URS

DOCKET
08-AFC-3
DATE MAR 10 2009
RECD. MAR 10 2009

March 10, 2009

BY EMAIL and Mail

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

RE: Marsh Landing Generating Station
Application for Certification 08-AFC-03

On behalf of Mirant Marsh Landing, LLC, the applicant for the above-referenced Marsh Landing Generating Station AFC, we are pleased to submit the enclosed document:

- Updated System Impact Study – Appendix 11, Results of 3 Phase Fault Duty Analysis

Please include this document in the AFC record.

URS Corporation

Anne Connell
Project Manager

Enclosures

CC: Mike Monasmith (email)
Proof of Service List (email)

URS Corporation
221 Main Street, Suite 600
San Francisco, CA 94105
Tel: 415.896.5858
Fax: 415.882.9261
www.urscorp.com

Updated System Impact Study

Mirant Marsh Landing, LLC

Marsh Landing Generating Station

Interconnection into PG&E's Contra Costa Switchyard

APPENDIX 11 – Results of 3 Phase Fault Duty Analysis

March 9, 2009

Table of Contents

Introduction

Mirant Marsh Landing, LLC (Mirant Marsh Landing) has requested that a comprehensive third-party system impact study (SIS) be conducted and submitted to the California Energy Commission (CEC) for the Marsh Landing Generating Station (MLGS). The *Updated SIS Report* was submitted to CEC in February 2009 to incorporate the information requested by the CEC in their November 13, 2008 Data Request Numbers 41 and 44 (i.e., Contingency C study and reactive power deficiency analysis). Appendix 10 to the Updated SIS report was submitted in March 2009 and addressed Data Request Number 43 (i.e., transient stability analyses).

As part of its first set of data requests (Data Request Set I (#1-54), CEC staff requested a short circuit duty analysis (Data Request 42) and a system protection and substation evaluation (Data Request 45). In its initial letter to staff dated December 2, 2008, and in its *Responses to Data Request Set I (#1-54)* submitted on December 12, 2008, Mirant Marsh Landing stated that a thorough short circuit duty analysis would be required to accurately perform a system protection and substation evaluation to respond to Data Requests 42 and 45 and that PG&E is the only entity that can perform this evaluation because PG&E is the only entity that has access to the impedance models and equipment rating limitations. Mirant Marsh Landing also explained that short circuit duty analyses will be performed by PG&E at the request of CAISO in studies that will be required as part of the Large Generator Interconnection Agreement process before the project can be interconnected with the CAISO transmission system.

Although these more detailed analyses will be performed in the future as part of the interconnection process, a short circuit analysis for three line-to-ground faults has been performed to assist the CEC in its evaluation of the MLGS. The assumptions and results of this study are presented in this document which is Appendix 11 to the Updated SIS report.

APPENDIX 11 – Results of 3-Phase Fault Duty Analysis

1. Special Note regarding Assumptions and Study Results

It should be noted that all the following results in this 3-phase fault duty analysis are only estimates and that this analysis is not complete due to our inability to run line to ground faults (because of a lack of accurate negative and zero sequence models; as noted above, only PG&E has access to these models). The following additional points should be noted:

A. The short circuit portion of the General Electric (GE) PSLF – version 16.3_02 was utilized to perform this analysis.

B. Since only positive sequence load flow impedance information was used in this analysis, only three phase faults could be modeled. Fault duty contributions from line to ground faults can actually be higher in magnitude than the contribution from 3-phase faults. However, single line to ground faults were not run because negative and zero sequence impedance data was not available at the time of this study. PG&E's System Protection Department is the only known entity with a complete negative and zero sequence model of the PG&E system.

C. Unsaturated reactance values were utilized for the MLGS project to be consistent

with existing unsaturated values extracted from the WECC dynamic data set used for the rest of this SIS.

D. PG&E and the ISO are the only entities with information regarding equipment ratings (e.g., circuit breaker interrupting capabilities). Without this information it cannot be determined if equipment is overstressed (i.e., if fault currents are in excess of equipment ratings.)

E. Potential environmental impacts from overstressed circuit breakers are likely to be extremely minor and less than significant. All overstressed equipment would be located inside the boundaries of existing electrical substations. All replacement work would likewise be performed within these substation boundaries. Therefore, the environmental impacts from these equipment replacements, if any, will be negligible and can be addressed via Conditions of Certification and in the compliance phase of the licensing process.

2. Summary of the 3-Phase Fault Duty Analysis

Short circuit studies were performed to determine the impact of the addition of the MLGS to the PG&E transmission system.

3. System Protection Study Input Data

The following data was used to model the MLGS in the 3-phase fault duty analysis. Note that unsaturated reactance values were utilized for MLGS in this study to be consistent with the data used to model the rest of the generators in the study case.

Gas Turbine Generators #1 & #2

Synchronous reactance (X_d)	= 236.4 %	@ 285 MVA
Transient reactance (X'_d)	= 30.0 %	@ 285 MVA
Sub-transient reactance (X''_d)	= 22.4 %	@ 285 MVA

Steam Turbine Generator 1 & 2

Synchronous reactance (X_d)	= 270.0 %	@ 83 MVA
Transient reactance (X'_d)	= 30.1 %	@ 83 MVA
Sub-transient reactance (X''_d)	= 20.9 %	@ 83 MVA

4. Results

Short circuit studies were performed to determine the impact of adding the MLGS to PG&E's transmission system. The 3-phase fault duties were calculated before and after the addition of the MLGS. The following table shows the results of this short circuit study for two scenario cases developed for comparison purposes. The two scenario cases were developed directly from the power-flow cases used to perform the transient stability study referenced in Appendix 10 of the Updated SIS. The following changes were made to both scenario cases

1 and 2: all Duke Moss Power Block units, Moss Landing 6 and all Delta Pumps were modeled on-line (at zero MW output) to capture their additional contribution to fault duty.

Case 1= Existing Summer 2013 system conditions (Base Case or Pre-Project Case). Detailed PG&E generation pattern for Case 1 can be found in Attachment C.

Case 2 = Case 1 plus the addition of the MLGS (Post-Project Case). Detailed PG&E generation pattern for Case 2 can be found in Attachment D.

The table below consists of buses that are electrically adjacent to the proposed Marsh Landing Generation Station project. Additional study details can be found in Attachments A and B, which provide raw pre- and post-project 3-phase fault results, respectively.

LOCATION(BUS)	FAULT CURRENT (A) PRE-PROJECT	FAULT CURRENT (A) PST-PROJECT	DELTA (A)	DELTA (%)
At 30525 C.COSTA 230.0	42,853.57	52,012.81	9,159.24	21.37%
At 30523 CC SUB 230.0	33,560.21	38,282.33	4,722.12	14.07%
At 30565 BRENTWOD230.0	18,143.21	19,016.53	873.32	4.81%
At 30550 MORAGA 230.0	30,801.75	31,528.73	726.98	2.36%
At 30545 ROSSMOOR230.0	17,984.02	18,382.99	398.97	2.22%
At 33000 CC SUB 115.0	13,576.18	13,861.17	284.99	2.10%
At 30575 WND MSTR230.0	21,502.13	21,922.05	419.92	1.95%
At 30537 NDUBLIN 230.0	10,240.56	10,407.88	167.32	1.63%
At 30625 TESLA D 230.0	62,469.31	63,050.70	581.39	0.93%
At 30630 NEWARK D230.0	46,466.86	46,808.28	341.42	0.73%
At 30631 NEWARK E230.0	46,570.75	46,885.49	314.74	0.68%
At 33010 SOBRANTE115.0	48,826.38	49,021.72	195.34	0.40%
At 30624 TESLA E 230.0	60,232.26	60,436.62	204.36	0.34%
At 30526 PITSBG D230.0	53,959.22	54,110.46	151.24	0.28%
At 30527 PITSBG E230.0	55,014.57	55,160.39	145.82	0.27%
At 30540 SOBRANTE230.0	30,616.30	30,692.36	76.06	0.25%
At 30528 DEC PTSG230.0	48,591.19	48,707.19	116.00	0.24%
At 30640 TESLA C 230.0	41,127.63	41,201.03	73.40	0.18%
At 30535 TIDEWATR230.0	26,060.73	26,096.62	35.89	0.14%
At 32950 PITSBURG115.0	48,992.26	49,039.63	47.37	0.10%
At 32978 LMEC 115.0	45,862.83	45,901.33	38.50	0.08%
At 32974 LAKEWD-M115.0	19,983.32	19,999.47	16.15	0.08%
At 32973 LAKEWD-C115.0	19,949.09	19,964.54	15.45	0.08%
At 30700 SANMATEO230.0	29,628.31	29,650.19	21.88	0.07%
At 32970 CLAYTN 115.0	28,635.45	28,655.14	19.69	0.07%
At 33011 ALHAMBRA115.0	14,688.52	14,692.05	3.53	0.02%
At 30561 TASSAJAR230.0	12,599.57	12,596.14	-3.43	-0.03%
At 30600 TRES VAQ230.0	19,174.40	19,159.24	-15.16	-0.08%

5. Conclusions

From the data analyzed, one can conclude that the 3-phase fault duty shows some slight increase at the point of interconnection (the Contra Costa 230kV bus), but that this impact decreases dramatically as the fault location moves away from the point of interconnection.

Please note that this analysis did not address the following:

- What are the fault duties for line to ground faults? Would these fault duties be greater

than the three phase fault duties?

- Is any equipment (e.g., circuit breakers) overstressed or undersized due to changes in fault duty?

These questions can only be answered by PG&E's System Protection Department. As explained above, PG&E is the only entity that possesses the detailed transmission grid information, such as zero and negative sequence impedance along with transmission equipment ratings, necessary to carry out the additional single line to ground fault duty analysis and then compare listed fault duties (both 3-phase and single line to ground) against actual transmission grid equipment ratings.

These analyses will be performed by PG&E as part of the CAISO Large Generator Interconnection Application process. The additional questions noted above thus will be addressed by PG&E and the CAISO before the MLGS project can be interconnected with the CAISO transmission system. This will ensure that all potentially significant impacts to the transmission system are adequately addressed as a condition to interconnection.

ATTACHMENT A – RAW PRE-PROJECT 3-PHASE FAULT RESULTS

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30525 C.COSTA 230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			42853.57			0.00	0.00 Ohms
Prefault voltage,	pu			1.0146				
Fault Current,	pu	76.637	-152.550	170.718	-63.3			
1 Seq impedance,	pu	0.0009	0.0059	0.0059	81.2	6.4456		

Current	Ck	[Near End [pu	deg]	[Nr Amps]	[Far End [pu	deg]	[Fr Amps]	[Z [Ohms	deg]	At 30525 C.COSTA 230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30525 C.COSTA 230.0															
From 30520 GATEWAY 230.0	1	18.224	127.2	4574.7	18.224	-52.8	4574.7	0.2	71.6	0.0	0.0	4574.7	127.2	0.0	0.0
From 30523 CC SUB 230.0	1	22.355	124.1	5611.6	22.355	-55.9	5611.6	1.4	79.5	0.0	0.0	5611.6	124.1	0.0	0.0
From 30479 BDLSWSTA230.0	1	21.129	125.2	5303.7	21.124	-54.8	5302.5	8.0	79.4	0.0	0.0	5303.7	125.2	0.0	0.0
From 30543 ROSSTAP1230.0	1	14.389	107.9	3611.9	14.375	-72.1	3608.4	16.0	81.9	0.0	0.0	3611.9	107.9	0.0	0.0
From 30544 ROSSTAP2230.0	2	14.412	108.1	3617.7	14.398	-71.9	3614.2	16.0	81.9	0.0	0.0	3617.7	108.1	0.0	0.0
From 30565 BRENTWOD230.0	1	15.333	111.1	3848.9	15.330	-68.9	3848.1	7.3	81.6	0.0	0.0	3848.9	111.1	0.0	0.0
From 30567 LONETREE230.0	1	9.062	103.1	2274.7	9.061	-76.9	2274.6	4.4	80.4	0.0	0.0	2274.7	103.1	0.0	0.0
From 30575 WND MSTR230.0	1	20.444	112.0	5131.8	20.431	-68.0	5128.5	13.3	81.9	0.0	0.0	5131.8	112.0	0.0	0.0
From 30585 LS PSTAS230.0	1	11.743	103.5	2947.8	11.729	-76.4	2944.1	18.5	80.4	0.0	0.0	2947.8	103.5	0.0	0.0
From 99980 MIRPKCC1230.0	1	0.000	-63.4	0.1	0.000	116.6	0.1	999.9	90.0	0.0	0.0	0.1	-63.4	0.0	0.0
From 99981 MIRPKCC2230.0	1	0.000	-63.4	0.1	0.000	116.6	0.1	999.9	90.0	0.0	0.0	0.1	-63.4	0.0	0.0
From 99985 MIRCCCC1230.0	1	0.000	-63.4	0.1	0.000	116.6	0.1	999.9	90.0	0.0	0.0	0.1	-63.4	0.0	0.0
From 99986 MIRCCCC2230.0	1	0.000	-63.4	0.1	0.000	116.6	0.1	999.9	90.0	0.0	0.0	0.1	-63.4	0.0	0.0
From 33114 C.COS 4 13.8	1	0.000	90.0	0.0	0.000	90.0	0.0	999.9	90.0	0.0	0.0	0.0	90.0	0.0	0.0
From 33115 C.COS 5 13.8	1	0.000	-88.3	0.0	0.000	91.7	0.0	999.9	90.0	0.0	0.0	0.0	-88.3	0.0	0.0
From 33116 C.COS 6 18.0	1	12.779	123.3	3207.7	12.781	-56.7	40993.4	0.1	88.6	0.0	0.0	3207.7	123.3	0.0	0.0
From 33117 C.COS 7 18.0	1	12.779	123.3	3207.7	12.781	-56.7	40993.4	0.1	88.6	0.0	0.0	3207.7	123.3	0.0	0.0

Voltage	[V0 [Mag	Ang]	[V1 [Mag	Ang]	[V2 [Mag	Ang]	[Va [Mag	Ang]	[Vb [Mag	Ang]	[Vc [Mag	Ang]
30525 C.COSTA 230.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
30520 GATEWAY 230.0												

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30526 PITSBG D230.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			53959.22			0.00	0.00 Ohms
Prefault voltage,	pu			1.0076				
Fault Current,	pu	88.213	-196.027	214.961	-65.8			
1 Seq impedance,	pu	0.0007	0.0046	0.0047	81.7	6.8731		

Current	Ck	[Near End [pu	deg]	[Nr Amps]	[Far End [pu	deg]	[Fr Amps]	[Z [Ohms	deg]	At 30526 PITSBG D230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30526 PITSBG D230.0															
From 30527 PITSBG E230.0	1	122.356	116.8	30713.8	122.356	-63.2	30713.8	0.4	45.0	0.0	0.0	30713.8	116.8	0.0	0.0
From 30528 DEC PTSG230.0	1	15.576	123.4	3909.9	15.576	-56.6	3909.9	0.8	70.5	0.0	0.0	3909.9	123.4	0.0	0.0
From 30528 DEC PTSG230.0	2	15.576	123.4	3909.9	15.576	-56.6	3909.9	0.8	70.5	0.0	0.0	3909.9	123.4	0.0	0.0
From 30555 SANRAMON230.0	1	10.657	108.4	2675.1	10.646	-71.6	2672.3	17.2	81.7	0.0	0.0	2675.1	108.4	0.0	0.0
From 30561 TASSAJAR230.0	1	10.506	103.6	2637.3	10.500	-76.4	2635.6	14.0	78.2	0.0	0.0	2637.3	103.6	0.0	0.0
From 99995 MIRCCPB1230.0	1	0.000	90.0	0.0	0.000	90.0	0.0	999.9	90.0	0.0	0.0	0.0	90.0	0.0	0.0
From 99996 MIRCCPB2230.0	1	0.000	90.0	0.0	0.000	90.0	0.0	999.9	90.0	0.0	0.0	0.0	90.0	0.0	0.0
From 32950 PITSBURG115.0	12	12.526	111.6	3144.2	11.850	-68.4	5949.1	3.2	89.2	0.0	0.0	3144.2	111.6	0.0	0.0
From 32950 PITSBURG115.0	13	12.526	111.6	3144.2	11.850	-68.4	5949.1	3.2	89.2	0.0	0.0	3144.2	111.6	0.0	0.0
From 38950 VSC_PTSB180.5	1	17.177	93.0	4311.9	17.177	-87.0	5494.4	9.9	88.2	0.0	0.0	4311.9	93.0	0.0	0.0

Voltage	[V0 [Mag	Ang]	[V1 [Mag	Ang]	[V2 [Mag	Ang]	[Va [Mag	Ang]	[Vb [Mag	Ang]	[Vc [Mag	Ang]
30526 PITSBG D230.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
30527 PITSBG E230.0	0.0000	90.0	0.0865	-18.2	0.0000	90.0	0.0865	-18.2	0.0865	-138.2	0.0865	101.8
30528 DEC PTSG230.0	0.0000	90.0	0.0233	13.9	0.0000	90.0	0.0233	13.9	0.0233	-106.1	0.0233	133.9
30528 DEC PTSG230.0	0.0000	90.0	0.0233	13.9	0.0000	90.0	0.0233	13.9	0.0233	-106.1	0.0233	133.9
30555 SANRAMON230.0	0.0000	90.0	0.3468	10.1	0.0000	90.0	0.3468	10.1	0.3468	-109.9	0.3468	130.1
30561 TASSAJAR230.0	0.0000	90.0	0.2780	1.8	0.0000	90.0	0.2780	1.8	0.2780	-118.2	0.2780	121.8
99995 MIRCCPB1230.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
99996 MIRCCPB2230.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
32950 PITSBURG115.0	0.0000	90.0	0.2883	20.8	0.0000	90.0	0.2883	20.8	0.2883	-99.2	0.2883	140.8
32950 PITSBURG115.0	0.0000	90.0	0.2883	20.8	0.0000	90.0	0.2883	20.8	0.2883	-99.2	0.2883	140

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30527 PITSBG E230.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			55014.57			0.00	0.00 Ohms
Prefault voltage,	pu			1.0112				
Fault Current,	pu	87.341	-201.010	219.165	-66.5			
1 Seq impedance,	pu	0.0006	0.0046	0.0046	82.5	7.5774		

Current	Ck	[Near End [pu	deg]	[Nr Amps]	[Far End [pu	deg]	[Fr Amps]	[Z [Ohms	deg]	At 30527 PITSBG E230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30527 PITSBG E230.0															
From 30526 PITSBG D230.0	1	87.308	113.6	21915.9	87.308	-66.4	21915.9	0.4	45.0	0.0	0.0	21915.9	113.6	0.0	0.0
From 30535 TIDEWATR230.0	1	18.300	107.8	4593.7	18.296	-72.2	4592.5	5.8	87.2	0.0	0.0	4593.7	107.8	0.0	0.0
From 30536 TESORO 230.0	1	15.613	107.8	3919.2	15.609	-72.2	3918.2	5.5	87.1	0.0	0.0	3919.2	107.8	0.0	0.0
From 30595 FLOWIND2230.0	1	15.613	111.9	3919.1	15.589	-68.1	3913.0	20.2	81.9	0.0	0.0	3919.1	111.9	0.0	0.0
From 30600 TRES VAQ230.0	2	15.584	111.9	3911.8	15.567	-68.1	3907.6	16.8	81.9	0.0	0.0	3911.8	111.9	0.0	0.0
From 30560 E. SHORE230.0	1	9.939	105.6	2495.0	9.894	-74.4	2483.5	38.1	82.1	0.0	0.0	2495.0	105.6	0.0	0.0
From 30700 SANMATEO230.0	1	8.557	99.2	2147.9	8.493	-80.7	2132.0	47.8	83.4	0.0	0.0	2147.9	99.2	0.0	0.0
From 30000 PTSB 7 20.0	1	22.222	124.6	5578.1	22.227	-55.4	64162.3	0.0	88.4	0.0	0.0	5578.1	124.6	0.0	0.0
From 33105 PTSB 5 18.0	1	6.411	121.2	1609.2	6.413	-58.8	20569.6	0.2	88.4	0.0	0.0	1609.2	121.2	0.0	0.0
From 33105 PTSB 5 18.0	2	6.411	121.2	1609.2	6.413	-58.8	20569.5	0.2	88.4	0.0	0.0	1609.2	121.2	0.0	0.0
From 33106 PTSB 6 18.0	1	7.179	119.6	1802.1	7.180	-60.4	23030.4	0.2	88.6	0.0	0.0	1802.1	119.6	0.0	0.0
From 33106 PTSB 6 18.0	2	7.179	119.6	1802.1	7.180	-60.4	23030.4	0.2	88.6	0.0	0.0	1802.1	119.6	0.0	0.0

Voltage	[V0 [Mag	Ang]	[V1 [Mag	Ang]	[V2 [Mag	Ang]	[Va [Mag	Ang]	[Vb [Mag	Ang]	[Vc [Mag	Ang]
30527 PITSBG E230.0	0.0000	90.0	0.0000	180.0	0.0000	90.0	0.0000	180.0	0.0000	60.0	0.0000	-60.0
30526 PITSBG D230.0	0.0000	90.0	0.0617	-21.4	0.0000	90.0	0.0617	-21.4	0.0617	-141.4	0.0617	98.6
30535 TIDEWATR230.0	0.0000	90.0	0.2012	15.1	0.0000	90.0	0.2012	15.1	0.2012	-104.9	0.2012	135.1
30536 TESORO 230.0	0.0000	90.0	0.1615	14.9	0.0000	90.0	0.1615	14.9	0.1615	-105.1	0.1615	134.9
30595 FLOWIND2230.0	0.0000	90.0	0.5957	13.7	0.0000	90.0	0.5957	13.7	0.5957	-106.3	0.5957	133.7
30600 TRES VAQ230.0	0.0000	90.0	0.4948	13.7	0.0000	90.0	0.4948	13.7	0.4948	-106.3	0.4948	133.7
30560 E. SHORE230.0	0.0000	90.0	0.7129	7.7	0.0000	90.0	0.7129	7.7	0.7129	-112.3	0.7129	127.7
30700 SANMATEO230.0	0.0000	90.0	0.7667	2.7								

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 32950 PITSBURG115.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			48992.26			0.00	0.00 Ohms
Prefault voltage,	pu			1.0381				
Fault Current,	pu	36.806	-90.380	97.587	-67.8			
1 Seq impedance,	pu	0.0014	0.0105	0.0106	82.3	7.4057		

Current		Ck	[Near End [pu	deg]	[Nr Amps]	[Far End [pu	deg]	[Fr Amps]	[Z [Ohms	deg]	At 32950 PITSBURG115.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 32950 PITSBURG115.0																
From 32970 CLAYTN	115.0	1	2.646	107.4	1328.4	2.646	-72.6	1328.2	3.3	79.1	0.0	0.0	1328.4	107.4	0.0	0.0
From 32970 CLAYTN	115.0	4	2.015	104.3	1011.5	2.015	-75.7	1011.5	4.3	82.2	0.0	0.0	1011.5	104.3	0.0	0.0
From 32978 LMEC	115.0	1	10.571	118.7	5307.2	10.571	-61.3	5307.0	0.4	79.1	0.0	0.0	5307.2	118.7	0.0	0.0
From 32978 LMEC	115.0	2	10.571	118.7	5307.2	10.571	-61.3	5307.0	0.4	79.1	0.0	0.0	5307.2	118.7	0.0	0.0
From 32992 BOLLMAN2	115.0	2	4.764	116.1	2391.8	4.763	-63.9	2391.2	8.4	74.3	0.0	0.0	2391.8	116.1	0.0	0.0
From 32993 W.P.BART	115.0	1	4.341	115.7	2179.3	4.340	-64.3	2179.1	5.8	74.4	0.0	0.0	2179.3	115.7	0.0	0.0
From 33030 COLSTJT1	115.0	1	1.420	115.9	712.8	1.420	-64.1	712.7	4.0	74.3	0.0	0.0	712.8	115.9	0.0	0.0
From 33032 KIRKTAP1	115.0	3	2.012	104.5	1010.3	2.012	-75.5	1010.3	0.7	84.3	0.0	0.0	1010.3	104.5	0.0	0.0
From 33033 KIRKTAP2	115.0	1	1.379	115.2	692.4	1.379	-64.8	692.4	1.1	74.4	0.0	0.0	692.4	115.2	0.0	0.0
From 30526 PITSBG D	230.0	12	29.063	109.8	14590.6	30.721	-70.2	7711.5	11.5	89.2	0.0	0.0	14590.6	109.8	0.0	0.0
From 30526 PITSBG D	230.0	13	29.063	109.8	14590.6	30.721	-70.2	7711.5	11.5	89.2	0.0	0.0	14590.6	109.8	0.0	0.0

Voltage		[V0 [Mag	Ang]	[V1 [Mag	Ang]	[V2 [Mag	Ang]	[Va [Mag	Ang]	[Vb [Mag	Ang]	[Vc [Mag	Ang]
32950 PITSBURG	115.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
32970 CLAYTN	115.0	0.0000	90.0	0.0651	6.5	0.0000	90.0	0.0651	6.5	0.0651	-113.5	0.0651	126.5
32970 CLAYTN	115.0	0.0000	90.0	0.0651	6.5	0.0000	90.0	0.0651	6.5	0.0651	-113.5	0.0651	126.5
32978 LMEC	115.0	0.0000	90.0	0.0280	17.8	0.0000	90.0	0.0280	17.8	0.0280	-102.2	0.0280	137.8
32978 LMEC	115.0	0.0000	90.0	0.0280	17.8	0.0000	90.0	0.0280	17.8	0.0280	-102.2	0.0280	137.8
32992 BOLLMAN2	115.0	0.0000	90.0	0.3014	10.4	0.0000	90.0	0.3014	10.4	0.3014	-109.6	0.3014	130.4
32993 W.P.BART	115.0	0.0000	90.0	0.1888	10.1	0.0000	90.0	0.1888	10.1	0.1888	-109.9	0.1888	130.1
33030 COLSTJT1	115.0	0.0000	90.0	0.0430	10.3	0.0000	90.0	0.0430	10.3	0.0430	-109.7	0.0430	130.3
33032 KIRKTAP1	115.0	0.0000	90.0	0.0105	8.7	0.0000	90.0	0.0105	8.				

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 33010 SOBRANTE115.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			48826.38			0.00	0.00 Ohms
Prefault voltage,	pu			1.0075				
Fault Current,	pu	36.210	-90.264	97.256	-68.1			
1 Seq impedance,	pu	0.0019	0.0102	0.0104	79.2	5.2609		

Current	Ck	[Near End [pu	deg]	[Nr Amps]	[Far End [pu	deg]	[Fr Amps]	[Z [Ohms	deg]	At 33010 SOBRANTE115.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 33010 SOBRANTE115.0															
From 32756 CHRISTIE115.0	1	3.310	114.3	1661.7	3.309	-65.7	1661.5	6.3	73.3	0.0	0.0	1661.7	114.3	0.0	0.0
From 32765 ELCRTJ1 115.0	1	2.190	116.7	1099.4	2.190	-63.3	1099.3	3.8	78.0	0.0	0.0	1099.4	116.7	0.0	0.0
From 32766 EL CRRTO115.0	2	2.198	115.8	1103.4	2.198	-64.2	1103.3	3.8	78.2	0.0	0.0	1103.4	115.8	0.0	0.0
From 32767 ELCRTJ2 115.0	1	0.000	-97.1	0.0	0.000	-97.1	0.0	999.9	90.0	0.0	0.0	0.0	-97.1	0.0	0.0
From 32768 RICHMOND115.0	2	0.000	128.5	0.0	0.000	-51.7	0.0	999.9	90.0	0.0	0.0	0.0	128.5	0.0	0.0
From 32806 SNPBLTP1115.0	2	1.914	110.5	960.7	1.913	-69.5	960.2	11.9	78.9	0.0	0.0	960.7	110.5	0.0	0.0
From 32808 SNPBLTP2115.0	1	1.915	110.5	961.6	1.915	-69.5	961.2	10.4	78.9	0.0	0.0	961.6	110.5	0.0	0.0
From 33006 GRIZLYJ1115.0	1	10.288	114.8	5165.1	10.288	-65.2	5165.1	0.1	45.0	0.0	0.0	5165.1	114.8	0.0	0.0
From 33008 GRIZLYJ2115.0	2	7.168	113.2	3598.5	7.168	-66.8	3598.5	0.1	45.0	0.0	0.0	3598.5	113.2	0.0	0.0
From 33014 ALHAMTP1115.0	1	4.716	119.5	2367.5	4.713	-60.5	2365.9	11.1	72.7	0.0	0.0	2367.5	119.5	0.0	0.0
From 33020 MORAGA 115.0	1	22.436	111.3	11263.8	22.435	-68.7	11263.0	2.6	77.7	0.0	0.0	11263.8	111.3	0.0	0.0
From 30540 SOBRANTE230.0	1	21.191	109.8	10638.9	21.662	-70.2	5437.7	12.3	88.9	0.0	0.0	10638.9	109.8	0.0	0.0
From 30540 SOBRANTE230.0	2	20.034	109.7	10057.9	20.480	-70.3	5140.8	13.0	89.0	0.0	0.0	10057.9	109.7	0.0	0.0

Voltage	[V0 [Mag	Ang]	[V1 [Mag	Ang]	[V2 [Mag	Ang]	[Va [Mag	Ang]	[Vb [Mag	Ang]	[Vc [Mag	Ang]
33010 SOBRANTE115.0	0.0000	90.0	0.0000	172.9	0.0000	90.0	0.0000	172.9	0.0000	52.9	0.0000	-67.1
32756 CHRISTIE115.0	0.0000	90.0	0.1578	7.6	0.0000	90.0	0.1578	7.6	0.1578	-112.4	0.1578	127.6
32765 ELCRTJ1 115.0	0.0000	90.0	0.0624	14.8	0.0000	90.0	0.0624	14.8	0.0624	-105.2	0.0624	134.8
32766 EL CRRTO115.0	0.0000	90.0	0.0637	14.0	0.0000	90.0	0.0637	14.0	0.0637	-106.0	0.0637	134.0
32767 ELCRTJ2 115.0	0.0000	90.0	0.0000	172.9	0.0000	90.0	0.0000	172.9	0.0000	52.9	0.0000	-67.1
32768 RICHMOND115.0	0.0000	90.0	0.0000	153.4	0.0000	90.0	0.0000	153.4	0.0000	33.4	0.0000	-86.6
32806 SNPBLTP1115.0												

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30624 TESLA E 230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			60232.26			0.00	0.00 Ohms
Prefault voltage,	pu			1.0261				
Fault Current,	pu	83.784	-224.848	239.951	-69.6			
1 Seq impedance,	pu	0.0006	0.0042	0.0043	82.1	7.2179		

Current	Ck	[Near End [pu	deg]	[Nr Amps]	[Far End [pu	deg]	[Fr Amps]	[Z [Ohms	deg]	At 30624 TESLA E 230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30624 TESLA E 230.0															
From 30489 STAGG-J2230.0	1	5.570	110.4	1398.2	5.564	-69.6	1396.5	16.7	82.1	0.0	0.0	1398.2	110.4	0.0	0.0
From 30500 BELLOTA 230.0	1	12.117	105.7	3041.7	12.080	-74.3	3032.3	28.3	81.0	0.0	0.0	3041.7	105.7	0.0	0.0
From 30505 WEBER 230.0	1	12.488	104.2	3134.7	12.473	-75.8	3130.9	17.6	80.9	0.0	0.0	3134.7	104.2	0.0	0.0
From 30622 EIGHT MI230.0	1	7.355	109.6	1846.3	7.344	-70.3	1843.5	18.8	82.2	0.0	0.0	1846.3	109.6	0.0	0.0
From 30625 TESLA D 230.0	1	63.000	113.2	15814.2	63.000	-66.8	15814.2	4.0	86.2	0.0	0.0	15814.2	113.2	0.0	0.0
From 30630 NEWARK D230.0	1	22.930	102.2	5755.9	22.892	-77.8	5746.2	14.9	87.2	0.0	0.0	5755.9	102.2	0.0	0.0
From 30670 WESTLEY 230.0	1	28.544	109.8	7165.1	28.513	-70.2	7157.4	8.6	80.1	0.0	0.0	7165.1	109.8	0.0	0.0
From 30703 RAVENSWD230.0	1	13.101	99.0	3288.6	13.063	-81.0	3279.0	27.0	87.2	0.0	0.0	3288.6	99.0	0.0	0.0
From 30632 TESL_GEN230.0	1	11.929	116.7	2994.3	11.928	-63.3	2994.3	0.6	84.6	0.0	0.0	2994.3	116.7	0.0	0.0
From 30632 TESL_GEN230.0	2	11.929	116.7	2994.3	11.928	-63.3	2994.3	0.6	84.6	0.0	0.0	2994.3	116.7	0.0	0.0
From 33852 TESLA 2M 13.8	2	51.907	113.8	13029.6	53.049	-66.2	221938.1	0.0	-89.1	0.0	0.0	13029.6	113.8	0.0	0.0

