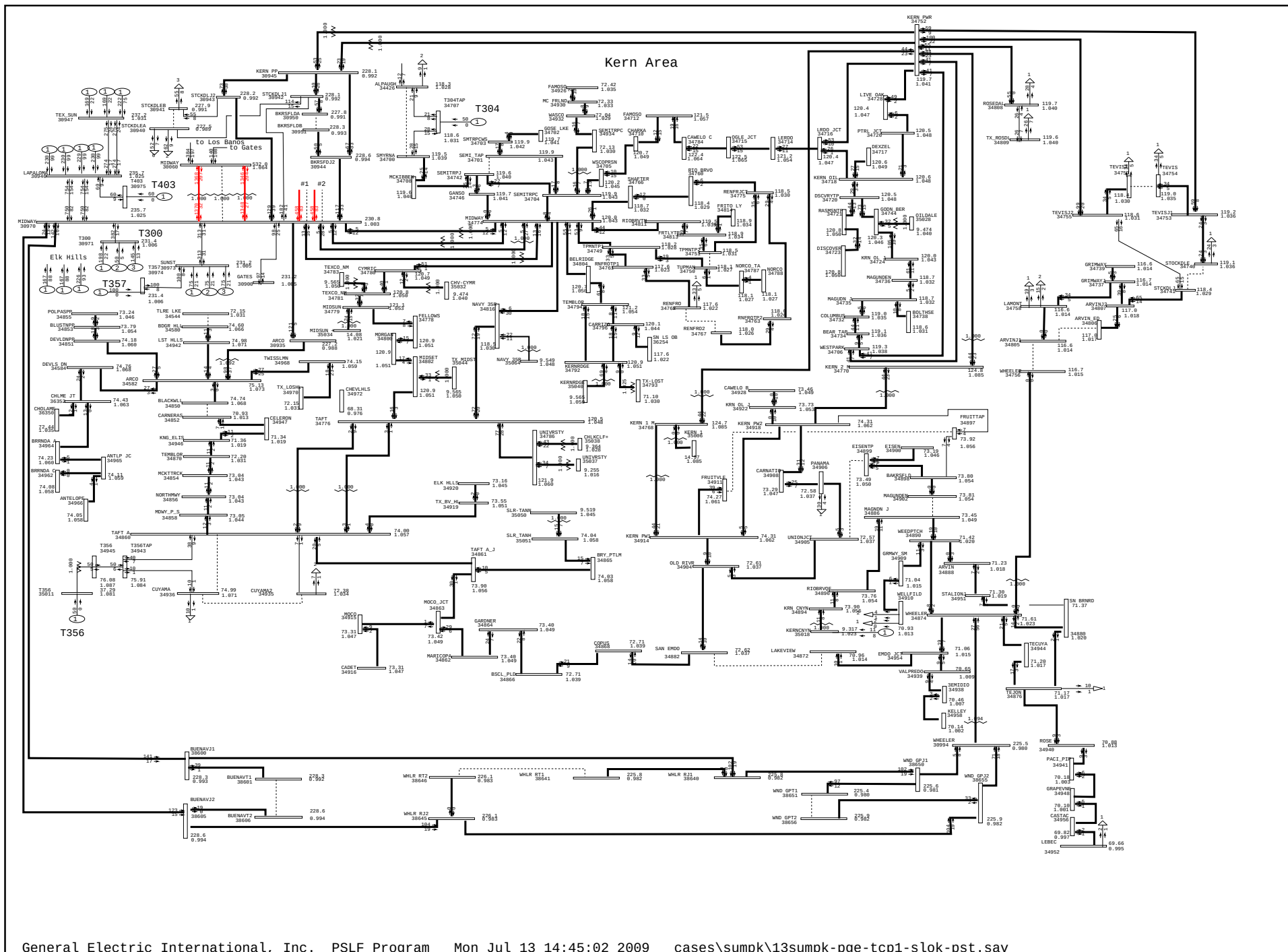


PG&E 2008 CASE SERIES: 2013 San Joaquin/Los Padres Summer Peak Case 1-in-10 lds
 PATH15= 434 MW(S-N) PATH26= 3952 MW(N-S) PDCI= 3099 MW(N-S) COI= 4761 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Peak Transition Pre-Cluster Case

Plot 018: Midway 500/230 KV Bank 12 Outage

amps/rate
 draw\slok\pge-tcp1-slok-
 Rating = 2

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:45:02 2009 cases\sumpk\13sumpk-pge-tcp1-slok-pst.sav

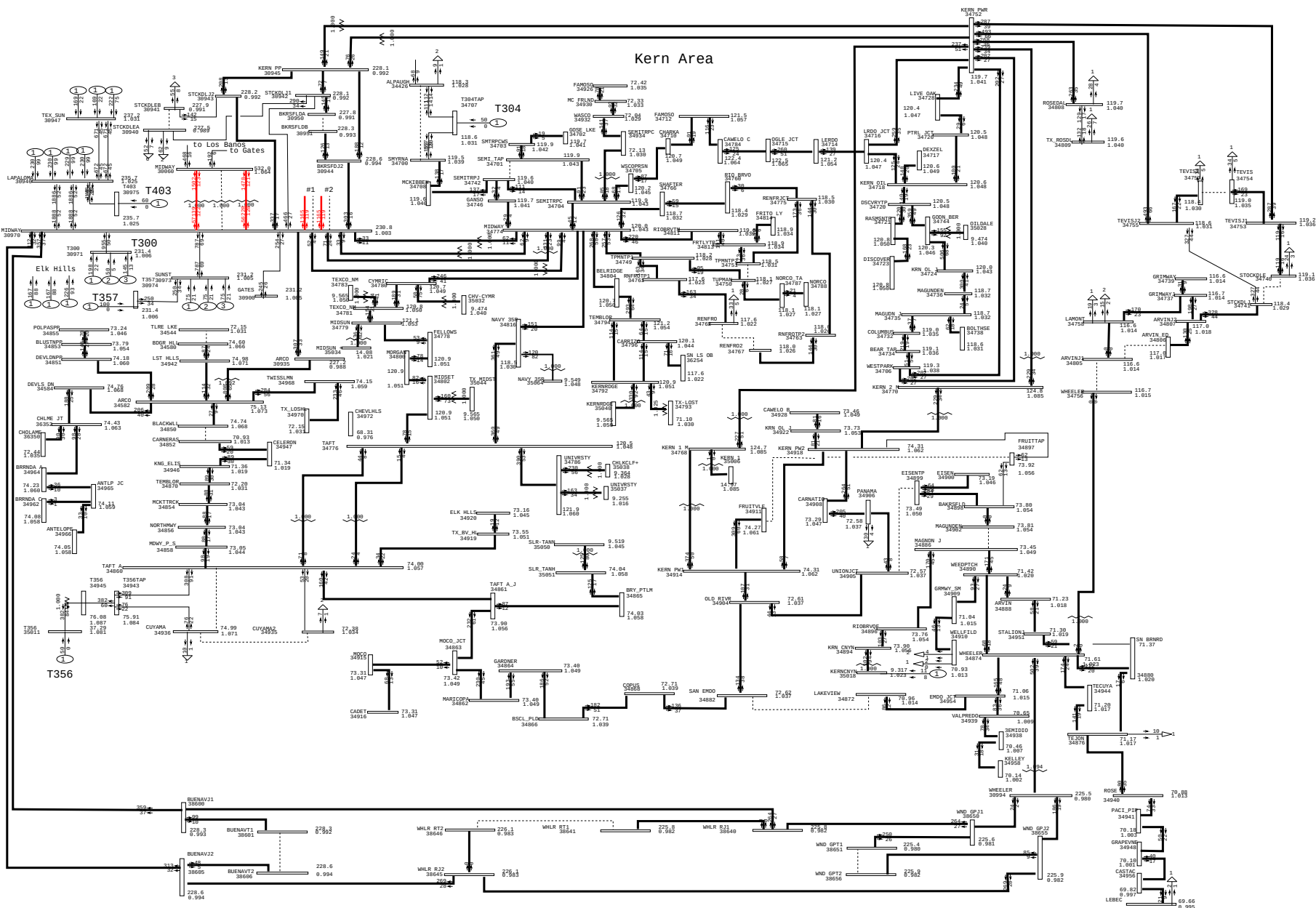


PG&E 2008 CASE SERIES: 2013 San Joaquin/Los Padres Summer Peak Case 1-in-10 lds
 PATH15= 1619 MW(S-N) PATH26= 3992 MW(N-S) PDCI= 3096 MW(N-S) COI= 4796 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Peak Transition Post-Cluster Case

Plot 019: Midway 500/230 KV Bank 12 Outage

MW/MVAR
 draw\slok\pge-tcp1-slok-
 Rating = 2

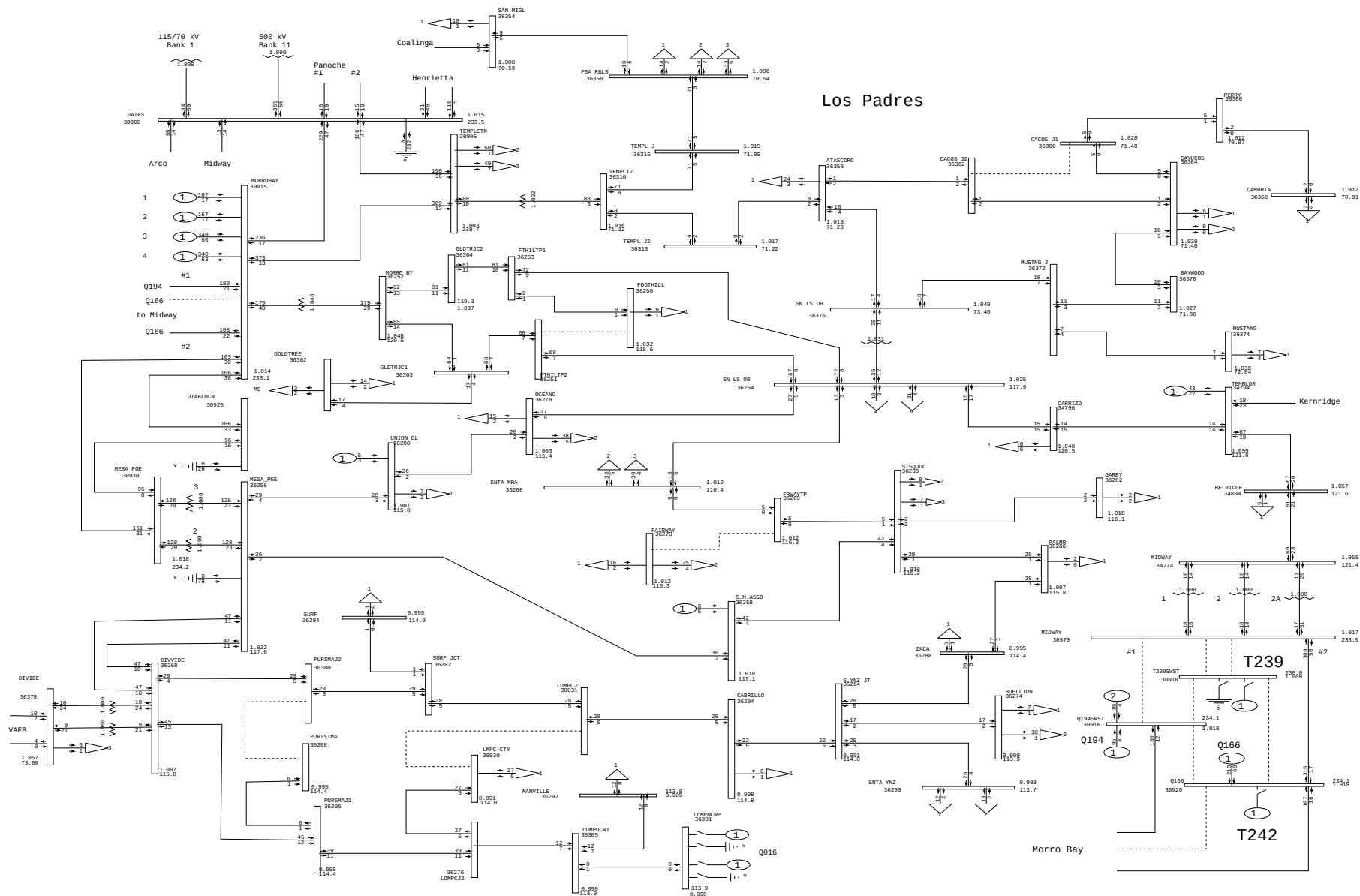
APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:45:03 2009 cases\sumpk\13sumpk-pge-tcp1-slok-pst.sav

	PG&E 2008 CASE SERIES: 2013 San Joaquin/Los Padres Summer Peak Case 1-in-10 lds PATH15= 1619 MW(S-N) PATH26= 3992 MW(N-S) PDCI= 3096 MW(N-S) COI= 4796 MW(N-S) PG&E 2008 Group 3 SLO/Kern Summer Peak Transition Post-Cluster Case	Plot 020: Midway 500/230 KV Bank 12 Outage	amps/rate draw\slok\pge-tcp1-slok- Rating = 2
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APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:45:09 2009 cases\sumpk\13sumpk-pge-tcp1-slok-pre.sav

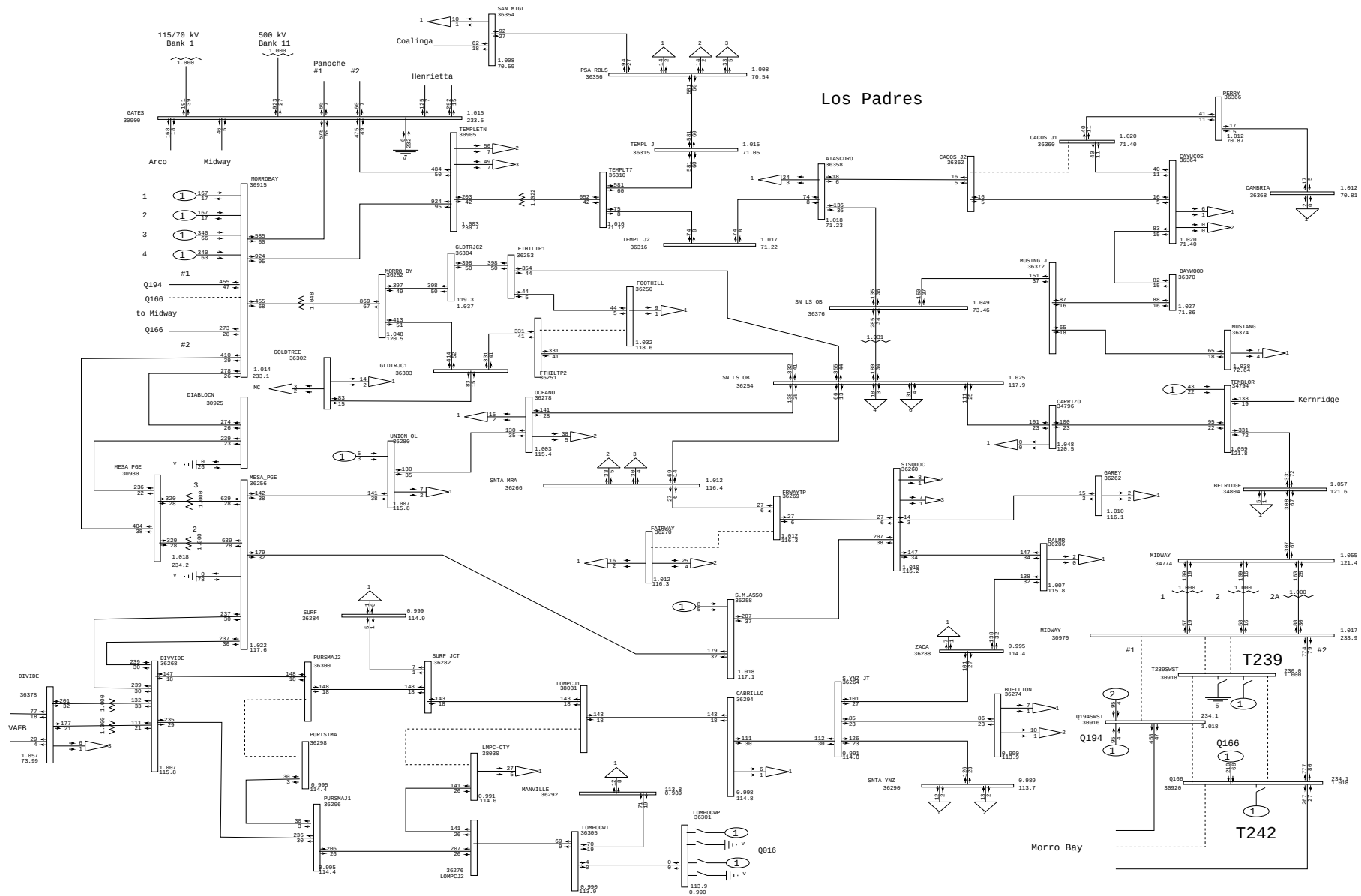


PG&E 2008 CASE SERIES: 2013 San Joaquin/Los Padres Summer Peak Case 1-in-10 lds
 PATH15= 434 MW(S-N) PATH26= 3952 MW(N-S) PDCI= 3099 MW(N-S) COI= 4761 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Peak Transition Pre-Cluster Case