Voltage	[V0 [Mag	Ang]	[V1 [Mag	Ang]	[V2 [Mag	Ang]	[Va [Mag	Ang]	[Vb [Mag	Ang]	[Vc [Mag	Ang]
30624 TESLA E 230.0	0.0000	90.0	0.0000	-90.0	0.0000	90.0	0.0000	-90.0	0.0000	150.0	0.0000	30.0
30489 STAGG-J2230.0	0.0000	90.0	0.1754	12.5	0.0000	90.0	0.1754	12.5	0.1754	-107.5	0.1754	132.5
30500 BELLOTA 230.0	0.0000	90.0	0.6453	6.7	0.0000	90.0	0.6453	6.7	0.6453	-113.3	0.6453	126.7
30505 WEBER 230.0	0.0000	90.0	0.4154	5.2	0.0000	90.0	0.4154	5.2	0.4154	-114.8	0.4154	125.2
30622 EIGHT MI230.0	0.0000	90.0	0.2606	11.9	0.0000	90.0	0.2606	11.9	0.2606	-108.1	0.2606	131.9
30625 TESLA D 230.0	0.0000	90.0	0.4773	19.4	0.0000	90.0	0.4773	19.4	0.4773	-100.6	0.4773	139.4
30630 NEWARK D230.0	0.0000	90.0	0.6444	9.4	0.0000	90.0	0.6444	9.4	0.6444	-110.6	0.6444	129.4
30670 WESTLEY 230.0	0.0000	90.0	0.4636	9.9	0.0000	90.0	0.4636	9.9	0.4636	-110.1	0.4636	129.9
30703 RAVENSWD230.0	0.0000	90.0	0.6658	6.2	0.0000	90.0	0.6658	6				

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 33011 ALHAMBRA115.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			14688.52			0.00	0.00 Ohms
Prefault voltage,	pu			1.0114				
Fault Current,	pu	13.714	-25.845	29.258	-62.0			
1 Seq impedance,	pu	0.0097	0.0332	0.0346	73.8	3.4380		

	Current	Ck	[Near End pu	deg]	[Nr Amps]	[Far End pu	deg]	[Fr Amps]	[Z Ohms	deg]	At 33011 ALHAMBRA115.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To	33011 ALHAMBRA115.0															
From	33014 ALHAMTP1115.0	1	29.258	118.0	14688.5	29.258	-62.0	14688.5	0.1	45.0	0.0	0.0	14688.5	118.0	0.0	0.0

Voltage	[V0 Mag	Ang]	[V1 Mag	Ang]	[V2 Mag	Ang]	[Va Mag	Ang]	[Vb Mag	Ang]	[Vc Mag	Ang]
33011 ALHAMBRA115.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	-30.0	0.0000	-150.0
33014 ALHAMTP1115.0	0.0000	90.0	0.0207	-17.0	0.0000	90.0	0.0207	-17.0	0.0207	-137.0	0.0207	103.0

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30565 BRENTWOD230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			18143.21			0.00	0.00 Ohms
Prefault voltage,	pu			1.0134				
Fault Current,	pu	31.142	-65.225	72.278	-64.5			
1 Seq impedance,	pu	0.0023	0.0138	0.0140	80.7	6.0926		

Current	Ck	[Near End [pu	deg]	[Nr Amps]	[Far End [pu	deg]	[Fr Amps]	[Z [Ohms	deg]	At 30565 BRENTWOD230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30565 BRENTWOD230.0															
From 30525 C.COSTA 230.0	1	49.022	117.2	12305.5	49.012	-62.8	12303.0	7.3	81.6	0.0	0.0	12305.5	117.2	0.0	0.0
From 30569 KELSO 230.0	1	23.323	111.9	5854.6	23.309	-68.1	5851.0	13.0	82.1	0.0	0.0	5854.6	111.9	0.0	0.0

Voltage	[V0 [Mag	Ang]	[V1 [Mag	Ang]	[V2 [Mag	Ang]	[Va [Mag	Ang]	[Vb [Mag	Ang]	[Vc [Mag	Ang]
30565 BRENTWOD230.0	0.0000	90.0	0.0000	153.4	0.0000	90.0	0.0000	153.4	0.0000	33.4	0.0000	-86.6
30525 C.COSTA 230.0	0.0000	90.0	0.6750	18.8	0.0000	90.0	0.6750	18.8	0.6750	-101.2	0.6750	138.8
30569 KELSO 230.0	0.0000	90.0	0.5738	14.1	0.0000	90.0	0.5738	14.1	0.5738	-105.9	0.5738	134.1
0.0000 90.0 0.0058	18.8	0.0000	90.0	0.0058	18.8	0.0058	-101.2	0.0058	138.8			
30523 CC SUB 230.0	0.0000	90.0	0.0587	23.6	0.0000	90.0	0.0587	23.6	0.0587	-96.4	0.0587	143.6
30479 BDLSWSTA230.0	0.0000	90.0	0.3207	24.6	0.0000	90.0	0.3207	24.6	0.3207	-95.4	0.3207	144.6
30543 ROSSTAP1230.0	0.0000	90.0	0.4353	9.8	0.0000	90.0	0.4353	9.8	0.4353	-110.2	0.4353	129.8
30544 ROSSTAP2230.0	0.0000	90.0	0.4360	10.0	0.0000	90.0	0.4360	10.0	0.4360	-110.0	0.4360	130.0
30565 BRENTWOD230.0	0.0000	90.0	0.2111	12.6	0.0000	90.0	0.2111	12.6	0.2111	-107.4	0.2111	132.6
30567 LONETREE230.0	0.0000	90.0	0.0750	3.5	0.0000	90.0	0.0750	3.5	0.0750	-116.5	0.0750	123.5
30575 WND MSTR230.0	0.0000	90.0	0.5123	13.9	0.0000	90.0	0.5123	13.9	0.5123	-106.1	0.5123	133.9
30585 LS PSTAS230.0	0.0000	90.0	0.4094	3.9	0.0000	90.0	0.4094	3.9	0.4094	-116.1	0.4094	123.9
99980 MIRPKCC1230.0	0.0000	90.0	0.0000	-153.4	0.0000	90.0	0.0000	-153.4	0.0000	86.6	0.0000	-33.4
99981 MIRPKCC2230.0	0.0000	90.0	0.0000	-153.4	0.0000	90.0	0.0000	-153.4	0.0000	86.6	0.0000	-33.4
99985 MIRCCCC1230.0	0.0000	90.0	0.0000	-153.4	0.0000	90.0	0.0000	-153.4	0.0000	86.6	0.0000	-33.4
99986 MIRCCCC2230.0	0.0000	90.0	0.0000	-153.4	0.0000	90.0	0.0000	-153.4	0.0000	86.6	0.0000	-33.4
33114 C.COS 4 13.8	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
33115 C.COS 5 13.8	0.0000	90.0	0.0000	180.0	0.0000	90.0	0.0000	180.0	0.0000	60.0	0.0000	-60.0
33116 C.COS 6 18.0	0.0000	90.0	0.3927	31.8	0.0000	90.0	0.3927	31.8	0.3927	-88.2	0.3927	151.8
33117 C.COS 7 18.0	0.0000	90.0	0.3927	31.8	0.0000	90.0	0.3927	31.8	0.3927	-88.2	0.3927	151.8

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30523 CC SUB 230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			33560.21			0.00	0.00 Ohms
Prefault voltage,	pu			1.0131				
Fault Current,	pu	61.992	-118.455	133.696	-62.4			
1 Seq impedance,	pu	0.0013	0.0075	0.0076	80.4	5.9421		

Current	Ck	[Near End [pu	deg]	[Nr Amps]	[Far End [pu	deg]	[Fr Amps]	[Z [Ohms	deg]	At 30523 CC SUB 230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30523 CC SUB 230.0															
From 30479 BDLSWSTA230.0	1	28.012	123.1	7031.5	28.006	-56.9	7030.1	7.4	79.4	0.0	0.0	7031.5	123.1	0.0	0.0
From 30525 C.COSTA 230.0	1	101.838	116.1	25563.4	101.838	-63.9	25563.2	1.4	79.5	0.0	0.0	25563.4	116.1	0.0	0.0
From 33000 CC SUB 115.0	3	4.012	118.9	1007.2	3.862	-61.1	1938.6	5.1	88.6	0.0	0.0	1007.2	118.9	0.0	0.0

Voltage	[V0 [Mag	Ang]	[V1 [Mag	Ang]	[V2 [Mag	Ang]	[Va [Mag	Ang]	[Vb [Mag	Ang]	[Vc [Mag	Ang]
30523 CC SUB 230.0	0.0000	90.0	0.0000	180.0	0.0000	90.0	0.0000	180.0	0.0000	60.0	0.0000	-60.0
30479 BDLSWSTA230.0	0.0000	90.0	0.3939	22.5	0.0000	90.0	0.3939	22.5	0.3939	-97.5	0.3939	142.5
30525 C.COSTA 230.0	0.0000	90.0	0.2673	15.5	0.0000	90.0	0.2673	15.5	0.2673	-104.5	0.2673	135.5
33000 CC SUB 115.0	0.0000	90.0	0.1481	27.5	0.0000	90.0	0.1481	27.5	0.1481	-92.5	0.1481	147.5

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)

********** THREE PHASE FAULT **********

Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 33000 CC SUB 115.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			13576.18			0.00	0.00 Ohms
Prefault voltage,	pu			1.0443				
Fault Current,	pu	10.303	-25.002	27.042	-67.6			
1 Seq impedance,	pu	0.0026	0.0385	0.0386	86.1	14.6185		

Current	Ck	[Near End [pu	deg]	[Nr Amps]	[Far End [pu	deg]	[Fr Amps]	[Z [Ohms	deg]	At 33000 CC SUB 115.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 33000 CC SUB 115.0															
From 33046 FIBRJCT2115.0	1	0.842	119.8	422.5	0.842	-60.2	422.5	1.2	66.7	0.0	0.0	422.5	119.8	0.0	0.0
From 33047 CC JCT 115.0	1	2.150	122.9	1079.5	2.150	-57.1	1079.5	0.2	73.1	0.0	0.0	1079.5	122.9	0.0	0.0
From 30523 CC SUB 230.0	3	22.565	110.9	11328.5	23.451	-69.1	5886.7	18.8	88.6	0.0	0.0	11328.5	110.9	0.0	0.0
From 33050 CC SUB 60.0	1	1.539	116.1	772.8	1.481	-63.9	1424.6	8.4	84.9	0.0	0.0	772.8	116.1	0.0	0.0

Voltage	[V0 [Mag	Ang]	[V1 [Mag	Ang]	[V2 [Mag	Ang]	[Va [Mag	Ang]	[Vb [Mag	Ang]	[Vc [Mag	Ang]
33000 CC SUB 115.0	0.0000	90.0	0.0000	180.0	0.0000	90.0	0.0000	180.0	0.0000	60.0	0.0000	-60.0
33046 FIBRJCT2115.0	0.0000	90.0	0.0076	6.4	0.0000	90.0	0.0076	6.4	0.0076	-113.6	0.0076	126.4
33047 CC JCT 115.0	0.0000	90.0	0.0037	16.0	0.0000	90.0	0.0037	16.0	0.0037	-104.0	0.0037	136.0
30523 CC SUB 230.0	0.0000	90.0	0.8327	19.4	0.0000	90.0	0.8327	19.4	0.8327	-100.6	0.8327	139.4
33050 CC SUB 60.0	0.0000	90.0	0.3446	21.0	0.0000	90.0	0.3446	21.0	0.3446	-99.0	0.3446	141.0

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 32970 CLAYTN 115.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			28635.45			0.00	0.00 Ohms
Prefault voltage,	pu			1.0204				
Fault Current,	pu	22.599	-52.371	57.038	-66.7			
1 Seq impedance,	pu	0.0034	0.0176	0.0179	78.9	5.1002		

Current		Ck	[Near End pu	deg]	[Nr Amps]	[Far End pu	deg]	[Fr Amps]	[Z Ohms	deg]	At 32970 CLAYTN 115.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To	32970 CLAYTN 115.0															
From	32950 PITSBURG115.0	1	19.499	116.1	9789.1	19.496	-63.9	9787.6	3.3	79.1	0.0	0.0	9789.1	116.1	0.0	0.0
From	32950 PITSBURG115.0	4	14.847	113.1	7453.9	14.847	-66.9	7453.8	4.3	82.2	0.0	0.0	7453.9	113.1	0.0	0.0
From	32971 MEDW LNE115.0	1	1.581	103.4	793.7	1.581	-76.6	793.6	5.0	78.2	0.0	0.0	793.7	103.4	0.0	0.0
From	32974 LAKEWD-M115.0	2	3.272	107.4	1642.9	3.272	-72.6	1642.8	4.1	73.5	0.0	0.0	1642.9	107.4	0.0	0.0
From	33032 KIRKTAP1115.0	3	14.830	113.2	7445.0	14.828	-66.8	7444.2	3.6	81.6	0.0	0.0	7445.0	113.2	0.0	0.0
From	33035 LKWD_JCT115.0	1	3.082	109.2	1547.4	3.082	-70.8	1547.3	4.1	73.5	0.0	0.0	1547.4	109.2	0.0	0.0

Voltage		[V0 Mag	Ang]	[V1 Mag	Ang]	[V2 Mag	Ang]	[Va Mag	Ang]	[Vb Mag	Ang]	[Vc Mag	Ang]
	32970 CLAYTN 115.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
	32950 PITSBURG115.0	0.0000	90.0	0.4796	15.2	0.0000	90.0	0.4796	15.2	0.4796	-104.8	0.4796	135.2
	32950 PITSBURG115.0	0.0000	90.0	0.4796	15.2	0.0000	90.0	0.4796	15.2	0.4796	-104.8	0.4796	135.2
	32971 MEDW LNE115.0	0.0000	90.0	0.0603	1.7	0.0000	90.0	0.0603	1.7	0.0603	-118.3	0.0603	121.7
	32974 LAKEWD-M115.0	0.0000	90.0	0.1010	0.8	0.0000	90.0	0.1010	0.8	0.1010	-119.2	0.1010	120.8
	33032 KIRKTAP1115.0	0.0000	90.0	0.4023	14.8	0.0000	90.0	0.4023	14.8	0.4023	-105.2	0.4023	134.8
	33035 LKWD_JCT115.0	0.0000	90.0	0.0952	2.7	0.0000	90.0	0.0952	2.7	0.0952	-117.3	0.0952	122.7

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30528 DEC PTSG230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			48591.19			0.00	0.00 Ohms
Prefault voltage,	pu			1.0106				
Fault Current,	pu	83.062	-174.850	193.576	-64.6			
1 Seq impedance,	pu	0.0008	0.0052	0.0052	80.9	6.2193		

Current	Ck	[Near End pu	deg]	[Nr Amps]	[Far End pu	deg]	[Fr Amps]	[Z Ohms	deg]	At 30528 DEC PTSG230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30528 DEC PTSG230.0															
From 30526 PITSBG D230.0	1	81.058	113.9	20347.2	81.058	-66.1	20347.2	0.8	70.5	0.0	0.0	20347.2	113.9	0.0	0.0
From 30526 PITSBG D230.0	2	81.058	113.9	20347.2	81.058	-66.1	20347.2	0.8	70.5	0.0	0.0	20347.2	113.9	0.0	0.0
From 33107 DEC STG1 24.0	1	10.080	123.0	2530.2	10.081	-57.0	24250.0	0.3	88.9	0.0	0.0	2530.2	123.0	0.0	0.0
From 33108 DEC CTG1 18.0	1	7.691	122.1	1930.5	7.691	-57.9	24669.4	0.2	88.8	0.0	0.0	1930.5	122.1	0.0	0.0
From 33109 DEC CTG2 18.0	1	7.011	123.5	1759.9	7.012	-56.5	22489.5	0.2	88.8	0.0	0.0	1759.9	123.5	0.0	0.0
From 33110 DEC CTG3 18.0	1	7.011	123.5	1759.9	7.012	-56.5	22489.5	0.2	88.8	0.0	0.0	1759.9	123.5	0.0	0.0

Voltage	[V0 Mag	Ang]	[V1 Mag	Ang]	[V2 Mag	Ang]	[Va Mag	Ang]	[Vb Mag	Ang]	[Vc Mag	Ang]
30528 DEC PTSG230.0	0.0000	90.0	0.0000	-14.0	0.0000	90.0	0.0000	-14.0	0.0000	-134.0	0.0000	106.0
30526 PITSBG D230.0	0.0000	90.0	0.1213	4.4	0.0000	90.0	0.1213	4.4	0.1213	-115.6	0.1213	124.4
30526 PITSBG D230.0	0.0000	90.0	0.1213	4.4	0.0000	90.0	0.1213	4.4	0.1213	-115.6	0.1213	124.4
33107 DEC STG1 24.0	0.0000	90.0	0.4726	31.9	0.0000	90.0	0.4726	31.9	0.4726	-88.1	0.4726	151.9
33108 DEC CTG1 18.0	0.0000	90.0	0.5009	30.9	0.0000	90.0	0.5009	30.9	0.5009	-89.1	0.5009	150.9
33109 DEC CTG2 18.0	0.0000	90.0	0.4566	32.2	0.0000	90.0	0.4566	32.2	0.4566	-87.8	0.4566	152.2
33110 DEC CTG3 18.0	0.0000	90.0	0.4566	32.2	0.0000	90.0	0.4566	32.2	0.4566	-87.8	0.4566	152.2

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 32973 LAKEWD-C115.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			19949.09			0.00	0.00 Ohms
Prefault voltage,	pu			1.0039				
Fault Current,	pu	16.805	-36.008	39.736	-65.0			
1 Seq impedance,	pu	0.0063	0.0245	0.0253	75.6	3.8840		

Current		Ck	[Near End [pu	deg]	[Nr Amps]	[Far End [pu	deg]	[Fr Amps]	[Z [Ohms	deg]	At 32973 LAKEWD-C115.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 32973 LAKEWD-C115.0																
From 33035 LKWD_JCT115.0		1	18.460	116.2	9267.8	18.460	-63.8	9267.8	0.1	45.0	0.0	0.0	9267.8	116.2	0.0	0.0
From 32974 LAKEWD-M115.0		1	21.283	114.0	10685.1	21.283	-66.0	10685.1	0.1	45.0	0.0	0.0	10685.1	114.0	0.0	0.0

Voltage		[V0 [Mag	Ang]	[V1 [Mag	Ang]	[V2 [Mag	Ang]	[Va [Mag	Ang]	[Vb [Mag	Ang]	[Vc [Mag	Ang]
32973	LAKEWD-C115.0	0.0000	90.0	0.0000	166.0	0.0000	90.0	0.0000	166.0	0.0000	46.0	0.0000	-74.0
33035	LKWD_JCT115.0	0.0000	90.0	0.0131	-18.8	0.0000	90.0	0.0131	-18.8	0.0131	-138.8	0.0131	101.2
32974	LAKEWD-M115.0	0.0000	90.0	0.0150	-21.0	0.0000	90.0	0.0150	-21.0	0.0150	-141.0	0.0150	99.0

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 32974 LAKEWD-M115.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			19983.32			0.00	0.00 Ohms
Prefault voltage,	pu			1.0039				
Fault Current,	pu	16.768	-36.100	39.804	-65.1			
1 Seq impedance,	pu	0.0062	0.0244	0.0252	75.7	3.9130		

Current	Ck	[Near End pu	deg]	[Nr Amps]	[Far End pu	deg]	[Fr Amps]	[Z Ohms	deg]	At 32974 LAKEWD-M115.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 32974 LAKEWD-M115.0															
From 32970 CLAYTN 115.0	2	12.615	117.2	6333.2	12.614	-62.8	6332.8	4.1	73.5	0.0	0.0	6333.2	117.2	0.0	0.0
From 32973 LAKEWD-C115.0	1	17.955	117.1	9014.2	17.955	-62.9	9014.2	0.1	45.0	0.0	0.0	9014.2	117.1	0.0	0.0
From 32976 LK_REACT115.0	9	9.331	107.7	4684.6	9.331	-72.3	4684.6	9.0	89.6	0.0	0.0	4684.6	107.7	0.0	0.0

Voltage	[V0 Mag	Ang]	[V1 Mag	Ang]	[V2 Mag	Ang]	[Va Mag	Ang]	[Vb Mag	Ang]	[Vc Mag	Ang]
32974 LAKEWD-M115.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	-30.0	0.0000	-150.0
32970 CLAYTN 115.0	0.0000	90.0	0.3895	10.7	0.0000	90.0	0.3895	10.7	0.3895	-109.3	0.3895	130.7
32973 LAKEWD-C115.0	0.0000	90.0	0.0127	-17.9	0.0000	90.0	0.0127	-17.9	0.0127	-137.9	0.0127	102.1
32976 LK_REACT115.0	0.0000	90.0	0.6345	17.2	0.0000	90.0	0.6345	17.2	0.6345	-102.8	0.6345	137.2

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 32978 LMEC 115.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			45862.83			0.00	0.00 Ohms
Prefault voltage,	pu			1.0386				
Fault Current,	pu	34.828	-84.454	91.353	-67.6			
1 Seq impedance,	pu	0.0015	0.0113	0.0114	82.4	7.4547		

Current	Ck	[Near End [pu	deg]	[Nr Amps]	[Far End [pu	deg]	[Fr Amps]	[Z [Ohms	deg]	At 32978 LMEC 115.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 32978 LMEC 115.0															
From 32950 PITSBURG115.0	1	34.898	110.5	17520.0	34.897	-69.5	17519.5	0.4	79.1	0.0	0.0	17520.0	110.5	0.0	0.0
From 32950 PITSBURG115.0	2	34.898	110.5	17520.0	34.897	-69.5	17519.5	0.4	79.1	0.0	0.0	17520.0	110.5	0.0	0.0
From 33111 LMECCT2 18.0	1	7.172	117.4	3600.7	7.173	-62.6	23005.8	0.2	88.6	0.0	0.0	3600.7	117.4	0.0	0.0
From 33112 LMECCT1 18.0	1	7.172	117.4	3600.7	7.173	-62.6	23005.8	0.2	88.6	0.0	0.0	3600.7	117.4	0.0	0.0
From 33113 LMECST1 18.0	1	7.380	120.5	3705.1	7.381	-59.5	23673.7	0.2	89.0	0.0	0.0	3705.1	120.5	0.0	0.0

Voltage	[V0 [Mag	Ang]	[V1 [Mag	Ang]	[V2 [Mag	Ang]	[Va [Mag	Ang]	[Vb [Mag	Ang]	[Vc [Mag	Ang]
32978 LMEC 115.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	-30.0	0.0000	-150.0
32950 PITSBURG115.0	0.0000	90.0	0.0924	9.6	0.0000	90.0	0.0924	9.6	0.0924	-110.4	0.0924	129.6
32950 PITSBURG115.0	0.0000	90.0	0.0924	9.6	0.0000	90.0	0.0924	9.6	0.0924	-110.4	0.0924	129.6
33111 LMECCT2 18.0	0.0000	90.0	0.3444	26.0	0.0000	90.0	0.3444	26.0	0.3444	-94.0	0.3444	146.0
33112 LMECCT1 18.0	0.0000	90.0	0.3444	26.0	0.0000	90.0	0.3444	26.0	0.3444	-94.0	0.3444	146.0
33113 LMECST1 18.0	0.0000	90.0	0.3543	29.5	0.0000	90.0	0.3543	29.5	0.3543	-90.5	0.3543	149.5

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30550 MORAGA 230.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			30801.75			0.00	0.00 Ohms
Prefault voltage,	pu			0.9983				
Fault Current,	pu	47.778	-113.023	122.707	-67.1			
1 Seq impedance,	pu	0.0015	0.0080	0.0081	79.5	5.4205		

Current	Ck	[Near End [pu	deg]	[Nr Amps]	[Far End [pu	deg]	[Fr Amps]	[Z [Ohms	deg]	At 30550 MORAGA 230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30550 MORAGA 230.0															
From 30465 BAHIA 230.0	1	10.853	117.9	2724.4	10.838	-62.1	2720.7	19.1	81.4	0.0	0.0	2724.4	117.9	0.0	0.0
From 30467 PARKWAY 230.0	1	11.037	119.4	2770.4	11.021	-60.6	2766.4	19.8	81.4	0.0	0.0	2770.4	119.4	0.0	0.0
From 30543 ROSSTAP1230.0	1	18.158	118.6	4557.9	18.156	-61.4	4557.6	4.2	81.9	0.0	0.0	4557.9	118.6	0.0	0.0
From 30544 ROSSTAP2230.0	2	18.187	118.8	4565.2	18.186	-61.2	4564.9	4.2	81.9	0.0	0.0	4565.2	118.8	0.0	0.0
From 30554 CASTROVL230.0	1	15.651	105.0	3928.8	15.644	-75.0	3927.0	11.3	81.7	0.0	0.0	3928.8	105.0	0.0	0.0
From 30555 SANRAMON230.0	1	12.888	112.1	3235.2	12.875	-67.9	3231.8	17.0	82.6	0.0	0.0	3235.2	112.1	0.0	0.0
From 30551 MRAGA_1M 13.2	1	12.061	107.5	3027.6	12.061	-72.5	52754.5	0.0	89.7	0.0	0.0	3027.6	107.5	0.0	0.0
From 30552 MRAGA_2M 13.2	2	12.061	107.5	3027.6	12.061	-72.5	52754.5	0.0	89.7	0.0	0.0	3027.6	107.5	0.0	0.0
From 30553 MRAGA_3M 13.2	3	12.425	107.3	3118.9	12.425	-72.7	54345.2	0.0	89.7	0.0	0.0	3118.9	107.3	0.0	0.0

Voltage	[V0 [Mag	Ang]	[V1 [Mag	Ang]	[V2 [Mag	Ang]	[Va [Mag	Ang]	[Vb [Mag	Ang]	[Vc [Mag	Ang]
30550 MORAGA 230.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
30465 BAHIA 230.0	0.0000	90.0	0.3919	19.3	0.0000	90.0	0.3919	19.3	0.3919	-100.7	0.3919	139.3
30467 PARKWAY 230.0	0.0000	90.0	0.4119	20.7	0.0000	90.0	0.4119	20.7	0.4119	-99.3	0.4119	140.7
30543 ROSSTAP1230.0	0.0000	90.0	0.1443	20.5	0.0000	90.0	0.1443	20.5	0.1443	-99.5	0.1443	140.5
30544 ROSSTAP2230.0	0.0000	90.0	0.1446	20.7	0.0000	90.0	0.1446	20.7	0.1446	-99.3	0.1446	140.7
30554 CASTROVL230.0	0.0000	90.0	0.3338	6.7	0.0000	90.0	0.3338	6.7	0.3338	-113.3	0.3338	126.7
30555 SANRAMON230.0	0.0000	90.0	0.4131	14.7	0.0000	90.0	0.4131	14.7	0.4131	-105.3	0.4131	134.7
30551 MRAGA_1M 13.2	0.0000	90.0	0.3230	17.2	0.0000	90.0	0.3230	17.2	0.3230	-102.8	0.3230	137.2
30552 MRAGA_2M 13.2	0.0000	90.0	0.3230	17.2	0.0000	90.0	0.3230	17.2	0.3230	-102.8	0.3230	137.2
30553 MRAGA_3M 13.2	0.0000	90.0	0.3327	17.0	0.0000	90.0	0.3327	17.0	0.3327	-103.0	0.3327	137.0

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30537 NDUBLIN 230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			10240.56			0.00	0.00 Ohms
Prefault voltage,	pu			1.0182				
Fault Current,	pu	15.620	-37.687	40.796	-67.5			
1 Seq impedance,	pu	0.0046	0.0245	0.0250	79.3	5.2921		

Current	Ck	[Near End pu	deg]	[Nr Amps]	[Far End pu	deg]	[Fr Amps]	[Z Ohms	deg]	At 30537 NDUBLIN 230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30537 NDUBLIN 230.0															
From 30530 CAYETANO230.0	1	22.749	118.0	5710.4	22.738	-62.0	5707.6	2.9	82.5	0.0	0.0	5710.4	118.0	0.0	0.0
From 35224 VINEYD_D230.0	1	18.284	105.6	4589.5	18.144	-74.3	4554.6	12.1	81.3	0.0	0.0	4589.5	105.6	0.0	0.0

Voltage	[V0 Mag	Ang]	[V1 Mag	Ang]	[V2 Mag	Ang]	[Va Mag	Ang]	[Vb Mag	Ang]	[Vc Mag	Ang]
30537 NDUBLIN 230.0	0.0000	90.0	0.0000	180.0	0.0000	90.0	0.0000	180.0	0.0000	60.0	0.0000	-60.0
30530 CAYETANO230.0	0.0000	90.0	0.1237	20.5	0.0000	90.0	0.1237	20.5	0.1237	-99.5	0.1237	140.5
35224 VINEYD_D230.0	0.0000	90.0	0.4140	7.0	0.0000	90.0	0.4140	7.0	0.4140	-113.0	0.4140	127.0

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30630 NEWARK D230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			46466.86			0.00	0.00 Ohms
Prefault voltage,	pu			1.0073				
Fault Current,	pu	64.202	-173.623	185.113	-69.7			
1 Seq impedance,	pu	0.0013	0.0053	0.0054	76.6	4.1964		

Current	Ck	[Near End [pu	deg]	[Nr Amps]	[Far End [pu	deg]	[Fr Amps]	[Z [Ohms	deg]	At 30630 NEWARK D230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30630 NEWARK D230.0															
From 30585 LS PSTAS230.0	1	11.433	119.1	2869.8	11.421	-60.9	2866.9	17.7	80.6	0.0	0.0	2869.8	119.1	0.0	0.0
From 30624 TESLA E 230.0	1	26.721	109.2	6707.5	26.676	-70.8	6696.3	14.9	87.2	0.0	0.0	6707.5	109.2	0.0	0.0
From 30631 NEWARK E230.0	1	88.899	114.0	22315.3	88.899	-66.0	22315.3	0.4	45.0	0.0	0.0	22315.3	114.0	0.0	0.0
From 30703 RAVENSWD230.0	1	30.155	101.8	7569.4	30.149	-78.2	7568.1	6.7	85.8	0.0	0.0	7569.4	101.8	0.0	0.0
From 35219 VINEYARD230.0	1	8.998	119.9	2258.7	8.956	-60.1	2248.2	13.2	80.8	0.0	0.0	2258.7	119.9	0.0	0.0
From 30627 NWRK_9M 13.2	9	9.987	100.0	2506.9	9.767	-80.0	42720.5	0.1	89.7	0.0	0.0	2506.9	100.0	0.0	0.0
From 30626 NWRK_7M 13.2	7	10.112	97.6	2538.4	9.893	-82.4	43269.5	0.1	90.0	0.0	0.0	2538.4	97.6	0.0	0.0

Voltage	[V0 Mag	Ang]	[V1 Mag	Ang]	[V2 Mag	Ang]	[Va Mag	Ang]	[Vb Mag	Ang]	[Vc Mag	Ang]
30630 NEWARK D230.0	0.0000	90.0	0.0000	-90.0	0.0000	90.0	0.0000	-90.0	0.0000	150.0	0.0000	30.0
30585 LS PSTAS230.0	0.0000	90.0	0.3819	19.7	0.0000	90.0	0.3819	19.7	0.3819	-100.3	0.3819	139.7
30624 TESLA E 230.0	0.0000	90.0	0.7509	16.4	0.0000	90.0	0.7509	16.4	0.7509	-103.6	0.7509	136.4
30631 NEWARK E230.0	0.0000	90.0	0.0629	-21.0	0.0000	90.0	0.0629	-21.0	0.0629	-141.0	0.0629	99.0
30703 RAVENSWD230.0	0.0000	90.0	0.3791	7.7	0.0000	90.0	0.3791	7.7	0.3791	-112.3	0.3791	127.7
35219 VINEYARD230.0	0.0000	90.0	0.2232	20.7	0.0000	90.0	0.2232	20.7	0.2232	-99.3	0.2232	140.7
30627 NWRK_9M 13.2	0.0000	90.0	0.3190	9.7	0.0000	90.0	0.3190	9.7	0.3190	-110.3	0.3190	129.7
30626 NWRK_7M 13.2	0.0000	90.0	0.3037	7.6	0.0000	90.0	0.3037	7.6	0.3037	-112.4	0.3037	127.6

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30631 NEWARK E230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			46570.75			0.00	0.00 Ohms
Prefault voltage,	pu			1.0073				
Fault Current,	pu	64.747	-173.862	185.527	-69.6			
1 Seq impedance,	pu	0.0013	0.0053	0.0054	76.5	4.1706		