Plot 021: T239 - Midway #1 230 kV Line Outage trip Q016

MW/MVAR
 draw\slok\pge-tcp1-slok-
 Rating = 2

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:45:09 2009 cases\sumpk\13sumpk-pge-tcp1-slok-pre.sav

PG&E 2008 CASE SERIES: 2013 San Joaquin/Los Padres Summer Peak Case 1-in-10 lds

PATH15= 434 MW(S-N) PATH26= 3952 MW(N-S) PDCI= 3099 MW(N-S) COI= 4761 MW(N-S)

PG&E 2008 Group 3 SLO/Kern Summer Peak Transition Pre-Cluster Case

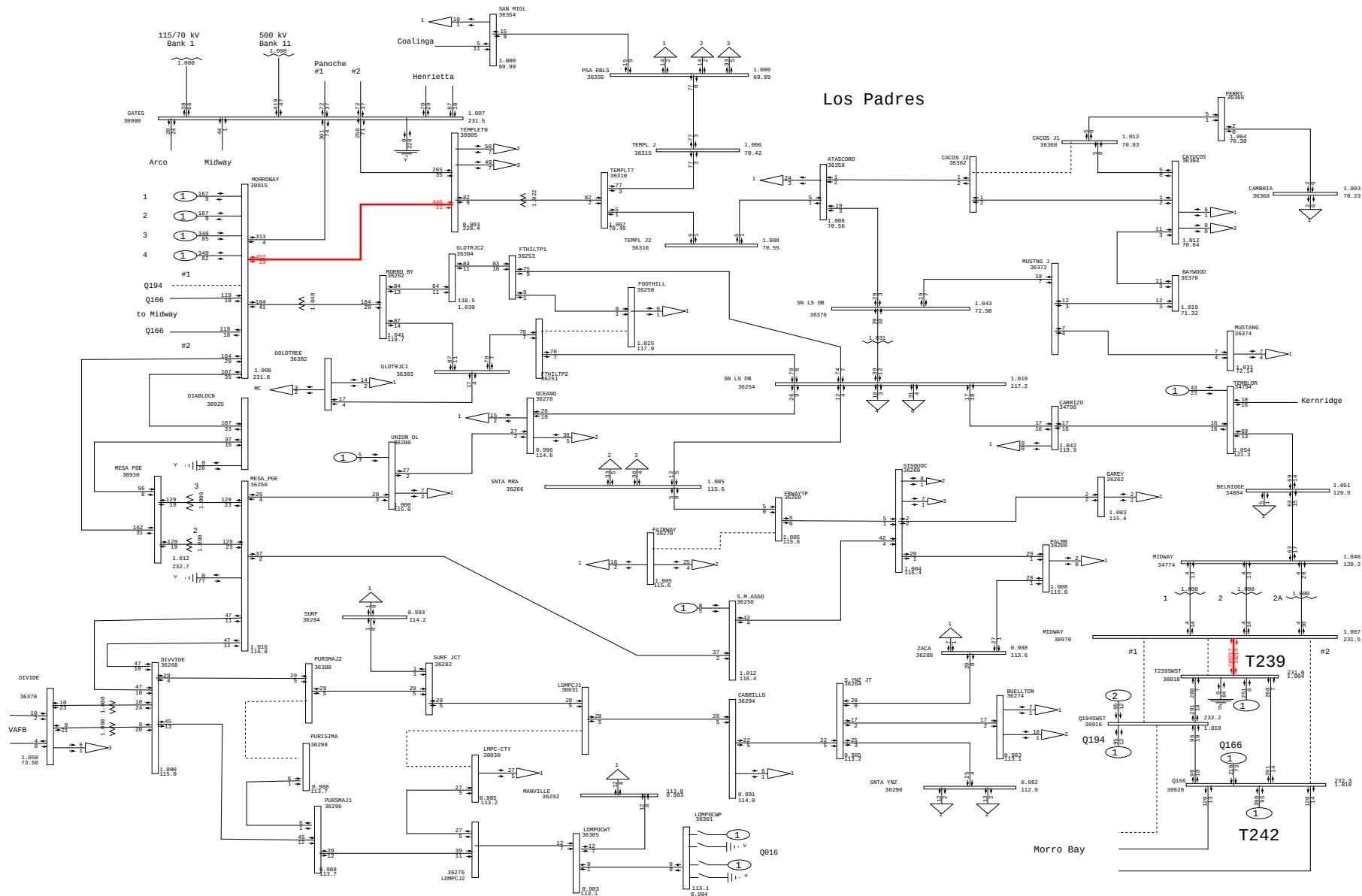
Plot 022: T239 - Midway #1 230 kV Line Outage trip Q016

amps/rate

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draw\slok\pge-tcp1-slok-
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Rating = 2

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:45:16 2009 cases\sumpk\13sumpk-pge-tcp1-slok-pst.sav

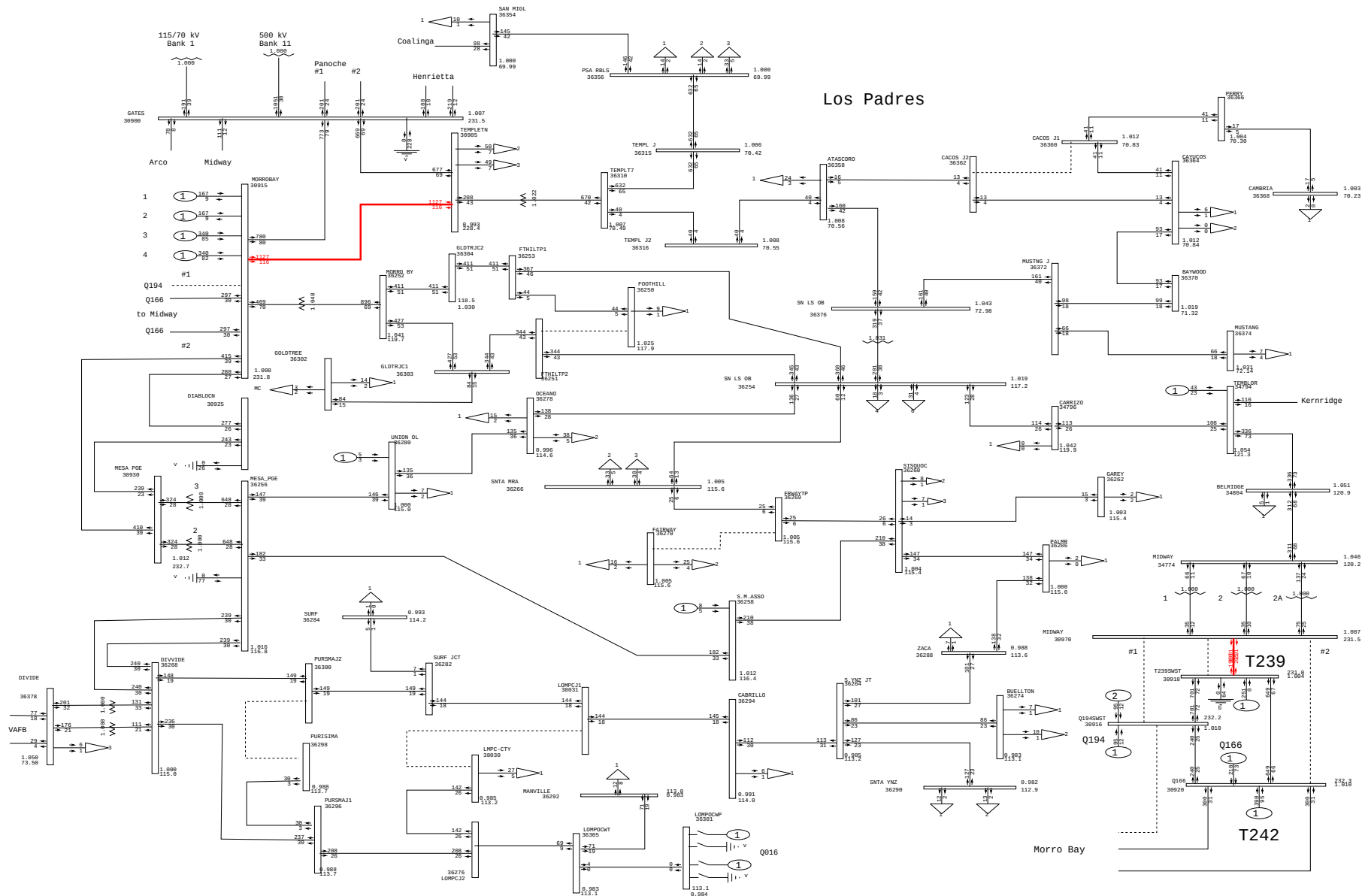


PG&E 2008 CASE SERIES: 2013 San Joaquin/Los Padres Summer Peak Case 1-in-10 lds
 PATH15= 1619 MW(S-N) PATH26= 3992 MW(N-S) PDCI= 3096 MW(N-S) COI= 4796 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Peak Transition Post-Cluster Case

Plot 023: T239 - Midway #1 230 kV Line Outage trip Q016

MW/MVAR
 draw\slok\pge-tcp1-slok-
 Rating = 2

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:45:16 2009 cases\sumpk\13sumpk-pge-tcp1-slok-pst.sav

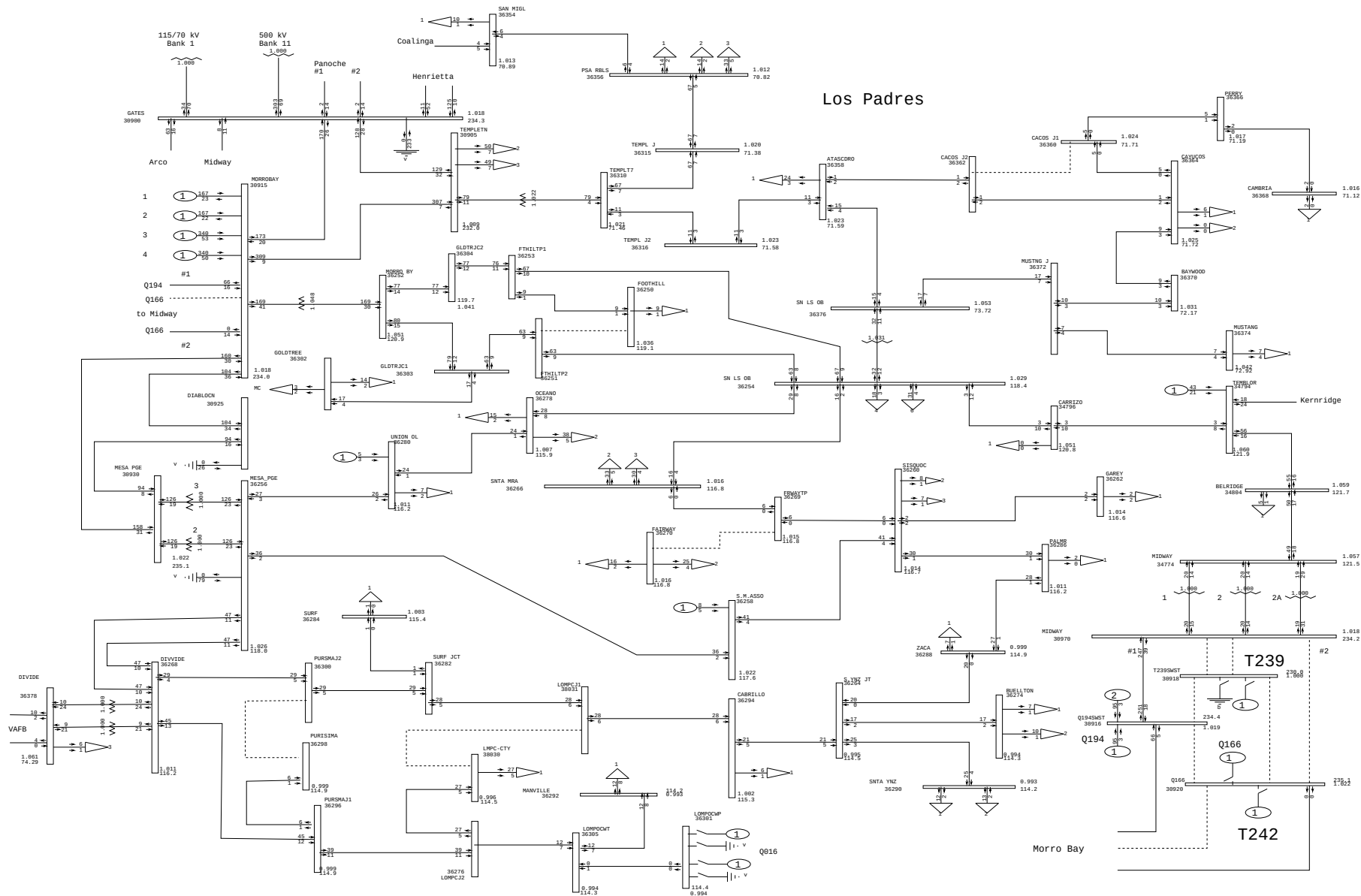


PG&E 2008 CASE SERIES: 2013 San Joaquin/Los Padres Summer Peak Case 1-in-10 lds
 PATH15= 1619 MW(S-N) PATH26= 3992 MW(N-S) PDCI= 3096 MW(N-S) COI= 4796 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Peak Transition Post-Cluster Case

Plot 024: T239 - Midway #1 230 kV Line Outage trip Q016

amps/rate
 draw\slok\pge-tcp1-slok-
 Rating = 2

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:45:23 2009 cases\sumpk\13sumpk-pge-tcp1-slok-pre.sav

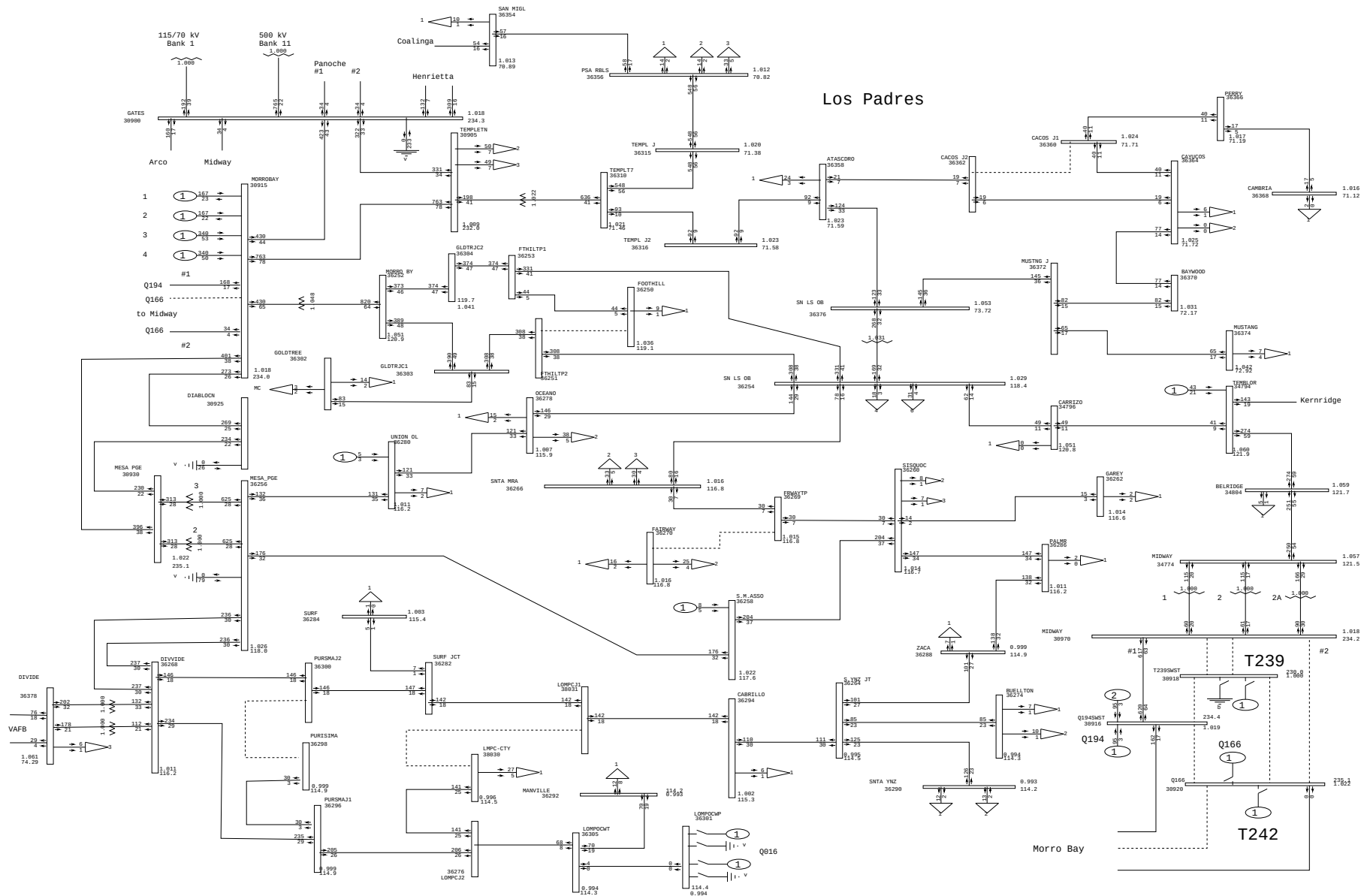


PG&E 2008 CASE SERIES: 2013 San Joaquin/Los Padres Summer Peak Case 1-in-10 lds
 PATH15= 434 MW(S-N) PATH26= 3952 MW(N-S) PDCI= 3099 MW(N-S) COI= 4761 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Peak Transition Pre-Cluster Case