Current	Ck	[Near End [pu	deg]	[Nr Amps]	[Far End [pu	deg]	[Fr Amps]	[Z [Ohms	deg]	At 30631 NEWARK E230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30631 NEWARK E230.0															
From 30554 CASTROVL230.0	1	13.694	113.9	3437.5	13.681	-66.1	3434.1	16.2	81.6	0.0	0.0	3437.5	113.9	0.0	0.0
From 30562 TES JCT 230.0	1	10.992	115.9	2759.2	10.974	-64.1	2754.8	21.1	82.5	0.0	0.0	2759.2	115.9	0.0	0.0
From 30630 NEWARK D230.0	1	88.626	110.6	22246.7	88.626	-69.4	22246.7	0.4	45.0	0.0	0.0	22246.7	110.6	0.0	0.0
From 30635 NWK DIST230.0	1	33.939	108.1	8519.2	33.939	-71.9	8519.2	0.2	81.9	0.0	0.0	8519.2	108.1	0.0	0.0
From 30655 ADCC 230.0	2	26.741	115.1	6712.5	26.705	-64.9	6703.4	11.9	83.5	0.0	0.0	6712.5	115.1	0.0	0.0
From 30628 NWRK_11M 13.2	11	12.083	96.5	3033.0	11.817	-83.5	51685.8	0.0	89.4	0.0	0.0	3033.0	96.5	0.0	0.0

Voltage	[V0 [Mag	Ang]	[V1 [Mag	Ang]	[V2 [Mag	Ang]	[Va [Mag	Ang]	[Vb [Mag	Ang]	[Vc [Mag	Ang]
30631 NEWARK E230.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	-30.0	0.0000	-150.0
30554 CASTROVL230.0	0.0000	90.0	0.4199	15.5	0.0000	90.0	0.4199	15.5	0.4199	-104.5	0.4199	135.5
30562 TES JCT 230.0	0.0000	90.0	0.4378	18.3	0.0000	90.0	0.4378	18.3	0.4378	-101.7	0.4378	138.3
30630 NEWARK D230.0	0.0000	90.0	0.0627	-24.4	0.0000	90.0	0.0627	-24.4	0.0627	-144.4	0.0627	95.6
30635 NWK DIST230.0	0.0000	90.0	0.0120	10.0	0.0000	90.0	0.0120	10.0	0.0120	-110.0	0.0120	130.0
30655 ADCC 230.0	0.0000	90.0	0.6021	18.6	0.0000	90.0	0.6021	18.6	0.6021	-101.4	0.6021	138.6
30628 NWRK_11M 13.2	0.0000	90.0	0.3220	5.9	0.0000	90.0	0.3220	5.9	0.3220	-114.1	0.3220	125.9
.8												
38950 VSC_PTSB180.5	0.0000	90.0	0.5196	1.3	0.0000	90.0	0.5196	1.3	0.5196	-118.7	0.5196	121.3
0.0000	90.0	0.7667	2.7	0.7667	-117.3	0.7667	122.7					
30000 PTSB 7 20.0	0.0000	90.0	0.2414	32.9	0.0000	90.0	0.2414	32.9	0.2414	-87.1	0.2414	152.9
33105 PTSB 5 18.0	0.0000	90.0	0.3706	29.6	0.0000	90.0	0.3706	29.6	0.3706	-90.4	0.3706	149.6
33105 PTSB 5 18.0	0.0000	90.0	0.3706	29.6	0.0000	90.0	0.3706	29.6	0.3706	-90.4	0.3706	149.6
33106 PTSB 6 18.0	0.0000	90.0	0.4599	28.2	0.0000	90.0	0.4599	28.2	0.4599	-91.8	0.4599	148.2
33106 PTSB 6 18.0	0.0000	90.0	0.4599	28.2	0.0000	90.0	0.4599	28.2	0.4599	-91.8	0.4599	148.2
7 0.0105 -111.3	0.0105	128.7										
33033 KIRKTAP2115.0	0.0000	90.0	0.0114	9.6	0.0000	90.0	0.0114	9.6	0.0114	-110.4	0.0114	129.6
30526 PITSBG D230.0	0.0000	90.0	0.6689	19.0	0.0000	90.0	0.6689	19.0	0.6689	-101.0	0.6689	139.0
30526 PITSBG D230.0	0.0000	90.0	0.6689	19.0	0.0000	90.0	0.6689	19.0	0.6689	-101.0	0.6689	139.0

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30545 ROSSMOOR230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			17984.02			0.00	0.00 Ohms
Prefault voltage,	pu			0.9990				
Fault Current,	pu	29.276	-65.390	71.644	-65.9			
1 Seq impedance,	pu	0.0026	0.0137	0.0139	79.2	5.2345		

	Current	Ck	[Near End pu	deg]	[Nr Amps]	[Far End pu	deg]	[Fr Amps]	[Z Ohms	deg]	At 30545 ROSSMOOR230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To	30545 ROSSMOOR230.0															
From	30543 ROSSTAP1230.0	1	71.644	114.1	17984.0	71.644	-65.9	17984.0	0.8	70.3	0.0	0.0	17984.0	114.1	0.0	0.0

Voltage	[V0 Mag	Ang]	[V1 Mag	Ang]	[V2 Mag	Ang]	[Va Mag	Ang]	[Vb Mag	Ang]	[Vc Mag	Ang]
30545 ROSSMOOR230.0	0.0000	90.0	0.0000	180.0	0.0000	90.0	0.0000	180.0	0.0000	60.0	0.0000	-60.0
30543 ROSSTAP1230.0	0.0000	90.0	0.1065	4.5	0.0000	90.0	0.1065	4.5	0.1065	-115.5	0.1065	124.5

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30700 SANMATEO230.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			29628.31			0.00	0.00 Ohms
Prefault voltage,	pu			1.0219				
Fault Current,	pu	31.475	-113.758	118.032	-74.5			
1 Seq impedance,	pu	0.0017	0.0085	0.0087	78.9	5.0771		

Current	Ck	[Near End pu	deg]	[Nr Amps]	[Far End pu	deg]	[Fr Amps]	[Z Ohms	deg]	At 30700 SANMATEO230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30700 SANMATEO230.0															
From 30560 E. SHORE230.0	1	22.124	114.8	5553.5	22.116	-65.2	5551.6	9.8	82.0	0.0	0.0	5553.5	114.8	0.0	0.0
From 30527 PITSBG E230.0	1	9.801	114.8	2460.3	9.754	-65.1	2448.4	47.6	83.4	0.0	0.0	2460.3	114.8	0.0	0.0
From 30695 MARTIN C230.0	1	10.271	95.4	2578.2	10.005	-84.5	2511.5	19.7	86.5	0.0	0.0	2578.2	95.4	0.0	0.0
From 30703 RAVENSWD230.0	1	23.782	105.0	5969.8	23.774	-75.0	5967.8	7.1	85.1	0.0	0.0	5969.8	105.0	0.0	0.0
From 30703 RAVENSWD230.0	2	23.782	105.0	5969.8	23.774	-75.0	5967.8	7.1	85.1	0.0	0.0	5969.8	105.0	0.0	0.0
From 30701 SMATEO5M 13.2	5	9.374	99.6	2353.0	9.374	-80.4	41000.0	0.0	90.0	0.0	0.0	2353.0	99.6	0.0	0.0
From 30702 SMATEO6M 13.2	6	9.396	99.5	2358.5	9.396	-80.5	41094.3	0.0	90.0	0.0	0.0	2358.5	99.5	0.0	0.0
From 30704 SMATEO7M 13.2	7	10.247	99.3	2572.2	10.247	-80.7	44819.4	0.0	90.0	0.0	0.0	2572.2	99.3	0.0	0.0

Voltage	[V0 Mag	Ang]	[V1 Mag	Ang]	[V2 Mag	Ang]	[Va Mag	Ang]	[Vb Mag	Ang]	[Vc Mag	Ang]
30700 SANMATEO230.0	0.0000	90.0	0.0000	-90.0	0.0000	90.0	0.0000	-90.0	0.0000	150.0	0.0000	30.0
30560 E. SHORE230.0	0.0000	90.0	0.4111	16.8	0.0000	90.0	0.4111	16.8	0.4111	-103.2	0.4111	136.8
30527 PITSBG E230.0	0.0000	90.0	0.8782	18.3	0.0000	90.0	0.8782	18.3	0.8782	-101.7	0.8782	138.3
30695 MARTIN C230.0	0.0000	90.0	0.3732	2.0	0.0000	90.0	0.3732	2.0	0.3732	-118.0	0.3732	122.0
30703 RAVENSWD230.0	0.0000	90.0	0.3203	10.2	0.0000	90.0	0.3203	10.2	0.3203	-109.8	0.3203	130.2
30703 RAVENSWD230.0	0.0000	90.0	0.3203	10.2	0.0000	90.0	0.3203	10.2	0.3203	-109.8	0.3203	130.2
30701 SMATEO5M 13.2	0.0000	90.0	0.2622	9.6	0.0000	90.0	0.2622	9.6	0.2622	-110.4	0.2622	129.6
30702 SMATEO6M 13.2	0.0000	90.0	0.2601	9.5	0.0000	90.0	0.2601	9.5	0.2601	-110.5	0.2601	129.5
30704 SMATEO7M 13.2	0.0000	90.0	0.2590	9.3	0.0000	90.0	0.2590	9.3	0.2590	-110.7	0.2590	129.3

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30540 SOBRANTE230.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			30616.30			0.00	0.00 Ohms
Prefault voltage,	pu			1.0007				
Fault Current,	pu	43.405	-113.983	121.968	-69.2			
1 Seq impedance,	pu	0.0010	0.0081	0.0082	83.0	8.1404		

Current	Ck	[Near End pu	deg]	[Nr Amps]	[Far End pu	deg]	[Fr Amps]	[Z Ohms	deg]	At 30540 SOBRANTE230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30540 SOBRANTE230.0															
From 30435 LAKEVILE230.0	2	12.277	111.0	3081.7	12.216	-69.0	3066.5	26.2	87.2	0.0	0.0	3081.7	111.0	0.0	0.0
From 30437 CROCKETT230.0	1	16.992	114.4	4265.3	16.989	-65.6	4264.4	5.7	86.0	0.0	0.0	4265.3	114.4	0.0	0.0
From 30535 TIDEWATR230.0	1	32.637	111.5	8192.4	32.629	-68.5	8190.6	5.2	86.9	0.0	0.0	8192.4	111.5	0.0	0.0
From 30536 TESORO 230.0	1	28.931	111.8	7262.3	28.921	-68.2	7259.8	6.5	87.1	0.0	0.0	7262.3	111.8	0.0	0.0
From 33010 SOBRANTE115.0	1	16.052	107.4	4029.4	15.704	-72.6	7884.0	3.2	88.9	0.0	0.0	4029.4	107.4	0.0	0.0
From 33010 SOBRANTE115.0	2	15.176	107.3	3809.4	14.847	-72.7	7453.6	3.4	89.0	0.0	0.0	3809.4	107.3	0.0	0.0

Voltage	[V0 Mag	Ang]	[V1 Mag	Ang]	[V2 Mag	Ang]	[Va Mag	Ang]	[Vb Mag	Ang]	[Vc Mag	Ang]
30540 SOBRANTE230.0	0.0000	90.0	0.0000	-90.0	0.0000	90.0	0.0000	-90.0	0.0000	150.0	0.0000	30.0
30435 LAKEVILE230.0	0.0000	90.0	0.6050	18.2	0.0000	90.0	0.6050	18.2	0.6050	-101.8	0.6050	138.2
30437 CROCKETT230.0	0.0000	90.0	0.1841	20.4	0.0000	90.0	0.1841	20.4	0.1841	-99.6	0.1841	140.4
30535 TIDEWATR230.0	0.0000	90.0	0.3213	18.4	0.0000	90.0	0.3213	18.4	0.3213	-101.6	0.3213	138.4
30536 TESORO 230.0	0.0000	90.0	0.3534	18.9	0.0000	90.0	0.3534	18.9	0.3534	-101.1	0.3534	138.9
33010 SOBRANTE115.0	0.0000	90.0	0.3806	16.3	0.0000	90.0	0.3806	16.3	0.3806	-103.7	0.3806	136.3
33010 SOBRANTE115.0	0.0000	90.0	0.3806	16.3	0.0000	90.0	0.3806	16.3	0.3806	-103.7	0.3806	136.3
0.0000 90.0 0.1728	9.5	0.0000	90.0	0.1728	9.5	0.1728	-110.5	0.1728	129.5			
32808 SNPBLTP2115.0	0.0000	90.0	0.1507	9.5	0.0000	90.0	0.1507	9.5	0.1507	-110.5	0.1507	129.5
33006 GRIZLYJ1115.0	0.0000	90.0	0.0073	-20.2	0.0000	90.0	0.0073	-20.2	0.0073	-140.2	0.0073	99.8
33008 GRIZLYJ2115.0	0.0000	90.0	0.0051	-21.8	0.0000	90.0	0.0051	-21.8	0.0051	-141.8	0.0051	98.2
33014 ALHAMTP1115.0	0.0000	90.0	0.3960	12.3	0.0000	90.0	0.3960	12.3	0.3960	-107.7	0.3960	132.3
33020 MORAGA 115.0	0.0000	90.0	0.4352	9.0	0.0000	90.0	0.4352	9.0	0.4352	-111.0	0.4352	129.0
30540 SOBRANTE230.0	0.0000	90.0	0.5024	18.7	0.0000	90.0	0.5024	18.7	0.5024	-101.3	0.5024	138.7
30540 SOBRANTE230.0	0.0000	90.0	0.5024	18.7	0.0000	90.0	0.5024	18.7	0.5024	-101.3	0.5024	138.7

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30561 TASSAJAR230.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			12599.57			0.00	0.00 Ohms
Prefault voltage,	pu			0.9911				
Fault Current,	pu	19.683	-46.173	50.194	-66.9			
1 Seq impedance,	pu	0.0041	0.0193	0.0197	78.1	4.7259		

Current	Ck	[Near End pu	deg]	[Nr Amps]	[Far End pu	deg]	[Fr Amps]	[Z Ohms	deg]	At 30561 TASSAJAR230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30561 TASSAJAR230.0															
From 30526 PITSBG D230.0	1	31.752	118.2	7970.3	31.731	-61.8	7965.1	14.0	78.2	0.0	0.0	7970.3	118.2	0.0	0.0
From 30562 TES JCT 230.0	1	18.782	104.4	4714.7	18.781	-75.6	4714.5	3.6	82.9	0.0	0.0	4714.7	104.4	0.0	0.0

Voltage	[V0 Mag	Ang]	[V1 Mag	Ang]	[V2 Mag	Ang]	[Va Mag	Ang]	[Vb Mag	Ang]	[Vc Mag	Ang]
30561 TASSAJAR230.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	-30.0	0.0000	-150.0
30526 PITSBG D230.0	0.0000	90.0	0.8401	16.4	0.0000	90.0	0.8401	16.4	0.8401	-103.6	0.8401	136.4
30562 TES JCT 230.0	0.0000	90.0	0.1268	7.3	0.0000	90.0	0.1268	7.3	0.1268	-112.7	0.1268	127.3

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30640 TESLA C 230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			41127.63			0.00	0.00 Ohms
Prefault voltage,	pu			1.0246				
Fault Current,	pu	56.919	-153.638	163.843	-69.7			
1 Seq impedance,	pu	0.0006	0.0062	0.0063	84.1	9.6052		

Current	Ck	[Near End [pu	deg]	[Nr Amps]	[Far End [pu	deg]	[Fr Amps]	[Z [Ohms	deg]	At 30640 TESLA C 230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30640 TESLA C 230.0															
From 30595 FLOWIND2230.0	1	17.503	115.0	4393.5	17.502	-65.0	4393.3	3.5	81.8	0.0	0.0	4393.5	115.0	0.0	0.0
From 30600 TRES VAQ230.0	2	17.147	115.2	4304.1	17.144	-64.8	4303.4	6.9	81.9	0.0	0.0	4304.1	115.2	0.0	0.0
From 30625 TESLA D 230.0	1	43.045	108.9	10805.1	43.045	-71.1	10805.1	8.3	88.2	0.0	0.0	10805.1	108.9	0.0	0.0
From 30655 ADCC 230.0	2	27.460	103.8	6892.9	27.459	-76.2	6892.8	1.5	84.4	0.0	0.0	6892.9	103.8	0.0	0.0
From 33856 TESLA 6M 13.8	6	59.013	111.6	14813.4	60.312	-68.4	252325.3	0.0	89.5	0.0	0.0	14813.4	111.6	0.0	0.0

Voltage	[V0 [Mag	Ang]	[V1 [Mag	Ang]	[V2 [Mag	Ang]	[Va [Mag	Ang]	[Vb [Mag	Ang]	[Vc [Mag	Ang]
30640 TESLA C 230.0	0.0000	90.0	0.0000	-90.0	0.0000	90.0	0.0000	-90.0	0.0000	150.0	0.0000	30.0
30595 FLOWIND2230.0	0.0000	90.0	0.1146	16.9	0.0000	90.0	0.1146	16.9	0.1146	-103.1	0.1146	136.9
30600 TRES VAQ230.0	0.0000	90.0	0.2222	17.0	0.0000	90.0	0.2222	17.0	0.2222	-103.0	0.2222	137.0
30625 TESLA D 230.0	0.0000	90.0	0.6718	17.1	0.0000	90.0	0.6718	17.1	0.6719	-102.9	0.6719	137.1
30655 ADCC 230.0	0.0000	90.0	0.0786	8.2	0.0000	90.0	0.0786	8.2	0.0786	-111.8	0.0786	128.2
33856 TESLA 6M 13.8	0.0000	90.0	0.3599	21.1	0.0000	90.0	0.3599	21.1	0.3599	-98.9	0.3599	141.1

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30625 TESLA D 230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			62469.31			0.00	0.00 Ohms
Prefault voltage,	pu			1.0270				
Fault Current,	pu	93.194	-230.754	248.863	-68.0			
1 Seq impedance,	pu	0.0006	0.0041	0.0041	82.3	7.3605		

Current	Ck	[Near End pu	deg]	[Nr Amps]	[Far End pu	deg]	[Fr Amps]	[Z Ohms	deg]	At 30625 TESLA D 230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30625 TESLA D 230.0															
From 30570 USWP-RLF230.0	1	14.015	117.7	3518.1	14.014	-62.3	3517.8	4.2	81.4	0.0	0.0	3518.1	117.7	0.0	0.0
From 30580 ALTM MDW230.0	1	19.449	117.4	4882.2	19.448	-62.6	4881.9	3.5	81.0	0.0	0.0	4882.2	117.4	0.0	0.0
From 30624 TESLA E 230.0	1	59.729	107.9	14993.0	59.729	-72.1	14993.0	4.0	86.2	0.0	0.0	14993.0	107.9	0.0	0.0
From 30640 TESLA C 230.0	1	31.019	110.5	7786.3	31.019	-69.5	7786.3	8.3	88.2	0.0	0.0	7786.3	110.5	0.0	0.0
From 37585 TRCY PMP230.0	1	32.552	112.7	8171.2	32.550	-67.3	8170.6	4.5	81.9	0.0	0.0	8171.2	112.7	0.0	0.0
From 37585 TRCY PMP230.0	2	32.552	112.7	8171.2	32.550	-67.3	8170.6	4.5	81.9	0.0	0.0	8171.2	112.7	0.0	0.0
From 33540 TESLA 115.0	1	5.885	111.1	1477.1	5.758	-68.8	2890.8	5.4	89.4	0.0	0.0	1477.1	111.1	0.0	0.0
From 33540 TESLA 115.0	3	5.885	111.1	1477.1	5.758	-68.9	2890.8	5.4	89.4	0.0	0.0	1477.1	111.1	0.0	0.0
From 33854 TESLA 4M 13.8	4	48.124	113.5	12080.0	49.183	-66.5	205762.9	0.0	89.5	0.0	0.0	12080.0	113.5	0.0	0.0

Voltage	[V0 Mag	Ang]	[V1 Mag	Ang]	[V2 Mag	Ang]	[Va Mag	Ang]	[Vb Mag	Ang]	[Vc Mag	Ang]
30625 TESLA D 230.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
30570 USWP-RLF230.0	0.0000	90.0	0.1107	19.2	0.0000	90.0	0.1107	19.2	0.1107	-100.8	0.1107	139.2
30580 ALTM MDW230.0	0.0000	90.0	0.1286	18.5	0.0000	90.0	0.1286	18.5	0.1286	-101.5	0.1286	138.5
30624 TESLA E 230.0	0.0000	90.0	0.4525	14.1	0.0000	90.0	0.4525	14.1	0.4525	-105.9	0.4525	134.1
30640 TESLA C 230.0	0.0000	90.0	0.4841	18.7	0.0000	90.0	0.4841	18.7	0.4841	-101.3	0.4841	138.7
37585 TRCY PMP230.0	0.0000	90.0	0.2755	14.6	0.0000	90.0	0.2755	14.6	0.2755	-105.4	0.2755	134.6
37585 TRCY PMP230.0	0.0000	90.0	0.2755	14.6	0.0000	90.0	0.2755	14.6	0.2755	-105.4	0.2755	134.6
33540 TESLA 115.0	0.0000	90.0	0.2359	20.5	0.0000	90.0	0.2359	20.5	0.2359	-99.5	0.2359	140.5
33540 TESLA 115.0	0.0000	90.0	0.2359	20.5	0.0000	90.0	0.2359	20.5	0.2359	-99.5	0.2359	140.5
33854 TESLA 4M 13.8	0.0000	90.0	0.2795	23.0	0.0000	90.0	0.2795	23.0	0.2795	-97.0	0.2795	143.0
.2 0.6658 -113.8 0.6658 126.2												
30632 TESL_GEN230.0	0.0000	90.0	0.0127	21.3	0.0000	90.0	0.0127	21.3	0.0127	-98.7	0.0127	141.3
30632 TESL_GEN230.0	0.0000	90.0	0.0127	21.3	0.0000	90.0	0.0127	21.3	0.0127	-98.7	0.0127	141.3
33852 TESLA 2M 13.8	0.0000	90.0	0.1432	-155.4	0.0000	90.0	0.1432	-155.4	0.1432	84.6	0.1432	-35.4

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)

********** THREE PHASE FAULT **********

Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30535 TIDEWATR230.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			26060.73			0.00	0.00 Ohms
Prefault voltage,	pu			1.0044				
Fault Current,	pu	36.309	-97.263	103.820	-69.5			
1 Seq impedance,	pu	0.0010	0.0096	0.0097	84.1	9.6493		

Current	Ck	[Near End [pu	deg]	Nr Amps]	[Far End [pu	deg]	Fr Amps]	[Z [Ohms	deg]	At 30535 TIDEWATR230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30535 TIDEWATR230.0															
From 30527 PITSBG E230.0	1	57.546	111.5	14445.1	57.531	-68.5	14441.3	5.8	87.2	0.0	0.0	14445.1	111.5	0.0	0.0
From 30540 SOBRANTE230.0	1	42.539	109.0	10678.1	42.530	-71.0	10675.7	5.2	86.9	0.0	0.0	10678.1	109.0	0.0	0.0
From 33151 FOSTER W 12.5	1	1.880	112.1	471.9	1.880	-67.9	8703.9	0.5	90.0	0.0	0.0	471.9	112.1	0.0	0.0
From 33151 FOSTER W 12.5	2	1.880	112.1	471.9	1.880	-67.9	8703.9	0.5	90.0	0.0	0.0	471.9	112.1	0.0	0.0

Voltage	[V0 [Mag	Ang]	[V1 [Mag	Ang]	[V2 [Mag	Ang]	[Va [Mag	Ang]	[Vb [Mag	Ang]	[Vc [Mag	Ang]
30535 TIDEWATR230.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
30527 PITSBG E230.0	0.0000	90.0	0.6326	18.7	0.0000	90.0	0.6326	18.7	0.6326	-101.3	0.6326	138.7
30540 SOBRANTE230.0	0.0000	90.0	0.4188	15.9	0.0000	90.0	0.4188	15.9	0.4188	-104.1	0.4188	135.9
33151 FOSTER W 12.5	0.0000	90.0	0.6016	22.1	0.0000	90.0	0.6016	22.1	0.6016	-97.9	0.6016	142.1
33151 FOSTER W 12.5	0.0000	90.0	0.6016	22.1	0.0000	90.0	0.6016	22.1	0.6016	-97.9	0.6016	142.1

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30600 TRES VAQ230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			19174.40			0.00	0.00 Ohms
Prefault voltage,	pu			1.0211				
Fault Current,	pu	29.124	-70.616	76.386	-67.6			
1 Seq impedance,	pu	0.0018	0.0133	0.0134	82.4	7.5177		

Current	Ck	[Near End pu	deg]	[Nr Amps]	[Far End pu	deg]	[Fr Amps]	[Z Ohms	deg]	At 30600 TRES VAQ230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30600 TRES VAQ230.0															
From 30527 PITSBG E230.0	2	26.070	114.4	6544.1	26.042	-65.6	6537.2	16.8	81.9	0.0	0.0	6544.1	114.4	0.0	0.0
From 30640 TESLA C 230.0	2	50.339	111.4	12636.0	50.330	-68.6	12633.8	6.9	81.9	0.0	0.0	12636.0	111.4	0.0	0.0
From 33171 TRSVQ+NW 9.1	1	0.000	-90.0	0.0	0.000	90.0	0.0	999.9	90.0	0.0	0.0	0.0	-90.0	0.0	0.0

Voltage	[V0 Mag	Ang]	[V1 Mag	Ang]	[V2 Mag	Ang]	[Va Mag	Ang]	[Vb Mag	Ang]	[Vc Mag	Ang]
30600 TRES VAQ230.0	0.0000	90.0	0.0000	180.0	0.0000	90.0	0.0000	180.0	0.0000	60.0	0.0000	-60.0
30527 PITSBG E230.0	0.0000	90.0	0.8277	16.2	0.0000	90.0	0.8277	16.2	0.8277	-103.8	0.8277	136.2
30640 TESLA C 230.0	0.0000	90.0	0.6524	13.3	0.0000	90.0	0.6524	13.3	0.6524	-106.7	0.6524	133.3
33171 TRSVQ+NW 9.1	0.0000	90.0	0.0000	180.0	0.0000	90.0	0.0000	180.0	0.0000	60.0	0.0000	-60.0

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30575 WND MSTR230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			21502.13			0.00	0.00 Ohms
Prefault voltage,	pu			1.0224				
Fault Current,	pu	34.836	-78.256	85.659	-66.0			
1 Seq impedance,	pu	0.0017	0.0118	0.0119	81.6	6.7673		

Current	Ck	[Near End pu	deg]	[Nr Amps]	[Far End pu	deg]	[Fr Amps]	[Z Ohms	deg]	At 30575 WND MSTR230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30575 WND MSTR230.0															
From 30525 C.COSTA 230.0	1	30.285	117.1	7602.2	30.266	-62.9	7597.4	13.3	81.9	0.0	0.0	7602.2	117.1	0.0	0.0
From 38610 DELTAPMP230.0	1	55.441	112.3	13916.8	55.441	-67.7	13916.7	1.1	75.8	0.0	0.0	13916.8	112.3	0.0	0.0
From 33170 WINDMSTR 9.1	1	0.000	180.0	0.0	0.000	0.0	0.0	999.9	90.0	0.0	0.0	0.0	180.0	0.0	0.0

Voltage	[V0 Mag	Ang]	[V1 Mag	Ang]	[V2 Mag	Ang]	[Va Mag	Ang]	[Vb Mag	Ang]	[Vc Mag	Ang]
30575 WND MSTR230.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
30525 C.COSTA 230.0	0.0000	90.0	0.7590	18.9	0.0000	90.0	0.7590	18.9	0.7590	-101.1	0.7590	138.9
38610 DELTAPMP230.0	0.0000	90.0	0.1132	8.1	0.0000	90.0	0.1132	8.1	0.1132	-111.9	0.1132	128.1
33170 WINDMSTR 9.1	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	-30.0	0.0000	-150.0

ATTACHMENT B – RAW POST-PROJECT 3-PHASE FAULT RESULTS

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30525 C.COSTA 230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			52012.81			0.00	0.00 Ohms
Prefault voltage,	pu			1.0183				
Fault Current,	pu	155.684	-136.737	207.207	-41.3			
1 Seq impedance,	pu	0.0006	0.0049	0.0049	82.7	7.7950		

Current	Ck	[Near End [pu	deg]	[Nr Amps]	[Far End [pu	deg]	[Fr Amps]	[Z [Ohms	deg]	At 30525 C.COSTA 230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30525 C.COSTA 230.0															
From 30520 GATEWAY 230.0	1	18.116	150.8	4547.5	18.116	-29.2	4547.5	0.2	71.6	0.0	0.0	4547.5	150.8	0.0	0.0
From 30523 CC SUB 230.0	1	22.249	144.8	5584.9	22.249	-35.2	5584.9	1.4	79.5	0.0	0.0	5584.9	144.8	0.0	0.0
From 30479 BDLSWSTA230.0	1	21.006	145.5	5272.8	21.001	-34.5	5271.6	8.0	79.4	0.0	0.0	5272.8	145.5	0.0	0.0
From 30543 ROSSTAP1230.0	1	14.362	127.5	3605.1	14.348	-52.5	3601.6	16.0	81.9	0.0	0.0	3605.1	127.5	0.0	0.0
From 30544 ROSSTAP2230.0	2	14.385	127.8	3610.9	14.371	-52.2	3607.4	16.0	81.9	0.0	0.0	3610.9	127.8	0.0	0.0
From 30565 BRENTWOD230.0	1	15.262	129.3	3831.1	15.259	-50.7	3830.3	7.3	81.6	0.0	0.0	3831.1	129.3	0.0	0.0
From 30567 LONETREE230.0	1	9.047	121.8	2271.1	9.047	-58.2	2270.9	4.4	80.4	0.0	0.0	2271.1	121.8	0.0	0.0
From 30575 WND MSTR230.0	1	20.354	130.5	5109.2	20.341	-49.5	5106.0	13.3	81.9	0.0	0.0	5109.2	130.5	0.0	0.0
From 30585 LS PSTAS230.0	1	11.727	122.4	2943.6	11.712	-57.6	2940.0	18.5	80.4	0.0	0.0	2943.6	122.4	0.0	0.0
From 99980 MIRPKCC1230.0	1	8.696	145.0	2182.9	8.696	-35.0	2182.9	0.2	90.0	0.0	0.0	2182.9	145.0	0.0	0.0
From 99981 MIRPKCC2230.0	1	7.881	146.5	1978.3	7.881	-33.5	1978.3	0.2	90.0	0.0	0.0	1978.3	146.5	0.0	0.0
From 99985 MIRCCCC1230.0	1	10.873	145.4	2729.4	10.873	-34.6	2729.4	0.2	90.0	0.0	0.0	2729.4	145.4	0.0	0.0
From 99986 MIRCCCC2230.0	1	10.873	145.4	2729.4	10.873	-34.6	2729.4	0.2	90.0	0.0	0.0	2729.4	145.4	0.0	0.0
From 33114 C.COS 4 13.8	1	0.000	-178.0	0.0	0.000	2.0	0.0	999.9	90.0	0.0	0.0	0.0	-178.0	0.0	0.0
From 33115 C.COS 5 13.8	1	0.000	90.0	0.0	0.000	90.0	0.0	999.9	90.0	0.0	0.0	0.0	90.0	0.0	0.0
From 33116 C.COS 6 18.0	1	12.698	146.9	3187.4	12.700	-33.1	40733.3	0.1	88.6	0.0	0.0	3187.4	146.9	0.0	0.0
From 33117 C.COS 7 18.0	1	12.698	146.9	3187.4	12.700	-33.1	40733.3	0.1	88.6	0.0	0.0	3187.4	146.9	0.0	0.0

Voltage	[V0 [Mag	Ang]	[V1 [Mag	Ang]	[V2 [Mag	Ang]	[Va [Mag	Ang]	[Vb [Mag	Ang]	[Vc [Mag	Ang]
30525 C.COSTA 230.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
30520 GATEWAY 230.0												

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30526 PITSBG D230.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			54110.46			0.00	0.00 Ohms
Prefault voltage,	pu			1.0071				
Fault Current,	pu	150.851	-153.985	215.563	-45.6			
1 Seq impedance,	pu	0.0007	0.0046	0.0047	81.8	6.9203		