Plot 025: T239 - Midway #2 230 kV Line Outage trip Q016/Q166

MW/MVAR
 draw\slok\pge-tcp1-slok-
 Rating = 2

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:45:23 2009 cases\sumpk\13sumpk-pge-tcp1-slok-pre.sav



PG&E 2008 CASE SERIES: 2013 San Joaquin/Los Padres Summer Peak Case 1-in-10 lds

PATH15= 434 MW(S-N) PATH26= 3952 MW(N-S) PDCI= 3099 MW(N-S) COI= 4761 MW(N-S)

PG&E 2008 Group 3 SLO/Kern Summer Peak Transition Pre-Cluster Case

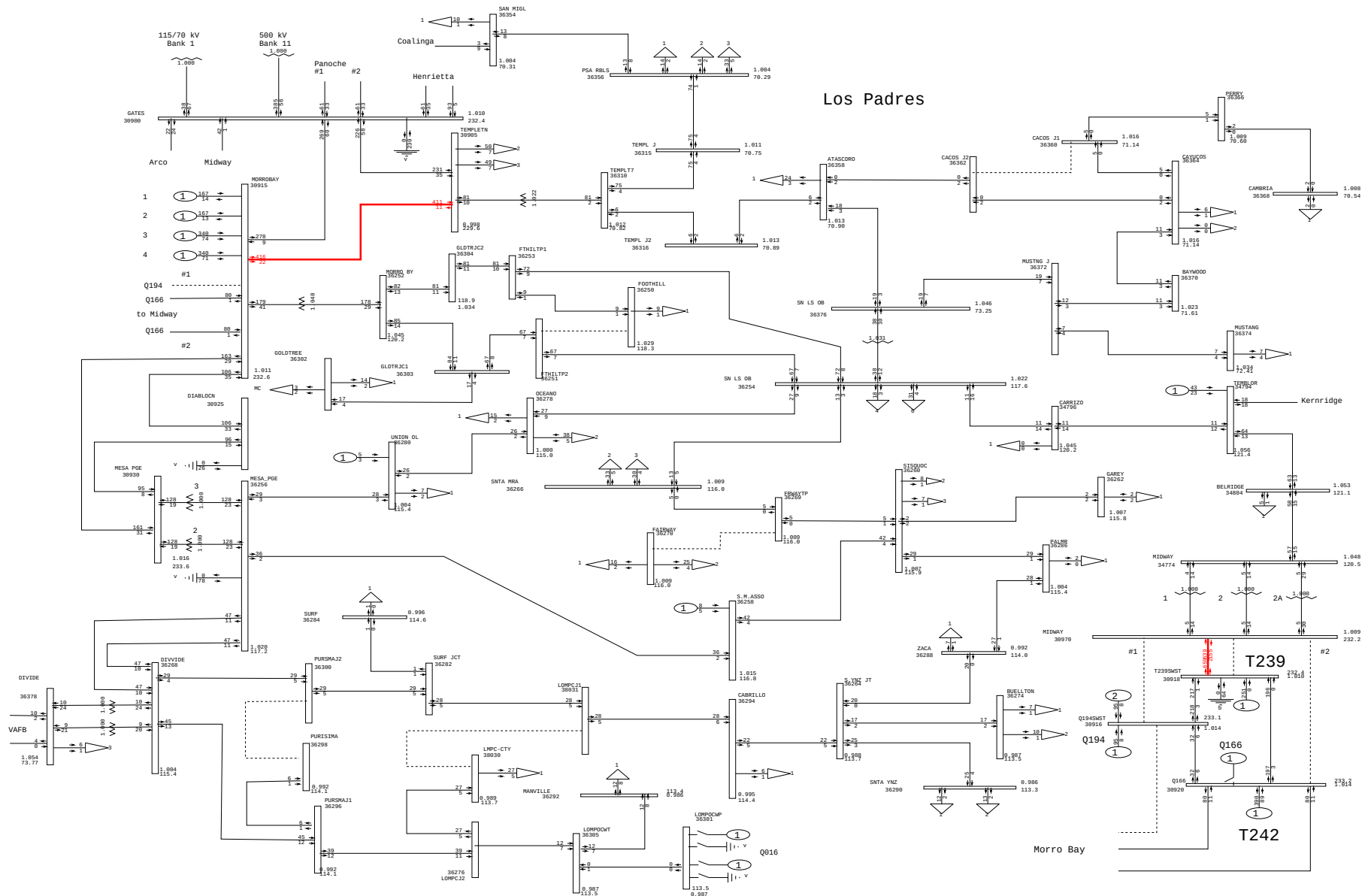
Plot 026: T239 - Midway #2 230 kV Line Outage trip Q016/Q166

amps/rate

draw\slok\pge-tcp1-slok-

Rating = 2

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:45:30 2009 cases\sumpk\13sumpk-pge-tcp1-slok-pst.sav

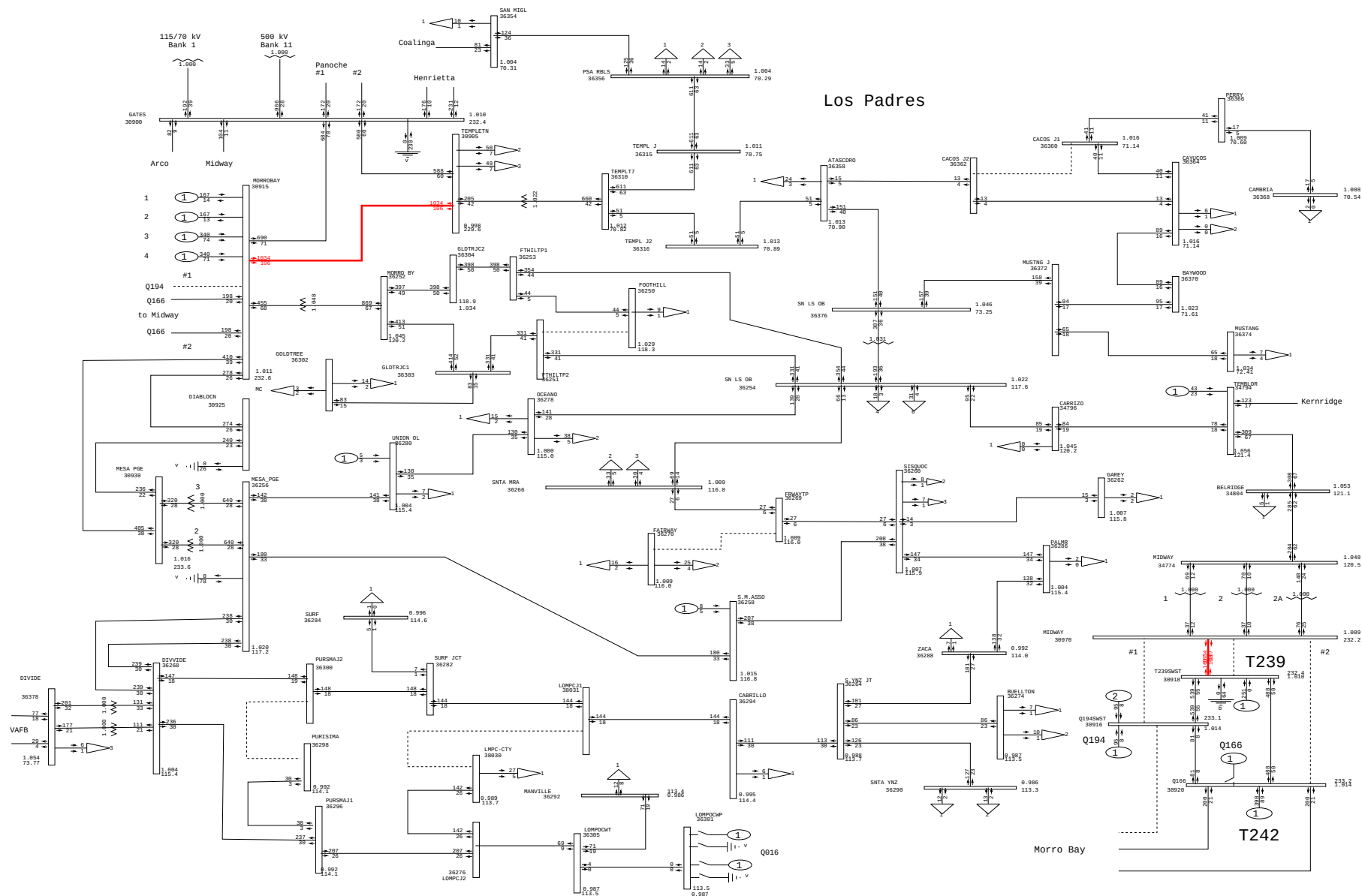


PG&E 2008 CASE SERIES: 2013 San Joaquin/Los Padres Summer Peak Case 1-in-10 lds
 PATH15= 1619 MW(S-N) PATH26= 3992 MW(N-S) PDCI= 3096 MW(N-S) COI= 4796 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Peak Transition Post-Cluster Case

Plot 027: T239 - Midway #2 230 kV Line Outage trip Q016/Q166

MW/MVAR
 draw\slok\pge-tcp1-slok-
 Rating = 2

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:45:30 2009 cases\sumpk\13sumpk-pge-tcp1-slok-pst.sav

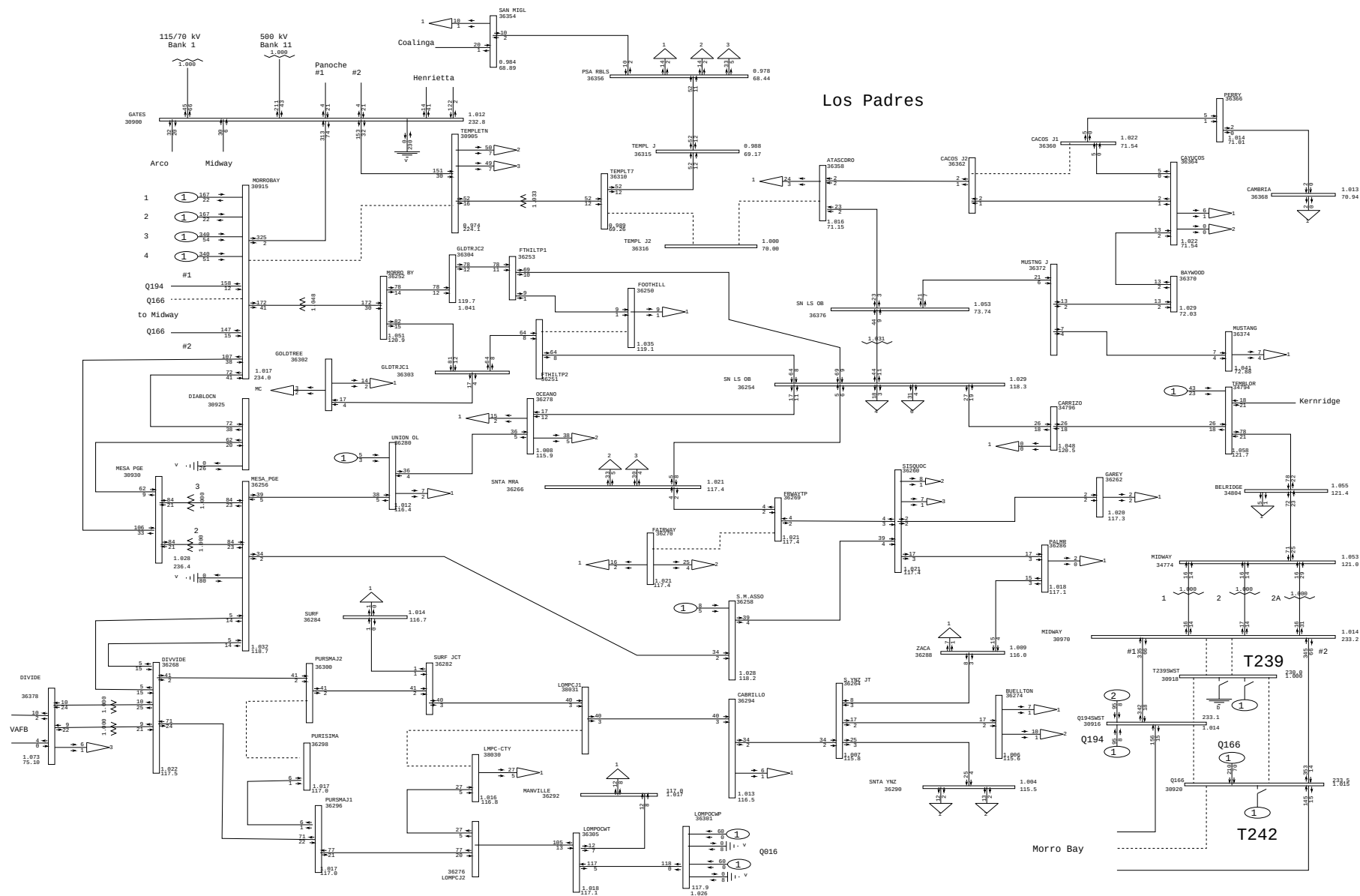


PG&E 2008 CASE SERIES: 2013 San Joaquin/Los Padres Summer Peak Case 1-in-10 lds
 PATH15= 1619 MW(S-N) PATH26= 3992 MW(N-S) PDCI= 3096 MW(N-S) COI= 4796 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Peak Transition Post-Cluster Case

Plot 028: T239 - Midway #2 230 kV Line Outage trip Q016/Q166

amps/rate
 draw\slok\pge-tcp1-slok-
 Rating = 2

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:45:33 2009 cases\sumpk\13sumpk-pge-tcp1-slok-pre.sav

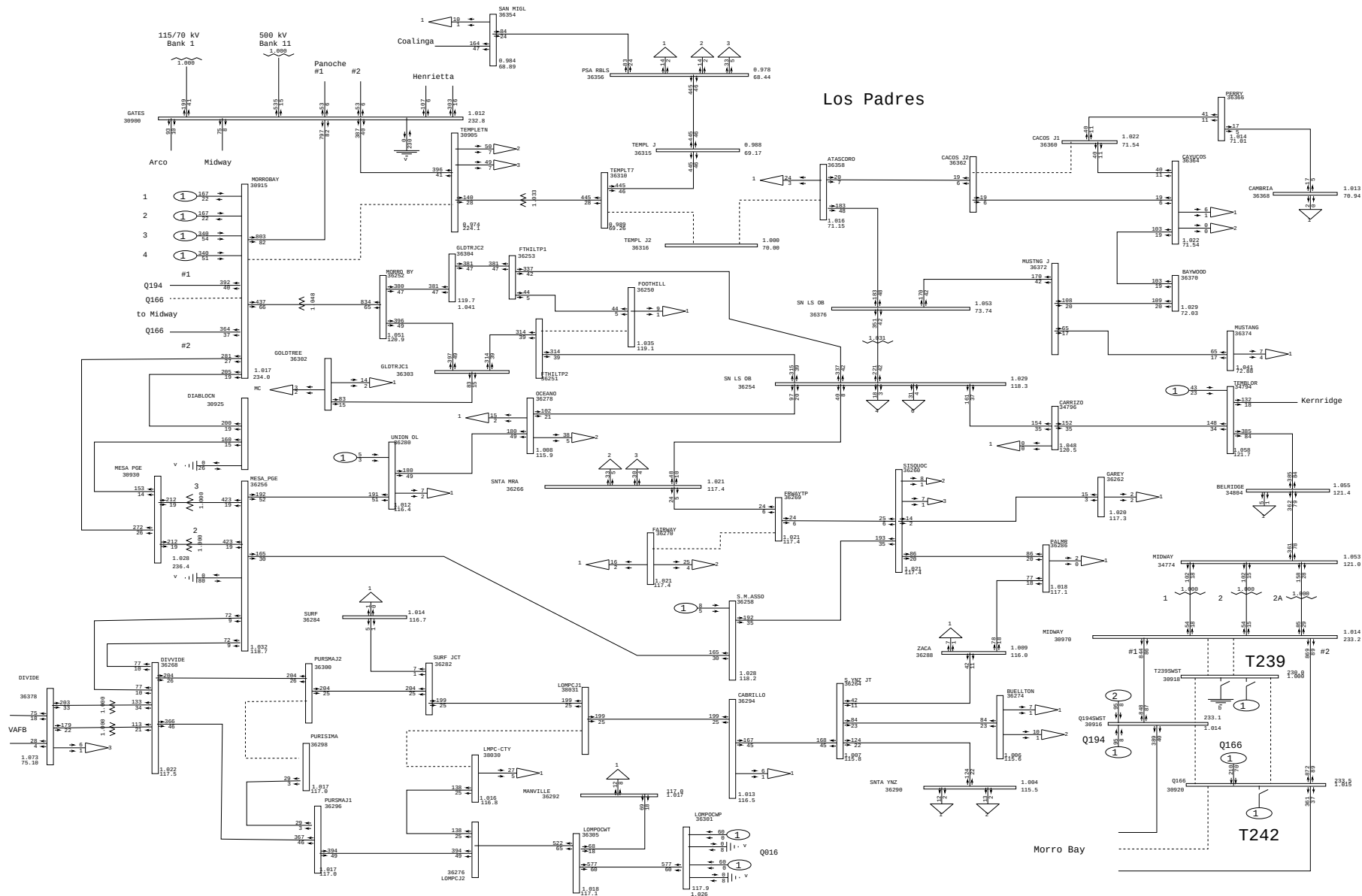


PG&E 2008 CASE SERIES: 2013 San Joaquin/Los Padres Summer Peak Case 1-in-10 lds
 PATH15= 434 MW(S-N) PATH26= 3952 MW(N-S) PDCI= 3099 MW(N-S) COI= 4761 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Peak Transition Pre-Cluster Case

Plot 029: Morro Bay - Templeton 230 kV Line Outage with Q016 SPS

MW/MVAR
 draw\slok\pge-tcp1-slok-
 Rating = 2

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:45:33 2009 cases\sumpk\13sumpk-pge-tcp1-slok-pre.sav

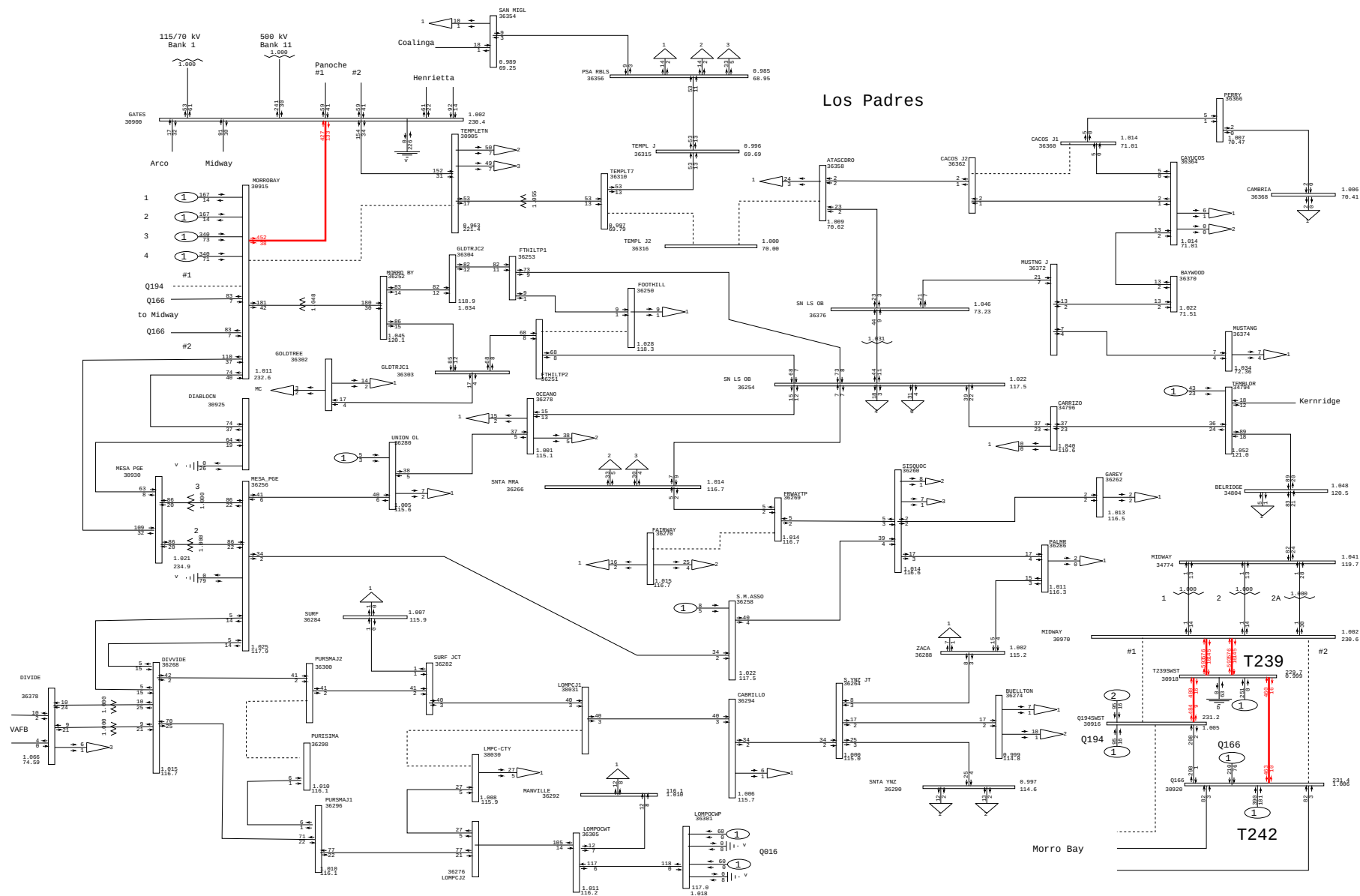


PG&E 2008 CASE SERIES: 2013 San Joaquin/Los Padres Summer Peak Case 1-in-10 lds
 PATH15= 434 MW(S-N) PATH26= 3952 MW(N-S) PDCI= 3099 MW(N-S) COI= 4761 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Peak Transition Pre-Cluster Case

Plot 030: Morro Bay - Templeton 230 kV Line Outage with Q016 SPS

amps/rate
 draw\slok\pge-tcp1-slok-
 Rating = 2

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:45:36 2009 cases\sumpk\13sumpk-pge-tcp1-slok-pst.sav

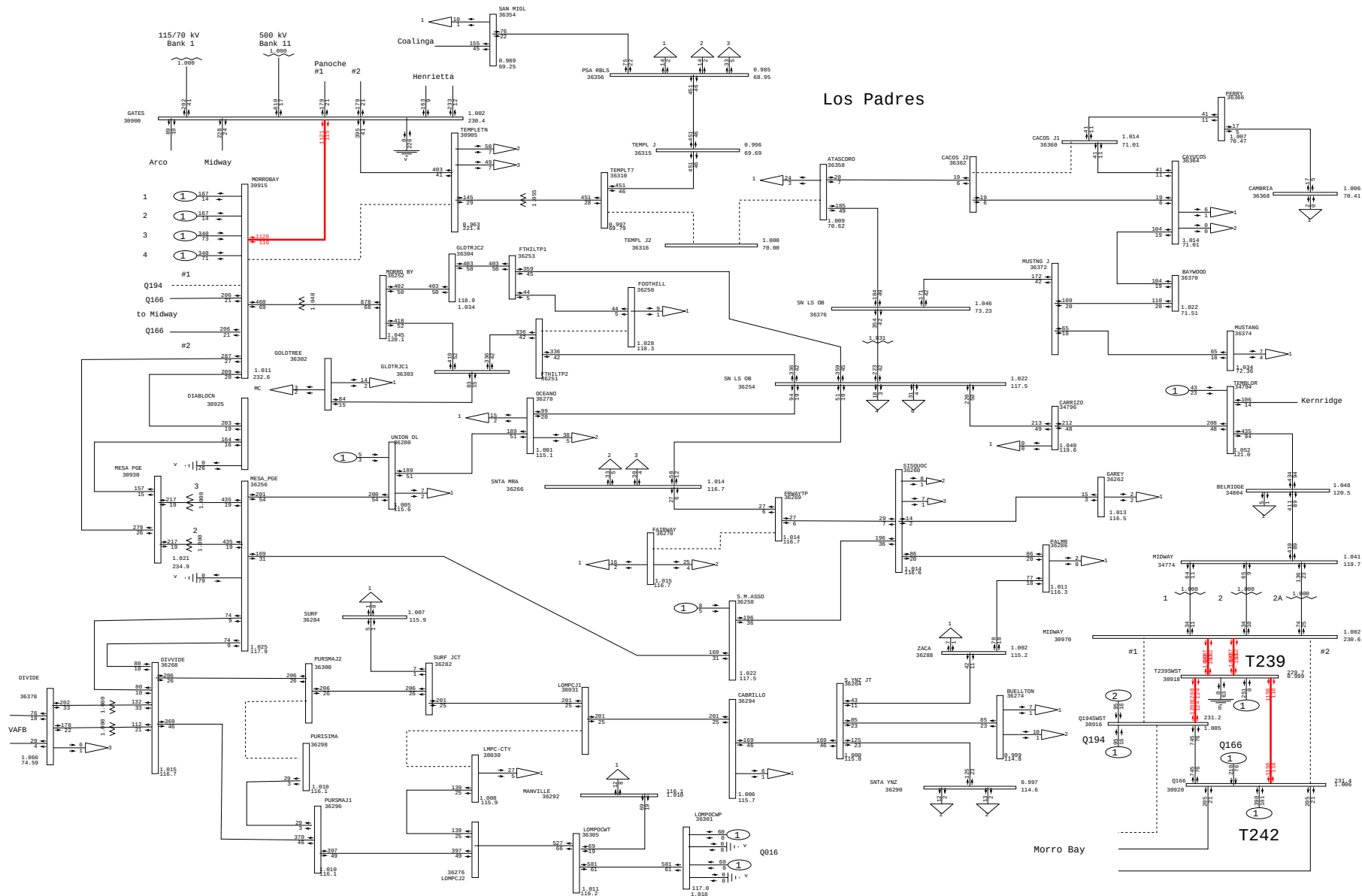


PG&E 2008 CASE SERIES: 2013 San Joaquin/Los Padres Summer Peak Case 1-in-10 lds
 PATH15= 1619 MW(S-N) PATH26= 3992 MW(N-S) PDCI= 3096 MW(N-S) COI= 4796 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Peak Transition Post-Cluster Case

Plot 031: Morro Bay - Templeton 230 kV Line Outage with Q016 SPS

MW/MVAR
 draw\slok\pge-tcp1-slok-
 Rating = 2

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:45:37 2009 cases\sumpk\13sumpk-pge-tcp1-slok-pst.sav

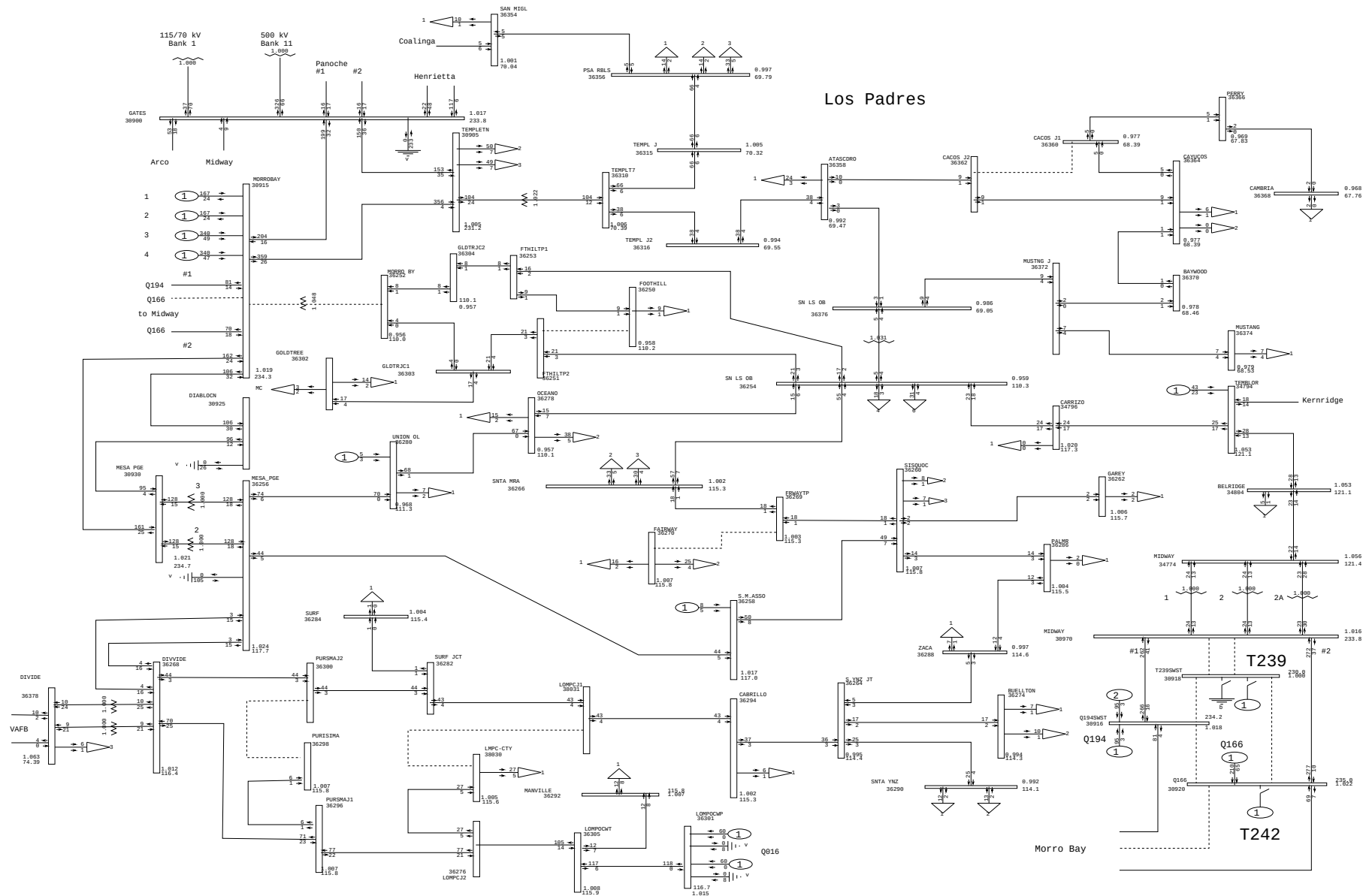


PG&E 2008 CASE SERIES: 2013 San Joaquin/Los Padres Summer Peak Case 1-in-10 lds
 PATH15= 1619 MW(S-N) PATH26= 3992 MW(N-S) PDCI= 3096 MW(N-S) COI= 4796 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Peak Transition Post-Cluster Case

Plot 032: Morro Bay - Templeton 230 kV Line Outage with Q016 SPS

amps/rate
 draw\slok\pge-tcp1-slok-
 Rating = 2

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:45:40 2009 cases\sumpk\13sumpk-pge-tcp1-slok-pre.sav