Current	Ck	[Near End [pu	deg]	[Nr Amps]	[Far End [pu	deg]	[Fr Amps]	[Z [Ohms	deg]	At 30526 PITSBG D230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30526 PITSBG D230.0															
From 30527 PITSBG E230.0	1	122.631	136.8	30782.6	122.631	-43.2	30782.6	0.4	45.0	0.0	0.0	30782.6	136.8	0.0	0.0
From 30528 DEC PTSG230.0	1	15.584	143.6	3911.8	15.584	-36.4	3911.8	0.8	70.5	0.0	0.0	3911.8	143.6	0.0	0.0
From 30528 DEC PTSG230.0	2	15.584	143.6	3911.8	15.584	-36.4	3911.8	0.8	70.5	0.0	0.0	3911.8	143.6	0.0	0.0
From 30555 SANRAMON230.0	1	10.812	130.1	2714.0	10.801	-49.9	2711.3	17.2	81.7	0.0	0.0	2714.0	130.1	0.0	0.0
From 30561 TASSAJAR230.0	1	10.551	123.3	2648.5	10.544	-56.7	2646.8	14.0	78.2	0.0	0.0	2648.5	123.3	0.0	0.0
From 99995 MIRCCPB1230.0	1	0.000	-45.0	0.0	0.000	135.0	0.0	999.9	90.0	0.0	0.0	0.0	-45.0	0.0	0.0
From 99996 MIRCCPB2230.0	1	0.000	-45.0	0.0	0.000	135.0	0.0	999.9	90.0	0.0	0.0	0.0	-45.0	0.0	0.0
From 32950 PITSBURG115.0	12	12.570	132.2	3155.2	11.891	-47.8	5970.0	3.2	89.2	0.0	0.0	3155.2	132.2	0.0	0.0
From 32950 PITSBURG115.0	13	12.570	132.2	3155.2	11.891	-47.8	5970.0	3.2	89.2	0.0	0.0	3155.2	132.2	0.0	0.0
From 38950 VSC_PTSB180.5	1	17.169	113.3	4309.8	17.169	-66.7	5491.7	9.9	88.2	0.0	0.0	4309.8	113.3	0.0	0.0

Voltage	[V0 [Mag	Ang]	[V1 [Mag	Ang]	[V2 [Mag	Ang]	[Va [Mag	Ang]	[Vb [Mag	Ang]	[Vc [Mag	Ang]
30526 PITSBG D230.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
30527 PITSBG E230.0	0.0000	90.0	0.0867	1.8	0.0000	90.0	0.0867	1.8	0.0867	-118.2	0.0867	121.8
30528 DEC PTSG230.0	0.0000	90.0	0.0233	34.1	0.0000	90.0	0.0233	34.1	0.0233	-85.9	0.0233	154.1
30528 DEC PTSG230.0	0.0000	90.0	0.0233	34.1	0.0000	90.0	0.0233	34.1	0.0233	-85.9	0.0233	154.1
30555 SANRAMON230.0	0.0000	90.0	0.3518	31.8	0.0000	90.0	0.3518	31.8	0.3518	-88.2	0.3518	151.8
30561 TASSAJAR230.0	0.0000	90.0	0.2791	21.5	0.0000	90.0	0.2791	21.5	0.2791	-98.5	0.2791	141.5
99995 MIRCCPB1230.0	0.0000	90.0	0.0000	-135.0	0.0000	90.0	0.0000	-135.0	0.0000	105.0	0.0000	-15.0
99996 MIRCCPB2230.0	0.0000	90.0	0.0000	-135.0	0.0000	90.0	0.0000	-135.0	0.0000	105.0	0.0000	-15.0
32950 PITSBURG115.0	0.0000	90.0	0.2893	41.4	0.0000	90.0	0.2893	41.4	0.2893	-78.6	0.2893	161.4
32950 PITSBURG115.0	0.0000	90.0	0.2893	41.4	0.0000	90.0	0.2893	41.4	0.2893	-78.6	0.2893	161

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30527 PITSBG E230.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			55160.39			0.00	0.00 Ohms
Prefault voltage,	pu			1.0104				
Fault Current,	pu	151.685	-158.996	219.746	-46.3			
1 Seq impedance,	pu	0.0006	0.0046	0.0046	82.5	7.6390		

Current	Ck	[Near End [pu	deg]	[Nr Amps]	[Far End [pu	deg]	[Fr Amps]	[Z [Ohms	deg]	At 30527 PITSBG E230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30527 PITSBG E230.0															
From 30526 PITSBG D230.0	1	87.586	134.0	21985.8	87.586	-46.0	21985.8	0.4	45.0	0.0	0.0	21985.8	134.0	0.0	0.0
From 30535 TIDEWATR230.0	1	18.403	128.6	4619.4	18.398	-51.4	4618.3	5.8	87.2	0.0	0.0	4619.4	128.6	0.0	0.0
From 30536 TESORO 230.0	1	15.708	128.5	3943.1	15.704	-51.5	3942.1	5.5	87.1	0.0	0.0	3943.1	128.5	0.0	0.0
From 30595 FLOWIND2230.0	1	15.629	131.0	3923.1	15.605	-49.0	3917.1	20.2	81.9	0.0	0.0	3923.1	131.0	0.0	0.0
From 30600 TRES VAQ230.0	2	15.600	130.9	3915.9	15.583	-49.1	3911.7	16.8	81.9	0.0	0.0	3915.9	130.9	0.0	0.0
From 30560 E. SHORE230.0	1	9.961	125.2	2500.3	9.915	-54.8	2488.9	38.1	82.1	0.0	0.0	2500.3	125.2	0.0	0.0
From 30700 SANMATEO230.0	1	8.580	118.7	2153.8	8.517	-61.2	2137.8	47.8	83.4	0.0	0.0	2153.8	118.7	0.0	0.0
From 30000 PTSB 7 20.0	1	22.268	144.8	5589.7	22.273	-35.2	64295.7	0.0	88.4	0.0	0.0	5589.7	144.8	0.0	0.0
From 33105 PTSB 5 18.0	1	6.418	141.4	1611.0	6.420	-38.6	20592.3	0.2	88.4	0.0	0.0	1611.0	141.4	0.0	0.0
From 33105 PTSB 5 18.0	2	6.418	141.4	1611.0	6.420	-38.6	20592.2	0.2	88.4	0.0	0.0	1611.0	141.4	0.0	0.0
From 33106 PTSB 6 18.0	1	7.185	139.8	1803.5	7.186	-40.2	23048.3	0.2	88.6	0.0	0.0	1803.5	139.8	0.0	0.0
From 33106 PTSB 6 18.0	2	7.185	139.8	1803.5	7.186	-40.2	23048.2	0.2	88.6	0.0	0.0	1803.5	139.8	0.0	0.0

Voltage	[V0 [Mag	Ang]	[V1 [Mag	Ang]	[V2 [Mag	Ang]	[Va [Mag	Ang]	[Vb [Mag	Ang]	[Vc [Mag	Ang]
30527 PITSBG E230.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
30526 PITSBG D230.0	0.0000	90.0	0.0619	-1.0	0.0000	90.0	0.0619	-1.0	0.0619	-121.0	0.0619	119.0
30535 TIDEWATR230.0	0.0000	90.0	0.2023	35.8	0.0000	90.0	0.2023	35.8	0.2023	-84.2	0.2023	155.8
30536 TESORO 230.0	0.0000	90.0	0.1625	35.6	0.0000	90.0	0.1625	35.6	0.1625	-84.4	0.1625	155.6
30595 FLOWIND2230.0	0.0000	90.0	0.5963	32.8	0.0000	90.0	0.5963	32.8	0.5963	-87.2	0.5963	152.8
30600 TRES VAQ230.0	0.0000	90.0	0.4953	32.8	0.0000	90.0	0.4953	32.8	0.4953	-87.2	0.4953	152.8
30560 E. SHORE230.0	0.0000	90.0	0.7144	27.3	0.0000	90.0	0.7144	27.3	0.7144	-92.7	0.7144	147.3
30700 SANMATEO230.0	0.0000	90.0	0.7688	22.1								

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 32950 PITSBURG115.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			49039.63			0.00	0.00 Ohms
Prefault voltage,	pu			1.0376				
Fault Current,	pu	65.977	-72.032	97.681	-47.5			
1 Seq impedance,	pu	0.0014	0.0105	0.0106	82.3	7.4345		

Current	Ck	[Near End pu	deg]	[Nr Amps]	[Far End pu	deg]	[Fr Amps]	[Z Ohms	deg]	At 32950 PITSBURG115.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 32950 PITSBURG115.0															
From 32970 CLAYTN 115.0	1	2.656	128.7	1333.5	2.656	-51.3	1333.3	3.3	79.1	0.0	0.0	1333.5	128.7	0.0	0.0
From 32970 CLAYTN 115.0	4	2.023	125.6	1015.4	2.023	-54.4	1015.4	4.3	82.2	0.0	0.0	1015.4	125.6	0.0	0.0
From 32978 LMEC 115.0	1	10.578	139.1	5310.5	10.578	-40.9	5310.4	0.4	79.1	0.0	0.0	5310.5	139.1	0.0	0.0
From 32978 LMEC 115.0	2	10.578	139.1	5310.5	10.578	-40.9	5310.4	0.4	79.1	0.0	0.0	5310.5	139.1	0.0	0.0
From 32992 BOLLMAN2115.0	2	4.772	136.9	2395.5	4.770	-43.1	2394.9	8.4	74.3	0.0	0.0	2395.5	136.9	0.0	0.0
From 32993 W.P.BART115.0	1	4.348	136.5	2182.8	4.347	-43.5	2182.5	5.8	74.4	0.0	0.0	2182.8	136.5	0.0	0.0
From 33030 COLSTJT1115.0	1	1.420	136.3	713.0	1.420	-43.7	713.0	4.0	74.3	0.0	0.0	713.0	136.3	0.0	0.0
From 33032 KIRKTAP1115.0	3	2.020	125.7	1014.2	2.020	-54.3	1014.2	0.7	84.3	0.0	0.0	1014.2	125.7	0.0	0.0
From 33033 KIRKTAP2115.0	1	1.379	135.6	692.6	1.379	-44.4	692.6	1.1	74.4	0.0	0.0	692.6	135.6	0.0	0.0
From 30526 PITSBG D230.0	12	29.084	129.9	14601.5	30.744	-50.1	7717.2	11.5	89.2	0.0	0.0	14601.5	129.9	0.0	0.0
From 30526 PITSBG D230.0	13	29.084	129.9	14601.5	30.744	-50.1	7717.2	11.5	89.2	0.0	0.0	14601.5	129.9	0.0	0.0

Voltage	[V0 Mag	Ang]	[V1 Mag	Ang]	[V2 Mag	Ang]	[Va Mag	Ang]	[Vb Mag	Ang]	[Vc Mag	Ang]
32950 PITSBURG115.0	0.0000	90.0	0.0000	-90.0	0.0000	90.0	0.0000	-90.0	0.0000	150.0	0.0000	30.0
32970 CLAYTN 115.0	0.0000	90.0	0.0653	27.8	0.0000	90.0	0.0653	27.8	0.0653	-92.2	0.0653	147.8
32970 CLAYTN 115.0	0.0000	90.0	0.0653	27.8	0.0000	90.0	0.0653	27.8	0.0653	-92.2	0.0653	147.8
32978 LMEC 115.0	0.0000	90.0	0.0280	38.2	0.0000	90.0	0.0280	38.2	0.0280	-81.8	0.0280	158.2
32978 LMEC 115.0	0.0000	90.0	0.0280	38.2	0.0000	90.0	0.0280	38.2	0.0280	-81.8	0.0280	158.2
32992 BOLLMAN2115.0	0.0000	90.0	0.3018	31.2	0.0000	90.0	0.3018	31.2	0.3018	-88.8	0.3018	151.2
32993 W.P.BART115.0	0.0000	90.0	0.1891	30.9	0.0000	90.0	0.1891	30.9	0.1891	-89.1	0.1891	150.9
33030 COLSTJT1115.0	0.0000	90.0	0.0430	30.6	0.0000	90.0	0.0430	30.6	0.0430	-89.4	0.0430	150.6
33032 KIRKTAP1115.0	0.0000	90.0	0.0105	30.0	0.0000	90.0	0.0105	30.				

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 33010 SOBRANTE115.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			49021.72			0.00	0.00 Ohms
Prefault voltage,	pu			1.0064				
Fault Current,	pu	66.026	-71.939	97.645	-47.5			
1 Seq impedance,	pu	0.0019	0.0101	0.0103	79.3	5.3000		

Current	Ck	[Near End [pu	deg]	[Nr Amps]	[Far End [pu	deg]	[Fr Amps]	[Z [Ohms	deg]	At 33010 SOBRANTE115.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 33010 SOBRANTE115.0															
From 32756 CHRISTIE115.0	1	3.314	134.8	1663.9	3.314	-45.2	1663.7	6.3	73.3	0.0	0.0	1663.9	134.8	0.0	0.0
From 32765 ELCRTJ1 115.0	1	2.193	137.2	1101.2	2.193	-42.8	1101.2	3.8	78.0	0.0	0.0	1101.2	137.2	0.0	0.0
From 32766 EL CRRTO115.0	2	2.202	136.2	1105.2	2.201	-43.8	1105.2	3.8	78.2	0.0	0.0	1105.2	136.2	0.0	0.0
From 32767 ELCRTJ2 115.0	1	0.000	113.7	0.0	0.000	-66.3	0.0	999.9	90.0	0.0	0.0	0.0	113.7	0.0	0.0
From 32768 RICHMOND115.0	2	0.000	90.0	0.0	0.000	90.0	0.0	999.9	90.0	0.0	0.0	0.0	90.0	0.0	0.0
From 32806 SNPBLTP1115.0	2	1.912	131.3	960.0	1.911	-48.7	959.4	11.9	78.9	0.0	0.0	960.0	131.3	0.0	0.0
From 32808 SNPBLTP2115.0	1	1.914	131.3	960.8	1.913	-48.7	960.4	10.4	78.9	0.0	0.0	960.8	131.3	0.0	0.0
From 33006 GRIZLYJ1115.0	1	10.374	136.2	5207.9	10.374	-43.8	5207.9	0.1	45.0	0.0	0.0	5207.9	136.2	0.0	0.0
From 33008 GRIZLYJ2115.0	2	7.226	134.6	3627.6	7.226	-45.4	3627.6	0.1	45.0	0.0	0.0	3627.6	134.6	0.0	0.0
From 33014 ALHAMTP1115.0	1	4.723	139.8	2371.1	4.720	-40.2	2369.5	11.1	72.7	0.0	0.0	2371.1	139.8	0.0	0.0
From 33020 MORAGA 115.0	1	22.647	132.7	11369.9	22.646	-47.3	11369.0	2.6	77.7	0.0	0.0	11369.9	132.7	0.0	0.0
From 30540 SOBRANTE230.0	1	21.211	129.9	10648.9	21.683	-50.1	5442.8	12.3	88.9	0.0	0.0	10648.9	129.9	0.0	0.0
From 30540 SOBRANTE230.0	2	20.053	129.8	10067.4	20.499	-50.2	5145.7	13.0	89.0	0.0	0.0	10067.4	129.8	0.0	0.0

Voltage	[V0 [Mag	Ang]	[V1 [Mag	Ang]	[V2 [Mag	Ang]	[Va [Mag	Ang]	[Vb [Mag	Ang]	[Vc [Mag	Ang]
33010 SOBRANTE115.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
32756 CHRISTIE115.0	0.0000	90.0	0.1580	28.1	0.0000	90.0	0.1580	28.1	0.1580	-91.9	0.1580	148.1
32765 ELCRTJ1 115.0	0.0000	90.0	0.0625	35.2	0.0000	90.0	0.0625	35.2	0.0625	-84.8	0.0625	155.2
32766 EL CRRTO115.0	0.0000	90.0	0.0638	34.4	0.0000	90.0	0.0638	34.4	0.0638	-85.6	0.0638	154.4
32767 ELCRTJ2 115.0	0.0000	90.0	0.0000	0.0	0.0000	90.0	0.0000	0.0	0.0000	-120.0	0.0000	120.0
32768 RICHMOND115.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
32806 SNPBLTP1115.0												

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30624 TESLA E 230.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			60436.62			0.00	0.00 Ohms
Prefault voltage,	pu			1.0231				
Fault Current,	pu	153.187	-185.746	240.765	-50.5			
1 Seq impedance,	pu	0.0006	0.0042	0.0042	82.2	7.3108		

Current	Ck	[Near End [pu	deg]	[Nr Amps]	[Far End [pu	deg]	[Fr Amps]	[Z [Ohms	deg]	At 30624 TESLA E 230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30624 TESLA E 230.0															
From 30489 STAGG-J2230.0	1	5.566	129.3	1397.2	5.560	-50.7	1395.6	16.7	82.1	0.0	0.0	1397.2	129.3	0.0	0.0
From 30500 BELLOTA 230.0	1	12.114	124.1	3040.8	12.076	-55.9	3031.4	28.3	81.0	0.0	0.0	3040.8	124.1	0.0	0.0
From 30505 WEBER 230.0	1	12.486	122.7	3134.1	12.471	-57.3	3130.4	17.6	80.9	0.0	0.0	3134.1	122.7	0.0	0.0
From 30622 EIGHT MI230.0	1	7.350	128.6	1845.1	7.339	-51.4	1842.3	18.8	82.2	0.0	0.0	1845.1	128.6	0.0	0.0
From 30625 TESLA D 230.0	1	63.459	132.9	15929.3	63.459	-47.1	15929.3	4.0	86.2	0.0	0.0	15929.3	132.9	0.0	0.0
From 30630 NEWARK D230.0	1	23.157	122.4	5812.9	23.118	-57.6	5803.1	14.9	87.2	0.0	0.0	5812.9	122.4	0.0	0.0
From 30670 WESTLEY 230.0	1	28.519	127.7	7158.8	28.489	-52.3	7151.2	8.6	80.1	0.0	0.0	7158.8	127.7	0.0	0.0
From 30703 RAVENSWD230.0	1	13.182	118.9	3308.9	13.143	-61.1	3299.2	27.0	87.2	0.0	0.0	3308.9	118.9	0.0	0.0
From 30632 TESL_GEN230.0	1	11.982	135.8	3007.7	11.982	-44.2	3007.7	0.6	84.6	0.0	0.0	3007.7	135.8	0.0	0.0
From 30632 TESL_GEN230.0	2	11.982	135.8	3007.7	11.982	-44.2	3007.7	0.6	84.6	0.0	0.0	3007.7	135.8	0.0	0.0
From 33852 TESLA 2M 13.8	2	51.855	132.4	13016.6	52.996	-47.6	221715.3	0.0	-89.1	0.0	0.0	13016.6	132.4	0.0	0.0

Voltage	[V0 [Mag	Ang]	[V1 [Mag	Ang]	[V2 [Mag	Ang]	[Va [Mag	Ang]	[Vb [Mag	Ang]	[Vc [Mag	Ang]
30624 TESLA E 230.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
30489 STAGG-J2230.0	0.0000	90.0	0.1753	31.4	0.0000	90.0	0.1753	31.4	0.1753	-88.6	0.1753	151.4
30500 BELLOTA 230.0	0.0000	90.0	0.6451	25.1	0.0000	90.0	0.6451	25.1	0.6451	-94.9	0.6451	145.1
30505 WEBER 230.0	0.0000	90.0	0.4153	23.6	0.0000	90.0	0.4153	23.6	0.4153	-96.4	0.4153	143.6
30622 EIGHT MI230.0	0.0000	90.0	0.2604	30.8	0.0000	90.0	0.2604	30.8	0.2604	-89.2	0.2604	150.8
30625 TESLA D 230.0	0.0000	90.0	0.4808	39.1	0.0000	90.0	0.4808	39.1	0.4808	-80.9	0.4808	159.1
30630 NEWARK D230.0	0.0000	90.0	0.6508	29.6	0.0000	90.0	0.6508	29.6	0.6508	-90.4	0.6508	149.6
30670 WESTLEY 230.0	0.0000	90.0	0.4632	27.8	0.0000	90.0	0.4632	27.8	0.4632	-92.2	0.4632	147.8
30703 RAVENSWD230.0	0.0000	90.0	0.6699	26.1	0.0000	90.0	0.6699	26				

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 33011 ALHAMBRA115.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			14692.05			0.00	0.00 Ohms
Prefault voltage,	pu			1.0108				
Fault Current,	pu	21.929	-19.379	29.265	-41.5			
1 Seq impedance,	pu	0.0096	0.0332	0.0345	73.8	3.4396		

Current		Ck	[Near End pu	deg]	[Nr Amps]	[Far End pu	deg]	[Fr Amps]	[Z Ohms	deg]	At 33011 ALHAMBRA115.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To	33011 ALHAMBRA115.0															
From	33014 ALHAMTP1115.0	1	29.265	138.5	14692.0	29.265	-41.5	14692.0	0.1	45.0	0.0	0.0	14692.0	138.5	0.0	0.0

Voltage		[V0 Mag	Ang]	[V1 Mag	Ang]	[V2 Mag	Ang]	[Va Mag	Ang]	[Vb Mag	Ang]	[Vc Mag	Ang]
	33011 ALHAMBRA115.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	-30.0	0.0000	-150.0
	33014 ALHAMTP1115.0	0.0000	90.0	0.0207	3.5	0.0000	90.0	0.0207	3.5	0.0207	-116.5	0.0207	123.5

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30565 BRENTWOD230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			19016.53			0.00	0.00 Ohms
Prefault voltage,	pu			1.0135				
Fault Current,	pu	55.939	-51.088	75.757	-42.4			
1 Seq impedance,	pu	0.0021	0.0132	0.0134	81.1	6.3632		

Current	Ck	[Near End [pu	deg]	[Nr Amps]	[Far End [pu	deg]	[Fr Amps]	[Z [Ohms	deg]	At 30565 BRENTWOD230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30565 BRENTWOD230.0															
From 30525 C.COSTA 230.0	1	52.574	140.6	13197.2	52.564	-39.4	13194.5	7.3	81.6	0.0	0.0	13197.2	140.6	0.0	0.0
From 30569 KELSO 230.0	1	23.414	130.9	5877.4	23.400	-49.1	5873.8	13.0	82.1	0.0	0.0	5877.4	130.9	0.0	0.0

Voltage	[V0 [Mag	Ang]	[V1 [Mag	Ang]	[V2 [Mag	Ang]	[Va [Mag	Ang]	[Vb [Mag	Ang]	[Vc [Mag	Ang]
30565 BRENTWOD230.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
30525 C.COSTA 230.0	0.0000	90.0	0.7239	42.1	0.0000	90.0	0.7239	42.1	0.7239	-77.9	0.7239	162.1
30569 KELSO 230.0	0.0000	90.0	0.5760	33.0	0.0000	90.0	0.5760	33.0	0.5760	-87.0	0.5760	153.0
0.0000 90.0 0.0057 42.4 0.0000 90.0 0.0057 42.4 0.0057 -77.6 0.0057 162.4												
30523 CC SUB 230.0	0.0000	90.0	0.0584	44.3	0.0000	90.0	0.0584	44.3	0.0584	-75.7	0.0584	164.3
30479 BDLSWSTA230.0	0.0000	90.0	0.3189	44.8	0.0000	90.0	0.3189	44.8	0.3189	-75.2	0.3189	164.8
30543 ROSSTAP1230.0	0.0000	90.0	0.4345	29.4	0.0000	90.0	0.4345	29.4	0.4345	-90.6	0.4345	149.4
30544 ROSSTAP2230.0	0.0000	90.0	0.4352	29.6	0.0000	90.0	0.4352	29.6	0.4352	-90.4	0.4352	149.6
30565 BRENTWOD230.0	0.0000	90.0	0.2101	30.9	0.0000	90.0	0.2101	30.9	0.2101	-89.1	0.2101	150.9
30567 LONETREE230.0	0.0000	90.0	0.0749	22.2	0.0000	90.0	0.0749	22.2	0.0749	-97.8	0.0749	142.2
30575 WND MSTR230.0	0.0000	90.0	0.5101	32.4	0.0000	90.0	0.5101	32.4	0.5101	-87.6	0.5101	152.4
30585 LS PSTAS230.0	0.0000	90.0	0.4088	22.8	0.0000	90.0	0.4088	22.8	0.4088	-97.2	0.4088	142.8
99980 MIRPKCC1230.0	0.0000	90.0	0.0026	55.0	0.0000	90.0	0.0026	55.0	0.0026	-65.0	0.0026	175.0
99981 MIRPKCC2230.0	0.0000	90.0	0.0024	56.5	0.0000	90.0	0.0024	56.5	0.0024	-63.5	0.0024	176.5
99985 MIRCCCC1230.0	0.0000	90.0	0.0033	55.4	0.0000	90.0	0.0033	55.4	0.0033	-64.6	0.0033	175.4
99986 MIRCCCC2230.0	0.0000	90.0	0.0033	55.4	0.0000	90.0	0.0033	55.4	0.0033	-64.6	0.0033	175.4
33114 C.COS 4 13.8	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	-30.0	0.0000	-150.0
33115 C.COS 5 13.8	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
33116 C.COS 6 18.0	0.0000	90.0	0.3902	55.5	0.0000	90.0	0.3902	55.5	0.3902	-64.5	0.3902	175.5
33117 C.COS 7 18.0	0.0000	90.0	0.3902	55.5	0.0000	90.0	0.3902	55.5	0.3902	-64.5	0.3902	175.5

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30523 CC SUB 230.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			38282.33			0.00	0.00 Ohms
Prefault voltage,	pu			1.0165				
Fault Current,	pu	116.972	-97.858	152.508	-39.9			
1 Seq impedance,	pu	0.0010	0.0066	0.0067	81.4	6.5860		

Current	Ck	[Near End [pu	deg]	[Nr Amps]	[Far End [pu	deg]	[Fr Amps]	[Z [Ohms	deg]	At 30523 CC SUB 230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30523 CC SUB 230.0															
From 30479 BDLSWSTA230.0	1	29.084	143.8	7300.7	29.079	-36.2	7299.3	7.4	79.4	0.0	0.0	7300.7	143.8	0.0	0.0
From 30525 C.COSTA 230.0	1	119.503	139.1	29997.5	119.502	-40.9	29997.3	1.4	79.5	0.0	0.0	29997.5	139.1	0.0	0.0
From 33000 CC SUB 115.0	3	4.002	142.3	1004.5	3.851	-37.7	1933.5	5.1	88.6	0.0	0.0	1004.5	142.3	0.0	0.0

Voltage	[V0 [Mag	Ang]	[V1 [Mag	Ang]	[V2 [Mag	Ang]	[Va [Mag	Ang]	[Vb [Mag	Ang]	[Vc [Mag	Ang]
30523 CC SUB 230.0	0.0000	90.0	0.0000	0.0	0.0000	90.0	0.0000	0.0	0.0000	-120.0	0.0000	120.0
30479 BDLSWSTA230.0	0.0000	90.0	0.4089	43.2	0.0000	90.0	0.4089	43.2	0.4089	-76.8	0.4089	163.2
30525 C.COSTA 230.0	0.0000	90.0	0.3136	38.6	0.0000	90.0	0.3136	38.6	0.3136	-81.4	0.3136	158.6
33000 CC SUB 115.0	0.0000	90.0	0.1477	50.9	0.0000	90.0	0.1477	50.9	0.1477	-69.1	0.1477	170.9

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 33000 CC SUB 115.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			13861.17			0.00	0.00 Ohms
Prefault voltage,	pu			1.0470				
Fault Current,	pu	19.693	-19.352	27.610	-44.5			
1 Seq impedance,	pu	0.0024	0.0378	0.0379	86.4	15.7372		

Current	Ck	[Near End [pu	deg]	[Nr Amps]	[Far End [pu	deg]	[Fr Amps]	[Z [Ohms	deg]	At 33000 CC SUB 115.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 33000 CC SUB 115.0															
From 33046 FIBRJCT2115.0	1	0.840	143.2	421.6	0.840	-36.8	421.6	1.2	66.7	0.0	0.0	421.6	143.2	0.0	0.0
From 33047 CC JCT 115.0	1	2.143	146.3	1075.8	2.143	-33.7	1075.8	0.2	73.1	0.0	0.0	1075.8	146.3	0.0	0.0
From 30523 CC SUB 230.0	3	23.148	134.0	11621.4	24.057	-46.0	6038.9	18.8	88.6	0.0	0.0	11621.4	134.0	0.0	0.0
From 33050 CC SUB 60.0	1	1.536	139.5	771.3	1.478	-40.5	1422.0	8.4	84.9	0.0	0.0	771.3	139.5	0.0	0.0

Voltage	[V0 [Mag	Ang]	[V1 [Mag	Ang]	[V2 [Mag	Ang]	[Va [Mag	Ang]	[Vb [Mag	Ang]	[Vc [Mag	Ang]
33000 CC SUB 115.0	0.0000	90.0	0.0000	0.0	0.0000	90.0	0.0000	0.0	0.0000	-120.0	0.0000	120.0
33046 FIBRJCT2115.0	0.0000	90.0	0.0075	29.8	0.0000	90.0	0.0075	29.8	0.0075	-90.2	0.0075	149.8
33047 CC JCT 115.0	0.0000	90.0	0.0037	39.4	0.0000	90.0	0.0037	39.4	0.0037	-80.6	0.0037	159.4
30523 CC SUB 230.0	0.0000	90.0	0.8542	42.5	0.0000	90.0	0.8542	42.5	0.8542	-77.5	0.8542	162.5
33050 CC SUB 60.0	0.0000	90.0	0.3439	44.4	0.0000	90.0	0.3439	44.4	0.3439	-75.6	0.3439	164.4

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 32970 CLAYTN 115.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			28655.14			0.00	0.00 Ohms
Prefault voltage,	pu			1.0201				
Fault Current,	pu	39.461	-41.239	57.078	-46.3			
1 Seq impedance,	pu	0.0034	0.0175	0.0179	78.9	5.1109		

Current	Ck	[Near End [pu	deg]	[Nr Amps] [pu	deg]	[Far End [pu	deg]	[Fr Amps] [Ohms	deg]	[Z At 32970 CLAYTN 115.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 32970 CLAYTN 115.0															
From 32950 PITSBURG115.0	1	19.503	136.4	9791.2	19.500	-43.6	9789.6	3.3	79.1	0.0	0.0	9791.2	136.4	0.0	0.0
From 32950 PITSBURG115.0	4	14.850	133.3	7455.4	14.850	-46.7	7455.3	4.3	82.2	0.0	0.0	7455.4	133.3	0.0	0.0
From 32971 MEDW LNE115.0	1	1.584	124.6	795.3	1.584	-55.4	795.2	5.0	78.2	0.0	0.0	795.3	124.6	0.0	0.0
From 32974 LAKEWD-M115.0	2	3.279	128.6	1646.4	3.279	-51.4	1646.3	4.1	73.5	0.0	0.0	1646.4	128.6	0.0	0.0
From 33032 KIRKTAP1115.0	3	14.833	133.4	7446.5	14.831	-46.6	7445.7	3.6	81.6	0.0	0.0	7446.5	133.4	0.0	0.0
From 33035 LKWD_JCT115.0	1	3.089	130.4	1550.7	3.089	-49.6	1550.6	4.1	73.5	0.0	0.0	1550.7	130.4	0.0	0.0

Voltage	[V0 [Mag	Ang]	[V1 [Mag	Ang]	[V2 [Mag	Ang]	[Va [Mag	Ang]	[Vb [Mag	Ang]	[Vc [Mag	Ang]
32970 CLAYTN 115.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	-30.0	0.0000	-150.0
32950 PITSBURG115.0	0.0000	90.0	0.4797	35.5	0.0000	90.0	0.4797	35.5	0.4797	-84.5	0.4797	155.5
32950 PITSBURG115.0	0.0000	90.0	0.4797	35.5	0.0000	90.0	0.4797	35.5	0.4797	-84.5	0.4797	155.5
32971 MEDW LNE115.0	0.0000	90.0	0.0604	22.9	0.0000	90.0	0.0604	22.9	0.0604	-97.1	0.0604	142.9
32974 LAKEWD-M115.0	0.0000	90.0	0.1013	22.0	0.0000	90.0	0.1013	22.0	0.1013	-98.0	0.1013	142.0
33032 KIRKTAP1115.0	0.0000	90.0	0.4024	35.1	0.0000	90.0	0.4024	35.1	0.4024	-84.9	0.4024	155.1
33035 LKWD_JCT115.0	0.0000	90.0	0.0954	23.9	0.0000	90.0	0.0954	23.9	0.0954	-96.1	0.0954	143.9

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30528 DEC PTSG230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			48707.19			0.00	0.00 Ohms
Prefault voltage,	pu			1.0101				
Fault Current,	pu	138.647	-135.748	194.038	-44.4			
1 Seq impedance,	pu	0.0008	0.0051	0.0052	80.9	6.2495		

Current	Ck	[Near End [pu	deg]	[Nr Amps]	[Far End [pu	deg]	[Fr Amps]	[Z [Ohms	deg]	At 30528 DEC PTSG230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30528 DEC PTSG230.0															
From 30526 PITSBG D230.0	1	81.284	134.1	20403.8	81.284	-45.9	20403.8	0.8	70.5	0.0	0.0	20403.8	134.1	0.0	0.0
From 30526 PITSBG D230.0	2	81.284	134.1	20403.8	81.284	-45.9	20403.8	0.8	70.5	0.0	0.0	20403.8	134.1	0.0	0.0
From 33107 DEC STG1 24.0	1	10.085	143.3	2531.5	10.086	-36.7	24261.7	0.3	88.9	0.0	0.0	2531.5	143.3	0.0	0.0
From 33108 DEC CTG1 18.0	1	7.694	142.3	1931.3	7.695	-37.7	24680.0	0.2	88.8	0.0	0.0	1931.3	142.3	0.0	0.0
From 33109 DEC CTG2 18.0	1	7.015	143.7	1760.8	7.015	-36.3	22501.1	0.2	88.8	0.0	0.0	1760.8	143.7	0.0	0.0
From 33110 DEC CTG3 18.0	1	7.015	143.7	1760.8	7.015	-36.3	22501.1	0.2	88.8	0.0	0.0	1760.8	143.7	0.0	0.0

Voltage	[V0 [Mag	Ang]	[V1 [Mag	Ang]	[V2 [Mag	Ang]	[Va [Mag	Ang]	[Vb [Mag	Ang]	[Vc [Mag	Ang]
30528 DEC PTSG230.0	0.0000	90.0	0.0000	0.0	0.0000	90.0	0.0000	0.0	0.0000	-120.0	0.0000	120.0
30526 PITSBG D230.0	0.0000	90.0	0.1216	24.6	0.0000	90.0	0.1216	24.6	0.1216	-95.4	0.1216	144.6
30526 PITSBG D230.0	0.0000	90.0	0.1216	24.6	0.0000	90.0	0.1216	24.6	0.1216	-95.4	0.1216	144.6
33107 DEC STG1 24.0	0.0000	90.0	0.4728	52.1	0.0000	90.0	0.4728	52.1	0.4728	-67.9	0.4728	172.1
33108 DEC CTG1 18.0	0.0000	90.0	0.5011	51.1	0.0000	90.0	0.5011	51.1	0.5011	-68.9	0.5011	171.1
33109 DEC CTG2 18.0	0.0000	90.0	0.4569	52.5	0.0000	90.0	0.4569	52.5	0.4569	-67.5	0.4569	172.5
33110 DEC CTG3 18.0	0.0000	90.0	0.4569	52.5	0.0000	90.0	0.4569	52.5	0.4569	-67.5	0.4569	172.5

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 32973 LAKEWD-C115.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			19964.54			0.00	0.00 Ohms
Prefault voltage,	pu			1.0037				
Fault Current,	pu	28.361	-27.875	39.767	-44.5			
1 Seq impedance,	pu	0.0063	0.0244	0.0252	75.6	3.8901		

Current	Ck	[Near End [pu	deg]	[Nr Amps]	[Far End [pu	deg]	[Fr Amps]	[Z [Ohms	deg]	At 32973 LAKEWD-C115.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 32973 LAKEWD-C115.0															
From 33035 LKWD_JCT115.0	1	18.462	136.5	9268.6	18.462	-43.5	9268.6	0.1	45.0	0.0	0.0	9268.6	136.5	0.0	0.0
From 32974 LAKEWD-M115.0	1	21.310	134.6	10698.6	21.310	-45.4	10698.6	0.1	45.0	0.0	0.0	10698.6	134.6	0.0	0.0

Voltage	[V0 [Mag	Ang]	[V1 [Mag	Ang]	[V2 [Mag	Ang]	[Va [Mag	Ang]	[Vb [Mag	Ang]	[Vc [Mag	Ang]
32973 LAKEWD-C115.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
33035 LKWD_JCT115.0	0.0000	90.0	0.0131	1.5	0.0000	90.0	0.0131	1.5	0.0131	-118.5	0.0131	121.5
32974 LAKEWD-M115.0	0.0000	90.0	0.0151	-0.4	0.0000	90.0	0.0151	-0.4	0.0151	-120.4	0.0151	119.6

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 32974 LAKEWD-M115.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			19999.47			0.00	0.00 Ohms
Prefault voltage,	pu			1.0037				
Fault Current,	pu	28.361	-27.975	39.837	-44.6			
1 Seq impedance,	pu	0.0062	0.0244	0.0252	75.7	3.9194		

Current	Ck	[Near End [pu	deg]	[Nr Amps]	[Far End [pu	deg]	[Fr Amps]	[Z [Ohms	deg]	At 32974 LAKEWD-M115.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 32974 LAKEWD-M115.0															
From 32970 CLAYTN 115.0	2	12.616	137.5	6333.5	12.615	-42.5	6333.1	4.1	73.5	0.0	0.0	6333.5	137.5	0.0	0.0
From 32973 LAKEWD-C115.0	1	17.956	137.3	9014.6	17.956	-42.7	9014.6	0.1	45.0	0.0	0.0	9014.6	137.3	0.0	0.0
From 32976 LK_REACT115.0	9	9.345	128.8	4691.4	9.345	-51.2	4691.4	9.0	89.6	0.0	0.0	4691.4	128.8	0.0	0.0

Voltage	[V0 [Mag	Ang]	[V1 [Mag	Ang]	[V2 [Mag	Ang]	[Va [Mag	Ang]	[Vb [Mag	Ang]	[Vc [Mag	Ang]
32974 LAKEWD-M115.0	0.0000	90.0	0.0000	0.0	0.0000	90.0	0.0000	0.0	0.0000	-120.0	0.0000	120.0
32970 CLAYTN 115.0	0.0000	90.0	0.3895	30.9	0.0000	90.0	0.3895	30.9	0.3895	-89.1	0.3895	150.9
32973 LAKEWD-C115.0	0.0000	90.0	0.0127	2.3	0.0000	90.0	0.0127	2.3	0.0127	-117.7	0.0127	122.3
32976 LK_REACT115.0	0.0000	90.0	0.6355	38.4	0.0000	90.0	0.6355	38.4	0.6355	-81.6	0.6355	158.4

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 32978 LMEC 115.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			45901.33			0.00	0.00 Ohms
Prefault voltage,	pu			1.0381				
Fault Current,	pu	62.056	-67.146	91.430	-47.3			
1 Seq impedance,	pu	0.0015	0.0113	0.0114	82.4	7.4800		

Current	Ck	[Near End pu	deg]	[Nr Amps]	[Far End pu	deg]	[Fr Amps]	[Z Ohms	deg]	At 32978 LMEC 115.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 32978 LMEC 115.0															
From 32950 PITSBURG115.0	1	34.930	130.9	17536.1	34.929	-49.1	17535.6	0.4	79.1	0.0	0.0	17536.1	130.9	0.0	0.0
From 32950 PITSBURG115.0	2	34.930	130.9	17536.1	34.929	-49.1	17535.6	0.4	79.1	0.0	0.0	17536.1	130.9	0.0	0.0
From 33111 LMECCT2 18.0	1	7.177	137.8	3603.0	7.177	-42.2	23020.6	0.2	88.6	0.0	0.0	3603.0	137.8	0.0	0.0
From 33112 LMECCT1 18.0	1	7.177	137.8	3603.0	7.177	-42.2	23020.6	0.2	88.6	0.0	0.0	3603.0	137.8	0.0	0.0
From 33113 LMECST1 18.0	1	7.385	140.9	3707.4	7.385	-39.1	23688.3	0.2	89.0	0.0	0.0	3707.4	140.9	0.0	0.0

Voltage	[V0 Mag	Ang]	[V1 Mag	Ang]	[V2 Mag	Ang]	[Va Mag	Ang]	[Vb Mag	Ang]	[Vc Mag	Ang]
32978 LMEC 115.0	0.0000	90.0	0.0000	0.0	0.0000	90.0	0.0000	0.0	0.0000	-120.0	0.0000	120.0
32950 PITSBURG115.0	0.0000	90.0	0.0925	30.0	0.0000	90.0	0.0925	30.0	0.0925	-90.0	0.0925	150.0
32950 PITSBURG115.0	0.0000	90.0	0.0925	30.0	0.0000	90.0	0.0925	30.0	0.0925	-90.0	0.0925	150.0
33111 LMECCT2 18.0	0.0000	90.0	0.3446	46.4	0.0000	90.0	0.3446	46.4	0.3446	-73.6	0.3446	166.4
33112 LMECCT1 18.0	0.0000	90.0	0.3446	46.4	0.0000	90.0	0.3446	46.4	0.3446	-73.6	0.3446	166.4
33113 LMECST1 18.0	0.0000	90.0	0.3545	49.8	0.0000	90.0	0.3545	49.8	0.3545	-70.2	0.3545	169.8

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30550 MORAGA 230.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			31528.73			0.00	0.00 Ohms
Prefault voltage,	pu			0.9967				
Fault Current,	pu	87.338	-90.267	125.603	-45.9			
1 Seq impedance,	pu	0.0014	0.0078	0.0079	79.8	5.5583		

Current	Ck	[Near End [pu	deg]	[Nr Amps]	[Far End [pu	deg]	[Fr Amps]	[Z [Ohms	deg]	At 30550 MORAGA 230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30550 MORAGA 230.0															
From 30465 BAHIA 230.0	1	10.935	137.8	2744.8	10.919	-42.1	2741.0	19.1	81.4	0.0	0.0	2744.8	137.8	0.0	0.0
From 30467 PARKWAY 230.0	1	11.122	139.1	2791.8	11.106	-40.9	2787.8	19.8	81.4	0.0	0.0	2791.8	139.1	0.0	0.0
From 30543 ROSSTAP1230.0	1	19.551	141.8	4907.7	19.550	-38.2	4907.4	4.2	81.9	0.0	0.0	4907.7	141.8	0.0	0.0
From 30544 ROSSTAP2230.0	2	19.583	142.1	4915.7	19.581	-37.9	4915.3	4.2	81.9	0.0	0.0	4915.7	142.1	0.0	0.0
From 30554 CASTROVL230.0	1	15.772	124.5	3959.1	15.765	-55.5	3957.2	11.3	81.7	0.0	0.0	3959.1	124.5	0.0	0.0
From 30555 SANRAMON230.0	1	12.928	132.1	3245.2	12.914	-47.9	3241.7	17.0	82.6	0.0	0.0	3245.2	132.1	0.0	0.0
From 30551 MRAGA_1M 13.2	1	12.079	127.8	3032.1	12.079	-52.2	52832.0	0.0	89.7	0.0	0.0	3032.1	127.8	0.0	0.0
From 30552 MRAGA_2M 13.2	2	12.079	127.8	3032.1	12.079	-52.2	52832.0	0.0	89.7	0.0	0.0	3032.1	127.8	0.0	0.0
From 30553 MRAGA_3M 13.2	3	12.443	127.7	3123.4	12.443	-52.3	54422.6	0.0	89.7	0.0	0.0	3123.4	127.7	0.0	0.0

Voltage	[V0 [Mag	Ang]	[V1 [Mag	Ang]	[V2 [Mag	Ang]	[Va [Mag	Ang]	[Vb [Mag	Ang]	[Vc [Mag	Ang]
30550 MORAGA 230.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
30465 BAHIA 230.0	0.0000	90.0	0.3948	39.2	0.0000	90.0	0.3948	39.2	0.3948	-80.8	0.3948	159.2
30467 PARKWAY 230.0	0.0000	90.0	0.4151	40.5	0.0000	90.0	0.4151	40.5	0.4151	-79.5	0.4151	160.5
30543 ROSSTAP1230.0	0.0000	90.0	0.1554	43.7	0.0000	90.0	0.1554	43.7	0.1554	-76.3	0.1554	163.7
30544 ROSSTAP2230.0	0.0000	90.0	0.1557	44.0	0.0000	90.0	0.1557	44.0	0.1557	-76.0	0.1557	164.0
30554 CASTROVL230.0	0.0000	90.0	0.3363	26.1	0.0000	90.0	0.3363	26.1	0.3363	-93.9	0.3363	146.1
30555 SANRAMON230.0	0.0000	90.0	0.4143	34.7	0.0000	90.0	0.4143	34.7	0.4143	-85.3	0.4143	154.7
30551 MRAGA_1M 13.2	0.0000	90.0	0.3234	37.5	0.0000	90.0	0.3234	37.5	0.3234	-82.5	0.3234	157.5
30552 MRAGA_2M 13.2	0.0000	90.0	0.3234	37.5	0.0000	90.0	0.3234	37.5	0.3234	-82.5	0.3234	157.5
30553 MRAGA_3M 13.2	0.0000	90.0	0.3332	37.4	0.0000	90.0	0.3332	37.4	0.3332	-82.6	0.3332	157.4

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30537 NDUBLIN 230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			10407.88			0.00	0.00 Ohms
Prefault voltage,	pu			1.0156				
Fault Current,	pu	28.961	-29.671	41.463	-45.7			
1 Seq impedance,	pu	0.0045	0.0241	0.0245	79.5	5.3846		

Current	Ck	[Near End pu	deg]	[Nr Amps]	[Far End pu	deg]	[Fr Amps]	[Z Ohms	deg]	At 30537 NDUBLIN 230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30537 NDUBLIN 230.0															
From 30530 CAYETANO230.0	1	23.538	141.4	5908.4	23.526	-38.6	5905.5	2.9	82.5	0.0	0.0	5908.4	141.4	0.0	0.0
From 35224 VINEYD_D230.0	1	18.334	125.2	4602.3	18.195	-54.7	4567.3	12.1	81.3	0.0	0.0	4602.3	125.2	0.0	0.0

Voltage	[V0 Mag	Ang]	[V1 Mag	Ang]	[V2 Mag	Ang]	[Va Mag	Ang]	[Vb Mag	Ang]	[Vc Mag	Ang]
30537 NDUBLIN 230.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
30530 CAYETANO230.0	0.0000	90.0	0.1280	43.9	0.0000	90.0	0.1280	43.9	0.1280	-76.1	0.1280	163.9
35224 VINEYD_D230.0	0.0000	90.0	0.4152	26.6	0.0000	90.0	0.4152	26.6	0.4152	-93.4	0.4152	146.6

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30630 NEWARK D230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			46808.28			0.00	0.00 Ohms
Prefault voltage,	pu			1.0050				
Fault Current,	pu	120.018	-142.716	186.473	-49.9			
1 Seq impedance,	pu	0.0012	0.0052	0.0054	76.7	4.2419		

Current	Ck	[Near End [pu	deg]	[Nr Amps]	[Far End [pu	deg]	[Fr Amps]	[Z [Ohms	deg]	At 30630 NEWARK D230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30630 NEWARK D230.0															
From 30585 LS PSTAS230.0	1	12.091	142.2	3035.1	12.079	-37.8	3031.9	17.7	80.6	0.0	0.0	3035.1	142.2	0.0	0.0
From 30624 TESLA E 230.0	1	26.765	128.0	6718.5	26.720	-52.0	6707.2	14.9	87.2	0.0	0.0	6718.5	128.0	0.0	0.0
From 30631 NEWARK E230.0	1	89.250	133.4	22403.4	89.250	-46.6	22403.4	0.4	45.0	0.0	0.0	22403.4	133.4	0.0	0.0
From 30703 RAVENSWD230.0	1	30.198	121.1	7580.3	30.193	-58.9	7579.0	6.7	85.8	0.0	0.0	7580.3	121.1	0.0	0.0
From 35219 VINEYARD230.0	1	9.570	143.1	2402.2	9.526	-36.9	2391.1	13.2	80.8	0.0	0.0	2402.2	143.1	0.0	0.0
From 30627 NWRK_9M 13.2	9	9.998	119.1	2509.7	9.778	-60.9	42767.8	0.1	89.7	0.0	0.0	2509.7	119.1	0.0	0.0
From 30626 NWRK_7M 13.2	7	10.125	116.4	2541.5	9.905	-63.6	43322.0	0.1	90.0	0.0	0.0	2541.5	116.4	0.0	0.0

Voltage	[V0 Mag	Ang]	[V1 Mag	Ang]	[V2 Mag	Ang]	[Va Mag	Ang]	[Vb Mag	Ang]	[Vc Mag	Ang]
30630 NEWARK D230.0	0.0000	90.0	0.0000	-90.0	0.0000	90.0	0.0000	-90.0	0.0000	150.0	0.0000	30.0
30585 LS PSTAS230.0	0.0000	90.0	0.4039	42.8	0.0000	90.0	0.4039	42.8	0.4039	-77.2	0.4039	162.8
30624 TESLA E 230.0	0.0000	90.0	0.7522	35.2	0.0000	90.0	0.7522	35.2	0.7522	-84.8	0.7522	155.2
30631 NEWARK E230.0	0.0000	90.0	0.0631	-1.6	0.0000	90.0	0.0631	-1.6	0.0631	-121.6	0.0631	118.4
30703 RAVENSWD230.0	0.0000	90.0	0.3797	27.0	0.0000	90.0	0.3797	27.0	0.3797	-93.0	0.3797	147.0
35219 VINEYARD230.0	0.0000	90.0	0.2374	43.9	0.0000	90.0	0.2374	43.9	0.2374	-76.1	0.2374	163.9
30627 NWRK_9M 13.2	0.0000	90.0	0.3194	28.8	0.0000	90.0	0.3194	28.8	0.3194	-91.2	0.3194	148.8
30626 NWRK_7M 13.2	0.0000	90.0	0.3041	26.4	0.0000	90.0	0.3041	26.4	0.3041	-93.6	0.3041	146.4

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30631 NEWARK E230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			46885.49			0.00	0.00 Ohms
Prefault voltage,	pu			1.0049				
Fault Current,	pu	120.548	-142.671	186.781	-49.8			
1 Seq impedance,	pu	0.0012	0.0052	0.0054	76.6	4.2070		

Current	Ck	[Near End [pu	deg]	[Nr Amps]	[Far End [pu	deg]	[Fr Amps]	[Z [Ohms	deg]	At 30631 NEWARK E230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30631 NEWARK E230.0															
From 30554 CASTROVL230.0	1	14.019	135.4	3519.1	14.005	-44.6	3515.6	16.2	81.6	0.0	0.0	3519.1	135.4	0.0	0.0
From 30562 TES JCT 230.0	1	11.039	136.1	2771.0	11.022	-43.9	2766.6	21.1	82.5	0.0	0.0	2771.0	136.1	0.0	0.0
From 30630 NEWARK D230.0	1	89.497	130.7	22465.5	89.497	-49.3	22465.5	0.4	45.0	0.0	0.0	22465.5	130.7	0.0	0.0
From 30635 NWK DIST230.0	1	33.984	126.9	8530.6	33.984	-53.1	8530.6	0.2	81.9	0.0	0.0	8530.6	126.9	0.0	0.0
From 30655 ADCC 230.0	2	26.784	134.3	6723.4	26.748	-45.7	6714.2	11.9	83.5	0.0	0.0	6723.4	134.3	0.0	0.0
From 30628 NWRK_11M 13.2	11	12.106	115.3	3038.9	11.840	-64.7	51786.6	0.0	89.4	0.0	0.0	3038.9	115.3	0.0	0.0

Voltage	[V0 [Mag	Ang]	[V1 [Mag	Ang]	[V2 [Mag	Ang]	[Va [Mag	Ang]	[Vb [Mag	Ang]	[Vc [Mag	Ang]
30631 NEWARK E230.0	0.0000	90.0	0.0000	180.0	0.0000	90.0	0.0000	180.0	0.0000	60.0	0.0000	-60.0
30554 CASTROVL230.0	0.0000	90.0	0.4298	37.0	0.0000	90.0	0.4298	37.0	0.4298	-83.0	0.4298	157.0
30562 TES JCT 230.0	0.0000	90.0	0.4397	38.6	0.0000	90.0	0.4397	38.6	0.4397	-81.4	0.4397	158.6
30630 NEWARK D230.0	0.0000	90.0	0.0633	-4.3	0.0000	90.0	0.0633	-4.3	0.0633	-124.3	0.0633	115.7
30635 NWK DIST230.0	0.0000	90.0	0.0120	28.8	0.0000	90.0	0.0120	28.8	0.0120	-91.2	0.0120	148.8
30655 ADCC 230.0	0.0000	90.0	0.6030	37.8	0.0000	90.0	0.6030	37.8	0.6030	-82.2	0.6030	157.8
30628 NWRK_11M 13.2	0.0000	90.0	0.3226	24.8	0.0000	90.0	0.3226	24.8	0.3226	-95.2	0.3226	144.8
.4												
38950 VSC_PTSB180.5	0.0000	90.0	0.5193	21.5	0.0000	90.0	0.5193	21.5	0.5193	-98.5	0.5193	141.5
0.0000	90.0	0.7688	22.1	0.7688	-97.9	0.7688	142.1					
30000 PTSB 7 20.0	0.0000	90.0	0.2419	53.2	0.0000	90.0	0.2419	53.2	0.2419	-66.8	0.2419	173.2
33105 PTSB 5 18.0	0.0000	90.0	0.3710	49.9	0.0000	90.0	0.3710	49.9	0.3710	-70.1	0.3710	169.9
33105 PTSB 5 18.0	0.0000	90.0	0.3710	49.9	0.0000	90.0	0.3710	49.9	0.3710	-70.1	0.3710	169.9
33106 PTSB 6 18.0	0.0000	90.0	0.4603	48.5	0.0000	90.0	0.4603	48.5	0.4603	-71.5	0.4603	168.5
33106 PTSB 6 18.0	0.0000	90.0	0.4603	48.5	0.0000	90.0	0.4603	48.5	0.4603	-71.5	0.4603	168.5
0 0.0105 -90.0 0.0105 150.0												
33033 KIRKTAP2115.0	0.0000	90.0	0.0114	29.9	0.0000	90.0	0.0114	29.9	0.0114	-90.1	0.0114	149.9
30526 PITSBG D230.0	0.0000	90.0	0.6694	39.1	0.0000	90.0	0.6694	39.1	0.6694	-80.9	0.6694	159.1
30526 PITSBG D230.0	0.0000	90.0	0.6694	39.1	0.0000	90.0	0.6694	39.1	0.6694	-80.9	0.6694	159.1

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30545 ROSSMOOR230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			18382.99			0.00	0.00 Ohms
Prefault voltage,	pu			0.9978				
Fault Current,	pu	52.474	-51.085	73.233	-44.2			
1 Seq impedance,	pu	0.0025	0.0134	0.0136	79.4	5.3360		

	Current	Ck	[Near End	]	[Nr Amps]	[Far End	]	[Fr Amps]	[Z	]	At 30545 ROSSMOOR230.0					
			[pu	deg]		[pu	deg]		[Ohms	deg]	[0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To	30545 ROSSMOOR230.0															
From	30543 ROSSTAP1230.0	1	73.233	135.8	18383.0	73.233	-44.2	18383.0	0.8	70.3	0.0	0.0	18383.0	135.8	0.0	0.0

Voltage		[V0	]	[V1	]	[V2	]	[Va	]	[Vb	]	[Vc	]
		[Mag	Ang]	[Mag	Ang]	[Mag	Ang]	[Mag	Ang]	[Mag	Ang]	[Mag	Ang]
30545	ROSSMOOR230.0	0.0000	90.0	0.0000	45.0	0.0000	90.0	0.0000	45.0	0.0000	-75.0	0.0000	165.0
30543	ROSSTAP1230.0	0.0000	90.0	0.1089	26.1	0.0000	90.0	0.1089	26.1	0.1089	-93.9	0.1089	146.1

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30700 SANMATEO230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]	
Fault Current,	Amps			29650.19			0.00	0.00	Ohms
Prefault voltage,	pu			1.0205					
Fault Current,	pu	67.942	-96.623	118.119	-54.9				
1 Seq impedance,	pu	0.0017	0.0085	0.0086	78.9	5.1008			

Current	Ck	[Near End pu	deg]	[Nr Amps]	[Far End pu	deg]	[Fr Amps]	[Z Ohms	deg]	At 30700 SANMATEO230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30700 SANMATEO230.0															
From 30560 E. SHORE230.0	1	22.149	134.7	5559.7	22.141	-45.3	5557.9	9.8	82.0	0.0	0.0	5559.7	134.7	0.0	0.0
From 30527 PITSBG E230.0	1	9.816	135.1	2464.1	9.769	-44.9	2452.2	47.6	83.4	0.0	0.0	2464.1	135.1	0.0	0.0
From 30695 MARTIN C230.0	1	10.282	114.6	2581.0	10.016	-65.3	2514.3	19.7	86.5	0.0	0.0	2581.0	114.6	0.0	0.0
From 30703 RAVENSWD230.0	1	23.810	124.7	5976.8	23.802	-55.3	5974.8	7.1	85.1	0.0	0.0	5976.8	124.7	0.0	0.0
From 30703 RAVENSWD230.0	2	23.810	124.7	5976.8	23.802	-55.3	5974.8	7.1	85.1	0.0	0.0	5976.8	124.7	0.0	0.0
From 30701 SMATEO5M 13.2	5	9.386	119.0	2356.1	9.386	-61.0	41053.2	0.0	90.0	0.0	0.0	2356.1	119.0	0.0	0.0
From 30702 SMATEO6M 13.2	6	9.408	119.0	2361.5	9.408	-61.0	41147.7	0.0	90.0	0.0	0.0	2361.5	119.0	0.0	0.0
From 30704 SMATEO7M 13.2	7	10.262	118.8	2575.9	10.262	-61.2	44882.6	0.0	90.0	0.0	0.0	2575.9	118.8	0.0	0.0

Voltage	[V0 Mag	Ang]	[V1 Mag	Ang]	[V2 Mag	Ang]	[Va Mag	Ang]	[Vb Mag	Ang]	[Vc Mag	Ang]
30700 SANMATEO230.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
30560 E. SHORE230.0	0.0000	90.0	0.4116	36.7	0.0000	90.0	0.4116	36.7	0.4116	-83.3	0.4116	156.7
30527 PITSBG E230.0	0.0000	90.0	0.8796	38.5	0.0000	90.0	0.8796	38.5	0.8796	-81.5	0.8796	158.5
30695 MARTIN C230.0	0.0000	90.0	0.3736	21.2	0.0000	90.0	0.3736	21.2	0.3736	-98.8	0.3736	141.2
30703 RAVENSWD230.0	0.0000	90.0	0.3207	29.8	0.0000	90.0	0.3207	29.8	0.3207	-90.2	0.3207	149.8
30703 RAVENSWD230.0	0.0000	90.0	0.3207	29.8	0.0000	90.0	0.3207	29.8	0.3207	-90.2	0.3207	149.8
30701 SMATEO5M 13.2	0.0000	90.0	0.2626	29.0	0.0000	90.0	0.2626	29.0	0.2626	-91.0	0.2626	149.0
30702 SMATEO6M 13.2	0.0000	90.0	0.2604	29.0	0.0000	90.0	0.2604	29.0	0.2604	-91.0	0.2604	149.0
30704 SMATEO7M 13.2	0.0000	90.0	0.2594	28.8	0.0000	90.0	0.2594	28.8	0.2594	-91.2	0.2594	148.8

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30540 SOBRANTE230.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			30692.36			0.00	0.00 Ohms
Prefault voltage,	pu			1.0000				
Fault Current,	pu	80.592	-91.952	122.271	-48.8			
1 Seq impedance,	pu	0.0010	0.0081	0.0082	83.1	8.2158		

Current	Ck	[Near End [pu	deg]	[Nr Amps]	[Far End [pu	deg]	[Fr Amps]	[Z [Ohms	deg]	At 30540 SOBRANTE230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30540 SOBRANTE230.0															
From 30435 LAKEVILE230.0	2	12.289	131.2	3084.8	12.228	-48.8	3069.6	26.2	87.2	0.0	0.0	3084.8	131.2	0.0	0.0
From 30437 CROCKETT230.0	1	17.004	134.7	4268.3	17.000	-45.3	4267.4	5.7	86.0	0.0	0.0	4268.3	134.7	0.0	0.0
From 30535 TIDEWATR230.0	1	32.665	131.6	8199.6	32.658	-48.4	8197.8	5.2	86.9	0.0	0.0	8199.6	131.6	0.0	0.0
From 30536 TESORO 230.0	1	28.958	131.8	7268.9	28.948	-48.2	7266.4	6.5	87.1	0.0	0.0	7268.9	131.8	0.0	0.0
From 33010 SOBRANTE115.0	1	16.153	128.5	4054.6	15.802	-51.5	7933.3	3.2	88.9	0.0	0.0	4054.6	128.5	0.0	0.0
From 33010 SOBRANTE115.0	2	15.271	128.5	3833.2	14.940	-51.5	7500.3	3.4	89.0	0.0	0.0	3833.2	128.5	0.0	0.0

Voltage	[V0 [Mag	Ang]	[V1 [Mag	Ang]	[V2 [Mag	Ang]	[Va [Mag	Ang]	[Vb [Mag	Ang]	[Vc [Mag	Ang]
30540 SOBRANTE230.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
30435 LAKEVILE230.0	0.0000	90.0	0.6056	38.4	0.0000	90.0	0.6056	38.4	0.6056	-81.6	0.6056	158.4
30437 CROCKETT230.0	0.0000	90.0	0.1843	40.6	0.0000	90.0	0.1843	40.6	0.1843	-79.4	0.1843	160.6
30535 TIDEWATR230.0	0.0000	90.0	0.3216	38.5	0.0000	90.0	0.3216	38.5	0.3216	-81.5	0.3216	158.5
30536 TESORO 230.0	0.0000	90.0	0.3537	39.0	0.0000	90.0	0.3537	39.0	0.3537	-81.0	0.3537	159.0
33010 SOBRANTE115.0	0.0000	90.0	0.3830	37.5	0.0000	90.0	0.3830	37.5	0.3830	-82.5	0.3830	157.5
33010 SOBRANTE115.0	0.0000	90.0	0.3830	37.5	0.0000	90.0	0.3830	37.5	0.3830	-82.5	0.3830	157.5
0.0000 90.0 0.1727	30.3	0.0000	90.0	0.1727	30.3	0.1727	-89.7	0.1727	150.3			
32808 SNPBLTP2115.0	0.0000	90.0	0.1506	30.3	0.0000	90.0	0.1506	30.3	0.1506	-89.7	0.1506	150.3
33006 GRIZLYJ1115.0	0.0000	90.0	0.0073	1.2	0.0000	90.0	0.0073	1.2	0.0073	-118.8	0.0073	121.2
33008 GRIZLYJ2115.0	0.0000	90.0	0.0051	-0.4	0.0000	90.0	0.0051	-0.4	0.0051	-120.4	0.0051	119.6
33014 ALHAMTP1115.0	0.0000	90.0	0.3966	32.6	0.0000	90.0	0.3966	32.6	0.3966	-87.4	0.3966	152.6
33020 MORAGA 115.0	0.0000	90.0	0.4393	30.4	0.0000	90.0	0.4393	30.4	0.4393	-89.6	0.4393	150.4
30540 SOBRANTE230.0	0.0000	90.0	0.5029	38.8	0.0000	90.0	0.5029	38.8	0.5029	-81.2	0.5029	158.8
30540 SOBRANTE230.0	0.0000	90.0	0.5029	38.8	0.0000	90.0	0.5029	38.8	0.5029	-81.2	0.5029	158.8

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30561 TASSAJAR230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			12596.14			0.00	0.00 Ohms
Prefault voltage,	pu			0.9896				
Fault Current,	pu	34.339	-36.590	50.180	-46.8			
1 Seq impedance,	pu	0.0041	0.0193	0.0197	78.1	4.7333		

Current	Ck	[Near End pu	deg]	[Nr Amps]	[Far End pu	deg]	[Fr Amps]	[Z Ohms	deg]	At 30561 TASSAJAR230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30561 TASSAJAR230.0															
From 30526 PITSBG D230.0	1	31.771	138.4	7975.1	31.750	-41.6	7969.9	14.0	78.2	0.0	0.0	7975.1	138.4	0.0	0.0
From 30562 TES JCT 230.0	1	18.770	124.3	4711.6	18.769	-55.7	4711.4	3.6	82.9	0.0	0.0	4711.6	124.3	0.0	0.0

Voltage	[V0 Mag	Ang]	[V1 Mag	Ang]	[V2 Mag	Ang]	[Va Mag	Ang]	[Vb Mag	Ang]	[Vc Mag	Ang]
30561 TASSAJAR230.0	0.0000	90.0	0.0000	-90.0	0.0000	90.0	0.0000	-90.0	0.0000	150.0	0.0000	30.0
30526 PITSBG D230.0	0.0000	90.0	0.8406	36.7	0.0000	90.0	0.8406	36.7	0.8406	-83.3	0.8406	156.7
30562 TES JCT 230.0	0.0000	90.0	0.1267	27.1	0.0000	90.0	0.1267	27.1	0.1267	-92.9	0.1267	147.1

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30640 TESLA C 230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			41201.03			0.00	0.00 Ohms
Prefault voltage,	pu			1.0209				
Fault Current,	pu	104.924	-126.219	164.135	-50.3			
1 Seq impedance,	pu	0.0006	0.0062	0.0062	84.1	9.7539		

Current	Ck	[Near End pu	deg]	[Nr Amps]	[Far End pu	deg]	[Fr Amps]	[Z Ohms	deg]	At 30640 TESLA C 230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30640 TESLA C 230.0															
From 30595 FLOWIND2230.0	1	17.563	135.4	4408.7	17.562	-44.6	4408.5	3.5	81.8	0.0	0.0	4408.7	135.4	0.0	0.0
From 30600 TRES VAQ230.0	2	17.209	135.6	4319.9	17.206	-44.4	4319.1	6.9	81.9	0.0	0.0	4319.9	135.6	0.0	0.0
From 30625 TESLA D 230.0	1	43.180	128.3	10839.0	43.180	-51.7	10839.0	8.3	88.2	0.0	0.0	10839.0	128.3	0.0	0.0
From 30655 ADCC 230.0	2	27.620	123.8	6933.2	27.620	-56.2	6933.1	1.5	84.4	0.0	0.0	6933.2	123.8	0.0	0.0
From 33856 TESLA 6M 13.8	6	58.900	130.2	14785.1	60.197	-49.8	251842.9	0.0	89.5	0.0	0.0	14785.1	130.2	0.0	0.0

Voltage	[V0 Mag	Ang]	[V1 Mag	Ang]	[V2 Mag	Ang]	[Va Mag	Ang]	[Vb Mag	Ang]	[Vc Mag	Ang]
30640 TESLA C 230.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
30595 FLOWIND2230.0	0.0000	90.0	0.1150	37.2	0.0000	90.0	0.1150	37.2	0.1150	-82.8	0.1150	157.2
30600 TRES VAQ230.0	0.0000	90.0	0.2230	37.4	0.0000	90.0	0.2230	37.4	0.2230	-82.6	0.2230	157.4
30625 TESLA D 230.0	0.0000	90.0	0.6740	36.5	0.0000	90.0	0.6740	36.5	0.6740	-83.5	0.6740	156.5
30655 ADCC 230.0	0.0000	90.0	0.0791	28.2	0.0000	90.0	0.0791	28.2	0.0791	-91.8	0.0791	148.2
33856 TESLA 6M 13.8	0.0000	90.0	0.3592	39.7	0.0000	90.0	0.3592	39.7	0.3592	-80.3	0.3592	159.7

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30625 TESLA D 230.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			63050.70			0.00	0.00 Ohms
Prefault voltage,	pu			1.0226				
Fault Current,	pu	165.919	-188.578	251.179	-48.7			
1 Seq impedance,	pu	0.0005	0.0040	0.0041	82.4	7.4983		

Current	Ck	[Near End pu	deg]	[Nr Amps]	[Far End pu	deg]	[Fr Amps]	[Z Ohms	deg]	At 30625 TESLA D 230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30625 TESLA D 230.0															
From 30570 USWP-RLF230.0	1	15.225	141.3	3821.9	15.224	-38.7	3821.6	4.2	81.4	0.0	0.0	3821.9	141.3	0.0	0.0
From 30580 ALTM MDW230.0	1	20.891	140.9	5244.0	20.890	-39.1	5243.7	3.5	81.0	0.0	0.0	5244.0	140.9	0.0	0.0
From 30624 TESLA E 230.0	1	59.905	126.6	15037.4	59.905	-53.4	15037.4	4.0	86.2	0.0	0.0	15037.4	126.6	0.0	0.0
From 30640 TESLA C 230.0	1	31.161	129.9	7821.9	31.161	-50.1	7821.9	8.3	88.2	0.0	0.0	7821.9	129.9	0.0	0.0
From 37585 TRCY PMP230.0	1	32.456	130.8	8147.0	32.453	-49.2	8146.4	4.5	81.9	0.0	0.0	8147.0	130.8	0.0	0.0
From 37585 TRCY PMP230.0	2	32.456	130.8	8147.0	32.453	-49.2	8146.4	4.5	81.9	0.0	0.0	8147.0	130.8	0.0	0.0
From 33540 TESLA 115.0	1	5.894	130.2	1479.6	5.768	-49.8	2895.6	5.4	89.4	0.0	0.0	1479.6	130.2	0.0	0.0
From 33540 TESLA 115.0	3	5.894	130.2	1479.6	5.768	-49.8	2895.6	5.4	89.4	0.0	0.0	1479.6	130.2	0.0	0.0
From 33854 TESLA 4M 13.8	4	48.044	131.9	12059.9	49.101	-48.1	205420.6	0.0	89.5	0.0	0.0	12059.9	131.9	0.0	0.0

Voltage	[V0 Mag	Ang]	[V1 Mag	Ang]	[V2 Mag	Ang]	[Va Mag	Ang]	[Vb Mag	Ang]	[Vc Mag	Ang]
30625 TESLA D 230.0	0.0000	90.0	0.0000	180.0	0.0000	90.0	0.0000	180.0	0.0000	60.0	0.0000	-60.0
30570 USWP-RLF230.0	0.0000	90.0	0.1203	42.8	0.0000	90.0	0.1203	42.8	0.1203	-77.2	0.1203	162.8
30580 ALTM MDW230.0	0.0000	90.0	0.1381	42.0	0.0000	90.0	0.1381	42.0	0.1381	-78.0	0.1381	162.0
30624 TESLA E 230.0	0.0000	90.0	0.4539	32.8	0.0000	90.0	0.4539	32.8	0.4539	-87.2	0.4539	152.8
30640 TESLA C 230.0	0.0000	90.0	0.4864	38.1	0.0000	90.0	0.4864	38.1	0.4864	-81.9	0.4864	158.1
37585 TRCY PMP230.0	0.0000	90.0	0.2747	32.8	0.0000	90.0	0.2747	32.8	0.2747	-87.2	0.2747	152.8
37585 TRCY PMP230.0	0.0000	90.0	0.2747	32.8	0.0000	90.0	0.2747	32.8	0.2747	-87.2	0.2747	152.8
33540 TESLA 115.0	0.0000	90.0	0.2363	39.6	0.0000	90.0	0.2363	39.6	0.2363	-80.4	0.2363	159.6
33540 TESLA 115.0	0.0000	90.0	0.2363	39.6	0.0000	90.0	0.2363	39.6	0.2363	-80.4	0.2363	159.6
33854 TESLA 4M 13.8	0.0000	90.0	0.2790	41.4	0.0000	90.0	0.2790	41.4	0.2790	-78.6	0.2790	161.4
.1 0.6699 -93.9 0.6699 146.1												
30632 TESL_GEN230.0	0.0000	90.0	0.0128	40.5	0.0000	90.0	0.0128	40.5	0.0128	-79.5	0.0128	160.5
30632 TESL_GEN230.0	0.0000	90.0	0.0128	40.5	0.0000	90.0	0.0128	40.5	0.0128	-79.5	0.0128	160.5
33852 TESLA 2M 13.8	0.0000	90.0	0.1431	-136.7	0.0000	90.0	0.1431	-136.7	0.1431	103.3	0.1431	-16.7

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30535 TIDEWATR230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			26096.62			0.00	0.00 Ohms
Prefault voltage,	pu			1.0037				
Fault Current,	pu	67.892	-78.733	103.963	-49.2			
1 Seq impedance,	pu	0.0010	0.0096	0.0097	84.1	9.7206		

Current	Ck	[Near End pu	deg]	[Nr Amps]	[Far End pu	deg]	[Fr Amps]	[Z Ohms	deg]	At 30535 TIDEWATR230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30535 TIDEWATR230.0															
From 30527 PITSBG E230.0	1	57.585	131.6	14455.0	57.571	-48.4	14451.3	5.8	87.2	0.0	0.0	14455.0	131.6	0.0	0.0
From 30540 SOBRANTE230.0	1	42.634	129.5	10701.9	42.625	-50.5	10699.6	5.2	86.9	0.0	0.0	10701.9	129.5	0.0	0.0
From 33151 FOSTER W 12.5	1	1.881	132.5	472.1	1.881	-47.5	8707.1	0.5	90.0	0.0	0.0	472.1	132.5	0.0	0.0
From 33151 FOSTER W 12.5	2	1.881	132.5	472.1	1.881	-47.5	8707.1	0.5	90.0	0.0	0.0	472.1	132.5	0.0	0.0

Voltage	[V0 Mag	Ang]	[V1 Mag	Ang]	[V2 Mag	Ang]	[Va Mag	Ang]	[Vb Mag	Ang]	[Vc Mag	Ang]
30535 TIDEWATR230.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
30527 PITSBG E230.0	0.0000	90.0	0.6330	38.8	0.0000	90.0	0.6330	38.8	0.6330	-81.2	0.6330	158.8
30540 SOBRANTE230.0	0.0000	90.0	0.4197	36.4	0.0000	90.0	0.4197	36.4	0.4197	-83.6	0.4197	156.4
33151 FOSTER W 12.5	0.0000	90.0	0.6018	42.5	0.0000	90.0	0.6018	42.5	0.6018	-77.5	0.6018	162.5
33151 FOSTER W 12.5	0.0000	90.0	0.6018	42.5	0.0000	90.0	0.6018	42.5	0.6018	-77.5	0.6018	162.5

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30600 TRES VAQ230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			19159.24			0.00	0.00 Ohms
Prefault voltage,	pu			1.0181				
Fault Current,	pu	51.159	-56.642	76.326	-47.9			
1 Seq impedance,	pu	0.0018	0.0132	0.0133	82.5	7.5506		

Current	Ck	[Near End pu	deg]	[Nr Amps]	[Far End pu	deg]	[Fr Amps]	[Z Ohms	deg]	At 30600 TRES VAQ230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30600 TRES VAQ230.0															
From 30527 PITSBG E230.0	2	26.103	134.7	6552.3	26.075	-45.3	6545.3	16.8	81.9	0.0	0.0	6552.3	134.7	0.0	0.0
From 30640 TESLA C 230.0	2	50.263	130.7	12617.0	50.254	-49.2	12614.8	6.9	81.9	0.0	0.0	12617.0	130.7	0.0	0.0
From 33171 TRSVQ+NW 9.1	1	0.000	180.0	0.0	0.000	0.0	0.0	999.9	90.0	0.0	0.0	0.0	180.0	0.0	0.0

Voltage	[V0 Mag	Ang]	[V1 Mag	Ang]	[V2 Mag	Ang]	[Va Mag	Ang]	[Vb Mag	Ang]	[Vc Mag	Ang]
30600 TRES VAQ230.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	-30.0	0.0000	-150.0
30527 PITSBG E230.0	0.0000	90.0	0.8287	36.5	0.0000	90.0	0.8287	36.5	0.8287	-83.5	0.8287	156.5
30640 TESLA C 230.0	0.0000	90.0	0.6514	32.6	0.0000	90.0	0.6514	32.6	0.6514	-87.4	0.6514	152.6
33171 TRSVQ+NW 9.1	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	-30.0	0.0000	-150.0

PG&E 2008 TRANSMISSION EXPANSION PLAN ASSESSMENT
2013 SUMPK: SYSTEM CASE (1-IN-10 LOAD)
COI=4800(n2s); P26=4000(n2s); PDCI=3100(n2s)
********** THREE PHASE FAULT **********
Equivalent Fault Impedance to Ground, pu: 0.0000 + j 0.0000

At 30575 WND MSTR230.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			21922.05			0.00	0.00 Ohms
Prefault voltage,	pu			1.0198				
Fault Current,	pu	61.564	-61.942	87.332	-45.2			
1 Seq impedance,	pu	0.0017	0.0116	0.0117	81.8	6.9263		

Current	Ck	[Near End pu	deg]	[Nr Amps]	[Far End pu	deg]	[Fr Amps]	[Z Ohms	deg]	At 30575 WND MSTR230.0 [0 Amps	deg]	[1 Amps	deg]	[2 Amps	deg]
To 30575 WND MSTR230.0															
From 30525 C.COSTA 230.0	1	32.046	140.7	8044.2	32.026	-39.3	8039.1	13.3	81.9	0.0	0.0	8044.2	140.7	0.0	0.0
From 38610 DELTAPMP230.0	1	55.552	131.4	13944.7	55.552	-48.6	13944.7	1.1	75.8	0.0	0.0	13944.7	131.4	0.0	0.0
From 33170 WINDMSTR 9.1	1	0.000	90.0	0.0	0.000	90.0	0.0	999.9	90.0	0.0	0.0	0.0	90.0	0.0	0.0

Voltage	[V0 Mag	Ang]	[V1 Mag	Ang]	[V2 Mag	Ang]	[Va Mag	Ang]	[Vb Mag	Ang]	[Vc Mag	Ang]
30575 WND MSTR230.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
30525 C.COSTA 230.0	0.0000	90.0	0.8031	42.6	0.0000	90.0	0.8031	42.6	0.8031	-77.4	0.8031	162.6
38610 DELTAPMP230.0	0.0000	90.0	0.1134	27.3	0.0000	90.0	0.1134	27.3	0.1134	-92.7	0.1134	147.3
33170 WINDMSTR 9.1	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0

ATTACHMENT C – CASE 1 (PRE-PROJECT) PG&E GENERATION PATTERN

ATTACHMENT C – CASE 1 (PRE-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
34608	AGRICO	13.8	4	1	44.2	7
34608	AGRICO	13.8	3	1	18.1	2.9
34608	AGRICO	13.8	2	1	9	1.4
38118	ALMDACT1	13.8	1	1	22.6	12.4
38119	ALMDACT2	13.8	1	1	22.6	12.4
38564	ALMONDCT	13.8	1	1	45	14.8
33773	ALTA-CGE	60	1	1	4	-1
33175	ALTAMONT	9.11	1	0	0	0
35029	BADGERCK	13.8	1	1	46.3	2.4
36202	BAF COG1	13.8	1	1	38	18
36203	BAF COG2	13.8	1	1	75	32.3
34624	BALCH 1	13.2	1	1	31	5.5
31820	BCKS CRK	11	2	1	25.2	6.9
31820	BCKS CRK	11	1	1	28	7.6
31402	BEAR CAN	13.8	1	1	9.8	2.2
31402	BEAR CAN	13.8	2	1	9.8	2.2
34074	BEARDSLY	6.9	1	1	10.6	2
31784	BELDEN	13.8	1	1	107	23.1
33804	BELLTA T	13.8	1	1	0	37.2
34334	BIO PWR	9.11	1	1	21.8	6.8
34612	BLCH 2-2	13.8	1	1	52	6
34614	BLCH 2-3	13.8	1	1	52	11.4
31840	BLCKBUTT	9.11	1	1	2.2	-1
31421	BOTTLERK	13.8	1	1	55	10.5
32480	BOWMAN	9.11	1	1	2.5	-1
31798	BRNYFRST	13.2	1	1	26.6	2.9
38775	BUENAVS1	13.2	2	0	0	0
38775	BUENAVS1	13.2	3	0	0	0
38775	BUENAVS1	13.2	5	1	-13	0
38775	BUENAVS1	13.2	4	1	-13	0
38775	BUENAVS1	13.2	1	0	0	0
38775	BUENAVS1	13.2	6	1	-13	0
38780	BUENAVS2	13.2	2	1	-6	0
38780	BUENAVS2	13.2	4	0	0	0
38780	BUENAVS2	13.2	1	1	-13	0
38780	BUENAVS2	13.2	3	0	0	0
31780	BUTTVLLY	13.8	1	1	39.9	-1.8
33114	C.COS 4	13.8	1	0	0	26.7
33115	C.COS 5	13.8	1	0	0	36.2
33116	C.COS 6	18	1	1	330	133.5
33117	C.COS 7	18	1	1	330	133.5
33850	CAMANCHE	4.16	1	1	3.5	-2
33850	CAMANCHE	4.16	2	1	3.5	0
33850	CAMANCHE	4.16	3	1	3.5	0
37301	CAMINO 1	13.8	1	1	50	5.3
37302	CAMINO 2	13.8	1	1	50	4.7

ATTACHMENT C – CASE 1 (PRE-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
37303	CAMPBEL1	13.8	1	1	100	39
37304	CAMPBEL2	13.8	1	1	50	20
33463	CARDINAL	12.47	1	1	31	12.5
33463	CARDINAL	12.47	2	1	10	4
35863	CATALYST	9.11	1	1	2.3	0
36856	CCA100	13.8	1	0	24	8.3
33136	CCCSD	12.47	1	1	4.4	0.9
33281	CCSFCT1	13.8	1	0	50.5	8.8
33282	CCSFCT2	13.8	1	0	50.5	8.8
33283	CCSFCT3	13.8	1	0	50.5	8.8
31850	CEDR FL+	9.11	2	0	0	-1.6
31850	CEDR FL+	9.11	1	0	0	-0.1
34050	CH.STN.	13.8	1	1	10	11
35052	CHEV.USA	9.11	1	1	11	3.3
32462	CHI.PARK	11.5	1	1	37.9	8.1
32510	CHILIBAR	4.16	1	1	5.5	4
35038	CHLKCLF+	9.11	1	1	43.6	24
34301	CHOWCOGN	13.8	1	1	48	-5.6
35032	CHV-CYMR	9.11	1	1	13.5	-0.5
34652	CHV.COAL	9.11	1	1	2.5	8.3
34652	CHV.COAL	9.11	2	1	8	4
34305	CHWCHLA2	13.8	1	1	12.5	7.3
36205	CIC COGN	12.47	1	1	28	10
31872	CLOVER	9.11	1	1	0.6	0.1
32470	CMP.FARW	9.11	1	1	4.6	-2.5
31838	CNTRVL12	9.11	1	1	4	0
31838	CNTRVL12	9.11	2	0	0	0
33832	COG.CAPT	9.11	1	1	4.3	4.3
33818	COG.NTNL	12	1	1	35	17.2
31906	COLEMAN	6.6	1	1	8.7	2.1
32450	COLGATE1	13.8	1	1	147	14.1
32452	COLGATE2	13.8	1	1	147	14.1
31894	COLLINS	9.11	1	1	8.3	1.4
38102	COLLRVL1	13.8	1	1	89.3	49.4
38104	COLLRVL2	13.8	1	1	89.3	49.4
34654	COLNGAGN	9.11	1	1	34	-11
37321	COSUMNE1	18	1	1	165	25.1
37322	COSUMNE2	18	1	1	165	25.1
37323	COSUMNE3	16.5	1	1	170	25.3
37324	COSUMNE4	18	1	0	160	7.5
37325	COSUMNE5	18	1	0	160	7.2
37326	COSUMNE6	16.5	1	0	165	5.3
31856	COWCRK	9.11	1	0	0	0
31856	COWCRK	9.11	2	1	0.8	0
33814	CPC STCN	12.47	1	1	49	16.1
31923	CPVGT1	18	1	1	199	59.8

ATTACHMENT C – CASE 1 (PRE-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
31924	CPVGT2	18	2	1	199	59.4
31925	CPVST1	18	3	1	317	105
31808	CRBOU2-3	11.5	1	1	20	12.3
31808	CRBOU2-3	11.5	2	1	20	11.6
31810	CRBU 1	11.5	1	1	20	-6.2
31782	CRBU 4-5	13.8	1	1	55	15.5
31782	CRBU 4-5	13.8	2	1	56	15.8
32900	CRCKTCOG	18	1	1	240	44.7
32175	CREEDGT1	13.8	3	1	46.3	-5.3
31812	CRESTA	11.5	2	1	28	7.3
31812	CRESTA	11.5	1	1	28	7.3
31842	CSC HYDR	9.11	2	1	0.3	0
31842	CSC HYDR	9.11	1	0	0	-1
32164	CTY FAIR	9.11	1	1	0.8	0.1
32164	CTY FAIR	9.11	2	1	1.5	0.1
32921	ChevGen1	13.8	1	1	54	34.2
32922	ChevGen2	13.8	1	1	54	34.2
36854	Cogen	12	2	1	3.5	-1.9
36854	Cogen	12	1	1	3.3	-1.9
38562	DAWSON	4.16	1	1	3.3	0
31898	DE SABLA	6.9	1	1	14.5	1.6
31862	DEADWOOD	9.11	1	0	0	0.2
33108	DEC CTG1	18	1	1	200	55.8
33109	DEC CTG2	18	1	1	200	55.8
33110	DEC CTG3	18	1	1	200	55.8
33107	DEC STG1	24	1	1	280	78.2
32474	DEER CRK	9.11	1	1	3.1	-2.2
38820	DELTA A	13.2	3	1	0	0
38820	DELTA A	13.2	1	1	0	0
38820	DELTA A	13.2	2	1	0	0
38815	DELTA B	13.2	4	1	0	0
38815	DELTA B	13.2	5	1	0	0
38770	DELTA C	13.2	6	1	0	0
38770	DELTA C	13.2	7	1	0	0
38765	DELTA D	13.2	9	1	0	0
38765	DELTA D	13.2	8	1	0	0
38760	DELTA E	13.2	10	1	0	0
38760	DELTA E	13.2	11	1	0	0
35024	DEXEL +	13.8	1	1	27.5	15.9
34186	DG_PAN1	13.8	1	1	49	-19.9
32150	DG_VADIX	13.8	1	1	49	8.6
36411	DIABLO 1	25	1	1	1180	-49.6
36412	DIABLO 2	25	1	1	1200	-34.2
34648	DINUBA E	13.8	1	1	11	6.7
35062	DISCOVRY	13.8	1	1	44	22
34058	DONNELLS	13.8	1	1	64.2	-8.4

ATTACHMENT C – CASE 1 (PRE-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
38550	DONPDRO1	13.8	1	1	35	1
38552	DONPDRO2	13.8	1	1	35	0.2
38350	DONPDRO3	13.8	1	1	49.9	-1.4
38554	DONPDRO4	13.8	1	1	20	0.2
38750	DOS AMG1	13.2	2	1	-30	0
38750	DOS AMG1	13.2	1	1	-30	0
38750	DOS AMG1	13.2	3	1	-30	0
38755	DOS AMG2	13.2	1	0	0	0
38755	DOS AMG2	13.2	2	0	0	0
38755	DOS AMG2	13.2	3	0	0	0
35023	DOUBLE C	13.8	1	1	42.5	1.7
33161	DOWCHEM1	13.8	1	1	15.3	2.9
33162	DOWCHEM2	13.8	1	1	22	8
33163	DOWCHEM3	13.8	1	1	22	8
32504	DRUM 1-2	6.6	2	1	12.5	4.3
32504	DRUM 1-2	6.6	1	1	12.5	4.3
32506	DRUM 3-4	6.6	2	1	13.2	4.4
32506	DRUM 3-4	6.6	1	1	12.5	4.2
32454	DRUM 5	13.8	1	1	42.5	12
32464	DTCHFLT1	11	1	1	17	9.2
32502	DTCHFLT2	6.9	1	1	24.5	3.9
36221	DUKMOSS1	18	1	1	0	16.3
36222	DUKMOSS2	18	1	1	0	16.3
36223	DUKMOSS3	18	1	1	0	15.9
36224	DUKMOSS4	18	1	1	0	16.6
36225	DUKMOSS5	18	1	1	0	16.6
36226	DUKMOSS6	18	1	1	0	16.2
36863	DVRaGT1	13.8	1	1	45	-6
36865	DVRaST3	13.8	1	1	30	-7.2
36864	DVRbGT2	13.8	1	1	45	-6.6
32513	ELDRADO1	21.6	1	1	10	-2.8
32514	ELDRADO2	21.6	1	1	10	-2.8
33812	ELECTRA	13.8	1	1	29	5.7
33812	ELECTRA	13.8	3	1	29	5.7
33812	ELECTRA	13.8	2	1	29	5.7
35076	ELKHIL1G	18	1	1	166.8	55.9
35077	ELKHIL2G	18	1	1	166.8	55.9
35078	ELKHIL3G	18	1	1	220.5	60.1
34330	ELNIDO	13.8	1	1	12.5	2.6
32168	ENXCO	9.11	2	1	40	0
34306	EXCHQUER	13.8	1	1	94.5	1
30464	EXXON_BH	12.47	1	1	52	25.6
31150	FAIRHAVN	13.8	1	1	15.9	2.1
33917	FBERBORD	115	1	1	3.2	-2.2
33840	FLOWD3-6	9.11	1	1	1.3	0
33840	FLOWD3-6	9.11	3	0	0	0

ATTACHMENT C – CASE 1 (PRE-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
33840	FLOWD3-6	9.11	4	1	1.1	0
33840	FLOWD3-6	9.11	5	0	0	0
33840	FLOWD3-6	9.11	2	0	0	0
35318	FLOWDPTR	9.11	1	0	0	0
37549	FOLSOM1	13.8	1	1	50	22
37550	FOLSOM2	13.8	2	1	50	22
37551	FOLSOM3	13.8	3	1	50	22
31814	FORBSTWN	11.5	1	1	30	0.4
31870	FORKBUTT	9.11	2	0	0	-0.6
31870	FORKBUTT	9.11	1	0	0	-1
33151	FOSTER W	12.47	3	1	35	19.4
33151	FOSTER W	12.47	1	1	45.4	25.2
33151	FOSTER W	12.47	2	1	45.4	25.2
32451	FREC	13.8	1	1	50	6
34485	FRESNOWW	12.47	1	1	9	0
34636	FRIANTDM	6.6	4	0	2.3	0.4
34636	FRIANTDM	6.6	3	1	7.8	1
34636	FRIANTDM	6.6	2	1	14.7	1.9
35048	FRITOLAY	9.11	1	1	4.3	3.8
32508	FRNCH MD	4.16	1	1	16.4	2.6
33118	GATEWAY1	18	1	1	200	-13.8
33119	GATEWAY2	18	1	1	195	-11.7
33120	GATEWAY3	18	1	1	195	-11.7
33830	GEN.MILL	9.11	1	1	2.5	1.5
31435	GEO.ENGY	9.11	1	1	8.9	-3
31435	GEO.ENGY	9.11	2	1	8.9	-3
31822	GERBER F	9.11	1	0	0	0
31412	GEYSER11	13.8	1	1	60	26.2
31414	GEYSER12	13.8	1	1	31	6
31416	GEYSER13	13.8	1	1	68	23.8
31418	GEYSER14	13.8	1	1	54	6.2
31420	GEYSER16	13.8	1	1	64	12.6
31422	GEYSER17	13.8	1	1	36	18.5
31424	GEYSER18	13.8	1	1	56	13.1
31426	GEYSER20	13.8	1	1	52	7.8
31408	GEYSER78	13.8	1	1	39	15.2
31408	GEYSER78	13.8	2	1	32	12.5
31406	GEYSR5-6	13.8	2	1	39	14.4
31406	GEYSR5-6	13.8	1	1	39	14.4
35850	GLRY COG	13.8	1	1	80.5	20.2
35850	GLRY COG	13.8	2	1	41.5	10.4
32174	GOOSEHGT	13.8	2	1	46.3	-5.3
31900	GRIZZLYG	6.9	1	1	16.8	-4
32490	GRNLEAF1	13.8	1	1	40	-14
32490	GRNLEAF1	13.8	2	1	9.5	-6
32492	GRNLEAF2	13.8	1	1	49	16.6

ATTACHMENT C – CASE 1 (PRE-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
35851	GROYPKR1	13.8	1	1	48.7	-6.8
35852	GROYPKR2	13.8	1	1	48.7	-6.8
35853	GROYPKR3	13.8	1	1	48.7	-6.8
33131	GWF #1	9.11	1	1	12.7	-2.6
33132	GWF #2	13.8	1	1	12.3	5.5
33133	GWF #3	13.8	1	1	19	4.5
33134	GWF #4	13.8	1	1	18.6	3.4
33135	GWF #5	13.8	1	1	18.9	4.3
34650	GWF-PWR.	13.8	1	1	23	6.1
33805	GWFTRCY1	13.8	1	1	85.9	12.2
33807	GWFTRCY2	13.8	1	1	85.9	12.2
34539	GWF_GT1	13.8	1	1	50	-7.8
34541	GWF_GT2	13.8	1	1	50	-7.8
34431	GWF_HEP1	13.8	1	1	50	17.1
34433	GWF_HEP2	13.8	1	1	50	17.1
36858	Gia100	13.8	1	0	20.1	5.1
36895	Gia200	13.8	1	0	20.6	5.1
34610	HAAS	13.8	2	1	70	14.9
34610	HAAS	13.8	1	1	70	14.9
32478	HALSEY F	6.6	1	1	8.6	-1.4
31830	HAMIL.BR	9.11	2	1	2	0.1
31830	HAMIL.BR	9.11	1	1	2	0.1
31902	HAT CRK1	6.6	1	1	5	-3.1
31904	HAT CRK2	6.6	1	1	5	-3.8
31846	HATCHET+	9.11	1	0	0	2.8
31846	HATCHET+	9.11	2	1	2.5	1.3
31846	HATCHET+	9.11	3	0	0	1
31846	HATCHET+	9.11	4	0	0	2.5
31868	HATLOST+	9.11	3	0	0	-0.2
31868	HATLOST+	9.11	1	0	0	-0.7
31868	HATLOST+	9.11	2	0	0	-0.5
32488	HAYPRES+	9.11	1	0	0	-2
32488	HAYPRES+	9.11	2	1	1.9	-2.5
32486	HELLHOLE	9.11	1	0	0	0
34600	HELMS 1	18	1	1	404	18.5
34602	HELMS 2	18	1	0	404	55.7
34604	HELMS 3	18	1	0	404	101.7
34630	HERNDN1T	13.2	1	1	0	6.7
34632	HERNDN2T	13.2	1	1	0	9.1
38346	HERSHEYF	9.11	1	0	0	2.8
32171	HIGHWND3	34.5	1	1	38	0
32172	HIGHWNDS	34.5	1	1	150	0
32740	HILLSIDE	115	1	1	26	-8.7
35027	HISIERRA	13.8	1	1	47.9	2.6
31170	HMBOLDT1	13.8	1	0	50	14.5
31172	HMBOLDT2	13.8	1	0	50	13.2

ATTACHMENT C – CASE 1 (PRE-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
36986	HOLM 1	13.8	1	1	17	1.7
36988	HOLM 2	13.8	1	1	17	1.7
36938	HONEYLKE	9.11	2	0	0	1
36938	HONEYLKE	9.11	1	1	22.1	2.1
31154	HUMBOLDT	13.2	1	0	15	0
31154	HUMBOLDT	13.2	2	0	15	0
31180	HUMB_G1	13.8	2	1	16.6	-5.5
31180	HUMB_G1	13.8	1	1	16.6	-5.5
31180	HUMB_G1	13.8	3	1	16.6	-5.5
31180	HUMB_G1	13.8	4	1	16.6	-5.5
31181	HUMB_G2	13.8	6	1	16.6	-0.5
31181	HUMB_G2	13.8	7	1	16.6	-0.5
31181	HUMB_G2	13.8	5	1	16.6	-0.5
31182	HUMB_G3	13.8	10	1	16.6	-0.5
31182	HUMB_G3	13.8	8	1	16.6	-0.5
31182	HUMB_G3	13.8	9	1	16.6	-0.5
38825	HYATT 1	12.5	1	1	117	18.3
38830	HYATT 2	12.5	1	1	97	17
38835	HYATT 3	12.5	1	1	117	19.2
38840	HYATT 4	12.5	1	1	97	17.8
38845	HYATT 5	12.5	1	1	117	18.8
38850	HYATT 6	12.5	1	1	97	17.4
33816	I.ENERGY	12	1	0	14.5	2.6
35637	IBM-CTLE	115	1	0	0	0
31436	INDIAN V	9.11	1	1	0.9	0
31908	INSKIP	4.16	1	1	6.9	1.5
34342	INT.TURB	9.11	1	1	1.1	0
37553	J.F.CARR	13.8	2	1	73.5	28.9
37553	J.F.CARR	13.8	1	1	73.5	28.9
37305	JAYBIRD1	13.8	1	1	60	-0.3
37306	JAYBIRD2	13.8	1	1	60	-0.1
31768	JBBLACK1	13.8	1	1	82	6.1
31770	JBBLACK2	13.8	1	1	83	6.1
36936	JELD-WN	9.11	1	0	1	0.1
37307	JONESFRK	4.16	1	1	9.5	1.7
34332	JRWCOGEN	9.11	1	1	3.8	5.4
33834	KALINA	9.11	1	0	0	3.3
36207	KCTYPKER	13.8	1	1	48.7	3.3
31166	KEKAWAK	4.16	1	1	4.5	3.7
31834	KELLYRDG	9.11	1	1	0	-0.6
34344	KERCKHOF	6.6	1	0	0	0
34344	KERCKHOF	6.6	3	0	0	0
34308	KERCKHOF	13.8	1	1	129	16
34344	KERCKHOF	6.6	2	1	6.8	-4
35006	KERN 1	13.8	1	0	0	0
35008	KERN 2	13.8	1	0	0	0

ATTACHMENT C – CASE 1 (PRE-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
35018	KERNCNYN	9.11	1	0	10.6	3
35026	KERNFRNT	9.11	1	1	47.7	-12
35040	KERNRDGE	9.11	2	1	9	5
35040	KERNRDGE	9.11	1	1	60	10
37559	KESWICK1	6.9	1	1	31	5
37556	KESWICK2	6.9	2	1	31	5
37557	KESWICK3	6.9	3	0	0	0
31828	KILRC1-2	9.11	2	1	1	0
31828	KILRC1-2	9.11	1	1	1	0
34642	KINGSBUR	9.11	1	1	34	17.3
34616	KINGSRIV	13.8	1	1	47	9
36980	KIRKWD 1	13.8	1	1	19	2.7
36982	KIRKWD 2	13.8	1	1	19	2.7
36984	KIRKWD 3	13.8	1	1	19	-0.3
34671	KRCDPCT1	13.8	1	1	50	2.8
34672	KRCDPCT2	13.8	1	1	50	2.8
38560	LA GRNGE	4.16	1	1	3.2	0
32173	LAMBGT1	13.8	1	1	46.3	-7
35070	LAPLM_G1	21	1	1	230	70.7
35071	LAPLM_G2	21	1	1	230	70.7
35072	LAPLM_G3	21	1	1	229	70.6
35073	LAPLM_G4	21	1	1	230	70.7
35854	LECEFGT1	13.8	1	1	50	36
35855	LECEFGT2	13.8	1	1	50	36
35856	LECEFGT3	13.8	1	1	50	36
35857	LECEFGT4	13.8	1	1	50	36
35858	LECEFST1	13.8	1	1	140	38.2
35310	LFC FIN+	9.11	1	0	0	0
33112	LMECCT1	18	1	1	150	5.5
33111	LMECCT2	18	1	1	150	5.5
33113	LMECST1	18	1	1	200	9.6
38120	LODI25CT	9.11	1	0	21.1	12.4
37308	LOON LK	13.8	1	1	70	6.5
31158	LP SAMOA	12.47	1	1	12	10.9
34179	MADERA_G	13.8	1	1	28.6	0.6
31764	MALCHA	13.8	1	1	12.5	16
31550	MC ARTHR	60	BV	1	7.5	-2.3
34618	MCCALL1T	13.2	1	1	0	-1.5
34621	MCCALL3T	13.2	1	1	0	-6
37309	MCCLELLN	13.8	1	1	60	16.3
38352	MCCLURE1	13.8	1	1	35	1.4
38354	MCCLURE2	13.8	1	1	35	1.4
36990	MCSN CK1	13.8	1	1	25	0.4
36992	MCSN CK2	13.8	1	1	25	0.4
34320	MCSWAIN	9.11	1	1	9	2
35881	MEC CTG1	18	1	1	180	49.2

ATTACHMENT C – CASE 1 (PRE-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
35882	MEC CTG2	18	1	1	180	49.2
35883	MEC STG1	18	1	1	200	50.7
37561	MELONE1	13.8	1	1	119	23.4
37562	MELONE2	13.8	2	0	0	0
34322	MERCEDFL	9.11	1	1	3.5	2
32456	MIDLFORK	13.8	1	1	64.5	10.1
32456	MIDLFORK	13.8	2	1	64.5	10.1
35034	MIDSUN +	13.8	1	1	24.5	15.2
99991	MIR_CT1	16.5	1	0	218.5	73.2
99993	MIR_CT2	16.5	3	0	218.5	73.2
99997	MIR_CT_1	16.5	1	0	208.5	60.9
99999	MIR_CT_2	16.5	3	0	208	60.8
99987	MIR_CT_3	16.5	5	0	208	62.9
99988	MIR_CT_4	16.5	6	0	208	-22.6
99992	MIR_ST1	13.8	2	0	64	21.3
99994	MIR_ST2	13.8	4	0	64	21.3
99998	MIR_ST_1	13.8	2	0	61	17.3
99984	MIR_ST_2	13.8	4	0	61	17.3
32700	MONTICLO	9.11	3	0	0	0
32700	MONTICLO	9.11	2	1	4.7	0
32700	MONTICLO	9.11	1	1	4.7	0
36407	MORRO 1	18	1	0	148	-32.1
36408	MORRO 2	18	1	0	157.3	-31.1
36409	MORRO 3	18	1	1	330	14
36410	MORRO 4	18	1	1	300.3	9.4
36405	MOSSLND6	22	1	1	0	64.4
36406	MOSSLND7	22	1	1	750	3
33121	MRAGA 1T	13.2	1	1	0	48
33122	MRAGA 2T	13.2	1	1	0	48
33123	MRAGA 3T	13.2	1	0	0	26.5
35036	MT POSO	13.8	1	1	44	20
38365	N.HGN DM	12	2	1	1.5	0
38365	N.HGN DM	12	1	1	1.5	0
32466	NARROWS1	11	1	1	10	3.2
32468	NARROWS2	9.11	1	1	45	1.7
35064	NAVY 35R	9.11	1	1	22	12
35064	NAVY 35R	9.11	2	1	22	12
38106	NCPA1GY1	13.8	1	1	35	3.7
38108	NCPA1GY2	13.8	1	1	35	3.7
38110	NCPA2GY1	13.8	1	1	36	3.1
38112	NCPA2GY2	13.8	1	1	36	3.1
31621	NEO REDB	13.8	1	1	50	5.8
32460	NEWCSTLE	13.2	1	0	0	1.5
37645	NIMBUS12	4.2	1	1	6	3.5
37645	NIMBUS12	4.2	2	0	0	0
32901	OAKLND 1	13.8	1	1	50	-2.9

ATTACHMENT C – CASE 1 (PRE-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
32902	OAKLND 2	13.8	1	1	50	1.2
32903	OAKLND 3	13.8	1	1	50	-0.4
35028	OILDALE	9.11	1	1	32	-10
35860	OLS-AGNE	9.11	1	1	29.6	6.2
31854	OLSEN +4	9.11	1	0	0	-0.1
34316	ONEILPMP	9.11	1	1	0.5	0
31888	OROVLLE	9.11	1	1	8.5	-2.5
32484	OXBOW F	9.11	1	1	5.4	1.9
33469	OX_MTN	4.16	5	0	1.9	0
33469	OX_MTN	4.16	4	0	1.9	0
33469	OX_MTN	4.16	6	0	1.9	0
33469	OX_MTN	4.16	7	0	1.9	0
33469	OX_MTN	4.16	1	0	1.9	0
33469	OX_MTN	4.16	3	0	1.9	0
33469	OX_MTN	4.16	2	0	1.9	0
34326	P0435BS1	13.8	2	1	102.5	21.1
34326	P0435BS1	13.8	1	1	102.5	21.1
34327	P0435BS2	13.8	3	1	102.5	21.1
34327	P0435BS2	13.8	4	1	102.5	21.1
31884	PAC.ENGY	9.11	1	1	9	5.5
31152	PAC.LUMB	13.8	1	1	7.5	-4
31153	PAC.LUMB	2.4	3	1	2.5	0
31152	PAC.LUMB	13.8	2	1	7.5	-4
33848	PARDE 2	7.2	1	1	8	-1.5
33842	PATTERSN	9.11	4	0	0	0
33842	PATTERSN	9.11	1	0	0	0
33842	PATTERSN	9.11	3	0	0	0
33842	PATTERSN	9.11	2	0	0	0
31892	PE.WWOOD	9.11	1	1	10.5	3.9
38720	PINE FLT	13.8	2	0	0	20.8
38720	PINE FLT	13.8	1	1	52	23.3
38720	PINE FLT	13.8	3	0	0	13.9
31818	PIT 1 U1	11	1	1	20	-23.5
31818	PIT 1 U1	11	2	1	20	-23.7
31802	PIT 3	11.5	1	1	18	2.3
31802	PIT 3	11.5	2	1	18	2.3
31802	PIT 3	11.5	3	1	18	2.3
31766	PIT 4	13.8	2	1	44	3.4
31766	PIT 4	13.8	1	1	44	3.4
31804	PIT 5 U1	11.5	1	1	35	2.6
31804	PIT 5 U1	11.5	2	1	35	2.6
31806	PIT 5 U2	11.5	2	1	35	2.6
31806	PIT 5 U2	11.5	1	1	35	2.6
31772	PIT 6 U1	13.8	1	1	35	3.4
31774	PIT 6 U2	13.8	1	1	35	3.4
31776	PIT 7 U1	13.8	1	1	52	5.3

ATTACHMENT C – CASE 1 (PRE-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
31778	PIT 7 U2	13.8	1	1	52	5.3
31890	PO POWER	9.11	2	1	7	-2.5
31890	PO POWER	9.11	1	1	7	-2.5
31790	POE 1	13.8	1	1	51	19.6
31792	POE 2	13.8	1	1	51	19.6
33252	POTRERO3	20	1	1	210	65.9
33253	POTRERO4	13.8	1	1	50	2.9
33254	POTRERO5	13.8	1	1	50	2.9
33255	POTRERO6	13.8	1	1	50	3
31433	POTTRVLY	2.4	1	1	3.2	1.3
31433	POTTRVLY	2.4	3	0	0	0
31433	POTTRVLY	2.4	4	0	0	0
33846	PRDE 1-3	7.2	1	0	0	1.2
33846	PRDE 1-3	7.2	2	1	8	2
37310	PROCTER1	13.8	1	1	40	15
37311	PROCTER2	13.8	1	1	30	15
37312	PROCTER3	13.8	1	1	40	15
37313	PROCTER4	13.8	1	1	40	20
35066	PSE-BEAR	9.11	1	1	43.3	0.1
35058	PSE-LVOK	9.11	1	1	43.1	-5.5
35060	PSEMCKIT	9.11	1	1	42.6	22.7
36217	PSWTSTCM	8	1	1	0	25.2
33105	PTSB 5	18	1	1	325	115.8
33106	PTSB 6	18	1	1	325	107.3
30000	PTSB 7	20	1	1	708.8	199.6
32458	RALSTON	13.8	1	1	83	7.3
35304	RCECCTG1	15	1	1	180	30.5
35305	RCECCTG2	15	2	1	180	30.5
35306	RCECSTG1	18	3	1	254	43.1
37940	RDGCT 1	13.8	1	0	0	0
37941	RDGCT 2	13.8	1	0	0	0
37942	RDGCT 3	13.8	1	1	30	0
37958	RDGCT4	13.8	1	0	0	0
37944	RDGSTEAM	13.8	1	0	0	0
37601	REP1	13.8	1	1	50	17.3
37602	REP2	13.8	1	1	50	17.3
37603	REP3	13.8	1	1	50	17.3
35020	RIOBRAVO	9.11	1	1	8.3	1.8
38351	RIPN_1	13.8	1	1	45	-3
38353	RIPN_2	13.8	1	1	45	-3
32162	RIV.DLTA	9.11	1	0	0	-1
37314	ROBBS PK	13.8	1	1	20	8.6
31786	ROCK CK1	13.8	1	1	51	14.5
31788	ROCK CK2	13.8	1	1	51	23.1
32476	ROLLINSF	9.11	1	1	12	-1
38116	ROSEVCT1	13.8	1	0	16.3	9.1

ATTACHMENT C – CASE 1 (PRE-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
38117	ROSEVCT2	13.8	1	0	16.3	9.1
33178	RVEC_GEN	13.8	1	1	50	2.9
36201	SALNR GN	13.8	1	1	32.2	1.4
33800	SALT SPS	11	1	1	8	7.8
33800	SALT SPS	11	2	1	32	9
34060	SANDBAR	13.8	1	1	14.7	5.4
34646	SANGERCO	9.11	1	1	37.5	4.9
38730	SANLUIS1	13.8	2	1	20	0
38730	SANLUIS1	13.8	1	1	20	0
38735	SANLUIS2	13.8	2	1	20	0
38735	SANLUIS2	13.8	1	1	20	0
38740	SANLUIS3	13.8	1	0	0	0
38740	SANLUIS3	13.8	2	0	0	0
38745	SANLUIS4	13.8	1	0	0	0
38745	SANLUIS4	13.8	2	0	0	0
31400	SANTA FE	13.8	2	0	0	0
31400	SANTA FE	13.8	1	1	64.2	5.5
36200	SARGCN G	13.8	1	1	33.7	3.7
35312	SEAWESTF	9.11	1	1	0.1	0
35046	SEKR	9.11	1	1	27	-6.8
33467	SFAERP	13.8	1	1	50.5	9.8
37575	SHASTA1	13.8	1	1	120	16.9
37576	SHASTA2	13.8	2	1	120	16.9
37577	SHASTA3	13.8	3	1	120	17.1
37578	SHASTA4	13.8	4	1	120	17.1
37579	SHASTA5	13.8	5	0	0	0
33141	SHELL 1	12.47	1	1	20	2.2
33142	SHELL 2	12.47	1	1	40	2.3
33143	SHELL 3	12.47	1	1	40	2.3
32177	SHILO	34.5	2	1	150	-63.6
32176	SHILOH	34.5	1	1	140	0
33808	SJ COGEN	13.8	1	1	45.2	22.9
35861	SJ-SCL W	9.11	1	1	5	0
34631	SJ2GEN	9.11	1	1	2	0
34633	SJ3GEN	9.11	1	1	1	0
36209	SLD ENRG	12.47	1	0	13.4	2.5
35050	SLR-TANN	9.11	1	1	9.9	8
31832	SLY.CR.	9.11	1	1	9.5	-2
33462	SMATO1SC	13.2	1	1	0	25
33460	SMATO2SC	13.2	1	1	0	19.1
33461	SMATO3SC	13.2	1	1	0	19.5
31800	SMPSN-AN	12.47	1	1	42	0.1
31430	SMUDGEO1	13.8	1	1	33	11
36414	SO VAFB	12.47	2	0	3	1.3
36414	SO VAFB	12.47	1	0	3	1.3
36414	SO VAFB	12.47	4	0	0	1.7

ATTACHMENT C – CASE 1 (PRE-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
36414	SO VAFB	12.47	3	0	3	1.3
36414	SO VAFB	12.47	5	0	0	1.7
32169	SOLANOWP	21	1	1	99	0
31446	SONMA LF	9.11	1	1	4	0
31826	SOUTH G	4.16	1	1	6.9	-0.9
33810	SP CMPNY	13.8	1	1	37.7	13.1
32472	SPAULDG	9.11	2	1	4.2	-1
32472	SPAULDG	9.11	1	1	7	-2.9
32472	SPAULDG	9.11	3	1	1.7	-2
36940	SPI	2.4	1	0	10.5	0.5
31874	SPI-BURN	9.11	1	1	15.8	2.4
31880	SPI-HAYF	9.11	1	0	6.8	-2.8
31896	SPI-QUCY	9.11	2	0	0	-0.6
31896	SPI-QUCY	9.11	1	1	19	-1.4
38100	SPICER	21	1	1	3.3	-4.8
32498	SPILINCF	12.5	1	1	18.3	3.7
31471	SPI_AND1	9.1	1	1	4	-2.5
37581	SPRINGCR	13.8	2	1	91	34.8
37581	SPRINGCR	13.8	1	1	91	34.8
34078	SPRNG GP	6	1	1	3.9	3.7
33468	SRI INTL	9.11	1	1	4.3	3
37315	SRWTPA	13.8	1	1	40	13.2
37315	SRWTPA	13.8	2	1	10	3.3
37316	SRWTPB	13.8	1	1	40	12.6
36416	ST MARIA	9.11	1	1	8	5
34062	STANISLS	13.8	1	1	63.9	15
33139	STAUFER	9.11	1	1	2	-1
38114	STIG CC	13.8	1	1	48.2	24.2
33687	STKTN WW	60	1	1	1.5	0.2
34056	STNSLSRP	13.8	1	1	16.3	4.7
35004	SUNSET G	13.8	1	1	75	-0.2
35004	SUNSET G	13.8	2	1	75	-0.2
35004	SUNSET G	13.8	3	1	75	-0.2
37521	SUTTER1	18	1	1	160	3.1
37522	SUTTER2	18	2	1	160	3.1
37523	SUTTER3	18	3	1	155	2.9
30620	TESL_GT1	18	1	1	173	53.5
30621	TESL_GT2	18	1	1	173	53.5
30623	TESL_GT3	18	1	0	173	71.5
30629	TESL_GT4	18	1	0	173	71.5
30641	TESL_ST1	18	1	1	232	72.1
30642	TESL_ST2	18	1	0	232	94.6
34783	TEXCO_NM	9.11	1	1	5.4	5.5
34783	TEXCO_NM	9.11	2	1	2.7	5
35074	TEXSUN1G	18	1	1	169	7.3
35075	TEXSUN2G	18	1	1	169	7.3

ATTACHMENT C – CASE 1 (PRE-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
35079	TEXSUNST	18	1	1	222	54.1
33806	TH.E.DV.	13.8	1	1	19.6	4.4
38700	THERMLT1	13.8	1	1	32	3
38705	THERMLT2	13.8	1	1	22	2.9
38710	THERMLT3	13.8	1	1	22	2.9
38715	THERMLT4	13.8	1	1	22	2.9
33822	TIGR CRK	11	1	1	26.7	0.7
33822	TIGR CRK	11	2	1	27	0.7
31855	TKO	9.11	3	1	0.7	1.5
31836	TOAD TWN	9.11	1	1	0.9	0
37590	TRINTY12	13.8	2	1	53	23.3
37590	TRINTY12	13.8	1	1	53	23.3
33171	TRSVQ+NW	9.11	2	0	10	0
33171	TRSVQ+NW	9.11	1	0	20	0
34076	TULLOCH	6.9	2	1	8.3	1
34076	TULLOCH	6.9	1	1	8.3	1
35044	TX MIDST	9.11	1	1	33.4	3.7
35056	TX-LOSTH	4.16	1	1	9	2.4
32166	UC DAVIS	9.11	1	1	3.5	-1.2
37320	UCDMC	12.5	1	1	25	0.9
35035	ULTR PWR	13.2	1	1	34.5	15
32500	ULTR RCK	9.11	1	1	22.1	12
34640	ULTR.PWR	9.11	1	1	14.5	13
31156	ULTRAPWR	12.47	1	0	10	3
32920	UNION CH	9.11	1	1	20.4	-9
36413	UNION OL	13.8	1	1	5	2.8
37317	UNIONVLY	13.8	1	1	40	14.2
35037	UNIVRSTY	9.11	1	1	33.7	8
32910	UNOCAL	12	1	1	15.7	8.3
32910	UNOCAL	12	3	1	15.7	8.3
32910	UNOCAL	12	2	1	15.7	8.3
33466	UNTED CO	9.11	1	1	28.2	9.9
35320	USW FRIC	12	1	1	2.6	0
35320	USW FRIC	12	2	0	0	0
33838	USWP_#3	9.11	1	0	0	0
33836	USWP_#4	9.11	2	0	0	0
33836	USWP_#4	9.11	3	1	4.5	0
33836	USWP_#4	9.11	1	0	0	0
31824	VOLTA1-2	9.11	2	1	0.9	0
31824	VOLTA1-2	9.11	1	1	7.8	0.3
38951	VSC_POTR	180.5	1	1	401.4	63.4
38950	VSC_PTSB	180.5	1	1	-413	-91.1
32154	WADHAM	9.11	1	1	22.8	2.1
35314	WALKER+	9.11	1	0	0	0
38556	WALNT1CT	13.8	1	0	24	0
38558	WALNT2CT	13.8	1	0	24	0

ATTACHMENT C – CASE 1 (PRE-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
31852	WEBR FL+	9.11	1	0	0	0
38570	WEC1-CT	13.8	1	1	73.2	22.6
38574	WEC2-CT	13.8	1	1	73.2	17.7
38572	WEC3-ST	13.8	1	1	89.2	22.5
31404	WEST FOR	13.8	1	1	12.1	5.8
31404	WEST FOR	13.8	2	1	12	5.8
33820	WEST PNT	11.5	1	1	8.6	7
34553	WHD_GAT2	13.8	1	1	49	-25.3
34142	WHD_PAN2	13.8	1	1	49	-14.6
31465	WHEELBR1	9.1	1	1	16.6	-1.3
31465	WHEELBR1	9.1	3	1	16.6	-1.3
31465	WHEELBR1	9.1	4	1	7.8	-0.6
31465	WHEELBR1	9.1	2	1	16.6	-1.3
37318	WHITERK1	13.8	1	1	80	30.3
37319	WHITERK2	13.8	1	1	80	30.5
38785	WHLR RD1	13.2	2	0	0	0
38785	WHLR RD1	13.2	1	0	0	0
38785	WHLR RD1	13.2	5	0	0	0
38785	WHLR RD1	13.2	4	0	0	0
38785	WHLR RD1	13.2	3	0	0	0
38790	WHLR RD2	13.2	3	0	-15	0
38790	WHLR RD2	13.2	1	0	-15	0
38790	WHLR RD2	13.2	4	0	-8	0
38790	WHLR RD2	13.2	2	0	-15	0
36934	WIN&AMDE	9.11	1	0	0	2
36934	WIN&AMDE	9.11	2	1	0.6	0.1
38795	WINDGAP1	13.2	3	0	0	0
38795	WINDGAP1	13.2	2	1	-15	0
38795	WINDGAP1	13.2	1	1	-16	0
38800	WINDGAP2	13.2	2	1	-33	0
38800	WINDGAP2	13.2	1	1	-33	0
38805	WINDGAP3	13.2	1	1	-33	0
38805	WINDGAP3	13.2	2	0	0	0
38810	WINDGAP4	13.2	2	0	0	0
38810	WINDGAP4	13.2	1	0	0	0
33170	WINDMSTR	9.11	1	0	0	0
32512	WISE	12	1	1	11.1	-0.9
34658	WISHON	2.3	1	0	0	0.1
34658	WISHON	2.3	SJ	0	0	0
34658	WISHON	2.3	3	1	4.5	1
34658	WISHON	2.3	4	1	4.5	1
34658	WISHON	2.3	2	0	0	0.1
32185	WOLFSKIL	13.8	1	1	50	7
32156	WOODLAND	9.11	1	1	25	5
31794	WOODLEAF	13.8	1	1	55	-0.2
38356	WOODLMID	13.8	1	1	41.1	-8.1

ATTACHMENT C – CASE 1 (PRE-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
38357	WOODMID2	13.8	1	1	75	-20
32496	YCEC	13.8	1	1	50	3.8
32494	YUBA CTY	9.11	1	1	41.3	10.7
35316	ZOND SYS	9.11	1	0	0	0

ATTACHMENT D – CASE 2 (POST-PROJECT) PG&E GENERATION PATTERN

ATTACHMENT D – CASE 2 (POST-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
34608	AGRICO	13.8	4	1	44.2	7.1
34608	AGRICO	13.8	3	1	18.1	2.9
34608	AGRICO	13.8	2	1	9	1.5
38118	ALMDACT1	13.8	1	1	22.6	12.4
38119	ALMDACT2	13.8	1	1	22.6	12.4
38564	ALMONDCT	13.8	1	1	45	15.4
33773	ALTA-CGE	60	1	1	4	-1
33175	ALTAMONT	9.11	1	0	0	0
35029	BADGERCK	13.8	1	1	46.3	2.6
36202	BAF COG1	13.8	1	1	38	18
36203	BAF COG2	13.8	1	1	75	32.8
34624	BALCH 1	13.2	1	1	31	5.7
31820	BCKS CRK	11	2	1	25.2	7
31820	BCKS CRK	11	1	1	28	7.7
31402	BEAR CAN	13.8	1	1	9.8	2.3
31402	BEAR CAN	13.8	2	1	9.8	2.3
34074	BEARDSLY	6.9	1	1	10.6	2
31784	BELDEN	13.8	1	1	107	23.5
33804	BELLTA T	13.8	1	1	0	38.4
34334	BIO PWR	9.11	1	1	21.8	7.4
34612	BLCH 2-2	13.8	1	1	52	6.3
34614	BLCH 2-3	13.8	1	1	52	11.6
31840	BLCKBUTT	9.11	1	1	2.2	-1
31421	BOTTLERK	13.8	1	1	55	10.7
32480	BOWMAN	9.11	1	1	2.5	-1
31798	BRNYFRST	13.2	1	1	26.6	3.2
38775	BUENAVS1	13.2	2	0	0	0
38775	BUENAVS1	13.2	3	0	0	0
38775	BUENAVS1	13.2	5	1	-13	0
38775	BUENAVS1	13.2	4	1	-13	0
38775	BUENAVS1	13.2	1	0	0	0
38775	BUENAVS1	13.2	6	1	-13	0
38780	BUENAVS2	13.2	2	1	-6	0
38780	BUENAVS2	13.2	4	0	0	0
38780	BUENAVS2	13.2	1	1	-13	0
38780	BUENAVS2	13.2	3	0	0	0
31780	BUTTVLLY	13.8	1	1	39.9	-1.7
33114	C.COS 4	13.8	1	0	0	26.7
33115	C.COS 5	13.8	1	0	0	36.2
33116	C.COS 6	18	1	1	330	120.3
33117	C.COS 7	18	1	1	330	120.3
33850	CAMANCHE	4.16	1	1	3.5	-2
33850	CAMANCHE	4.16	2	1	3.5	0
33850	CAMANCHE	4.16	3	1	3.5	0
37301	CAMINO 1	13.8	1	1	50	6
37302	CAMINO 2	13.8	1	1	50	5.2

ATTACHMENT D – CASE 2 (POST-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
37303	CAMPBEL1	13.8	1	1	100	39
37304	CAMPBEL2	13.8	1	1	50	20
33463	CARDINAL	12.47	1	1	31	12.5
33463	CARDINAL	12.47	2	1	10	4
35863	CATALYST	9.11	1	1	2.3	0
36856	CCA100	13.8	1	0	24	8.3
33136	CCCSD	12.47	1	1	4.4	1
33281	CCSFCT1	13.8	1	0	50.5	8.8
33282	CCSFCT2	13.8	1	0	50.5	8.8
33283	CCSFCT3	13.8	1	0	50.5	8.8
31850	CEDR FL+	9.11	2	0	0	-1.6
31850	CEDR FL+	9.11	1	0	0	-0.1
34050	CH.STN.	13.8	1	1	10	11
35052	CHEV.USA	9.11	1	1	11	3.7
32462	CHI.PARK	11.5	1	1	37.9	8.3
32510	CHILIBAR	4.16	1	1	5.5	4
35038	CHLKCLF+	9.11	1	1	43.6	24
34301	CHOWCOGN	13.8	1	1	48	-5.2
35032	CHV-CYMR	9.11	1	1	13.5	-0.2
34652	CHV.COAL	9.11	1	1	2.5	8.3
34652	CHV.COAL	9.11	2	1	8	4
34305	CHWCHLA2	13.8	1	1	12.5	7.3
36205	CIC COGN	12.47	1	1	28	10.4
31872	CLOVER	9.11	1	1	0.6	0.1
32470	CMP.FARW	9.11	1	1	4.6	-2.5
31838	CNTRVL12	9.11	1	1	4	0
31838	CNTRVL12	9.11	2	0	0	0
33832	COG.CAPT	9.11	1	1	4.3	6.5
33818	COG.NTNL	12	1	1	35	18.1
31906	COLEMAN	6.6	1	1	8.7	2.2
32450	COLGATE1	13.8	1	1	147	15.2
32452	COLGATE2	13.8	1	1	147	15.2
31894	COLLINS	9.11	1	1	8.3	1.4
38102	COLLRVL1	13.8	1	1	89.3	50.6
38104	COLLRVL2	13.8	1	1	89.3	50.6
34654	COLNGAGN	9.11	1	1	34	-9.5
37321	COSUMNE1	18	1	1	165	26.9
37322	COSUMNE2	18	1	1	165	27
37323	COSUMNE3	16.5	1	1	170	27.1
37324	COSUMNE4	18	1	0	160	7.5
37325	COSUMNE5	18	1	0	160	7.2
37326	COSUMNE6	16.5	1	0	165	5.3
31856	COWCRK	9.11	1	0	0	0
31856	COWCRK	9.11	2	1	0.8	0
33814	CPC STCN	12.47	1	1	49	17.2
31923	CPVGT1	18	1	1	199	61.6

ATTACHMENT D – CASE 2 (POST-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
31924	CPVGT2	18	2	1	199	61.2
31925	CPVST1	18	3	1	317	105
31808	CRBOU2-3	11.5	1	1	20	12.6
31808	CRBOU2-3	11.5	2	1	20	11.6
31810	CRBU 1	11.5	1	1	20	-6
31782	CRBU 4-5	13.8	1	1	55	15.9
31782	CRBU 4-5	13.8	2	1	56	16.2
32900	CRCKTCOG	18	1	1	240	45.9
32175	CREEDGT1	13.8	3	1	46.3	-5.2
31812	CRESTA	11.5	2	1	28	7.5
31812	CRESTA	11.5	1	1	28	7.5
31842	CSC HYDR	9.11	2	1	0.3	0
31842	CSC HYDR	9.11	1	0	0	-1
32164	CTY FAIR	9.11	1	1	0.8	0.1
32164	CTY FAIR	9.11	2	1	1.5	0.1
32921	ChevGen1	13.8	1	1	54	34.2
32922	ChevGen2	13.8	1	1	54	34.2
36854	Cogen	12	2	1	3.5	-1.9
36854	Cogen	12	1	1	3.3	-1.9
38562	DAWSON	4.16	1	1	3.3	0
31898	DE SABLA	6.9	1	1	14.5	1.7
31862	DEADWOOD	9.11	1	0	0	0.2
33108	DEC CTG1	18	1	1	200	56.5
33109	DEC CTG2	18	1	1	200	56.5
33110	DEC CTG3	18	1	1	200	56.5
33107	DEC STG1	24	1	1	280	79.1
32474	DEER CRK	9.11	1	1	3.1	-2.2
38820	DELTA A	13.2	3	1	0	0
38820	DELTA A	13.2	1	1	0	0
38820	DELTA A	13.2	2	1	0	0
38815	DELTA B	13.2	4	1	0	0
38815	DELTA B	13.2	5	1	0	0
38770	DELTA C	13.2	6	1	0	0
38770	DELTA C	13.2	7	1	0	0
38765	DELTA D	13.2	9	1	0	0
38765	DELTA D	13.2	8	1	0	0
38760	DELTA E	13.2	10	1	0	0
38760	DELTA E	13.2	11	1	0	0
35024	DEXEL +	13.8	1	1	27.5	16.5
34186	DG_PAN1	13.8	1	1	49	-18.9
32150	DG_VADIX	13.8	1	1	49	9.6
36411	DIABLO 1	25	1	1	1180	-32.4
36412	DIABLO 2	25	1	1	1200	-17.7
34648	DINUBA E	13.8	1	1	11	6.9
35062	DISCOVRY	13.8	1	1	44	22
34058	DONNELLS	13.8	1	1	64.2	-7.8

ATTACHMENT D – CASE 2 (POST-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
38550	DONPDRO1	13.8	1	1	35	1.2
38552	DONPDRO2	13.8	1	1	35	0.5
38350	DONPDRO3	13.8	1	1	49.9	-0.8
38554	DONPDRO4	13.8	1	1	20	0.4
38750	DOS AMG1	13.2	2	1	-30	0
38750	DOS AMG1	13.2	1	1	-30	0
38750	DOS AMG1	13.2	3	1	-30	0
38755	DOS AMG2	13.2	1	0	0	0
38755	DOS AMG2	13.2	2	0	0	0
38755	DOS AMG2	13.2	3	0	0	0
35023	DOUBLE C	13.8	1	1	42.5	1.9
33161	DOWCHEM1	13.8	1	1	15.3	3
33162	DOWCHEM2	13.8	1	1	22	8
33163	DOWCHEM3	13.8	1	1	22	8
32504	DRUM 1-2	6.6	2	1	12.5	4.3
32504	DRUM 1-2	6.6	1	1	12.5	4.3
32506	DRUM 3-4	6.6	2	1	13.2	4.5
32506	DRUM 3-4	6.6	1	1	12.5	4.2
32454	DRUM 5	13.8	1	1	42.5	12
32464	DTCHFLT1	11	1	1	17	9.4
32502	DTCHFLT2	6.9	1	1	24.5	4.1
36221	DUKMOSS1	18	1	1	0	16.3
36222	DUKMOSS2	18	1	1	0	16.3
36223	DUKMOSS3	18	1	1	0	15.9
36224	DUKMOSS4	18	1	1	0	16.6
36225	DUKMOSS5	18	1	1	0	16.6
36226	DUKMOSS6	18	1	1	0	16.2
36863	DVRaGT1	13.8	1	1	45	-5.3
36865	DVRaST3	13.8	1	1	30	-6.5
36864	DVRbGT2	13.8	1	1	45	-5.9
32513	ELDRADO1	21.6	1	1	10	-2.6
32514	ELDRADO2	21.6	1	1	10	-2.6
33812	ELECTRA	13.8	1	1	29	6.1
33812	ELECTRA	13.8	3	1	29	6.1
33812	ELECTRA	13.8	2	1	29	6.1
35076	ELKHIL1G	18	1	0	166.8	58.4
35077	ELKHIL2G	18	1	1	166.8	63.6
35078	ELKHIL3G	18	1	1	220.5	67.9
34330	ELNIDO	13.8	1	1	12.5	2.7
32168	ENXCO	9.11	2	1	40	0
34306	EXCHQUER	13.8	1	1	94.5	1.3
30464	EXXON_BH	12.47	1	1	52	27.3
31150	FAIRHAVN	13.8	1	1	15.9	2.1
33917	FBERBORD	115	1	1	3.2	-2.2
33840	FLOWD3-6	9.11	1	1	1.3	0
33840	FLOWD3-6	9.11	3	0	0	0

ATTACHMENT D – CASE 2 (POST-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
33840	FLOWD3-6	9.11	4	1	1.1	0
33840	FLOWD3-6	9.11	5	0	0	0
33840	FLOWD3-6	9.11	2	0	0	0
35318	FLOWDPTR	9.11	1	0	0	0
37549	FOLSOM1	13.8	1	1	50	22
37550	FOLSOM2	13.8	2	1	50	22
37551	FOLSOM3	13.8	3	1	50	22
31814	FORBSTWN	11.5	1	1	30	0.6
31870	FORKBUTT	9.11	2	0	0	-0.6
31870	FORKBUTT	9.11	1	0	0	-1
33151	FOSTER W	12.47	3	1	35	19.5
33151	FOSTER W	12.47	1	1	45.4	25.3
33151	FOSTER W	12.47	2	1	45.4	25.3
32451	FREC	13.8	1	1	50	6.4
34485	FRESNOWW	12.47	1	1	9	0
34636	FRIANTDM	6.6	4	0	2.3	0.4
34636	FRIANTDM	6.6	3	1	7.8	1
34636	FRIANTDM	6.6	2	1	14.7	2
35048	FRITOLAY	9.11	1	1	4.3	3.8
32508	FRNCH MD	4.16	1	1	16.4	2.6
33118	GATEWAY1	18	1	1	200	-20.1
33119	GATEWAY2	18	1	1	195	-17.5
33120	GATEWAY3	18	1	1	195	-17.5
33830	GEN.MILL	9.11	1	1	2.5	1.5
31435	GEO.ENGY	9.11	1	1	8.9	-3
31435	GEO.ENGY	9.11	2	1	8.9	-3
31822	GERBER F	9.11	1	0	0	0
31412	GEYSER11	13.8	1	1	60	26.3
31414	GEYSER12	13.8	1	1	31	6.3
31416	GEYSER13	13.8	1	1	68	24.1
31418	GEYSER14	13.8	1	1	54	6.4
31420	GEYSER16	13.8	1	1	64	13.3
31422	GEYSER17	13.8	1	1	36	19.3
31424	GEYSER18	13.8	1	1	56	13.7
31426	GEYSER20	13.8	1	1	52	8.4
31408	GEYSER78	13.8	1	1	39	15.3
31408	GEYSER78	13.8	2	1	32	12.5
31406	GEYSR5-6	13.8	2	1	39	14.5
31406	GEYSR5-6	13.8	1	1	39	14.5
35850	GLRY COG	13.8	1	1	80.5	20.6
35850	GLRY COG	13.8	2	1	41.5	10.6
32174	GOOSEHGT	13.8	2	1	46.3	-5.2
31900	GRIZZLYG	6.9	1	1	16.8	-4
32490	GRNLEAF1	13.8	1	1	40	-14
32490	GRNLEAF1	13.8	2	1	9.5	-5.6
32492	GRNLEAF2	13.8	1	1	49	16.9

ATTACHMENT D – CASE 2 (POST-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
35851	GROYPKR1	13.8	1	1	48.7	-6.4
35852	GROYPKR2	13.8	1	1	48.7	-6.4
35853	GROYPKR3	13.8	1	1	48.7	-6.4
33131	GWF #1	9.11	1	1	12.7	-3.1
33132	GWF #2	13.8	1	1	12.3	5.6
33133	GWF #3	13.8	1	1	19	4
33134	GWF #4	13.8	1	1	18.6	3.2
33135	GWF #5	13.8	1	1	18.9	4.4
34650	GWF-PWR.	13.8	1	1	23	6.5
33805	GWFTRCY1	13.8	1	1	85.9	13.4
33807	GWFTRCY2	13.8	1	1	85.9	13.4
34539	GWF_GT1	13.8	1	1	50	-7.2
34541	GWF_GT2	13.8	1	1	50	-7.2
34431	GWF_HEP1	13.8	1	1	50	17.4
34433	GWF_HEP2	13.8	1	1	50	17.4
36858	Gia100	13.8	1	0	20.1	5.1
36895	Gia200	13.8	1	0	20.6	5.1
34610	HAAS	13.8	2	1	70	15.2
34610	HAAS	13.8	1	1	70	15.2
32478	HALSEY F	6.6	1	1	8.6	-1.2
31830	HAMIL.BR	9.11	2	1	2	0.1
31830	HAMIL.BR	9.11	1	1	2	0.1
31902	HAT CRK1	6.6	1	1	5	-3
31904	HAT CRK2	6.6	1	1	5	-3.8
31846	HATCHET+	9.11	1	0	0	2.8
31846	HATCHET+	9.11	2	1	2.5	1.3
31846	HATCHET+	9.11	3	0	0	1
31846	HATCHET+	9.11	4	0	0	2.5
31868	HATLOST+	9.11	3	0	0	-0.2
31868	HATLOST+	9.11	1	0	0	-0.7
31868	HATLOST+	9.11	2	0	0	-0.5
32488	HAYPRES+	9.11	1	0	0	-2
32488	HAYPRES+	9.11	2	1	1.9	-2.5
32486	HELLHOLE	9.11	1	0	0	0
34600	HELMS 1	18	1	1	404	20.7
34602	HELMS 2	18	1	0	404	55.7
34604	HELMS 3	18	1	0	404	101.7
34630	HERNDN1T	13.2	1	1	0	7.3
34632	HERNDN2T	13.2	1	1	0	10.3
38346	HERSHEYF	9.11	1	0	0	2.8
32171	HIGHWND3	34.5	1	1	38	0
32172	HIGHWNDS	34.5	1	1	150	0
32740	HILLSIDE	115	1	1	26	-8.7
35027	HISIERRA	13.8	1	1	47.9	2.8
31170	HMBOLDT1	13.8	1	0	50	14.5
31172	HMBOLDT2	13.8	1	0	50	13.2

ATTACHMENT D – CASE 2 (POST-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
36986	HOLM 1	13.8	1	1	17	2.5
36988	HOLM 2	13.8	1	1	17	2.5
36938	HONEYLKE	9.11	2	0	0	1
36938	HONEYLKE	9.11	1	1	22.1	2.1
31154	HUMBOLDT	13.2	1	0	15	0
31154	HUMBOLDT	13.2	2	0	15	0
31180	HUMB_G1	13.8	2	1	16.6	-5.5
31180	HUMB_G1	13.8	1	1	16.6	-5.5
31180	HUMB_G1	13.8	3	1	16.6	-5.5
31180	HUMB_G1	13.8	4	1	16.6	-5.5
31181	HUMB_G2	13.8	6	1	16.6	-0.4
31181	HUMB_G2	13.8	7	1	16.6	-0.4
31181	HUMB_G2	13.8	5	1	16.6	-0.4
31182	HUMB_G3	13.8	10	1	16.6	-0.4
31182	HUMB_G3	13.8	8	1	16.6	-0.4
31182	HUMB_G3	13.8	9	1	16.6	-0.4
38825	HYATT 1	12.5	1	1	117	19.5
38830	HYATT 2	12.5	1	1	97	18.2
38835	HYATT 3	12.5	1	1	117	20.4
38840	HYATT 4	12.5	1	1	97	19
38845	HYATT 5	12.5	1	1	117	20
38850	HYATT 6	12.5	1	1	97	18.6
33816	I.ENERGY	12	1	0	14.5	2.6
35637	IBM-CTLE	115	1	0	0	0
31436	INDIAN V	9.11	1	1	0.9	0
31908	INSKIP	4.16	1	1	6.9	1.5
34342	INT.TURB	9.11	1	1	1.1	0
37553	J.F.CARR	13.8	2	1	73.5	30.1
37553	J.F.CARR	13.8	1	1	73.5	30.1
37305	JAYBIRD1	13.8	1	1	60	0.7
37306	JAYBIRD2	13.8	1	1	60	0.9
31768	JBBLACK1	13.8	1	1	82	7.1
31770	JBBLACK2	13.8	1	1	83	7.2
36936	JELD-WN	9.11	1	0	1	0.1
37307	JONESFRK	4.16	1	1	9.5	1.8
34332	JRWCOGEN	9.11	1	1	3.8	5.4
33834	KALINA	9.11	1	0	0	3.3
36207	KCTYPKER	13.8	1	1	48.7	3.6
31166	KEKAWAK	4.16	1	1	4.5	3.7
31834	KELLYRDG	9.11	1	1	0	-0.3
34344	KERCKHOF	6.6	1	0	0	0
34344	KERCKHOF	6.6	3	0	0	0
34308	KERCKHOF	13.8	1	1	129	16
34344	KERCKHOF	6.6	2	1	6.8	-4
35006	KERN 1	13.8	1	0	0	0
35008	KERN 2	13.8	1	0	0	0

ATTACHMENT D – CASE 2 (POST-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
35018	KERNCNYN	9.11	1	0	10.6	3
35026	KERNFRNT	9.11	1	1	47.7	-11.2
35040	KERNRDGE	9.11	2	1	9	5
35040	KERNRDGE	9.11	1	1	60	10
37559	KESWICK1	6.9	1	1	31	5
37556	KESWICK2	6.9	2	1	31	5
37557	KESWICK3	6.9	3	0	0	0
31828	KILRC1-2	9.11	2	1	1	0
31828	KILRC1-2	9.11	1	1	1	0
34642	KINGSBUR	9.11	1	1	34	17.3
34616	KINGSRIV	13.8	1	1	47	9
36980	KIRKWD 1	13.8	1	1	19	3.1
36982	KIRKWD 2	13.8	1	1	19	3.1
36984	KIRKWD 3	13.8	1	1	19	0.1
34671	KRCDPCT1	13.8	1	1	50	3.1
34672	KRCDPCT2	13.8	1	1	50	3.1
38560	LA GRNGE	4.16	1	1	3.2	0
32173	LAMBGT1	13.8	1	1	46.3	-6.9
35070	LAPLM_G1	21	1	0	230	74.4
35071	LAPLM_G2	21	1	1	230	76.3
35072	LAPLM_G3	21	1	1	229	76.2
35073	LAPLM_G4	21	1	1	230	76.3
35854	LECEFGT1	13.8	1	1	50	37
35855	LECEFGT2	13.8	1	1	50	37
35856	LECEFGT3	13.8	1	1	50	37
35857	LECEFGT4	13.8	1	1	50	37
35858	LECEFST1	13.8	1	1	140	42.9
35310	LFC FIN+	9.11	1	0	0	0
33112	LMECCT1	18	1	1	150	6.2
33111	LMECCT2	18	1	1	150	6.2
33113	LMECST1	18	1	1	200	10.3
38120	LODI25CT	9.11	1	0	21.1	12.4
37308	LOON LK	13.8	1	1	70	6.6
31158	LP SAMOA	12.47	1	1	12	10.9
34179	MADERA_G	13.8	1	1	28.6	1
31764	MALCHA	13.8	1	1	12.5	16
31550	MC ARTHR	60	BV	1	7.5	-2.3
34618	MCCALL1T	13.2	1	1	0	0.4
34621	MCCALL3T	13.2	1	1	0	-5.5
37309	MCCLELLN	13.8	1	1	60	17
38352	MCCLURE1	13.8	1	1	35	2.6
38354	MCCLURE2	13.8	1	1	35	2.6
36990	MCSN CK1	13.8	1	1	25	1
36992	MCSN CK2	13.8	1	1	25	1
34320	MCSWAIN	9.11	1	1	9	2
35881	MEC CTG1	18	1	1	180	52.2

ATTACHMENT D – CASE 2 (POST-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
35882	MEC CTG2	18	1	1	180	52.2
35883	MEC STG1	18	1	1	200	53.7
37561	MELONE1	13.8	1	1	119	27.1
37562	MELONE2	13.8	2	0	0	0
34322	MERCEDFL	9.11	1	1	3.5	2
32456	MIDLFORK	13.8	1	1	64.5	10.4
32456	MIDLFORK	13.8	2	1	64.5	10.4
35034	MIDSUN +	13.8	1	1	24.5	15.2
99991	MIR_CT1	16.5	1	0	218.5	73.2
99993	MIR_CT2	16.5	3	0	218.5	73.2
99997	MIR_CT_1	16.5	1	1	208	59.2
99999	MIR_CT_2	16.5	3	1	208	59.2
99987	MIR_CT_3	16.5	5	1	208	61.1
99988	MIR_CT_4	16.5	6	1	208	-24.3
99992	MIR_ST1	13.8	2	0	64	21.3
99994	MIR_ST2	13.8	4	0	64	21.3
99998	MIR_ST_1	13.8	2	1	61	16.8
99984	MIR_ST_2	13.8	4	1	61	16.8
32700	MONTICLO	9.11	3	0	0	0
32700	MONTICLO	9.11	2	1	4.7	0
32700	MONTICLO	9.11	1	1	4.7	0
36407	MORRO 1	18	1	0	148	-32.1
36408	MORRO 2	18	1	0	157.3	-31.1
36409	MORRO 3	18	1	0	330	15
36410	MORRO 4	18	1	1	51	28.1
36405	MOSSLND6	22	1	1	0	64.4
36406	MOSSLND7	22	1	1	750	22.3
33121	MRAGA 1T	13.2	1	1	0	48
33122	MRAGA 2T	13.2	1	1	0	48
33123	MRAGA 3T	13.2	1	0	0	26.5
35036	MT POSO	13.8	1	1	44	20
38365	N.HGN DM	12	2	1	1.5	0.1
38365	N.HGN DM	12	1	1	1.5	0.1
32466	NARROWS1	11	1	1	10	3.4
32468	NARROWS2	9.11	1	1	45	1.8
35064	NAVY 35R	9.11	1	1	22	12
35064	NAVY 35R	9.11	2	1	22	12
38106	NCPA1GY1	13.8	1	1	35	3.9
38108	NCPA1GY2	13.8	1	1	35	3.9
38110	NCPA2GY1	13.8	1	1	36	3.2
38112	NCPA2GY2	13.8	1	1	36	3.2
31621	NEO REDB	13.8	1	1	50	6.1
32460	NEWCSTLE	13.2	1	0	0	1.5
37645	NIMBUS12	4.2	1	1	6	3.7
37645	NIMBUS12	4.2	2	0	0	0
32901	OAKLND 1	13.8	1	1	50	-2.7

ATTACHMENT D – CASE 2 (POST-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
32902	OAKLND 2	13.8	1	1	50	1.5
32903	OAKLND 3	13.8	1	1	50	0.2
35028	OILDALE	9.11	1	1	32	-10
35860	OLS-AGNE	9.11	1	1	29.6	7.2
31854	OLSEN +4	9.11	1	0	0	-0.1
34316	ONEILPMP	9.11	1	1	0.5	0
31888	OROVLLE	9.11	1	1	8.5	-2.5
32484	OXBOW F	9.11	1	1	5.4	2
33469	OX_MTN	4.16	5	0	1.9	0
33469	OX_MTN	4.16	4	0	1.9	0
33469	OX_MTN	4.16	6	0	1.9	0
33469	OX_MTN	4.16	7	0	1.9	0
33469	OX_MTN	4.16	1	0	1.9	0
33469	OX_MTN	4.16	3	0	1.9	0
33469	OX_MTN	4.16	2	0	1.9	0
34326	P0435BS1	13.8	2	1	102.5	23
34326	P0435BS1	13.8	1	1	102.5	23
34327	P0435BS2	13.8	3	1	102.5	23
34327	P0435BS2	13.8	4	1	102.5	23
31884	PAC.ENGY	9.11	1	1	9	5.5
31152	PAC.LUMB	13.8	1	1	7.5	-4
31153	PAC.LUMB	2.4	3	1	2.5	0
31152	PAC.LUMB	13.8	2	1	7.5	-4
33848	PARDE 2	7.2	1	1	8	-1.5
33842	PATTERSN	9.11	4	0	0	0
33842	PATTERSN	9.11	1	0	0	0
33842	PATTERSN	9.11	3	0	0	0
33842	PATTERSN	9.11	2	0	0	0
31892	PE.WWOOD	9.11	1	1	10.5	4
38720	PINE FLT	13.8	2	0	0	20.8
38720	PINE FLT	13.8	1	1	52	23.3
38720	PINE FLT	13.8	3	0	0	13.9
31818	PIT 1 U1	11	1	1	20	-23.5
31818	PIT 1 U1	11	2	1	20	-23.7
31802	PIT 3	11.5	1	1	18	2.6
31802	PIT 3	11.5	2	1	18	2.6
31802	PIT 3	11.5	3	1	18	2.6
31766	PIT 4	13.8	2	1	44	4
31766	PIT 4	13.8	1	1	44	4
31804	PIT 5 U1	11.5	1	1	35	3.2
31804	PIT 5 U1	11.5	2	1	35	3.2
31806	PIT 5 U2	11.5	2	1	35	3.2
31806	PIT 5 U2	11.5	1	1	35	3.2
31772	PIT 6 U1	13.8	1	1	35	4
31774	PIT 6 U2	13.8	1	1	35	4
31776	PIT 7 U1	13.8	1	1	52	6.2

ATTACHMENT D – CASE 2 (POST-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
31778	PIT 7 U2	13.8	1	1	52	6.2
31890	PO POWER	9.11	2	1	7	-2.5
31890	PO POWER	9.11	1	1	7	-2.5
31790	POE 1	13.8	1	1	51	19.9
31792	POE 2	13.8	1	1	51	19.9
33252	POTRERO3	20	1	1	210	65.9
33253	POTRERO4	13.8	1	1	50	2.9
33254	POTRERO5	13.8	1	1	50	2.9
33255	POTRERO6	13.8	1	1	50	3
31433	POTTRVLY	2.4	1	1	3.2	1.3
31433	POTTRVLY	2.4	3	0	0	0
31433	POTTRVLY	2.4	4	0	0	0
33846	PRDE 1-3	7.2	1	0	0	1.2
33846	PRDE 1-3	7.2	2	1	8	2
37310	PROCTER1	13.8	1	1	40	15
37311	PROCTER2	13.8	1	1	30	15
37312	PROCTER3	13.8	1	1	40	15
37313	PROCTER4	13.8	1	1	40	20
35066	PSE-BEAR	9.11	1	1	43.3	0.9
35058	PSE-LVOK	9.11	1	1	43.1	-4.7
35060	PSEMCKIT	9.11	1	1	42.6	22.7
36217	PSWTSTCM	8	1	1	0	28.1
33105	PTSB 5	18	1	1	325	118.1
33106	PTSB 6	18	1	1	325	109.4
30000	PTSB 7	20	1	1	710	205.6
32458	RALSTON	13.8	1	1	83	7.9
35304	RCECCTG1	15	1	1	180	31.9
35305	RCECCTG2	15	2	1	180	31.9
35306	RCECSTG1	18	3	1	254	44.7
37940	RDGCT 1	13.8	1	0	0	0
37941	RDGCT 2	13.8	1	0	0	0
37942	RDGCT 3	13.8	1	1	30	0
37958	RDGCT4	13.8	1	0	0	0
37944	RDGSTEAM	13.8	1	0	0	0
37601	REP1	13.8	1	1	50	17.8
37602	REP2	13.8	1	1	50	17.8
37603	REP3	13.8	1	1	50	17.8
35020	RIOBRAVO	9.11	1	1	8.3	2.2
38351	RIPN_1	13.8	1	1	45	-2.4
38353	RIPN_2	13.8	1	1	45	-2.4
32162	RIV.DLTA	9.11	1	0	0	-1
37314	ROBBS PK	13.8	1	1	20	8.7
31786	ROCK CK1	13.8	1	1	51	14.7
31788	ROCK CK2	13.8	1	1	51	23.5
32476	ROLLINSF	9.11	1	1	12	-1
38116	ROSEVCT1	13.8	1	0	16.3	9.1

ATTACHMENT D – CASE 2 (POST-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
38117	ROSEVCT2	13.8	1	0	16.3	9.1
33178	RVEC_GEN	13.8	1	1	50	1.5
36201	SALNR GN	13.8	1	1	32.2	1.5
33800	SALT SPS	11	1	1	8	7.8
33800	SALT SPS	11	2	1	32	9
34060	SANDBAR	13.8	1	1	14.7	5.5
34646	SANGERCO	9.11	1	1	37.5	5.2
38730	SANLUIS1	13.8	2	1	20	0
38730	SANLUIS1	13.8	1	1	20	0
38735	SANLUIS2	13.8	2	1	20	0
38735	SANLUIS2	13.8	1	1	20	0
38740	SANLUIS3	13.8	1	0	0	0
38740	SANLUIS3	13.8	2	0	0	0
38745	SANLUIS4	13.8	1	0	0	0
38745	SANLUIS4	13.8	2	0	0	0
31400	SANTA FE	13.8	2	0	0	0
31400	SANTA FE	13.8	1	1	64.2	5.8
36200	SARGCN G	13.8	1	1	33.7	3.9
35312	SEAWESTF	9.11	1	1	0.1	0
35046	SEKR	9.11	1	1	27	-6
33467	SFAERP	13.8	1	1	50.5	10
37575	SHASTA1	13.8	1	1	120	18.2
37576	SHASTA2	13.8	2	1	120	18.2
37577	SHASTA3	13.8	3	1	120	18.3
37578	SHASTA4	13.8	4	1	120	18.3
37579	SHASTA5	13.8	5	0	0	0
33141	SHELL 1	12.47	1	1	20	2.4
33142	SHELL 2	12.47	1	1	40	2.5
33143	SHELL 3	12.47	1	1	40	2.5
32177	SHILO	34.5	2	1	150	-67.6
32176	SHILOH	34.5	1	1	140	0
33808	SJ COGEN	13.8	1	1	45.2	24.1
35861	SJ-SCL W	9.11	1	1	5	0
34631	SJ2GEN	9.11	1	1	2	0
34633	SJ3GEN	9.11	1	1	1	0
36209	SLD ENRG	12.47	1	0	13.4	2.5
35050	SLR-TANN	9.11	1	1	9.9	8.2
31832	SLY.CR.	9.11	1	1	9.5	-2
33462	SMATO1SC	13.2	1	1	0	25
33460	SMATO2SC	13.2	1	1	0	19.8
33461	SMATO3SC	13.2	1	1	0	20.2
31800	SMPSN-AN	12.47	1	1	42	0.5
31430	SMUDGEO1	13.8	1	1	33	11.1
36414	SO VAFB	12.47	2	0	3	1.3
36414	SO VAFB	12.47	1	0	3	1.3
36414	SO VAFB	12.47	4	0	0	1.7

ATTACHMENT D – CASE 2 (POST-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
36414	SO VAFB	12.47	3	0	3	1.3
36414	SO VAFB	12.47	5	0	0	1.7
32169	SOLANOWP	21	1	1	99	0
31446	SONMA LF	9.11	1	1	4	0
31826	SOUTH G	4.16	1	1	6.9	-0.7
33810	SP CMPNY	13.8	1	1	37.7	13.9
32472	SPAULDG	9.11	2	1	4.2	-1
32472	SPAULDG	9.11	1	1	7	-2.9
32472	SPAULDG	9.11	3	1	1.7	-2
36940	SPI	2.4	1	0	10.5	0.5
31874	SPI-BURN	9.11	1	1	15.8	3.3
31880	SPI-HAYF	9.11	1	0	6.8	-2.8
31896	SPI-QUCY	9.11	2	0	0	-0.6
31896	SPI-QUCY	9.11	1	1	19	-1.2
38100	SPICER	21	1	1	3.3	-4.8
32498	SPILINCF	12.5	1	1	18.3	3.8
31471	SPI_AND1	9.1	1	1	4	-2.5
37581	SPRINGCR	13.8	2	1	91	36.3
37581	SPRINGCR	13.8	1	1	91	36.3
34078	SPRNG GP	6	1	1	3.9	3.7
33468	SRI INTL	9.11	1	1	4.3	3
37315	SRWTPA	13.8	1	1	40	13.6
37315	SRWTPA	13.8	2	1	10	3.4
37316	SRWTPB	13.8	1	1	40	12.9
36416	ST MARIA	9.11	1	1	8	5
34062	STANISLS	13.8	1	1	63.9	15
33139	STAUFER	9.11	1	1	2	-1
38114	STIG CC	13.8	1	1	48.2	24.2
33687	STKTN WW	60	1	1	1.5	0.2
34056	STNSLSRP	13.8	1	1	16.3	5.3
35004	SUNSET G	13.8	1	1	75	1.7
35004	SUNSET G	13.8	2	1	75	1.7
35004	SUNSET G	13.8	3	1	75	1.7
37521	SUTTER1	18	1	1	160	5.5
37522	SUTTER2	18	2	1	160	5.5
37523	SUTTER3	18	3	1	155	5.2
30620	TESL_GT1	18	1	1	173	58.8
30621	TESL_GT2	18	1	1	173	58.8
30623	TESL_GT3	18	1	0	173	71.5
30629	TESL_GT4	18	1	0	173	71.5
30641	TESL_ST1	18	1	1	232	78.7
30642	TESL_ST2	18	1	0	232	94.6
34783	TEXCO_NM	9.11	1	1	5.4	5.5
34783	TEXCO_NM	9.11	2	1	2.7	5
35074	TEXSUN1G	18	1	1	169	10.2
35075	TEXSUN2G	18	1	1	169	10.2

ATTACHMENT D – CASE 2 (POST-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
35079	TEXSUNST	18	1	1	222	58.4
33806	TH.E.DV.	13.8	1	1	19.6	5.4
38700	THERMLT1	13.8	1	1	32	3.5
38705	THERMLT2	13.8	1	1	22	3.4
38710	THERMLT3	13.8	1	1	22	3.4
38715	THERMLT4	13.8	1	1	22	3.4
33822	TIGR CRK	11	1	1	26.7	1.1
33822	TIGR CRK	11	2	1	27	1.1
31855	TKO	9.11	3	1	0.7	1.5
31836	TOAD TWN	9.11	1	1	0.9	0
37590	TRINTY12	13.8	2	1	53	24
37590	TRINTY12	13.8	1	1	53	24
33171	TRSVQ+NW	9.11	2	0	10	0
33171	TRSVQ+NW	9.11	1	0	20	0
34076	TULLOCH	6.9	2	1	8.3	1
34076	TULLOCH	6.9	1	1	8.3	1
35044	TX MIDST	9.11	1	1	33.4	4.4
35056	TX-LOSTH	4.16	1	1	9	2.7
32166	UC DAVIS	9.11	1	1	3.5	-1.2
37320	UCDMC	12.5	1	1	25	1.1
35035	ULTR PWR	13.2	1	1	34.5	15
32500	ULTR RCK	9.11	1	1	22.1	12
34640	ULTR.PWR	9.11	1	1	14.5	13
31156	ULTRAPWR	12.47	1	0	10	3
32920	UNION CH	9.11	1	1	20.4	-9
36413	UNION OL	13.8	1	1	5	2.8
37317	UNIONVLY	13.8	1	1	40	14.2
35037	UNIVRSTY	9.11	1	1	33.7	8
32910	UNOCAL	12	1	1	15.7	8.5
32910	UNOCAL	12	3	1	15.7	8.5
32910	UNOCAL	12	2	1	15.7	8.5
33466	UNTED CO	9.11	1	1	28.2	10.1
35320	USW FRIC	12	1	1	2.6	0
35320	USW FRIC	12	2	0	0	0
33838	USWP_#3	9.11	1	0	0	0
33836	USWP_#4	9.11	2	0	0	0
33836	USWP_#4	9.11	3	1	4.5	0
33836	USWP_#4	9.11	1	0	0	0
31824	VOLTA1-2	9.11	2	1	0.9	0.1
31824	VOLTA1-2	9.11	1	1	7.8	0.4
38951	VSC_POTR	180.5	1	1	401.4	73.5
38950	VSC_PTSB	180.5	1	1	-413	-91.1
32154	WADHAM	9.11	1	1	22.8	2.5
35314	WALKER+	9.11	1	0	0	0
38556	WALNT1CT	13.8	1	0	24	0
38558	WALNT2CT	13.8	1	0	24	0

ATTACHMENT D – CASE 2 (POST-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
31852	WEBR FL+	9.11	1	0	0	0
38570	WEC1-CT	13.8	1	1	73.2	23.9
38574	WEC2-CT	13.8	1	1	73.2	18.9
38572	WEC3-ST	13.8	1	1	89.2	23.8
31404	WEST FOR	13.8	1	1	12.1	5.9
31404	WEST FOR	13.8	2	1	12	5.8
33820	WEST PNT	11.5	1	1	8.6	7
34553	WHD_GAT2	13.8	1	1	49	-25.3
34142	WHD_PAN2	13.8	1	1	49	-13.3
31465	WHEELBR1	9.1	1	1	16.6	-1
31465	WHEELBR1	9.1	3	1	16.6	-1
31465	WHEELBR1	9.1	4	1	7.8	-0.5
31465	WHEELBR1	9.1	2	1	16.6	-1
37318	WHITERK1	13.8	1	1	80	31
37319	WHITERK2	13.8	1	1	80	31.2
38785	WHLR RD1	13.2	2	0	0	0
38785	WHLR RD1	13.2	1	0	0	0
38785	WHLR RD1	13.2	5	0	0	0
38785	WHLR RD1	13.2	4	0	0	0
38785	WHLR RD1	13.2	3	0	0	0
38790	WHLR RD2	13.2	3	0	-15	0
38790	WHLR RD2	13.2	1	0	-15	0
38790	WHLR RD2	13.2	4	0	-8	0
38790	WHLR RD2	13.2	2	0	-15	0
36934	WIN&AMDE	9.11	1	0	0	2
36934	WIN&AMDE	9.11	2	1	0.6	0.1
38795	WINDGAP1	13.2	3	0	0	0
38795	WINDGAP1	13.2	2	1	-15	0
38795	WINDGAP1	13.2	1	1	-16	0
38800	WINDGAP2	13.2	2	1	-33	0
38800	WINDGAP2	13.2	1	1	-33	0
38805	WINDGAP3	13.2	1	1	-33	0
38805	WINDGAP3	13.2	2	0	0	0
38810	WINDGAP4	13.2	2	0	0	0
38810	WINDGAP4	13.2	1	0	0	0
33170	WINDMSTR	9.11	1	0	0	0
32512	WISE	12	1	1	11.1	-0.7
34658	WISHON	2.3	1	0	0	0.1
34658	WISHON	2.3	SJ	0	0	0
34658	WISHON	2.3	3	1	4.5	1
34658	WISHON	2.3	4	1	4.5	1
34658	WISHON	2.3	2	0	0	0.1
32185	WOLFSKIL	13.8	1	1	50	8.3
32156	WOODLAND	9.11	1	1	25	5
31794	WOODLEAF	13.8	1	1	55	0.1
38356	WOODLMID	13.8	1	1	41.1	-6.9

ATTACHMENT D – CASE 2 (POST-PROJECT) PGE GENERATION PATTERN

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
38357	WOODMID2	13.8	1	1	75	-17.9
32496	YCEC	13.8	1	1	50	3.9
32494	YUBA CTY	9.11	1	1	41.3	10.9
35316	ZOND SYS	9.11	1	0	0	0

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 *WILLOW PASS GENERATING STATION*

Docket No. 08-AFC-6
PROOF OF SERVICE
(Revised 2/23/2009)

APPLICANT
Chuck Hicklin, Project Manager
Mirant Corporation
P.O. Box 192
Pittsburg, CA 94565
chuck.hicklin@mirant.com

Jonathan Sacks, Project Director
Steven Nickerson
Mirant Corporation
1155 Perimeter Center West Atlanta, GA, 30338
jon.sacks@mirant.com
steve.nickerson@mirant.com

CONSULTANTS
***Dale Shileikis**
Kathy Rushmore
URS Corporation
221 Main Street, Suite 600
San Francisco, CA 94105-1917
kathy_rushmore@urscorp.com
dale_shileikis@urscorp.com

COUNSEL FOR APPLICANT
***Karleen O'Connor**
Lisa Cottle
Winston & Strawn LLP
101 California Street
San Francisco, CA 94111-5802
(e-mail preferred)
lcottle@winston.com
koconnor@winston.com

INTERESTED AGENCIES
California ISO
e-recipient@caiso.com

***Marc Grisham, City Manager**
Garrett D. Evans
General Manager
Pittsburg Power Company
65 Civic Avenue
Pittsburg, CA 94565
mgrisham@ci.pittsburg.ca.us
gevans@ci.pittsburg.ca.us

Greggory L. Wheatland
Ellison, Schneider & Harris
2015 H Street
Sacramento, CA 95811-3109
glw@eslawfirm.com

INTERVENORS
California Unions for Reliable Energy ("CURE")
Gloria D. Smith & Marc D. Joseph Adams
Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, California 94080
gsmith@adamsbroadwell.com
mdjoseph@adamsbroadwell.com

ENERGY COMMISSION
KAREN DOUGLAS
Chair and Presiding Member
kldougla@energy.state.ca.us

JAMES D. BOYD
Vice Chair and Associate Member
jboyd@energy.state.ca.us

Paul Kramer
Hearing Officer
pkramer@energy.state.ca.us

Ivor Benci-Woodward
Project Manager
ibenciwo@energy.state.ca.us

Dick Ratliff
Staff Counsel
dratliff@energy.state.ca.us

Elena Miller
Public Adviser
publicadviser@energy.state.ca.us

DECLARATION OF SERVICE

I, Kathy Rushmore, declare that on March 10, 2009, I served and filed copies of the attached *Updated System Impact Study: Appendix 11*. 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: **[http://www.energy.ca.gov/sitingcases/willowpass/index.html]**. The document has 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 Sacramento, California 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-6
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.