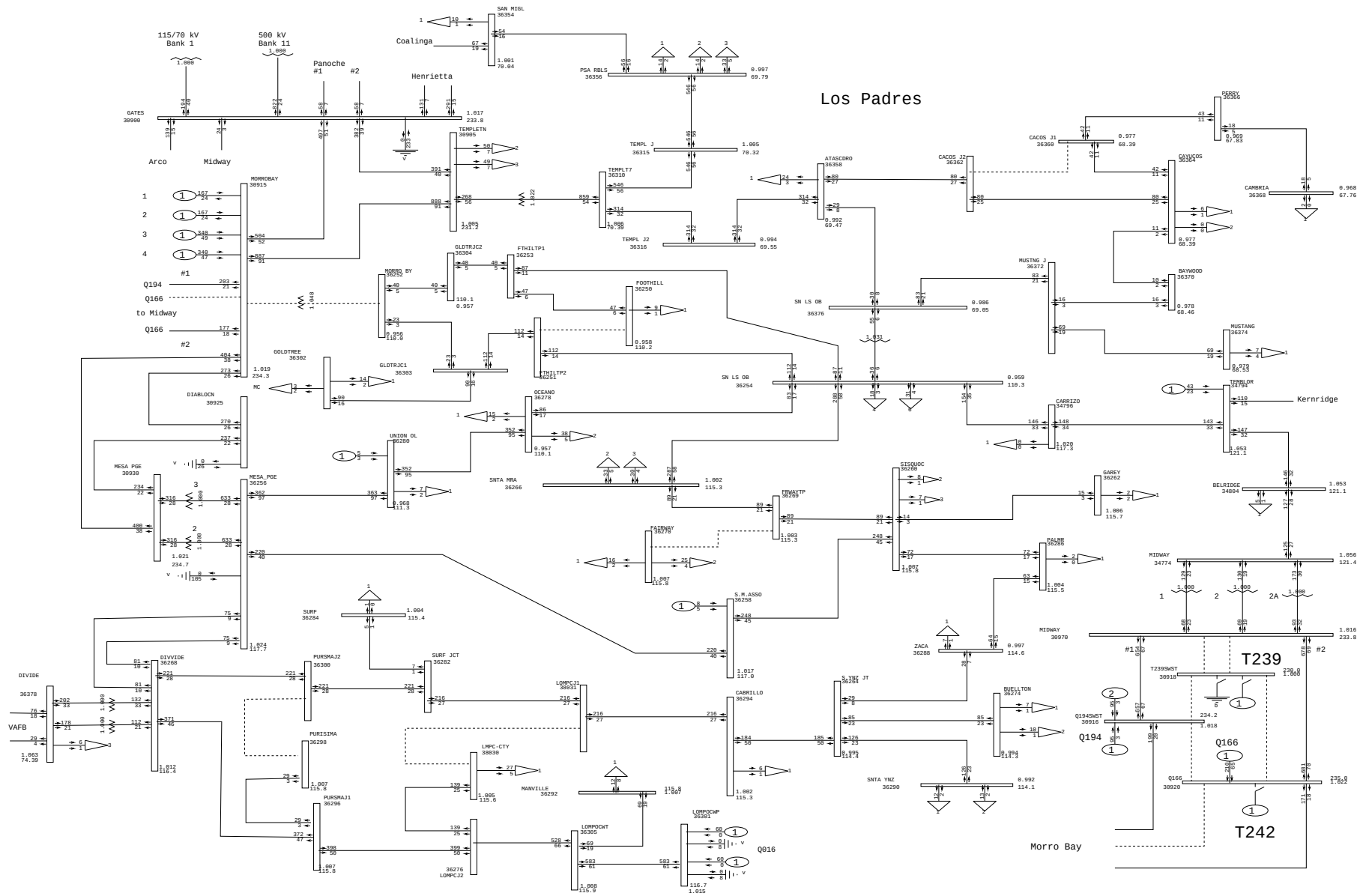


PG&E 2008 CASE SERIES: 2013 San Joaquin/Los Padres Summer Peak Case 1-in-10 lds
 PATH15= 434 MW(S-N) PATH26= 3952 MW(N-S) PDCI= 3099 MW(N-S) COI= 4761 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Peak Transition Pre-Cluster Case

Plot 033: Morro Bay 230/115 kV Bank 6

MW/MVAR
 draw\slok\pge-tcp1-slok-
 Rating = 2

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:45:41 2009 cases\sumpk\13sumpk-pge-tcp1-slok-pre.sav

PG&E 2008 CASE SERIES: 2013 San Joaquin/Los Padres Summer Peak Case 1-in-10 lds

PATH15= 434 MW(S-N) PATH26= 3952 MW(N-S) PDCI= 3099 MW(N-S) COI= 4761 MW(N-S)

PG&E 2008 Group 3 SLO/Kern Summer Peak Transition Pre-Cluster Case

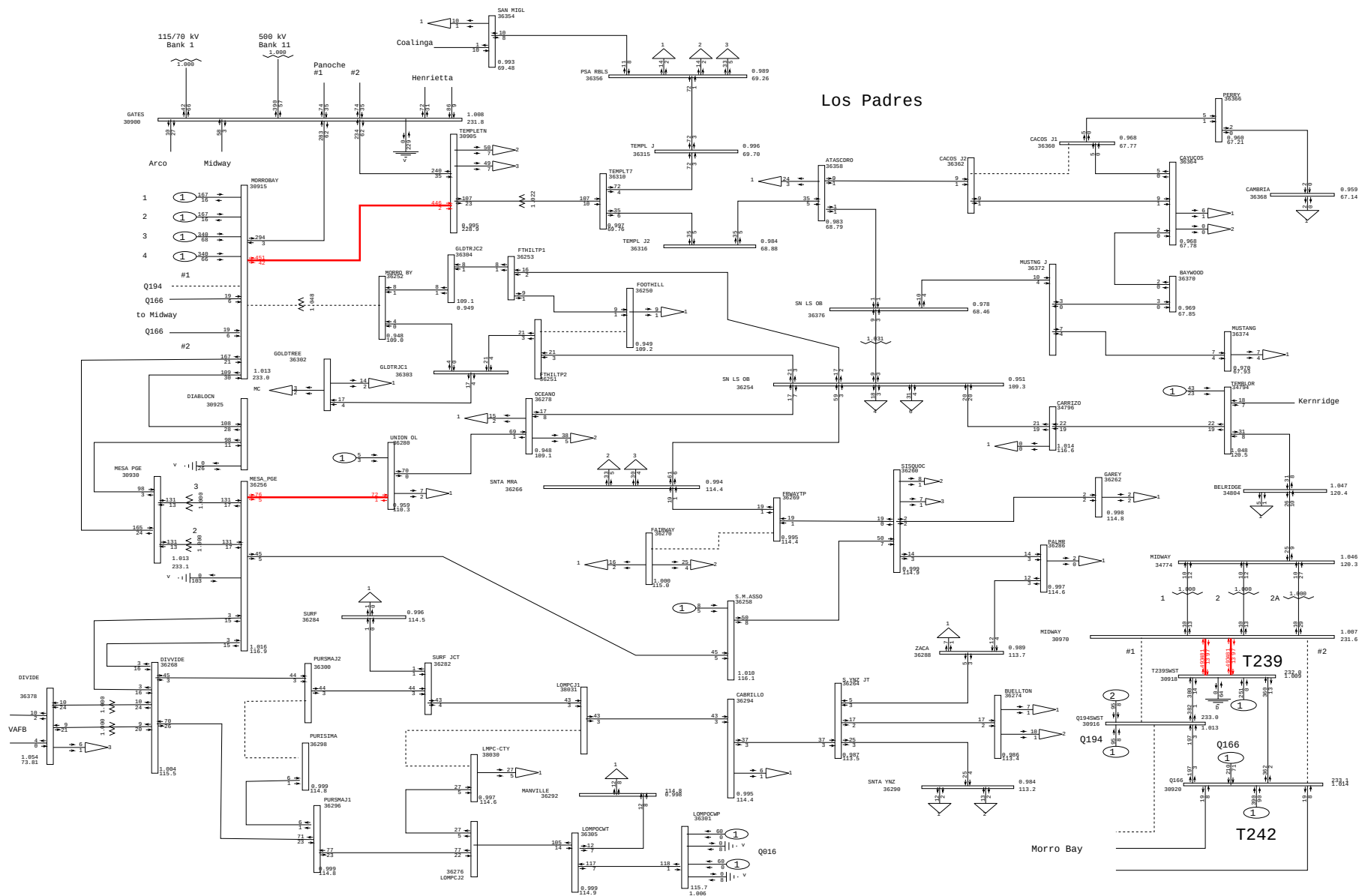
Plot 034: Morro Bay 230/115 kV Bank 6

amps/rate

draw\slok\pge-tcp1-slok-

Rating = 2

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:45:43 2009 cases\sumpk\13sumpk-pge-tcp1-slok-pst.sav

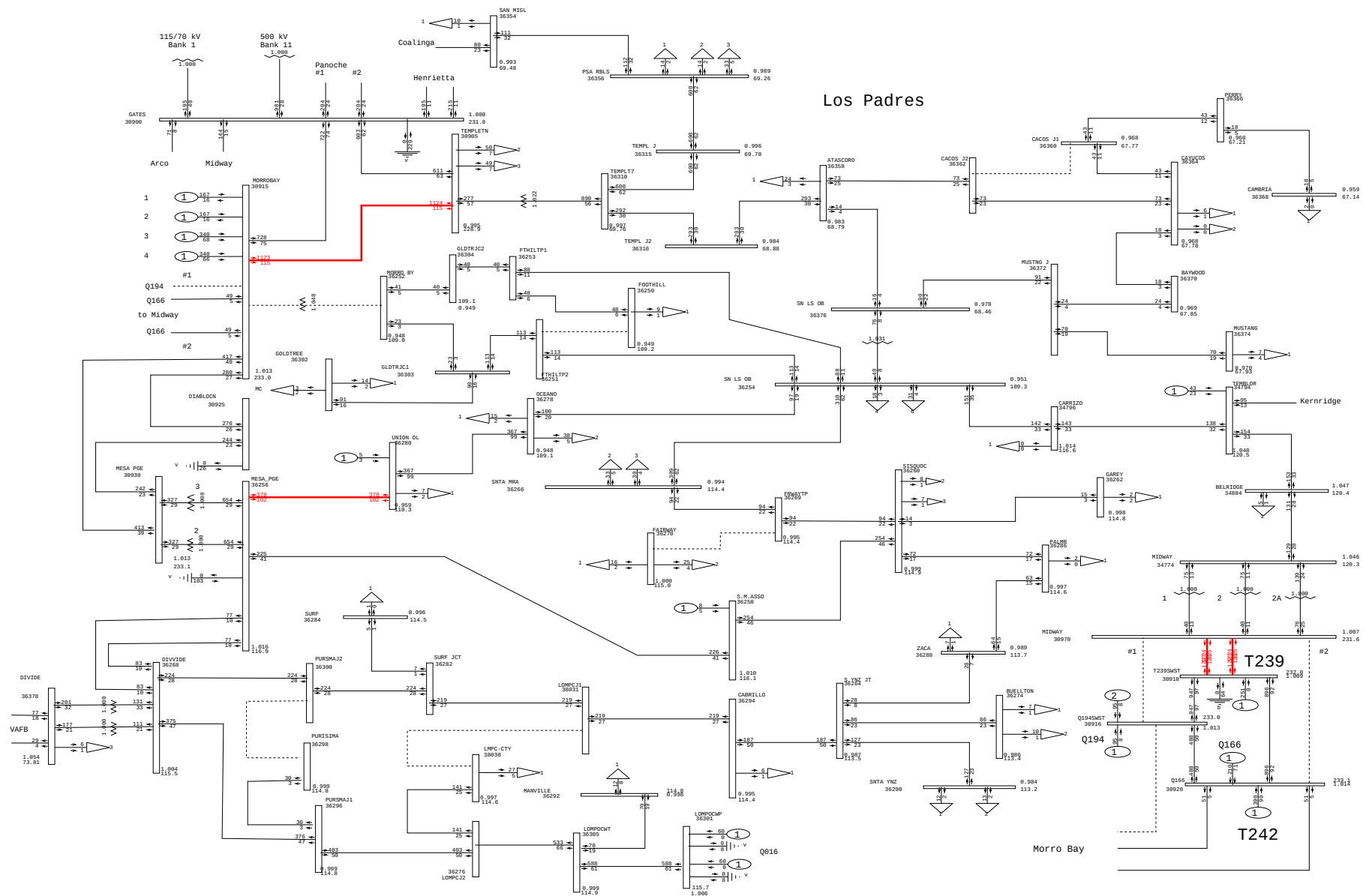


PG&E 2008 CASE SERIES: 2013 San Joaquin/Los Padres Summer Peak Case 1-in-10 lds
 PATH15= 1619 MW(S-N) PATH26= 3992 MW(N-S) PDCI= 3096 MW(N-S) COI= 4796 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Peak Transition Post-Cluster Case

Plot 035: Morro Bay 230/115 kV Bank 6

MW/MVAR
 draw\slok\pge-tcp1-slok-
 Rating = 2

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:45:44 2009 cases\sumpk\13sumpk-pge-tcp1-slok-pst.sav

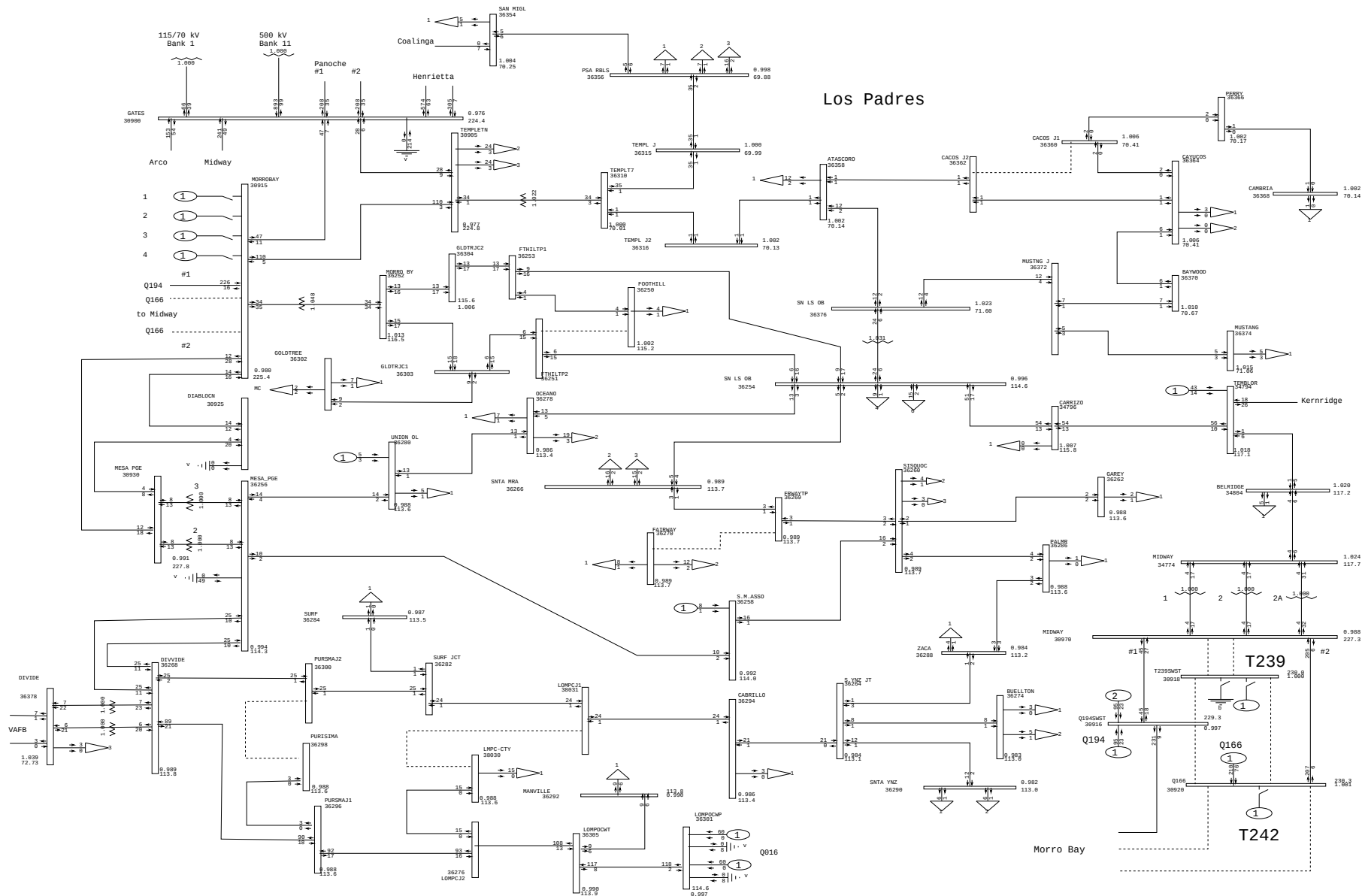


PG&E 2008 CASE SERIES: 2013 San Joaquin/Los Padres Summer Peak Case 1-in-10 lds
 PATH15= 1619 MW(S-N) PATH26= 3992 MW(N-S) PDCI= 3096 MW(N-S) COI= 4796 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Peak Transition Post-Cluster Case

Plot 036: Morro Bay 230/115 kV Bank 6

amps/rate
 draw\slok\pge-tcp1-slok-
 Rating = 2

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:45:46 2009 cases\sumop\13sumop-pge-tcp1-slok-pre.sav

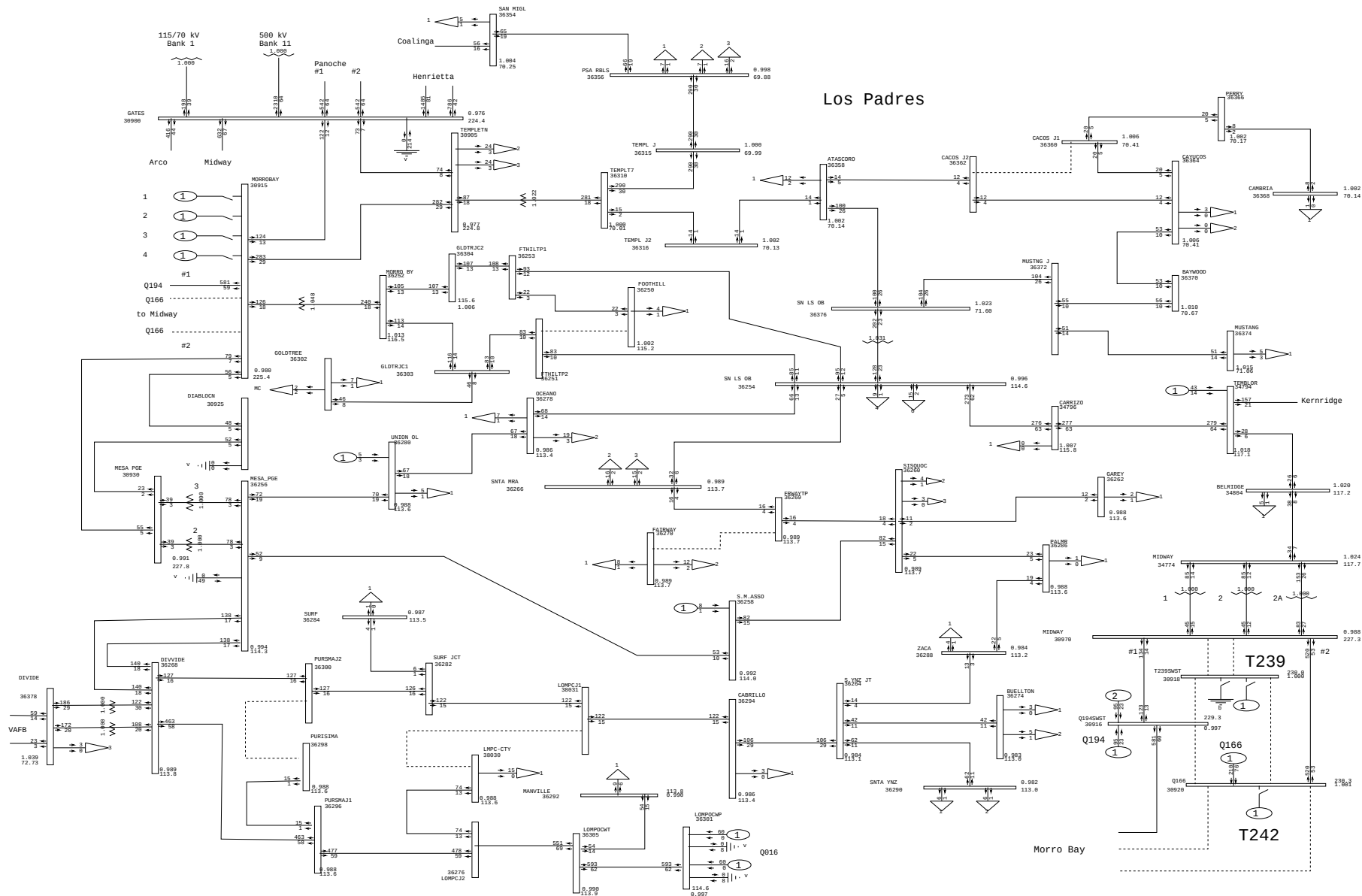


PG&E 2008 CASE SERIES: 2013 Summer Off Peak Case
 PATH15= 4932 MW(S-N) PATH26=-1657 MW(N-S) PDCI=-1846 MW(N-S) COI=-3603 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Off Peak Transition Pre-Cluster Case

Plot 037: Morro Bay - Q166 #2 230 kV Line Outage

MW/MVAR
 draw\slok\pge-tcp1-slok-
 Rating = 2

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:45:47 2009 cases\sumop\13sumop-pge-tcp1-slok-pre.sav

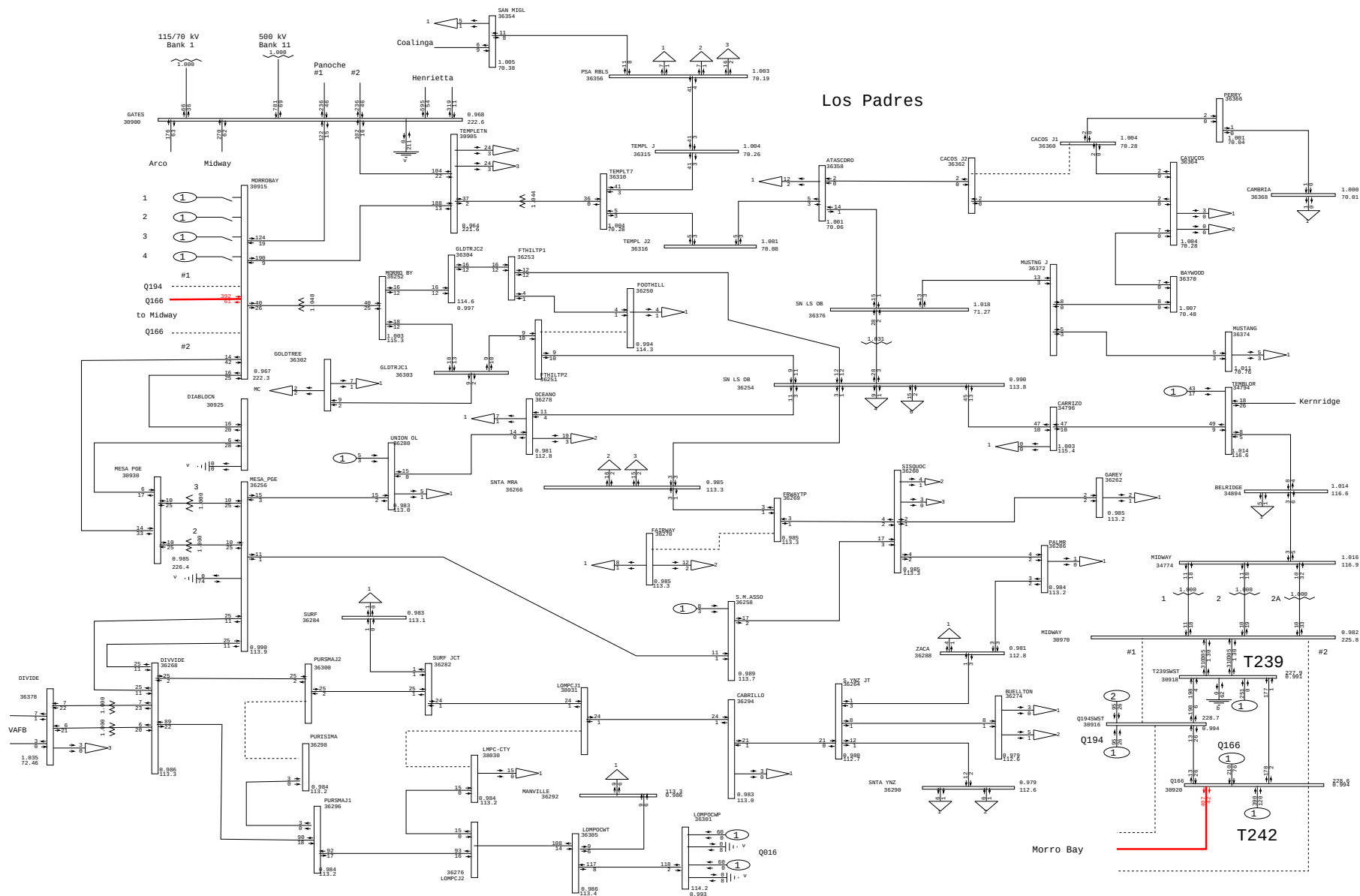


PG&E 2008 CASE SERIES: 2013 Summer Off Peak Case
 PATH15= 4932 MW(S-N) PATH26=-1657 MW(N-S) PDCI=-1846 MW(N-S) COI=-3603 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Off Peak Transition Pre-Cluster Case

Plot 038: Morro Bay - Q166 #2 230 kV Line Outage

amps/rate
 draw\slok\pge-tcp1-slok-
 Rating = 2

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:45:50 2009 cases\sumop\13sumop-pge-tcp1-slok-pst.sav



Pacific Gas and
Electric Company

PG&E 2008 CASE SERIES: 2013 Summer Off Peak Case

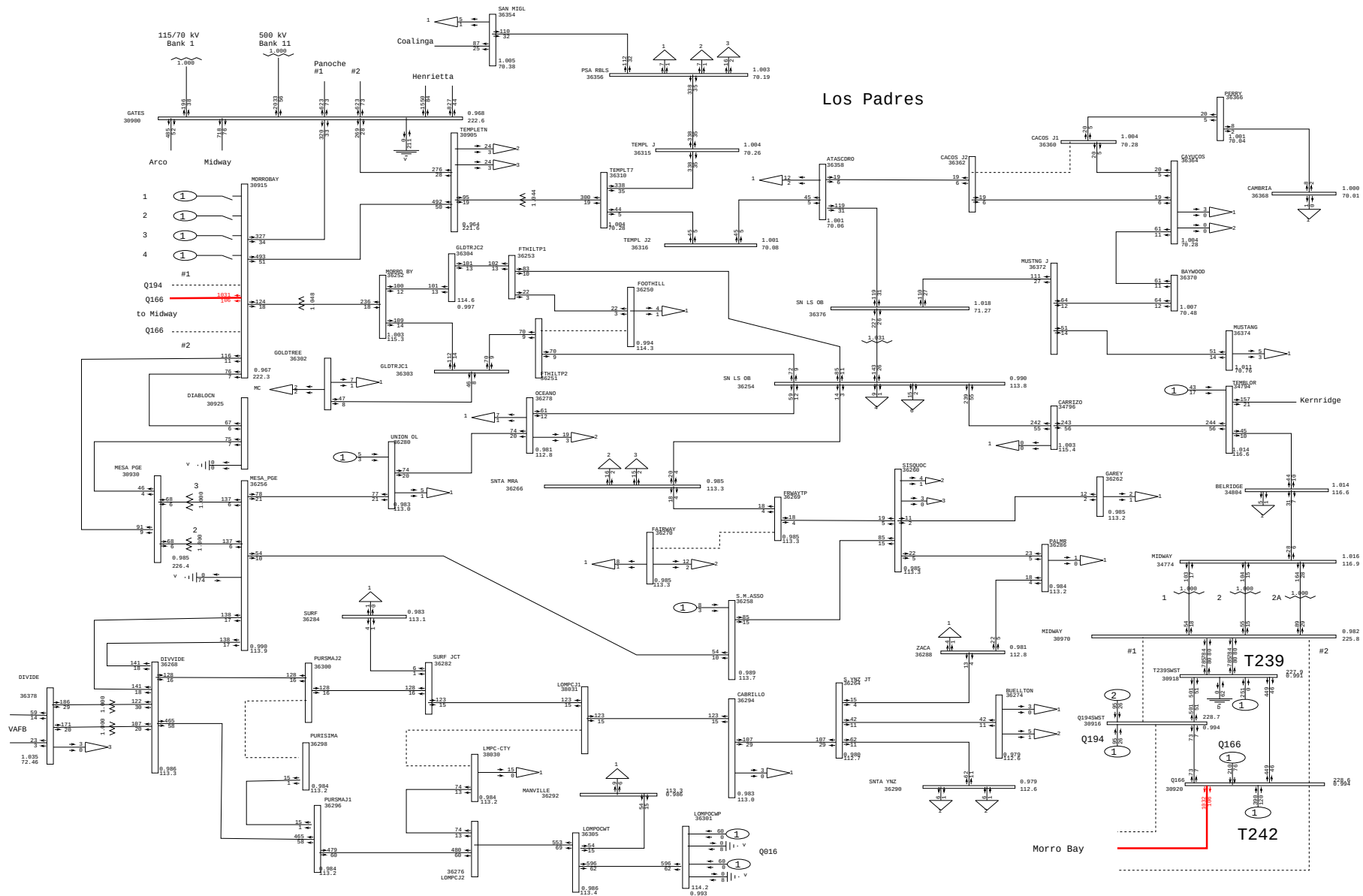
PATH15= 5357 Mw(S-N) PATH26= -815 Mw(N-S) PDCI=-1846 Mw(N-S) COI=-3609 Mw(N-S)

PG&E 2008 Group 3 SLO/Kern Summer Off Peak Transition Post-Cluster Case

Plot 039: Morro Bay - Q166 #2 230 kV Line Outage

MW/MVAR	
draw\slok\pge-tcp1-slok-	
Rating =	2

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:45:51 2009 cases\sumop\13sumop-pge-tcp1-slok-pst.sav

 Pacific Gas and Electric Company®

PG&E 2008 CASE SERIES: 2013 Summer Off Peak Case

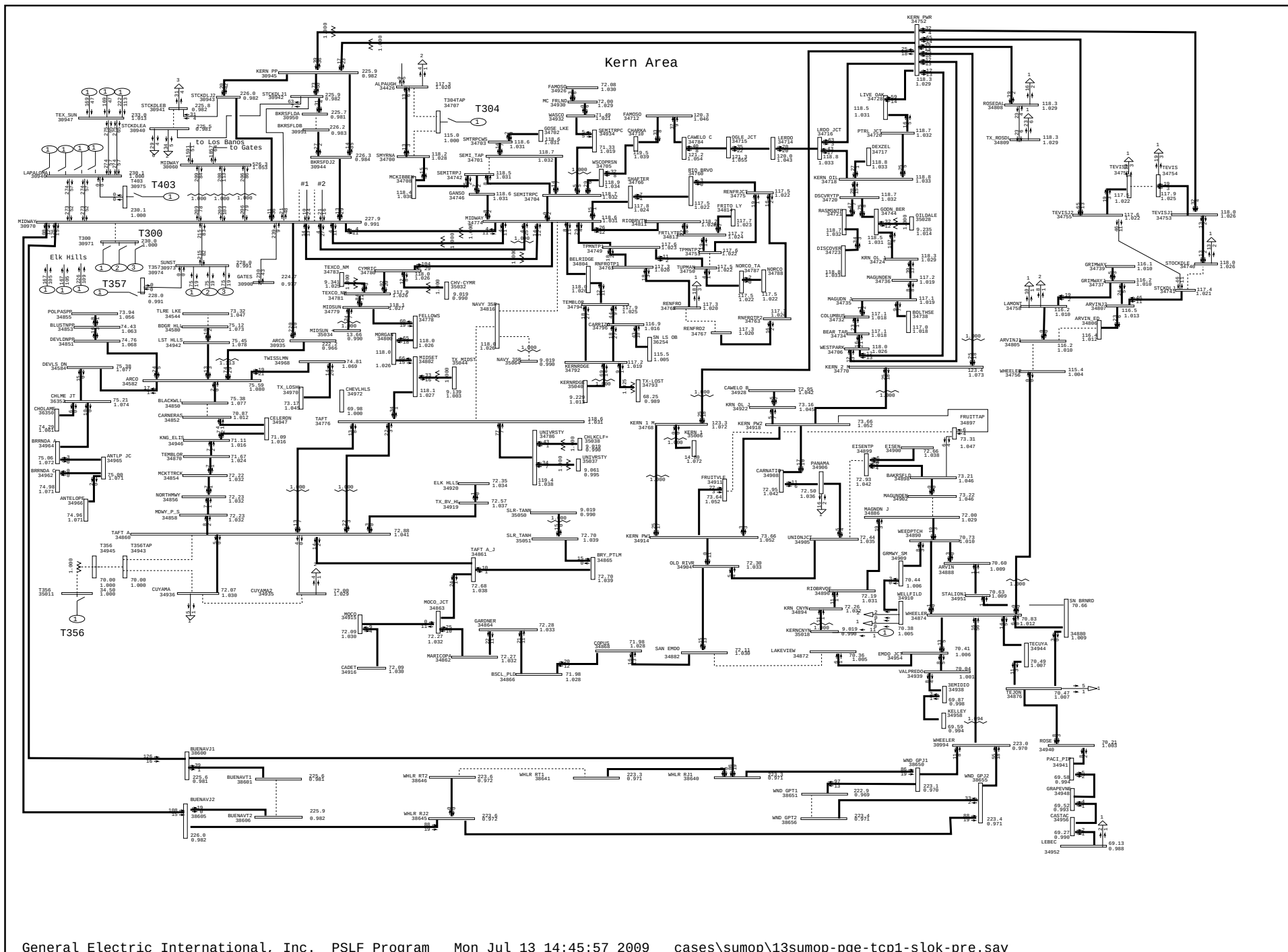
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PG&E 2008 Group 3 SL0/Kern Summer Off Peak Transition Post-Cluster Case

Plot 040: Morro Bay - Q166 #2 230 kV Line Outage

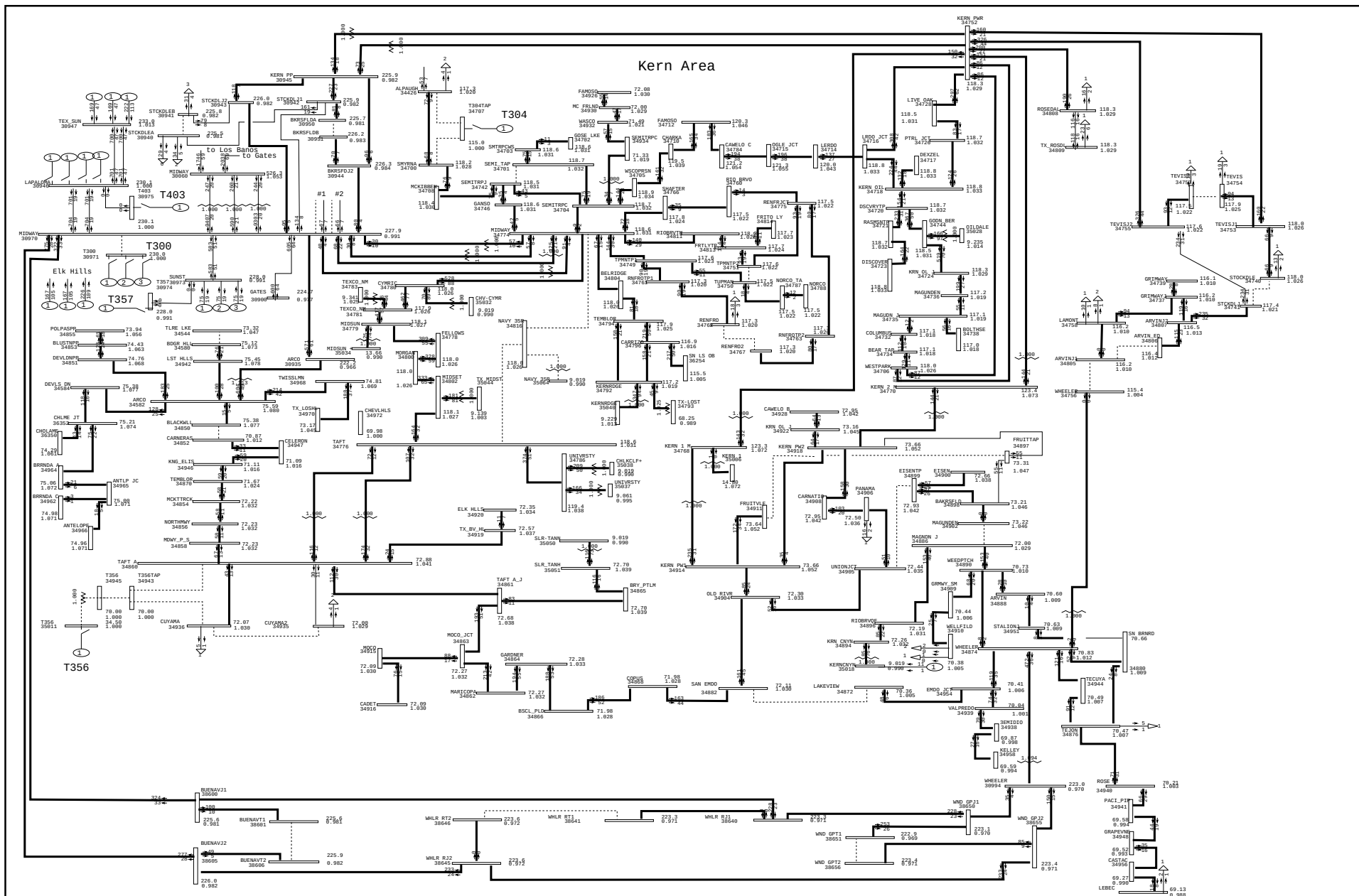
amps/rate	
draw\slok\pge-tcp1-slok-	
Rating =	2

APPENDIX D - STEADY STATE POWER FLOW PLOTS



PG&E 2008 CASE SERIES: 2013 Summer Off Peak Case PATH15= 4932 MW(S-N) PATH26=-1657 MW(N-S) PDCI=-1846 MW(N-S) COI=-3603 MW(N-S) PG&E 2008 Group 3 SLO/Kern Summer Off Peak Transition Pre-Cluster Case	Plot 041: Midway - Taft 115 kV Line	MW/MVAR draw\slok\pge-tcp1-slok- Rating = 2
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APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:45:58 2009 cases\sumop\13sumop-pge-tcp1-slok-pre.sav

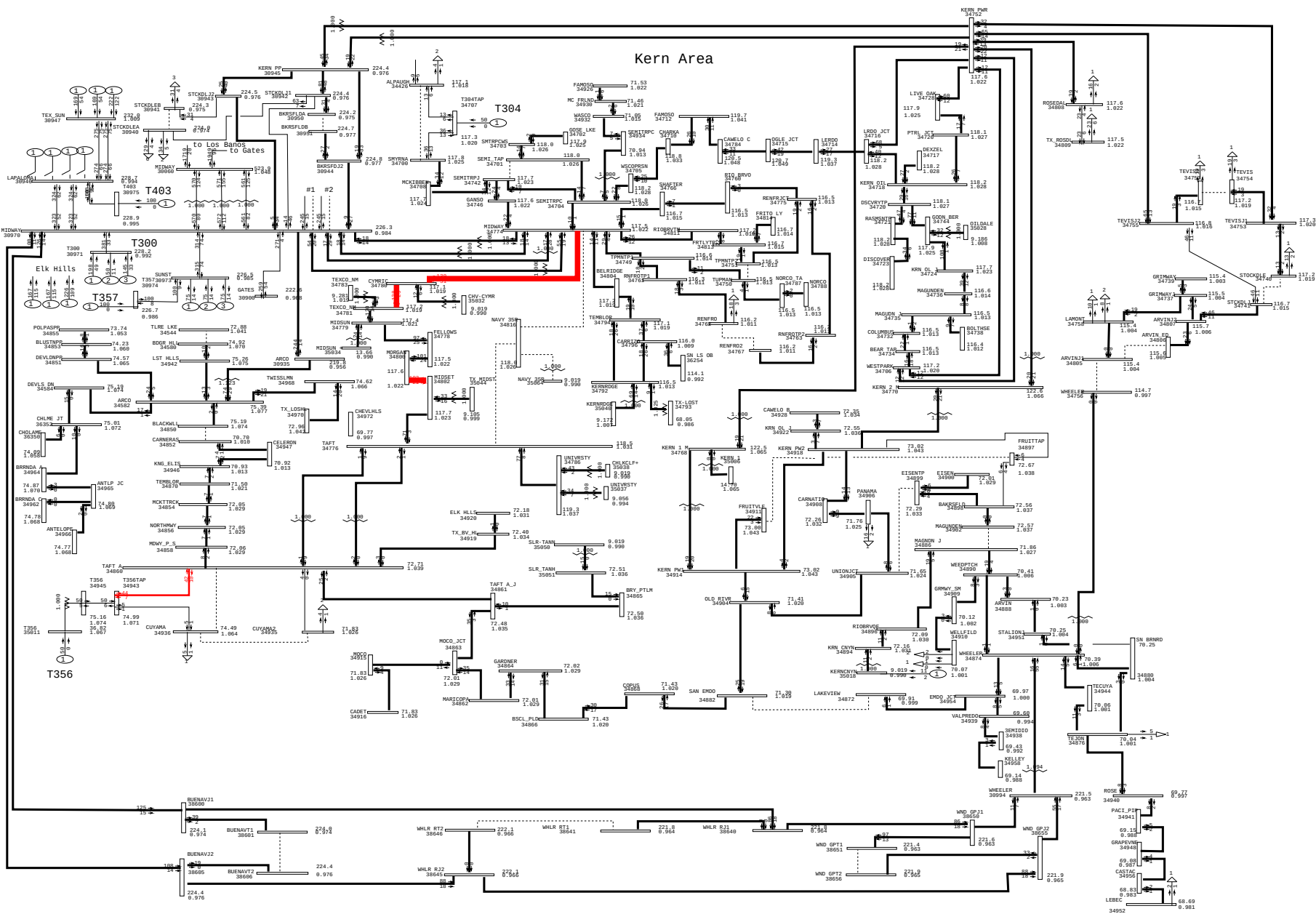


PG&E 2008 CASE SERIES: 2013 Summer Off Peak Case
 PATH15= 4932 MW(S-N) PATH26=-1657 MW(N-S) PDCI=-1846 MW(N-S) COI=-3603 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Off Peak Transition Pre-Cluster Case

Plot 042: Midway - Taft 115 kV Line

amps/rate
 draw\slok\pge-tcp1-slok-
 Rating = 2

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:46:05 2009 cases\sumop\13sumop-pge-tcp1-slok-pst.sav

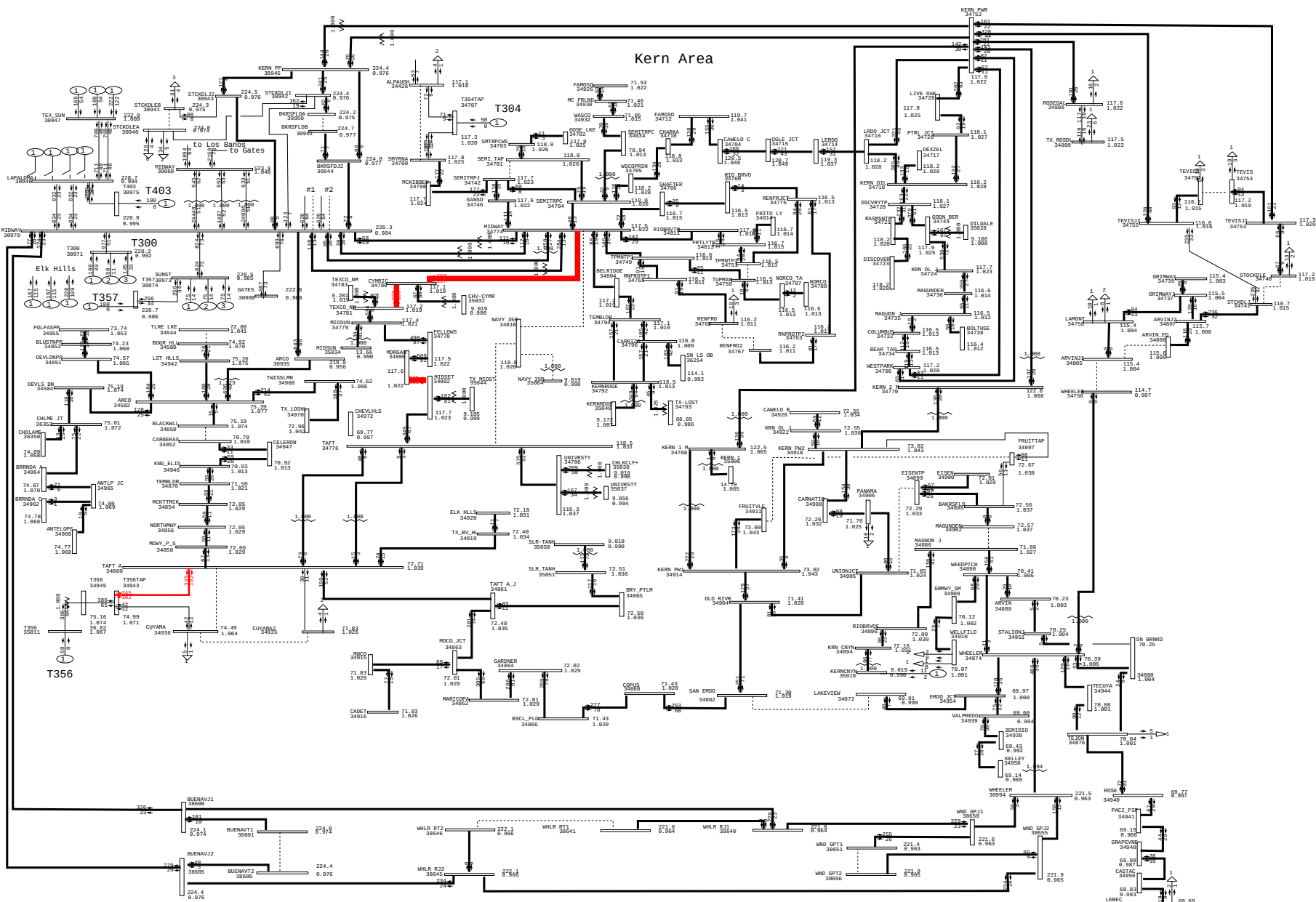


PG&E 2008 CASE SERIES: 2013 Summer Off Peak Case
 PATH15= 5357 MW(S-N) PATH26= -815 MW(N-S) PDCI=-1846 MW(N-S) COI=-3609 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Off Peak Transition Post-Cluster Case

Plot 043: Midway - Taft 115 kV Line

MW/MVAR
 draw\slok\pge-tcp1-slok-
 Rating = 2

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:46:06 2009 cases\sumop\13sumop-pge-tcp1-slok-pst.sav

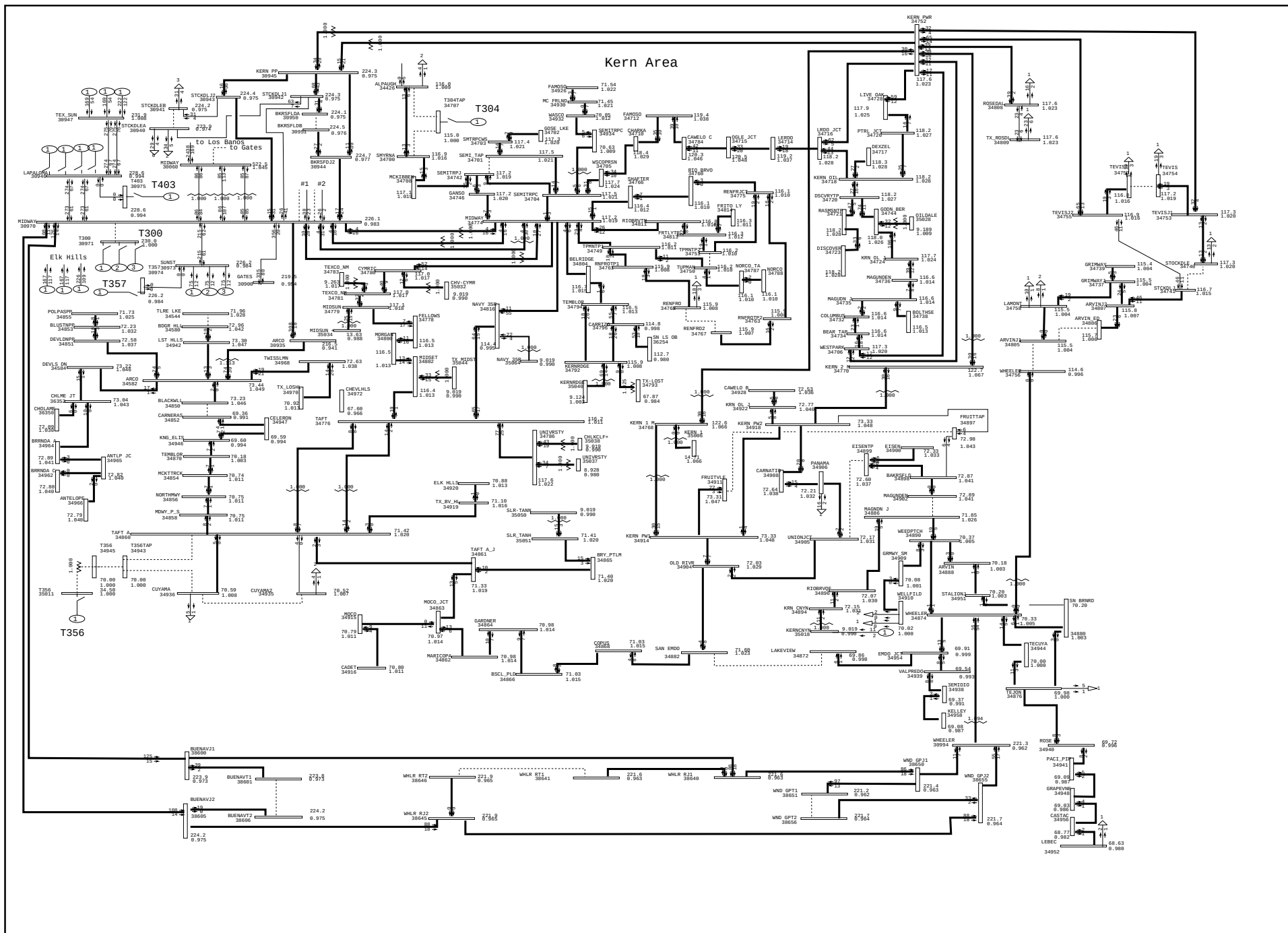


PG&E 2008 CASE SERIES: 2013 Summer Off Peak Case
 PATH15= 5357 MW(S-N) PATH26= -815 MW(N-S) PDCI=-1846 MW(N-S) COI=-3609 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Off Peak Transition Post-Cluster Case

Plot 044: Midway - Taft 115 kV Line

amps/rate
 draw\slok\pge-tcp1-slok-
 Rating = 2

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:46:09 2009 draw\slok\pt-13sumop-slok-pre-dyn_swt16_b2_gtes-mdwy-500kV.sav

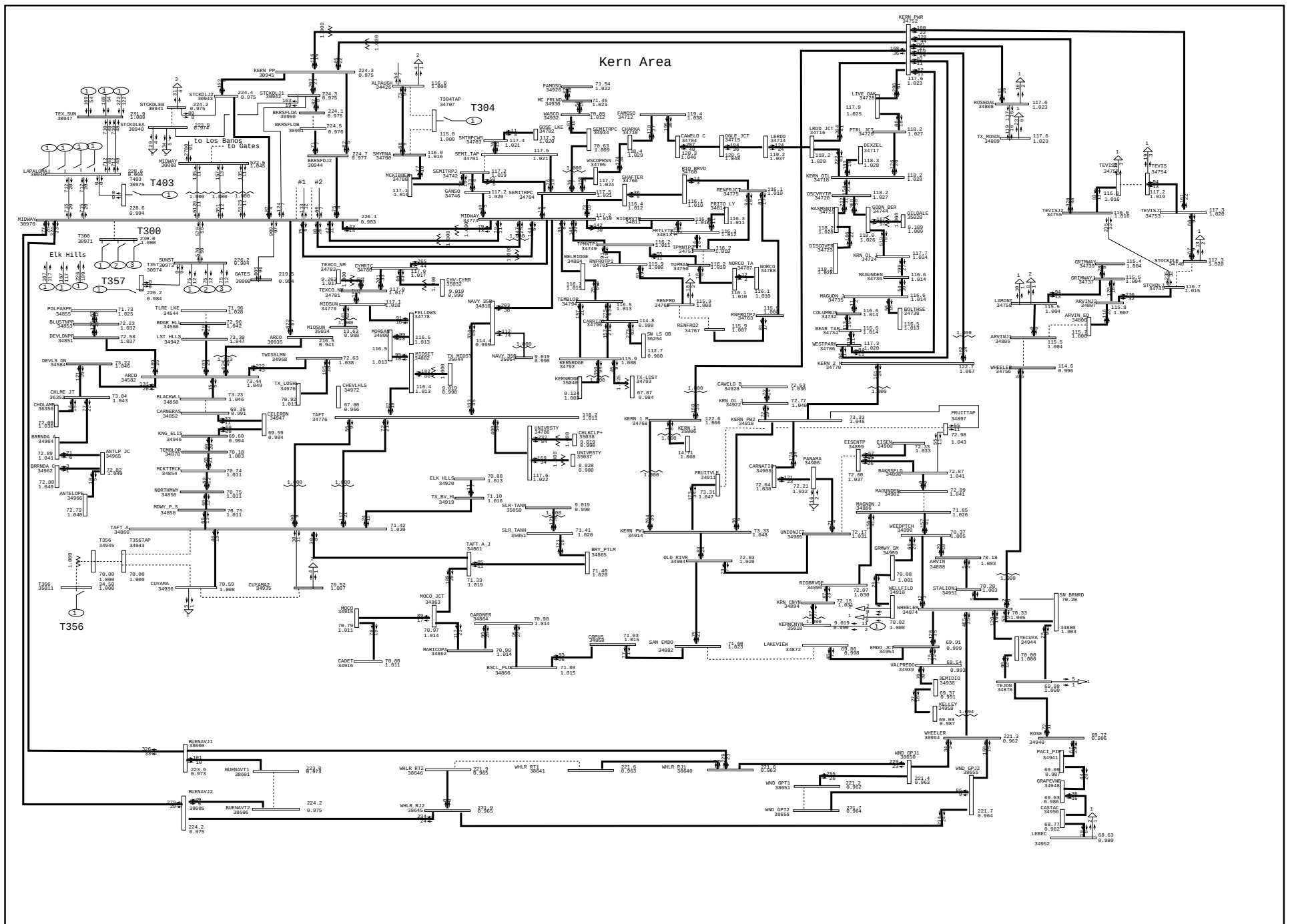


PG&E 2008 CASE SERIES: 2013 Summer Off Peak Tstab/PT Case
 PATH15= 4932 MW(S-N) PATH26=-1657 MW(N-S) PDCI=-1846 MW(N-S) COI=-3603 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Off Peak Transition Pre-Cluster Case

Plot 045: Gates - Midway 500 kV Line Outage

MW/MVAR
 draw\slok\pge-tcp1-slok-
 Rating = 2

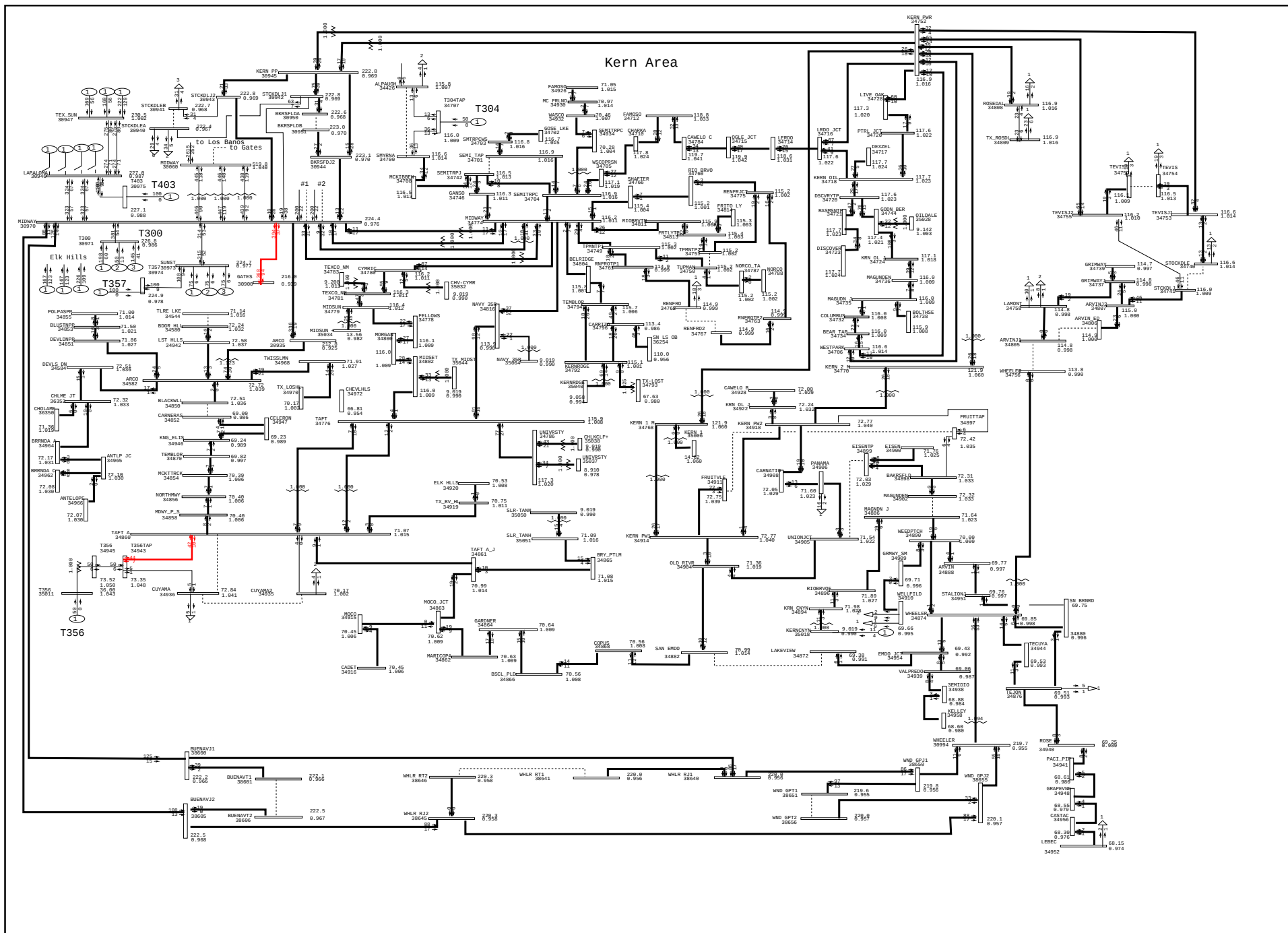
APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:46:10 2009 draw\slok\pt-13sumop-slok-pre-dyn_swt16_b2_gtes-mdwy-500kv.sav

	PG&E 2008 CASE SERIES: 2013 Summer Off Peak Tstab/PT Case PATH15= 4932 MW(S-N) PATH26=-1657 MW(N-S) PDCI=-1846 MW(N-S) COI=-3603 MW(N-S) PG&E 2008 Group 3 SLO/Kern Summer Off Peak Transition Pre-Cluster Case	Plot 046: Gates - Midway 500 kV Line Outage	amps/rate draw\slok\pge-tcp1-slok- Rating = 2
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APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:46:13 2009 draw\slok\pt-13sumop-slok-pst-dyn_swt16_b2_gtes-mdwy-500kv.sav

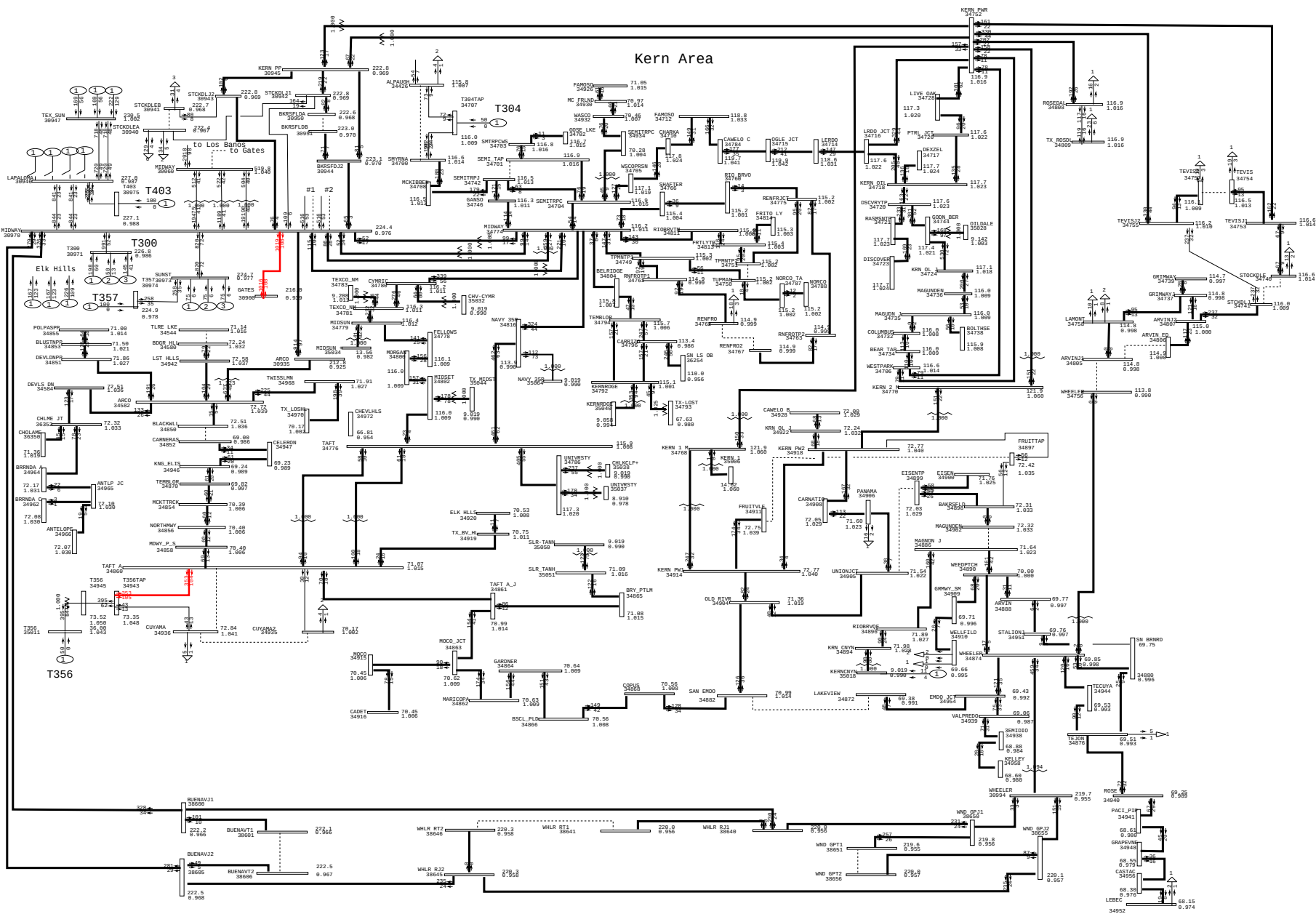


PG&E 2008 CASE SERIES: 2013 Summer Off Peak Case
 PATH15= 5357 MW(S-N) PATH26= -815 MW(N-S) PDCI=-1846 MW(N-S) COI=-3609 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Off Peak Transition Post-Cluster Case

Plot 047: Gates - Midway 500 kv LLine Outage

MW/MVAR
 draw\slok\pge-tcp1-slok-
 Rating = 2

APPENDIX D - STEADY STATE POWER FLOW PLOTS



General Electric International, Inc. PSLF Program Mon Jul 13 14:46:14 2009 draw\slok\pt-13sumop-slok-pst-dyn_swt16_b2_gtes-mdwy-500kv.sav



PG&E 2008 CASE SERIES: 2013 Summer Off Peak Case
 PATH15= 5357 MW(S-N) PATH26= -815 MW(N-S) PDCI=-1846 MW(N-S) COI=-3609 MW(N-S)
 PG&E 2008 Group 3 SLO/Kern Summer Off Peak Transition Post-Cluster Case

Plot 048: Gates - Midway 500 kV Line Outage

amps/rate
 draw\slok\pge-tcp1-slok-
 Rating = 2



BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV

APPLICATION FOR CERTIFICATION
FOR THE *HYDROGEN ENERGY*
CALIFORNIA PROJECT

Docket No. 08-AFC-8

PROOF OF SERVICE LIST
(Est. 8/26/09)

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DECLARATION OF SERVICE

I, Dale Shileikis, declare that on September 22, 2009, I served and filed copies of the attached Appendix D Steady State Power Flow Plots, dated September 22, 2009. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: [www.energy.ca.gov/sitingcases/hydrogen_energy].

The documents have been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(Check all that Apply)

FOR SERVICE TO ALL OTHER PARTIES:

 x sent electronically to all email addresses on the Proof of Service list

 by personal delivery or by depositing in the United States mail at with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses **NOT** marked "email preferred."

AND

FOR FILING WITH THE ENERGY COMMISSION:

 x sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (***preferred method***);

OR

 depositing in the mail an original and 12 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION

Attn: Docket No. 08-AFC-8
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct.