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DOCKET
08-AFC-6
DATE MAR 10 2009
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March 10, 2009

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

RE: Willow Pass Generating Station
Application for Certification 08-AFC-06

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

- One print copy of Appendix 11 (Three Phase Fault Duty Analysis) to the Updated System Impact Study. The Updated System Impact Study was previously submitted to the CEC on February 12, 2009.

Please include this document in the AFC record.

URS Corporation

Kathy Rushmore
Project Manager

Enclosures

CC: Ivor Benci-Woodward

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: Appendix 11

Application for Certification (08-AFC-6) for WILLOW PASS GENERATING STATION Pittsburg, California

March 2009

Prepared for:

MIRANT℠
WILLOW PASS, LLC

Prepared by:

URS

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System Impact Study

Mirant Willow Pass, LLC

Willow Pass Generating Station
Interconnection into PG&E's Pittsburg Substation

APPENDIX 11 – Results of 3 Phase Fault Duty Analysis

March 9, 2009

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Introduction

Mirant Willow Pass, LLC (Willow Pass) has requested that a comprehensive third-party System Interconnection Study (SIS) be conducted and submitted to the California Energy Commission (CEC) for the Willow Pass Generating Station (WPGS). *This document is submitted under separate cover as Appendix 11 to the Updated SIS report submitted to the CEC in February 2009. This study incorporates the information requested by the CEC in their November 12, 2008 Data Request 38 (d) regarding short circuit analysis for three phase faults.*

In its initial letter to staff dated December 2, 2008, and in its *Responses to Data Request (#1-48)* submitted on December 15, 2008*,* Mirant Willow Pass stated that a thorough short circuit duty analysis would be required to accurately perform a system protection and substation evaluation to respond to Data Request 38 (d) 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 Willow Pass 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 WPGS. 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 WPGS 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 WPGS to the PG&E transmission system.

3. System Protection Study Input Data

The following data was used to model the WPGS in the 3-phase fault duty analysis. Note that unsaturated reactance values were utilized for WPGS 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 WPGS to PG&E's transmission system. The 3-phase fault duties were calculated before and after the addition of the WPGS. 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 WPGS (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 Willow Pass 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 30526 PITSBG D230.0	53,945.81	59,103.14	5,157.33	9.56%
At 30527 PITSBG E230.0	55,002.80	59,546.43	4,543.63	8.26%
At 30528 DEC PTSG230.0	48,583.18	52,570.07	3,986.89	8.21%
At 30535 TIDEWATR230.0	26,062.21	26,690.33	628.12	2.41%
At 32950 PITSBURG115.0	48,993.58	50,094.79	1,101.21	2.25%
At 32978 LMEC 115.0	45,864.32	46,781.64	917.32	2.00%
At 30540 SOBRANTE230.0	30,617.75	31,183.27	565.52	1.85%
At 32970 CLAYTN 115.0	28,638.31	28,994.27	355.96	1.24%
At 30561 TASSAJAR230.0	12,601.31	12,723.76	122.45	0.97%
At 33010 SOBRANTE115.0	48,830.39	49,270.51	440.12	0.90%
At 32973 LAKEWD-C115.0	19,951.53	20,106.51	154.98	0.78%
At 32974 LAKEWD-M115.0	19,985.73	20,139.74	154.01	0.77%
At 30550 MORAGA 230.0	30,804.81	30,985.88	181.07	0.59%
At 30600 TRES VAQ230.0	19,176.72	19,281.96	105.24	0.55%
At 33011 ALHAMBRA115.0	14,690.14	14,748.52	58.38	0.40%
At 30640 TESLA C 230.0	41,130.77	41,277.37	146.60	0.36%
At 30545 ROSSMOOR230.0	17,986.16	18,042.82	56.66	0.32%
At 30631 NEWARK E230.0	46,572.37	46,699.24	126.87	0.27%
At 30630 NEWARK D230.0	46,468.38	46,582.86	114.48	0.25%
At 30525 C.COSTA 230.0	42,855.75	42,917.48	61.73	0.14%
At 30700 SANMATEO230.0	29,628.59	29,666.66	38.07	0.13%
At 30523 CC SUB 230.0	33,562.13	33,596.13	34.00	0.10%
At 30625 TESLA D 230.0	62,473.79	62,478.73	4.94	0.01%
At 30624 TESLA E 230.0	60,235.96	60,240.16	4.20	0.01%
At 33000 CC SUB 115.0	13,576.90	13,577.30	0.40	0.00%
At 30537 NDUBLIN 230.0	10,241.31	10,240.34	-0.97	-0.01%
At 30565 BRENTWOD230.0	18,144.57	18,142.71	-1.86	-0.01%
At 30575 WND MSTR230.0	21,504.21	21,490.53	-13.68	-0.06%

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 Pittsburg 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 WPGS 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			42855.75			0.00	0.00 Ohms
Prefault voltage,	pu			1.0147				
Fault Current,	pu	94.084	-142.464	170.727	-56.6			
1 Seq impedance,	pu	0.0009	0.0059	0.0059	81.2	6.4464		

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	18.222	134.0	4574.1	18.222	-46.0	4574.1	0.2	71.6	0.0	0.0	4574.1	134.0	0.0	0.0
From 30523 CC SUB 230.0	1	22.356	130.9	5611.9	22.356	-49.1	5611.8	1.4	79.5	0.0	0.0	5611.9	130.9	0.0	0.0
From 30479 BDLSWSTA230.0	1	21.130	132.0	5304.0	21.125	-48.0	5302.9	8.0	79.4	0.0	0.0	5304.0	132.0	0.0	0.0
From 30543 ROSSTAP1230.0	1	14.391	114.7	3612.4	14.377	-65.3	3608.9	16.0	81.9	0.0	0.0	3612.4	114.7	0.0	0.0
From 30544 ROSSTAP2230.0	2	14.414	114.9	3618.2	14.400	-65.1	3614.7	16.0	81.9	0.0	0.0	3618.2	114.9	0.0	0.0
From 30565 BRENTWOD230.0	1	15.335	117.8	3849.4	15.332	-62.2	3848.6	7.3	81.6	0.0	0.0	3849.4	117.8	0.0	0.0
From 30567 LONETREE230.0	1	9.063	109.8	2274.9	9.062	-70.2	2274.7	4.4	80.4	0.0	0.0	2274.9	109.8	0.0	0.0
From 30575 WND MSTR230.0	1	20.446	118.8	5132.4	20.433	-61.2	5129.2	13.3	81.9	0.0	0.0	5132.4	118.8	0.0	0.0
From 30585 LS PSTAS230.0	1	11.744	110.3	2948.0	11.730	-69.7	2944.3	18.5	80.4	0.0	0.0	2948.0	110.3	0.0	0.0
From 99980 MIRPKCC1230.0	1	0.000	0.0	0.0	0.000	180.0	0.0	999.9	90.0	0.0	0.0	0.0	0.0	0.0	0.0
From 99981 MIRPKCC2230.0	1	0.000	0.0	0.0	0.000	180.0	0.0	999.9	90.0	0.0	0.0	0.0	0.0	0.0	0.0
From 99985 MIRCCCC1230.0	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 99986 MIRCCCC2230.0	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 33114 C.COS 4 13.8	1	0.000	1.9	0.0	0.000	-178.0	0.0	999.9	90.0	0.0	0.0	0.0	1.9	0.0	0.0
From 33115 C.COS 5 13.8	1	0.000	-62.3	0.0	0.000	117.6	0.0	999.9	90.0	0.0	0.0	0.0	-62.3	0.0	0.0
From 33116 C.COS 6 18.0	1	12.777	130.0	3207.3	12.779	-50.0	40987.4	0.1	88.6	0.0	0.0	3207.3	130.0	0.0	0.0
From 33117 C.COS 7 18.0	1	12.777	130.0	3207.3	12.779	-50.0	40987.4	0.1	88.6	0.0	0.0	3207.3	130.0	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	-30.0	0.0000	-150.0
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 30527 PITSBG E230.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			55002.80			0.00	0.00 Ohms
Prefault voltage,	pu			1.0114				
Fault Current,	pu	110.500	-189.215	219.118	-59.7			
1 Seq impedance,	pu	0.0006	0.0046	0.0046	82.5	7.6129		

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	87.305	120.4	21915.1	87.305	-59.6	21915.1	0.4	45.0	0.0	0.0	21915.1	120.4	0.0	0.0
From 30535 TIDEWATR230.0	1	18.299	114.6	4593.4	18.294	-65.4	4592.2	5.8	87.2	0.0	0.0	4593.4	114.6	0.0	0.0
From 30536 TESORO 230.0	1	15.612	114.5	3919.0	15.608	-65.5	3918.0	5.5	87.1	0.0	0.0	3919.0	114.5	0.0	0.0
From 30595 FLOWIND2230.0	1	15.614	118.6	3919.3	15.590	-61.4	3913.3	20.2	81.9	0.0	0.0	3919.3	118.6	0.0	0.0
From 30600 TRES VAQ230.0	2	15.585	118.6	3912.0	15.568	-61.4	3907.8	16.8	81.9	0.0	0.0	3912.0	118.6	0.0	0.0
From 30560 E. SHORE230.0	1	9.939	112.3	2494.8	9.893	-67.6	2483.4	38.1	82.1	0.0	0.0	2494.8	112.3	0.0	0.0
From 30700 SANMATEO230.0	1	8.557	106.0	2147.9	8.493	-74.0	2131.9	47.8	83.4	0.0	0.0	2147.9	106.0	0.0	0.0
From 30000 PTSB 7 20.0	1	22.200	131.4	5572.7	22.205	-48.6	64100.8	0.0	88.4	0.0	0.0	5572.7	131.4	0.0	0.0
From 33105 PTSB 5 18.0	1	6.407	128.1	1608.3	6.410	-51.9	20558.5	0.2	88.4	0.0	0.0	1608.3	128.1	0.0	0.0
From 33105 PTSB 5 18.0	2	6.407	128.1	1608.3	6.410	-51.9	20558.4	0.2	88.4	0.0	0.0	1608.3	128.1	0.0	0.0
From 33106 PTSB 6 18.0	1	7.177	126.4	1801.5	7.178	-53.6	23021.7	0.2	88.6	0.0	0.0	1801.5	126.4	0.0	0.0
From 33106 PTSB 6 18.0	2	7.177	126.4	1801.5	7.178	-53.6	23021.7	0.2	88.6	0.0	0.0	1801.5	126.4	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	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	0.0617	-14.6	0.0000	90.0	0.0617	-14.6	0.0617	-134.6	0.0617	105.4
30535 TIDEWATR230.0	0.0000	90.0	0.2012	21.9	0.0000	90.0	0.2012	21.9	0.2012	-98.1	0.2012	141.9
30536 TESORO 230.0	0.0000	90.0	0.1615	21.7	0.0000	90.0	0.1615	21.7	0.1615	-98.3	0.1615	141.7
30595 FLOWIND2230.0	0.0000	90.0	0.5957	20.5	0.0000	90.0	0.5957	20.5	0.5957	-99.5	0.5957	140.5
30600 TRES VAQ230.0	0.0000	90.0	0.4948	20.5	0.0000	90.0	0.4948	20.5	0.4948	-99.5	0.4948	140.5
30560 E. SHORE230.0	0.0000	90.0	0.7128	14.5	0.0000	90.0	0.7128	14.5	0.7128	-105.5	0.7128	134.5
30700 SANMATEO230.0	0.0000	90.0	0.7667	9.4								

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 32950 PITSBURG115.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			48993.58			0.00	0.00 Ohms
Prefault voltage,	pu			1.0383				
Fault Current,	pu	47.282	-85.371	97.589	-61.0			
1 Seq impedance,	pu	0.0014	0.0105	0.0106	82.3	7.4144		

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	114.2	1328.5	2.646	-65.8	1328.2	3.3	79.1	0.0	0.0	1328.5	114.2	0.0	0.0
From 32970 CLAYTN	115.0	4	2.015	111.1	1011.5	2.015	-68.9	1011.5	4.3	82.2	0.0	0.0	1011.5	111.1	0.0	0.0
From 32978 LMEC	115.0	1	10.567	125.5	5305.1	10.567	-54.5	5305.0	0.4	79.1	0.0	0.0	5305.1	125.5	0.0	0.0
From 32978 LMEC	115.0	2	10.567	125.5	5305.1	10.567	-54.5	5305.0	0.4	79.1	0.0	0.0	5305.1	125.5	0.0	0.0
From 32992 BOLLMAN2	115.0	2	4.764	122.9	2391.7	4.763	-57.1	2391.1	8.4	74.3	0.0	0.0	2391.7	122.9	0.0	0.0
From 32993 W.P.BART	115.0	1	4.341	122.5	2179.2	4.340	-57.5	2179.0	5.8	74.4	0.0	0.0	2179.2	122.5	0.0	0.0
From 33030 COLSTJT1	115.0	1	1.420	122.8	712.7	1.419	-57.2	712.6	4.0	74.3	0.0	0.0	712.7	122.8	0.0	0.0
From 33032 KIRKTAP1	115.0	3	2.012	111.2	1010.3	2.012	-68.8	1010.3	0.7	84.3	0.0	0.0	1010.3	111.2	0.0	0.0
From 33033 KIRKTAP2	115.0	1	1.379	122.0	692.2	1.379	-58.0	692.2	1.1	74.4	0.0	0.0	692.2	122.0	0.0	0.0
From 30526 PITSBG D	230.0	12	29.069	116.6	14593.6	30.727	-63.4	7713.1	11.5	89.2	0.0	0.0	14593.6	116.6	0.0	0.0
From 30526 PITSBG D	230.0	13	29.069	116.6	14593.6	30.727	-63.4	7713.1	11.5	89.2	0.0	0.0	14593.6	116.6	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	180.0	0.0000	90.0	0.0000	180.0	0.0000	60.0	0.0000	-60.0
32970 CLAYTN	115.0	0.0000	90.0	0.0651	13.3	0.0000	90.0	0.0651	13.3	0.0651	-106.7	0.0651	133.3
32970 CLAYTN	115.0	0.0000	90.0	0.0651	13.3	0.0000	90.0	0.0651	13.3	0.0651	-106.7	0.0651	133.3
32978 LMEC	115.0	0.0000	90.0	0.0280	24.6	0.0000	90.0	0.0280	24.6	0.0280	-95.4	0.0280	144.6
32978 LMEC	115.0	0.0000	90.0	0.0280	24.6	0.0000	90.0	0.0280	24.6	0.0280	-95.4	0.0280	144.6
32992 BOLLMAN2	115.0	0.0000	90.0	0.3013	17.2	0.0000	90.0	0.3013	17.2	0.3013	-102.8	0.3013	137.2
32993 W.P.BART	115.0	0.0000	90.0	0.1888	16.9	0.0000	90.0	0.1888	16.9	0.1888	-103.1	0.1888	136.9
33030 COLSTJT1	115.0	0.0000	90.0	0.0430	17.1	0.0000	90.0	0.0430	17.1	0.0430	-102.9	0.0430	137.1
33032 KIRKTAP1	115.0	0.0000	90.0	0.0105	15.5	0.0000	90.0	0.0105	15.				

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			48830.39			0.00	0.00 Ohms
Prefault voltage,	pu			1.0076				
Fault Current,	pu	46.653	-85.345	97.264	-61.3			
1 Seq impedance,	pu	0.0019	0.0102	0.0104	79.2	5.2632		

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	121.1	1661.6	3.309	-58.9	1661.4	6.3	73.3	0.0	0.0	1661.6	121.1	0.0	0.0
From 32765 ELCRTJ1 115.0	1	2.190	123.5	1099.3	2.190	-56.5	1099.2	3.8	78.0	0.0	0.0	1099.3	123.5	0.0	0.0
From 32766 EL CRRTO115.0	2	2.198	122.6	1103.3	2.198	-57.4	1103.3	3.8	78.2	0.0	0.0	1103.3	122.6	0.0	0.0
From 32767 ELCRTJ2 115.0	1	0.000	23.7	0.0	0.000	-156.3	0.0	999.9	90.0	0.0	0.0	0.0	23.7	0.0	0.0
From 32768 RICHMOND115.0	2	0.000	141.0	0.0	0.000	-39.1	0.0	999.9	90.0	0.0	0.0	0.0	141.0	0.0	0.0
From 32806 SNPBLTP1115.0	2	1.914	117.3	960.9	1.913	-62.6	960.4	11.9	78.9	0.0	0.0	960.9	117.3	0.0	0.0
From 32808 SNPBLTP2115.0	1	1.916	117.3	961.7	1.915	-62.6	961.3	10.4	78.9	0.0	0.0	961.7	117.3	0.0	0.0
From 33006 GRIZLYJ1115.0	1	10.289	121.6	5165.5	10.289	-58.4	5165.5	0.1	45.0	0.0	0.0	5165.5	121.6	0.0	0.0
From 33008 GRIZLYJ2115.0	2	7.168	120.0	3598.7	7.168	-60.0	3598.7	0.1	45.0	0.0	0.0	3598.7	120.0	0.0	0.0
From 33014 ALHAMTP1115.0	1	4.716	126.4	2367.4	4.713	-53.6	2365.9	11.1	72.7	0.0	0.0	2367.4	126.4	0.0	0.0
From 33020 MORAGA 115.0	1	22.438	118.1	11264.6	22.436	-61.9	11263.8	2.6	77.7	0.0	0.0	11264.6	118.1	0.0	0.0
From 30540 SOBRANTE230.0	1	21.194	116.6	10640.2	21.665	-63.4	5438.3	12.3	88.9	0.0	0.0	10640.2	116.6	0.0	0.0
From 30540 SOBRANTE230.0	2	20.037	116.6	10059.1	20.482	-63.4	5141.5	13.0	89.0	0.0	0.0	10059.1	116.6	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	180.0	0.0000	90.0	0.0000	180.0	0.0000	60.0	0.0000	-60.0
32756 CHRISTIE115.0	0.0000	90.0	0.1578	14.4	0.0000	90.0	0.1578	14.4	0.1578	-105.6	0.1578	134.4
32765 ELCRTJ1 115.0	0.0000	90.0	0.0624	21.6	0.0000	90.0	0.0624	21.6	0.0624	-98.4	0.0624	141.6
32766 EL CRRTO115.0	0.0000	90.0	0.0637	20.8	0.0000	90.0	0.0637	20.8	0.0637	-99.2	0.0637	140.8
32767 ELCRTJ2 115.0	0.0000	90.0	0.0000	-153.4	0.0000	90.0	0.0000	-153.4	0.0000	86.6	0.0000	-33.4
32768 RICHMOND115.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	-30.0	0.0000	-150.0
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			60235.96			0.00	0.00 Ohms
Prefault voltage,	pu			1.0262				
Fault Current,	pu	109.643	-213.453	239.966	-62.8			
1 Seq impedance,	pu	0.0006	0.0042	0.0043	82.1	7.2186		

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	117.1	1398.3	5.564	-62.9	1396.6	16.7	82.1	0.0	0.0	1398.3	117.1	0.0	0.0
From 30500 BELLOTA 230.0	1	12.117	112.4	3041.6	12.080	-67.5	3032.2	28.3	81.0	0.0	0.0	3041.6	112.4	0.0	0.0
From 30505 WEBER 230.0	1	12.487	111.0	3134.6	12.472	-69.0	3130.8	17.6	80.9	0.0	0.0	3134.6	111.0	0.0	0.0
From 30622 EIGHT MI230.0	1	7.355	116.4	1846.3	7.344	-63.6	1843.5	18.8	82.2	0.0	0.0	1846.3	116.4	0.0	0.0
From 30625 TESLA D 230.0	1	63.005	120.0	15815.5	63.005	-60.0	15815.5	4.0	86.2	0.0	0.0	15815.5	120.0	0.0	0.0
From 30630 NEWARK D230.0	1	22.931	109.0	5756.1	22.892	-71.0	5746.4	14.9	87.2	0.0	0.0	5756.1	109.0	0.0	0.0
From 30670 WESTLEY 230.0	1	28.552	116.6	7167.0	28.521	-63.4	7159.3	8.6	80.1	0.0	0.0	7167.0	116.6	0.0	0.0
From 30703 RAVENSWD230.0	1	13.101	105.8	3288.6	13.063	-74.2	3279.0	27.0	87.2	0.0	0.0	3288.6	105.8	0.0	0.0
From 30632 TESL_GEN230.0	1	11.925	123.4	2993.5	11.925	-56.6	2993.5	0.6	84.6	0.0	0.0	2993.5	123.4	0.0	0.0
From 30632 TESL_GEN230.0	2	11.925	123.4	2993.5	11.925	-56.6	2993.5	0.6	84.6	0.0	0.0	2993.5	123.4	0.0	0.0
From 33852 TESLA 2M 13.8	2	51.912	120.5	13030.9	53.054	-59.5	221958.8	0.0	-89.1	0.0	0.0	13030.9	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]
30624 TESLA E 230.0	0.0000	90.0	0.0000	-26.6	0.0000	90.0	0.0000	-26.6	0.0000	-146.6	0.0000	93.4
30489 STAGG-J2230.0	0.0000	90.0	0.1754	19.3	0.0000	90.0	0.1754	19.3	0.1754	-100.7	0.1754	139.3
30500 BELLOTA 230.0	0.0000	90.0	0.6452	13.5	0.0000	90.0	0.6452	13.5	0.6452	-106.5	0.6452	133.5
30505 WEBER 230.0	0.0000	90.0	0.4154	11.9	0.0000	90.0	0.4154	11.9	0.4154	-108.1	0.4154	131.9
30622 EIGHT MI230.0	0.0000	90.0	0.2606	18.6	0.0000	90.0	0.2606	18.6	0.2606	-101.4	0.2606	138.6
30625 TESLA D 230.0	0.0000	90.0	0.4774	26.2	0.0000	90.0	0.4774	26.2	0.4774	-93.8	0.4774	146.2
30630 NEWARK D230.0	0.0000	90.0	0.6444	16.2	0.0000	90.0	0.6444	16.2	0.6444	-103.8	0.6444	136.2
30670 WESTLEY 230.0	0.0000	90.0	0.4638	16.6	0.0000	90.0	0.4638	16.6	0.4638	-103.4	0.4638	136.6
30703 RAVENSWD230.0	0.0000	90.0	0.6658	13.0	0.0000	90.0	0.6658	13				

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			14690.14			0.00	0.00 Ohms
Prefault voltage,	pu			1.0115				
Fault Current,	pu	16.687	-24.037	29.261	-55.2			
1 Seq impedance,	pu	0.0097	0.0332	0.0346	73.8	3.4384		

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	29.261	124.8	14690.2	29.261	-55.2	14690.2	0.1	45.0	0.0	0.0	14690.2	124.8	0.0	0.0

Voltage		[V0	]	[V1	]	[V2	]	[Va	]	[Vb	]	[Vc	]
		[Mag	Ang]	[Mag	Ang]	[Mag	Ang]	[Mag	Ang]	[Mag	Ang]	[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	-10.2	0.0000	90.0	0.0207	-10.2	0.0207	-130.2	0.0207	109.8

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 30565 BRENTWOD230.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			18144.57			0.00	0.00 Ohms
Prefault voltage,	pu			1.0135				
Fault Current,	pu	38.611	-61.108	72.284	-57.7			
1 Seq impedance,	pu	0.0023	0.0138	0.0140	80.7	6.0929		

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	49.025	124.0	12306.3	49.015	-56.0	12303.8	7.3	81.6	0.0	0.0	12306.3	124.0	0.0	0.0
From 30569 KELSO 230.0	1	23.326	118.7	5855.4	23.312	-61.3	5851.8	13.0	82.1	0.0	0.0	5855.4	118.7	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	0.6750	25.6	0.0000	90.0	0.6750	25.6	0.6750	-94.4	0.6750	145.6
30569 KELSO 230.0	0.0000	90.0	0.5738	20.8	0.0000	90.0	0.5738	20.8	0.5738	-99.2	0.5738	140.8
0.0000 90.0 0.0058	25.5	0.0000	90.0	0.0058	25.5	0.0058	-94.5	0.0058	145.5			
30523 CC SUB 230.0	0.0000	90.0	0.0587	30.3	0.0000	90.0	0.0587	30.3	0.0587	-89.7	0.0587	150.3
30479 BDLSWSTA230.0	0.0000	90.0	0.3208	31.4	0.0000	90.0	0.3208	31.4	0.3208	-88.6	0.3208	151.4
30543 ROSSTAP1230.0	0.0000	90.0	0.4354	16.6	0.0000	90.0	0.4354	16.6	0.4354	-103.4	0.4354	136.6
30544 ROSSTAP2230.0	0.0000	90.0	0.4361	16.8	0.0000	90.0	0.4361	16.8	0.4361	-103.2	0.4361	136.8
30565 BRENTWOD230.0	0.0000	90.0	0.2111	19.4	0.0000	90.0	0.2111	19.4	0.2111	-100.6	0.2111	139.4
30567 LONETREE230.0	0.0000	90.0	0.0750	10.2	0.0000	90.0	0.0750	10.2	0.0750	-109.8	0.0750	130.2
30575 WND MSTR230.0	0.0000	90.0	0.5124	20.6	0.0000	90.0	0.5124	20.6	0.5124	-99.4	0.5124	140.6
30585 LS PSTAS230.0	0.0000	90.0	0.4094	10.7	0.0000	90.0	0.4094	10.7	0.4094	-109.3	0.4094	130.7
99980 MIRPKCC1230.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
99981 MIRPKCC2230.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
99985 MIRCCCC1230.0	0.0000	90.0	0.0000	153.4	0.0000	90.0	0.0000	153.4	0.0000	33.4	0.0000	-86.6
99986 MIRCCCC2230.0	0.0000	90.0	0.0000	153.4	0.0000	90.0	0.0000	153.4	0.0000	33.4	0.0000	-86.6
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	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	0.3926	38.6	0.0000	90.0	0.3926	38.6	0.3926	-81.4	0.3926	158.6
33117 C.COS 7 18.0	0.0000	90.0	0.3926	38.6	0.0000	90.0	0.3926	38.6	0.3926	-81.4	0.3926	158.6

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 30523 CC SUB 230.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			33562.13			0.00	0.00 Ohms
Prefault voltage,	pu			1.0132				
Fault Current,	pu	75.523	-110.331	133.704	-55.6			
1 Seq impedance,	pu	0.0013	0.0075	0.0076	80.4	5.9427		

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	28.014	129.9	7032.0	28.008	-50.1	7030.6	7.4	79.4	0.0	0.0	7032.0	129.9	0.0	0.0
From 30525 C.COSTA 230.0	1	101.844	122.8	25564.8	101.843	-57.2	25564.6	1.4	79.5	0.0	0.0	25564.8	122.8	0.0	0.0
From 33000 CC SUB 115.0	3	4.012	125.7	1007.1	3.861	-54.3	1938.5	5.1	88.6	0.0	0.0	1007.1	125.7	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	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
30479 BDLSWSTA230.0	0.0000	90.0	0.3939	29.3	0.0000	90.0	0.3939	29.3	0.3939	-90.7	0.3939	149.3
30525 C.COSTA 230.0	0.0000	90.0	0.2673	22.3	0.0000	90.0	0.2673	22.3	0.2673	-97.7	0.2673	142.3
33000 CC SUB 115.0	0.0000	90.0	0.1481	34.3	0.0000	90.0	0.1481	34.3	0.1481	-85.7	0.1481	154.3

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 33000 CC SUB 115.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			13576.90			0.00	0.00 Ohms
Prefault voltage,	pu			1.0444				
Fault Current,	pu	13.179	-23.615	27.044	-60.8			
1 Seq impedance,	pu	0.0026	0.0385	0.0386	86.1	14.6195		

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	126.5	422.5	0.842	-53.5	422.5	1.2	66.7	0.0	0.0	422.5	126.5	0.0	0.0
From 33047 CC JCT 115.0	1	2.150	129.6	1079.4	2.150	-50.4	1079.4	0.2	73.1	0.0	0.0	1079.4	129.6	0.0	0.0
From 30523 CC SUB 230.0	3	22.567	117.6	11329.4	23.453	-62.4	5887.1	18.8	88.6	0.0	0.0	11329.4	117.6	0.0	0.0
From 33050 CC SUB 60.0	1	1.539	122.8	772.7	1.480	-57.2	1424.5	8.4	84.9	0.0	0.0	772.7	122.8	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	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
33046 FIBRJCT2115.0	0.0000	90.0	0.0076	13.2	0.0000	90.0	0.0076	13.2	0.0076	-106.8	0.0076	133.2
33047 CC JCT 115.0	0.0000	90.0	0.0037	22.8	0.0000	90.0	0.0037	22.8	0.0037	-97.2	0.0037	142.8
30523 CC SUB 230.0	0.0000	90.0	0.8328	26.2	0.0000	90.0	0.8328	26.2	0.8328	-93.8	0.8328	146.2
33050 CC SUB 60.0	0.0000	90.0	0.3446	27.8	0.0000	90.0	0.3446	27.8	0.3446	-92.2	0.3446	147.8

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 32970 CLAYTN 115.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]	
Fault Current,	Amps			28638.31			0.00	0.00	Ohms
Prefault voltage,	pu			1.0207					
Fault Current,	pu	28.663	-49.320	57.044	-59.8				
1 Seq impedance,	pu	0.0034	0.0176	0.0179	78.9	5.1030			

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	19.501	123.0	9790.2	19.498	-57.0	9788.7	3.3	79.1	0.0	0.0	9790.2	123.0	0.0	0.0
From 32950 PITSBURG115.0	4	14.849	119.9	7454.7	14.849	-60.1	7454.6	4.3	82.2	0.0	0.0	7454.7	119.9	0.0	0.0
From 32971 MEDW LNE115.0	1	1.581	110.2	793.7	1.581	-69.8	793.7	5.0	78.2	0.0	0.0	793.7	110.2	0.0	0.0
From 32974 LAKEWD-M115.0	2	3.273	114.2	1643.1	3.273	-65.8	1643.0	4.1	73.5	0.0	0.0	1643.1	114.2	0.0	0.0
From 33032 KIRKTAP1115.0	3	14.831	120.0	7445.8	14.830	-60.0	7445.0	3.6	81.6	0.0	0.0	7445.8	120.0	0.0	0.0
From 33035 LKWD_JCT115.0	1	3.083	116.0	1547.6	3.082	-64.0	1547.5	4.1	73.5	0.0	0.0	1547.6	116.0	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	22.0	0.0000	90.0	0.4796	22.0	0.4796	-98.0	0.4796	142.0
32950 PITSBURG115.0	0.0000	90.0	0.4796	22.0	0.0000	90.0	0.4796	22.0	0.4796	-98.0	0.4796	142.0
32971 MEDW LNE115.0	0.0000	90.0	0.0603	8.5	0.0000	90.0	0.0603	8.5	0.0603	-111.5	0.0603	128.5
32974 LAKEWD-M115.0	0.0000	90.0	0.1011	7.6	0.0000	90.0	0.1011	7.6	0.1011	-112.4	0.1011	127.6
33032 KIRKTAP1115.0	0.0000	90.0	0.4024	21.6	0.0000	90.0	0.4024	21.6	0.4024	-98.4	0.4024	141.6
33035 LKWD_JCT115.0	0.0000	90.0	0.0952	9.5	0.0000	90.0	0.0952	9.5	0.0952	-110.5	0.0952	129.5

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 30528 DEC PTSG230.0

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		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			48583.18			0.00	0.00 Ohms
Prefault voltage,	pu			1.0110				
Fault Current,	pu	103.173	-163.752	193.544	-57.8			
1 Seq impedance,	pu	0.0008	0.0052	0.0052	80.9	6.2415		

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	81.051	120.7	20345.3	81.051	-59.3	20345.3	0.8	70.5	0.0	0.0	20345.3	120.7	0.0	0.0
From 30526 PITSBG D230.0	2	81.051	120.7	20345.3	81.051	-59.3	20345.3	0.8	70.5	0.0	0.0	20345.3	120.7	0.0	0.0
From 33107 DEC STG1 24.0	1	10.075	129.9	2529.1	10.076	-50.1	24239.2	0.3	88.9	0.0	0.0	2529.1	129.9	0.0	0.0
From 33108 DEC CTG1 18.0	1	7.688	128.9	1929.7	7.688	-51.1	24659.5	0.2	88.8	0.0	0.0	1929.7	128.9	0.0	0.0
From 33109 DEC CTG2 18.0	1	7.008	130.3	1759.1	7.008	-49.7	22478.9	0.2	88.8	0.0	0.0	1759.1	130.3	0.0	0.0
From 33110 DEC CTG3 18.0	1	7.008	130.3	1759.1	7.008	-49.7	22478.9	0.2	88.8	0.0	0.0	1759.1	130.3	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	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	0.1213	11.2	0.0000	90.0	0.1213	11.2	0.1213	-108.8	0.1213	131.2
30526 PITSBG D230.0	0.0000	90.0	0.1213	11.2	0.0000	90.0	0.1213	11.2	0.1213	-108.8	0.1213	131.2
33107 DEC STG1 24.0	0.0000	90.0	0.4724	38.7	0.0000	90.0	0.4724	38.7	0.4724	-81.3	0.4724	158.7
33108 DEC CTG1 18.0	0.0000	90.0	0.5007	37.7	0.0000	90.0	0.5007	37.7	0.5007	-82.3	0.5007	157.7
33109 DEC CTG2 18.0	0.0000	90.0	0.4564	39.1	0.0000	90.0	0.4564	39.1	0.4564	-80.9	0.4564	159.1
33110 DEC CTG3 18.0	0.0000	90.0	0.4564	39.1	0.0000	90.0	0.4564	39.1	0.4564	-80.9	0.4564	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 32973 LAKEWD-C115.0

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		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			19951.53			0.00	0.00 Ohms
Prefault voltage,	pu			1.0041				
Fault Current,	pu	20.965	-33.761	39.741	-58.2			
1 Seq impedance,	pu	0.0063	0.0245	0.0253	75.6	3.8853		

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	18.463	123.0	9269.2	18.463	-57.0	9269.2	0.1	45.0	0.0	0.0	9269.2	123.0	0.0	0.0
From 32974 LAKEWD-M115.0	1	21.285	120.8	10686.1	21.285	-59.2	10686.1	0.1	45.0	0.0	0.0	10686.1	120.8	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	0.0	0.0000	90.0	0.0000	0.0	0.0000	-120.0	0.0000	120.0
33035 LKWD_JCT115.0	0.0000	90.0	0.0131	-12.0	0.0000	90.0	0.0131	-12.0	0.0131	-132.0	0.0131	108.0
32974 LAKEWD-M115.0	0.0000	90.0	0.0151	-14.2	0.0000	90.0	0.0151	-14.2	0.0151	-134.2	0.0151	105.8

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 32974 LAKEWD-M115.0

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		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			19985.73			0.00	0.00 Ohms
Prefault voltage,	pu			1.0041				
Fault Current,	pu	20.939	-33.857	39.809	-58.3			
1 Seq impedance,	pu	0.0062	0.0244	0.0252	75.7	3.9144		

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	12.617	124.0	6334.2	12.616	-56.0	6333.8	4.1	73.5	0.0	0.0	6334.2	124.0	0.0	0.0
From 32973 LAKEWD-C115.0	1	17.958	123.9	9015.6	17.958	-56.1	9015.6	0.1	45.0	0.0	0.0	9015.6	123.9	0.0	0.0
From 32976 LK_REACT115.0	9	9.332	114.5	4685.0	9.332	-65.5	4685.0	9.0	89.6	0.0	0.0	4685.0	114.5	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	-26.6	0.0000	90.0	0.0000	-26.6	0.0000	-146.6	0.0000	93.4
32970 CLAYTN 115.0	0.0000	90.0	0.3896	17.5	0.0000	90.0	0.3896	17.5	0.3896	-102.5	0.3896	137.5
32973 LAKEWD-C115.0	0.0000	90.0	0.0127	-11.1	0.0000	90.0	0.0127	-11.1	0.0127	-131.1	0.0127	108.9
32976 LK_REACT115.0	0.0000	90.0	0.6346	24.0	0.0000	90.0	0.6346	24.0	0.6346	-96.0	0.6346	144.0

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 32978 LMEC 115.0

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		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			45864.32			0.00	0.00 Ohms
Prefault voltage,	pu			1.0388				
Fault Current,	pu	44.615	-79.721	91.356	-60.8			
1 Seq impedance,	pu	0.0015	0.0113	0.0114	82.4	7.4626		

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	34.904	117.3	17523.0	34.903	-62.7	17522.5	0.4	79.1	0.0	0.0	17523.0	117.3	0.0	0.0
From 32950 PITSBURG115.0	2	34.904	117.3	17523.0	34.903	-62.7	17522.5	0.4	79.1	0.0	0.0	17523.0	117.3	0.0	0.0
From 33111 LMECCT2 18.0	1	7.169	124.3	3599.3	7.170	-55.7	22996.6	0.2	88.6	0.0	0.0	3599.3	124.3	0.0	0.0
From 33112 LMECCT1 18.0	1	7.169	124.3	3599.3	7.170	-55.7	22996.6	0.2	88.6	0.0	0.0	3599.3	124.3	0.0	0.0
From 33113 LMECST1 18.0	1	7.377	127.3	3703.7	7.378	-52.7	23664.6	0.2	89.0	0.0	0.0	3703.7	127.3	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	16.5	0.0000	90.0	0.0924	16.5	0.0924	-103.5	0.0924	136.5
32950 PITSBURG115.0	0.0000	90.0	0.0924	16.5	0.0000	90.0	0.0924	16.5	0.0924	-103.5	0.0924	136.5
33111 LMECCT2 18.0	0.0000	90.0	0.3442	32.8	0.0000	90.0	0.3442	32.8	0.3442	-87.2	0.3442	152.8
33112 LMECCT1 18.0	0.0000	90.0	0.3442	32.8	0.0000	90.0	0.3442	32.8	0.3442	-87.2	0.3442	152.8
33113 LMECST1 18.0	0.0000	90.0	0.3542	36.3	0.0000	90.0	0.3542	36.3	0.3542	-83.7	0.3542	156.3

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 30550 MORAGA 230.0

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		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			30804.81			0.00	0.00 Ohms
Prefault voltage,	pu			0.9984				
Fault Current,	pu	60.803	-106.597	122.719	-60.3			
1 Seq impedance,	pu	0.0015	0.0080	0.0081	79.6	5.4220		

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	10.854	124.7	2724.5	10.839	-55.3	2720.7	19.1	81.4	0.0	0.0	2724.5	124.7	0.0	0.0
From 30467 PARKWAY 230.0	1	11.038	126.1	2770.6	11.022	-53.9	2766.6	19.8	81.4	0.0	0.0	2770.6	126.1	0.0	0.0
From 30543 ROSSTAP1230.0	1	18.158	125.3	4557.9	18.156	-54.7	4557.6	4.2	81.9	0.0	0.0	4557.9	125.3	0.0	0.0
From 30544 ROSSTAP2230.0	2	18.187	125.6	4565.2	18.186	-54.4	4564.9	4.2	81.9	0.0	0.0	4565.2	125.6	0.0	0.0
From 30554 CASTROVL230.0	1	15.652	111.8	3928.9	15.645	-68.2	3927.1	11.3	81.7	0.0	0.0	3928.9	111.8	0.0	0.0
From 30555 SANRAMON230.0	1	12.892	118.9	3236.2	12.878	-61.0	3232.7	17.0	82.6	0.0	0.0	3236.2	118.9	0.0	0.0
From 30551 MRAGA_1M 13.2	1	12.062	114.3	3027.9	12.062	-65.7	52758.7	0.0	89.7	0.0	0.0	3027.9	114.3	0.0	0.0
From 30552 MRAGA_2M 13.2	2	12.062	114.3	3027.9	12.062	-65.7	52758.7	0.0	89.7	0.0	0.0	3027.9	114.3	0.0	0.0
From 30553 MRAGA_3M 13.2	3	12.426	114.1	3119.2	12.426	-65.9	54349.6	0.0	89.7	0.0	0.0	3119.2	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]
30550 MORAGA 230.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	-30.0	0.0000	-150.0
30465 BAHIA 230.0	0.0000	90.0	0.3919	26.1	0.0000	90.0	0.3919	26.1	0.3919	-93.9	0.3919	146.1
30467 PARKWAY 230.0	0.0000	90.0	0.4119	27.5	0.0000	90.0	0.4119	27.5	0.4119	-92.5	0.4119	147.5
30543 ROSSTAP1230.0	0.0000	90.0	0.1443	27.2	0.0000	90.0	0.1443	27.2	0.1443	-92.8	0.1443	147.2
30544 ROSSTAP2230.0	0.0000	90.0	0.1446	27.5	0.0000	90.0	0.1446	27.5	0.1446	-92.5	0.1446	147.5
30554 CASTROVL230.0	0.0000	90.0	0.3338	13.4	0.0000	90.0	0.3338	13.4	0.3338	-106.6	0.3338	133.4
30555 SANRAMON230.0	0.0000	90.0	0.4132	21.5	0.0000	90.0	0.4132	21.5	0.4132	-98.5	0.4132	141.5
30551 MRAGA_1M 13.2	0.0000	90.0	0.3230	24.0	0.0000	90.0	0.3230	24.0	0.3230	-96.0	0.3230	144.0
30552 MRAGA_2M 13.2	0.0000	90.0	0.3230	24.0	0.0000	90.0	0.3230	24.0	0.3230	-96.0	0.3230	144.0
30553 MRAGA_3M 13.2	0.0000	90.0	0.3327	23.8	0.0000	90.0	0.3327	23.8	0.3327	-96.2	0.3327	143.8

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 30537 NDUBLIN 230.0

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		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			10241.31			0.00	0.00 Ohms
Prefault voltage,	pu			1.0183				
Fault Current,	pu	19.955	-35.586	40.799	-60.7			
1 Seq impedance,	pu	0.0046	0.0245	0.0250	79.3	5.2923		

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	22.750	124.8	5710.8	22.739	-55.2	5708.0	2.9	82.5	0.0	0.0	5710.8	124.8	0.0	0.0
From 35224 VINEYD_D230.0	1	18.285	112.4	4589.9	18.146	-67.5	4555.0	12.1	81.3	0.0	0.0	4589.9	112.4	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	166.0	0.0000	90.0	0.0000	166.0	0.0000	46.0	0.0000	-74.0
30530 CAYETANO230.0	0.0000	90.0	0.1237	27.3	0.0000	90.0	0.1237	27.3	0.1237	-92.7	0.1237	147.3
35224 VINEYD_D230.0	0.0000	90.0	0.4141	13.8	0.0000	90.0	0.4141	13.8	0.4141	-106.2	0.4141	133.8

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 30630 NEWARK D230.0

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		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			46468.38			0.00	0.00 Ohms
Prefault voltage,	pu			1.0074				
Fault Current,	pu	84.220	-164.852	185.119	-62.9			
1 Seq impedance,	pu	0.0013	0.0053	0.0054	76.6	4.1971		

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	125.9	2870.0	11.422	-54.1	2867.0	17.7	80.6	0.0	0.0	2870.0	125.9	0.0	0.0
From 30624 TESLA E 230.0	1	26.724	115.9	6708.1	26.679	-64.1	6696.8	14.9	87.2	0.0	0.0	6708.1	115.9	0.0	0.0
From 30631 NEWARK E230.0	1	88.903	120.8	22316.3	88.903	-59.2	22316.3	0.4	45.0	0.0	0.0	22316.3	120.8	0.0	0.0
From 30703 RAVENSWD230.0	1	30.155	108.6	7569.4	30.149	-71.4	7568.1	6.7	85.8	0.0	0.0	7569.4	108.6	0.0	0.0
From 35219 VINEYARD230.0	1	8.998	126.7	2258.8	8.957	-53.3	2248.3	13.2	80.8	0.0	0.0	2258.8	126.7	0.0	0.0
From 30627 NWRK_9M 13.2	9	9.986	106.7	2506.7	9.767	-73.3	42716.9	0.1	89.7	0.0	0.0	2506.7	106.7	0.0	0.0
From 30626 NWRK_7M 13.2	7	10.112	104.3	2538.4	9.893	-75.7	43269.6	0.1	90.0	0.0	0.0	2538.4	104.3	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	0.0	0.0000	90.0	0.0000	0.0	0.0000	-120.0	0.0000	120.0
30585 LS PSTAS230.0	0.0000	90.0	0.3819	26.5	0.0000	90.0	0.3819	26.5	0.3819	-93.5	0.3819	146.5
30624 TESLA E 230.0	0.0000	90.0	0.7510	23.1	0.0000	90.0	0.7510	23.1	0.7510	-96.9	0.7510	143.1
30631 NEWARK E230.0	0.0000	90.0	0.0629	-14.2	0.0000	90.0	0.0629	-14.2	0.0629	-134.2	0.0629	105.8
30703 RAVENSWD230.0	0.0000	90.0	0.3791	14.4	0.0000	90.0	0.3791	14.4	0.3791	-105.6	0.3791	134.4
35219 VINEYARD230.0	0.0000	90.0	0.2232	27.5	0.0000	90.0	0.2232	27.5	0.2232	-92.5	0.2232	147.5
30627 NWRK_9M 13.2	0.0000	90.0	0.3190	16.4	0.0000	90.0	0.3190	16.4	0.3190	-103.6	0.3190	136.4
30626 NWRK_7M 13.2	0.0000	90.0	0.3037	14.3	0.0000	90.0	0.3037	14.3	0.3037	-105.7	0.3037	134.3

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 30631 NEWARK E230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			46572.37			0.00	0.00 Ohms
Prefault voltage,	pu			1.0074				
Fault Current,	pu	84.790	-165.025	185.533	-62.8			
1 Seq impedance,	pu	0.0013	0.0053	0.0054	76.5	4.1713		

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	13.696	120.7	3438.0	13.683	-59.3	3434.6	16.2	81.6	0.0	0.0	3438.0	120.7	0.0	0.0
From 30562 TES JCT 230.0	1	10.996	122.7	2760.1	10.978	-57.3	2755.7	21.1	82.5	0.0	0.0	2760.1	122.7	0.0	0.0
From 30630 NEWARK D230.0	1	88.628	117.3	22247.3	88.628	-62.7	22247.3	0.4	45.0	0.0	0.0	22247.3	117.3	0.0	0.0
From 30635 NWK DIST230.0	1	33.937	114.9	8518.9	33.937	-65.1	8518.9	0.2	81.9	0.0	0.0	8518.9	114.9	0.0	0.0
From 30655 ADCC 230.0	2	26.744	121.9	6713.2	26.707	-58.1	6704.0	11.9	83.5	0.0	0.0	6713.2	121.9	0.0	0.0
From 30628 NWRK_11M 13.2	11	12.083	103.3	3033.0	11.817	-76.7	51685.3	0.0	89.4	0.0	0.0	3033.0	103.3	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	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	22.3	0.0000	90.0	0.4199	22.3	0.4199	-97.7	0.4199	142.3
30562 TES JCT 230.0	0.0000	90.0	0.4380	25.2	0.0000	90.0	0.4380	25.2	0.4380	-94.8	0.4380	145.2
30630 NEWARK D230.0	0.0000	90.0	0.0627	-17.7	0.0000	90.0	0.0627	-17.7	0.0627	-137.7	0.0627	102.3
30635 NWK DIST230.0	0.0000	90.0	0.0120	16.8	0.0000	90.0	0.0120	16.8	0.0120	-103.2	0.0120	136.8
30655 ADCC 230.0	0.0000	90.0	0.6021	25.4	0.0000	90.0	0.6021	25.4	0.6021	-94.6	0.6021	145.4
30628 NWRK_11M 13.2	0.0000	90.0	0.3220	12.7	0.0000	90.0	0.3220	12.7	0.3220	-107.3	0.3220	132.7

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 30526 PITSBG D230.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			53945.81			0.00	0.00 Ohms
Prefault voltage,	pu			1.0080				
Fault Current,	pu	110.773	-184.159	214.907	-59.0			
1 Seq impedance,	pu	0.0007	0.0046	0.0047	81.8	6.9036		

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	122.316	123.6	30703.5	122.316	-56.4	30703.5	0.4	45.0	0.0	0.0	30703.5	123.6	0.0	0.0
From 30528 DEC PTSG230.0	1	15.569	130.2	3908.2	15.569	-49.8	3908.2	0.8	70.5	0.0	0.0	3908.2	130.2	0.0	0.0
From 30528 DEC PTSG230.0	2	15.569	130.2	3908.2	15.569	-49.8	3908.2	0.8	70.5	0.0	0.0	3908.2	130.2	0.0	0.0
From 30555 SANRAMON230.0	1	10.657	115.2	2675.1	10.646	-64.8	2672.4	17.2	81.7	0.0	0.0	2675.1	115.2	0.0	0.0
From 30561 TASSAJAR230.0	1	10.507	110.3	2637.3	10.500	-69.7	2635.6	14.0	78.2	0.0	0.0	2637.3	110.3	0.0	0.0
From 99995 MIRCCPB1230.0	1	0.000	-63.4	0.0	0.000	116.6	0.0	999.9	90.0	0.0	0.0	0.0	-63.4	0.0	0.0
From 32950 PITSBURG115.0	12	12.522	118.4	3143.3	11.846	-61.6	5947.4	3.2	89.2	0.0	0.0	3143.3	118.4	0.0	0.0
From 32950 PITSBURG115.0	13	12.522	118.4	3143.3	11.846	-61.6	5947.4	3.2	89.2	0.0	0.0	3143.3	118.4	0.0	0.0
From 38950 VSC_PTSB180.5	1	17.185	99.9	4313.8	17.185	-80.1	5496.8	9.9	88.2	0.0	0.0	4313.8	99.9	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	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	0.0865	-11.4	0.0000	90.0	0.0865	-11.4	0.0865	-131.4	0.0865	108.6
30528 DEC PTSG230.0	0.0000	90.0	0.0233	20.7	0.0000	90.0	0.0233	20.7	0.0233	-99.3	0.0233	140.7
30528 DEC PTSG230.0	0.0000	90.0	0.0233	20.7	0.0000	90.0	0.0233	20.7	0.0233	-99.3	0.0233	140.7
30555 SANRAMON230.0	0.0000	90.0	0.3468	16.9	0.0000	90.0	0.3468	16.9	0.3468	-103.1	0.3468	136.9
30561 TASSAJAR230.0	0.0000	90.0	0.2780	8.6	0.0000	90.0	0.2780	8.6	0.2780	-111.4	0.2780	128.6
99995 MIRCCPB1230.0	0.0000	90.0	0.0000	-166.0	0.0000	90.0	0.0000	-166.0	0.0000	74.0	0.0000	-46.0
32950 PITSBURG115.0	0.0000	90.0	0.2882	27.6	0.0000	90.0	0.2882	27.6	0.2882	-92.4	0.2882	147.6
32950 PITSBURG115.0	0.0000	90.0	0.2882	27.6	0.0000	90.0	0.2882	27.6	0.2882	-92.4	0.2882	147.6
38950 VSC_PTSB180.5	0.0000	90.0	0.5198	8.1	0.0000	90.0	0.5198	8.1	0.5198	-111.9	0.5198	128.1
0.0000 90.0 0.7667	9.4	0.7667	-110.6	0.7667	129.4							
30000 PTSB 7 20.0	0.0000	90.0	0.2412	39.8	0.0000	90.0	0.2412	39.8	0.2412	-80.2	0.2412	159.8
33105 PTSB 5 18.0	0.0000	90.0	0.3704	36.5	0.0000	90.0	0.3704	36.5	0.3704	-83.5	0.3704	156.5
33105 PTSB 5 18.0	0.0000	90.0	0.3704	36.5	0.0000	90.0	0.3704	36.5	0.3704	-83.5	0.3704	156.5
33106 PTSB 6 18.0	0.0000	90.0	0.4597	35.1	0.0000	90.0	0.4597	35.1	0.4597	-84.9	0.4597	155.1
33106 PTSB 6 18.0	0.0000	90.0	0.4597	35.1	0.0000	90.0	0.4597	35.1	0.4597	-84.9	0.4597	155.1
5 0.0105 -104.5 0.0105	135.5											
33033 KIRKTAP2115.0	0.0000	90.0	0.0114	16.4	0.0000	90.0	0.0114	16.4	0.0114	-103.6	0.0114	136.4
30526 PITSBG D230.0	0.0000	90.0	0.6690	25.8	0.0000	90.0	0.6690	25.8	0.6690	-94.2	0.6690	145.8
30526 PITSBG D230.0	0.0000	90.0	0.6690	25.8	0.0000	90.0	0.6690	25.8	0.6690	-94.2	0.6690	145.8

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 30545 ROSSMOOR230.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			17986.16			0.00	0.00 Ohms
Prefault voltage,	pu			0.9992				
Fault Current,	pu	36.798	-61.482	71.653	-59.1			
1 Seq impedance,	pu	0.0026	0.0137	0.0139	79.2	5.2352		

	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	71.653	120.9	17986.2	71.652	-59.1	17986.1	0.8	70.3	0.0	0.0	17986.2	120.9	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	90.0	0.0000	90.0	0.0000	90.0	0.0000	-30.0	0.0000	-150.0
30543	ROSSTAP1230.0	0.0000	90.0	0.1065	11.2	0.0000	90.0	0.1065	11.2	0.1065	-108.8	0.1065	131.2

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 30700 SANMATEO230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			29628.59			0.00	0.00 Ohms
Prefault voltage,	pu			1.0220				
Fault Current,	pu	44.680	-109.250	118.033	-67.8			
1 Seq impedance,	pu	0.0017	0.0085	0.0087	78.9	5.0777		

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	22.125	121.6	5553.7	22.117	-58.4	5551.8	9.8	82.0	0.0	0.0	5553.7	121.6	0.0	0.0
From 30527 PITSBG E230.0	1	9.804	121.7	2461.0	9.756	-58.3	2449.1	47.6	83.4	0.0	0.0	2461.0	121.7	0.0	0.0
From 30695 MARTIN C230.0	1	10.271	102.2	2578.1	10.005	-77.7	2511.4	19.7	86.5	0.0	0.0	2578.1	102.2	0.0	0.0
From 30703 RAVENSWD230.0	1	23.784	111.8	5970.2	23.776	-68.2	5968.1	7.1	85.1	0.0	0.0	5970.2	111.8	0.0	0.0
From 30703 RAVENSWD230.0	2	23.784	111.8	5970.2	23.776	-68.2	5968.1	7.1	85.1	0.0	0.0	5970.2	111.8	0.0	0.0
From 30701 SMATEO5M 13.2	5	9.374	106.3	2353.0	9.374	-73.7	40998.7	0.0	90.0	0.0	0.0	2353.0	106.3	0.0	0.0
From 30702 SMATEO6M 13.2	6	9.395	106.3	2358.4	9.395	-73.7	41092.9	0.0	90.0	0.0	0.0	2358.4	106.3	0.0	0.0
From 30704 SMATEO7M 13.2	7	10.247	106.1	2572.1	10.247	-73.9	44817.6	0.0	90.0	0.0	0.0	2572.1	106.1	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	-30.0	0.0000	-150.0
30560 E. SHORE230.0	0.0000	90.0	0.4111	23.6	0.0000	90.0	0.4111	23.6	0.4111	-96.4	0.4111	143.6
30527 PITSBG E230.0	0.0000	90.0	0.8784	25.1	0.0000	90.0	0.8784	25.1	0.8784	-94.9	0.8784	145.1
30695 MARTIN C230.0	0.0000	90.0	0.3732	8.8	0.0000	90.0	0.3732	8.8	0.3732	-111.2	0.3732	128.8
30703 RAVENSWD230.0	0.0000	90.0	0.3203	16.9	0.0000	90.0	0.3203	16.9	0.3203	-103.1	0.3203	136.9
30703 RAVENSWD230.0	0.0000	90.0	0.3203	16.9	0.0000	90.0	0.3203	16.9	0.3203	-103.1	0.3203	136.9
30701 SMATEO5M 13.2	0.0000	90.0	0.2622	16.3	0.0000	90.0	0.2622	16.3	0.2622	-103.7	0.2622	136.3
30702 SMATEO6M 13.2	0.0000	90.0	0.2600	16.3	0.0000	90.0	0.2600	16.3	0.2600	-103.7	0.2600	136.3
30704 SMATEO7M 13.2	0.0000	90.0	0.2590	16.1	0.0000	90.0	0.2590	16.1	0.2590	-103.9	0.2590	136.1

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 30540 SOBRANTE230.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			30617.75			0.00	0.00 Ohms
Prefault voltage,	pu			1.0009				
Fault Current,	pu	56.615	-108.039	121.974	-62.3			
1 Seq impedance,	pu	0.0010	0.0081	0.0082	83.0	8.1497		

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	117.8	3081.7	12.216	-62.2	3066.5	26.2	87.2	0.0	0.0	3081.7	117.8	0.0	0.0
From 30437 CROCKETT230.0	1	16.990	121.2	4264.8	16.987	-58.8	4264.0	5.7	86.0	0.0	0.0	4264.8	121.2	0.0	0.0
From 30535 TIDEWATR230.0	1	32.640	118.3	8193.3	32.633	-61.7	8191.5	5.2	86.9	0.0	0.0	8193.3	118.3	0.0	0.0
From 30536 TESORO 230.0	1	28.935	118.6	7263.2	28.925	-61.4	7260.7	6.5	87.1	0.0	0.0	7263.2	118.6	0.0	0.0
From 33010 SOBRANTE115.0	1	16.053	114.2	4029.5	15.704	-65.8	7884.2	3.2	88.9	0.0	0.0	4029.5	114.2	0.0	0.0
From 33010 SOBRANTE115.0	2	15.176	114.1	3809.5	14.847	-65.9	7453.8	3.4	89.0	0.0	0.0	3809.5	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]
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	0.6050	25.0	0.0000	90.0	0.6050	25.0	0.6050	-95.0	0.6050	145.0
30437 CROCKETT230.0	0.0000	90.0	0.1841	27.2	0.0000	90.0	0.1841	27.2	0.1841	-92.8	0.1841	147.2
30535 TIDEWATR230.0	0.0000	90.0	0.3213	25.2	0.0000	90.0	0.3213	25.2	0.3213	-94.8	0.3213	145.2
30536 TESORO 230.0	0.0000	90.0	0.3534	25.7	0.0000	90.0	0.3534	25.7	0.3534	-94.3	0.3534	145.7
33010 SOBRANTE115.0	0.0000	90.0	0.3806	23.1	0.0000	90.0	0.3806	23.1	0.3806	-96.9	0.3806	143.1
33010 SOBRANTE115.0	0.0000	90.0	0.3806	23.1	0.0000	90.0	0.3806	23.1	0.3806	-96.9	0.3806	143.1
0.0000 90.0 0.1728 16.3 0.0000 90.0 0.1728 16.3 0.1728 -103.7 0.1728 136.3												
32808 SNPBLTP2115.0	0.0000	90.0	0.1507	16.3	0.0000	90.0	0.1507	16.3	0.1507	-103.7	0.1507	136.3
33006 GRIZLYJ1115.0	0.0000	90.0	0.0073	-13.4	0.0000	90.0	0.0073	-13.4	0.0073	-133.4	0.0073	106.6
33008 GRIZLYJ2115.0	0.0000	90.0	0.0051	-15.0	0.0000	90.0	0.0051	-15.0	0.0051	-135.0	0.0051	105.0
33014 ALHAMTP1115.0	0.0000	90.0	0.3960	19.1	0.0000	90.0	0.3960	19.1	0.3960	-100.9	0.3960	139.1
33020 MORAGA 115.0	0.0000	90.0	0.4352	15.7	0.0000	90.0	0.4352	15.7	0.4352	-104.3	0.4352	135.7
30540 SOBRANTE230.0	0.0000	90.0	0.5025	25.5	0.0000	90.0	0.5025	25.5	0.5025	-94.5	0.5025	145.5
30540 SOBRANTE230.0	0.0000	90.0	0.5025	25.5	0.0000	90.0	0.5025	25.5	0.5025	-94.5	0.5025	145.5

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 30561 TASSAJAR230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			12601.31			0.00	0.00 Ohms
Prefault voltage,	pu			0.9913				
Fault Current,	pu	25.022	-43.520	50.201	-60.1			
1 Seq impedance,	pu	0.0041	0.0193	0.0197	78.1	4.7280		

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	31.761	125.0	7972.7	31.741	-55.0	7967.5	14.0	78.2	0.0	0.0	7972.7	125.0	0.0	0.0
From 30562 TES JCT 230.0	1	18.783	111.2	4714.9	18.782	-68.8	4714.7	3.6	82.9	0.0	0.0	4714.9	111.2	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	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	0.8403	23.3	0.0000	90.0	0.8403	23.3	0.8403	-96.7	0.8403	143.3
30562 TES JCT 230.0	0.0000	90.0	0.1268	14.0	0.0000	90.0	0.1268	14.0	0.1268	-106.0	0.1268	134.0

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 30640 TESLA C 230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			41130.77			0.00	0.00 Ohms
Prefault voltage,	pu			1.0247				
Fault Current,	pu	74.631	-145.872	163.855	-62.9			
1 Seq impedance,	pu	0.0006	0.0062	0.0063	84.1	9.6097		

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	17.506	121.9	4394.4	17.505	-58.1	4394.2	3.5	81.8	0.0	0.0	4394.4	121.9	0.0	0.0
From 30600 TRES VAQ230.0	2	17.150	122.0	4305.0	17.147	-58.0	4304.3	6.9	81.9	0.0	0.0	4305.0	122.0	0.0	0.0
From 30625 TESLA D 230.0	1	43.049	115.7	10806.0	43.049	-64.3	10806.0	8.3	88.2	0.0	0.0	10806.0	115.7	0.0	0.0
From 30655 ADCC 230.0	2	27.460	110.6	6893.1	27.460	-69.4	6892.9	1.5	84.4	0.0	0.0	6893.1	110.6	0.0	0.0
From 33856 TESLA 6M 13.8	6	59.018	118.3	14814.7	60.317	-61.7	252346.5	0.0	89.5	0.0	0.0	14814.7	118.3	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	180.0	0.0000	90.0	0.0000	180.0	0.0000	60.0	0.0000	-60.0
30595 FLOWIND2230.0	0.0000	90.0	0.1146	23.7	0.0000	90.0	0.1146	23.7	0.1146	-96.3	0.1146	143.7
30600 TRES VAQ230.0	0.0000	90.0	0.2223	23.9	0.0000	90.0	0.2223	23.9	0.2223	-96.1	0.2223	143.9
30625 TESLA D 230.0	0.0000	90.0	0.6719	23.8	0.0000	90.0	0.6719	23.8	0.6719	-96.2	0.6719	143.8
30655 ADCC 230.0	0.0000	90.0	0.0786	15.0	0.0000	90.0	0.0786	15.0	0.0786	-105.0	0.0786	135.0
33856 TESLA 6M 13.8	0.0000	90.0	0.3600	27.8	0.0000	90.0	0.3600	27.8	0.3600	-92.2	0.3600	147.8

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 30625 TESLA D 230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			62473.79			0.00	0.00 Ohms
Prefault voltage,	pu			1.0271				
Fault Current,	pu	119.687	-218.213	248.881	-61.3			
1 Seq impedance,	pu	0.0006	0.0041	0.0041	82.3	7.3615		

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	124.5	3518.0	14.014	-55.5	3517.8	4.2	81.4	0.0	0.0	3518.0	124.5	0.0	0.0
From 30580 ALTM MDW230.0	1	19.450	124.2	4882.4	19.449	-55.8	4882.1	3.5	81.0	0.0	0.0	4882.4	124.2	0.0	0.0
From 30624 TESLA E 230.0	1	59.732	114.6	14993.8	59.732	-65.4	14993.8	4.0	86.2	0.0	0.0	14993.8	114.6	0.0	0.0
From 30640 TESLA C 230.0	1	31.022	117.3	7787.1	31.022	-62.7	7787.1	8.3	88.2	0.0	0.0	7787.1	117.3	0.0	0.0
From 37585 TRCY PMP230.0	1	32.556	119.4	8172.1	32.553	-60.6	8171.5	4.5	81.9	0.0	0.0	8172.1	119.4	0.0	0.0
From 37585 TRCY PMP230.0	2	32.556	119.4	8172.1	32.553	-60.6	8171.5	4.5	81.9	0.0	0.0	8172.1	119.4	0.0	0.0
From 33540 TESLA 115.0	1	5.884	117.9	1477.1	5.758	-62.1	2890.7	5.4	89.4	0.0	0.0	1477.1	117.9	0.0	0.0
From 33540 TESLA 115.0	3	5.884	117.9	1477.1	5.758	-62.1	2890.7	5.4	89.4	0.0	0.0	1477.1	117.9	0.0	0.0
From 33854 TESLA 4M 13.8	4	48.128	120.2	12081.0	49.187	-59.8	205780.8	0.0	89.5	0.0	0.0	12081.0	120.2	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	0.0	0.0000	90.0	0.0000	0.0	0.0000	-120.0	0.0000	120.0
30570 USWP-RLF230.0	0.0000	90.0	0.1107	25.9	0.0000	90.0	0.1107	25.9	0.1107	-94.1	0.1107	145.9
30580 ALTM MDW230.0	0.0000	90.0	0.1286	25.2	0.0000	90.0	0.1286	25.2	0.1286	-94.8	0.1286	145.2
30624 TESLA E 230.0	0.0000	90.0	0.4526	20.8	0.0000	90.0	0.4526	20.8	0.4526	-99.2	0.4526	140.8
30640 TESLA C 230.0	0.0000	90.0	0.4842	25.4	0.0000	90.0	0.4842	25.4	0.4842	-94.6	0.4842	145.4
37585 TRCY PMP230.0	0.0000	90.0	0.2756	21.3	0.0000	90.0	0.2756	21.3	0.2756	-98.7	0.2756	141.3
37585 TRCY PMP230.0	0.0000	90.0	0.2756	21.3	0.0000	90.0	0.2756	21.3	0.2756	-98.7	0.2756	141.3
33540 TESLA 115.0	0.0000	90.0	0.2359	27.3	0.0000	90.0	0.2359	27.3	0.2359	-92.7	0.2359	147.3
33540 TESLA 115.0	0.0000	90.0	0.2359	27.3	0.0000	90.0	0.2359	27.3	0.2359	-92.7	0.2359	147.3
33854 TESLA 4M 13.8	0.0000	90.0	0.2795	29.7	0.0000	90.0	0.2795	29.7	0.2795	-90.3	0.2795	149.7
.0 0.6658 -107.0 0.6658 133.0												
30632 TESL_GEN230.0	0.0000	90.0	0.0127	28.1	0.0000	90.0	0.0127	28.1	0.0127	-91.9	0.0127	148.1
30632 TESL_GEN230.0	0.0000	90.0	0.0127	28.1	0.0000	90.0	0.0127	28.1	0.0127	-91.9	0.0127	148.1
33852 TESLA 2M 13.8	0.0000	90.0	0.1432	-148.6	0.0000	90.0	0.1432	-148.6	0.1432	91.4	0.1432	-28.6

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 30535 TIDEWATR230.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			26062.21			0.00	0.00 Ohms
Prefault voltage,	pu			1.0046				
Fault Current,	pu	47.597	-92.273	103.826	-62.7			
1 Seq impedance,	pu	0.0010	0.0096	0.0097	84.1	9.6661		

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	57.552	118.3	14446.6	57.537	-61.7	14442.9	5.8	87.2	0.0	0.0	14446.6	118.3	0.0	0.0
From 30540 SOBRANTE230.0	1	42.540	115.8	10678.3	42.531	-64.2	10676.0	5.2	86.9	0.0	0.0	10678.3	115.8	0.0	0.0
From 33151 FOSTER W 12.5	1	1.880	119.0	471.8	1.880	-61.0	8702.5	0.5	90.0	0.0	0.0	471.8	119.0	0.0	0.0
From 33151 FOSTER W 12.5	2	1.880	119.0	471.8	1.880	-61.0	8702.5	0.5	90.0	0.0	0.0	471.8	119.0	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	150.0	0.0000	30.0
30527 PITSBG E230.0	0.0000	90.0	0.6327	25.5	0.0000	90.0	0.6327	25.5	0.6327	-94.5	0.6327	145.5
30540 SOBRANTE230.0	0.0000	90.0	0.4188	22.7	0.0000	90.0	0.4188	22.7	0.4188	-97.3	0.4188	142.7
33151 FOSTER W 12.5	0.0000	90.0	0.6015	29.0	0.0000	90.0	0.6015	29.0	0.6015	-91.0	0.6015	149.0
33151 FOSTER W 12.5	0.0000	90.0	0.6015	29.0	0.0000	90.0	0.6015	29.0	0.6015	-91.0	0.6015	149.0

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 30600 TRES VAQ230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			19176.72			0.00	0.00 Ohms
Prefault voltage,	pu			1.0212				
Fault Current,	pu	37.267	-66.689	76.396	-60.8			
1 Seq impedance,	pu	0.0018	0.0133	0.0134	82.4	7.5210		

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	26.076	121.2	6545.5	26.048	-58.8	6538.6	16.8	81.9	0.0	0.0	6545.5	121.2	0.0	0.0
From 30640 TESLA C 230.0	2	50.344	118.2	12637.2	50.335	-61.8	12635.0	6.9	81.9	0.0	0.0	12637.2	118.2	0.0	0.0
From 33171 TRSVQ+NW 9.1	1	0.000	63.4	0.0	0.000	-116.6	0.0	999.9	90.0	0.0	0.0	0.0	63.4	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	90.0	0.0000	90.0
30527 PITSBG E230.0	0.0000	90.0	0.8279	23.1	0.0000	90.0	0.8279	23.1	0.8279	-96.9	0.8279	143.1
30640 TESLA C 230.0	0.0000	90.0	0.6524	20.0	0.0000	90.0	0.6524	20.0	0.6524	-100.0	0.6524	140.0
33171 TRSVQ+NW 9.1	0.0000	90.0	0.0000	-26.6	0.0000	90.0	0.0000	-26.6	0.0000	-146.6	0.0000	93.4

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 30575 WND MSTR230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			21504.21			0.00	0.00 Ohms
Prefault voltage,	pu			1.0226				
Fault Current,	pu	43.807	-73.620	85.668	-59.2			
1 Seq impedance,	pu	0.0017	0.0118	0.0119	81.6	6.7676		

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	30.287	123.8	7602.6	30.268	-56.2	7597.8	13.3	81.9	0.0	0.0	7602.6	123.8	0.0	0.0
From 38610 DELTAPMP230.0	1	55.448	119.1	13918.6	55.448	-60.9	13918.5	1.1	75.8	0.0	0.0	13918.6	119.1	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	0.7590	25.7	0.0000	90.0	0.7590	25.7	0.7590	-94.3	0.7590	145.7
38610 DELTAPMP230.0	0.0000	90.0	0.1132	14.9	0.0000	90.0	0.1132	14.9	0.1132	-105.1	0.1132	134.9
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 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			42917.48			0.00	0.00 Ohms
Prefault voltage,	pu			1.0145				
Fault Current,	pu	142.651	-94.247	170.973	-33.5			
1 Seq impedance,	pu	0.0009	0.0059	0.0059	81.2	6.4669		

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	18.225	157.1	4574.7	18.225	-22.9	4574.7	0.2	71.6	0.0	0.0	4574.7	157.1	0.0	0.0
From 30523	CC SUB 230.0	1	22.360	153.8	5612.9	22.360	-26.2	5612.8	1.4	79.5	0.0	0.0	5612.9	153.8	0.0	0.0
From 30479	BDLSWSTA230.0	1	21.133	154.9	5304.7	21.128	-25.1	5303.5	8.0	79.4	0.0	0.0	5304.7	154.9	0.0	0.0
From 30543	ROSSTAP1230.0	1	14.476	139.0	3633.7	14.462	-41.0	3630.2	16.0	81.9	0.0	0.0	3633.7	139.0	0.0	0.0
From 30544	ROSSTAP2230.0	2	14.499	139.2	3639.5	14.485	-40.8	3636.0	16.0	81.9	0.0	0.0	3639.5	139.2	0.0	0.0
From 30565	BRENTWOD230.0	1	15.326	140.2	3847.1	15.323	-39.8	3846.3	7.3	81.6	0.0	0.0	3847.1	140.2	0.0	0.0
From 30567	LONETREE230.0	1	9.073	132.9	2277.4	9.072	-47.1	2277.3	4.4	80.4	0.0	0.0	2277.4	132.9	0.0	0.0
From 30575	WND MSTR230.0	1	20.433	141.1	5129.0	20.420	-38.8	5125.8	13.3	81.9	0.0	0.0	5129.0	141.1	0.0	0.0
From 30585	LS PSTAS230.0	1	11.761	133.5	2952.2	11.746	-46.5	2948.5	18.5	80.4	0.0	0.0	2952.2	133.5	0.0	0.0
From 99980	MIRPKCC1230.0	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
From 99981	MIRPKCC2230.0	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
From 99985	MIRCCCC1230.0	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 99986	MIRCCCC2230.0	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 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	-178.3	0.0	0.000	1.7	0.0	999.9	90.0	0.0	0.0	0.0	-178.3	0.0	0.0
From 33116	C.COS 6 18.0	1	12.779	153.2	3207.7	12.781	-26.8	40993.1	0.1	88.6	0.0	0.0	3207.7	153.2	0.0	0.0
From 33117	C.COS 7 18.0	1	12.779	153.2	3207.7	12.781	-26.8	40993.1	0.1	88.6	0.0	0.0	3207.7	153.2	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	150.0	0.0000	30.0
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 30527 PITSBG E230.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			59546.43			0.00	0.00 Ohms
Prefault voltage,	pu			1.0132				
Fault Current,	pu	195.907	-133.766	237.219	-34.3			
1 Seq impedance,	pu	0.0005	0.0042	0.0043	82.7	7.7732		

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	106.184	147.7	26654.2	106.184	-32.3	26654.2	0.4	45.0	0.0	0.0	26654.2	147.7	0.0	0.0
From 30535 TIDEWATR230.0	1	18.296	138.3	4592.7	18.291	-41.7	4591.5	5.8	87.2	0.0	0.0	4592.7	138.3	0.0	0.0
From 30536 TESORO 230.0	1	15.614	138.1	3919.5	15.610	-41.9	3918.5	5.5	87.1	0.0	0.0	3919.5	138.1	0.0	0.0
From 30595 FLOWIND2230.0	1	15.575	140.6	3909.7	15.551	-39.4	3903.7	20.2	81.9	0.0	0.0	3909.7	140.6	0.0	0.0
From 30600 TRES VAQ230.0	2	15.546	140.6	3902.4	15.530	-39.4	3898.2	16.8	81.9	0.0	0.0	3902.4	140.6	0.0	0.0
From 30560 E. SHORE230.0	1	9.932	135.2	2493.1	9.886	-44.7	2481.7	38.1	82.1	0.0	0.0	2493.1	135.2	0.0	0.0
From 30700 SANMATEO230.0	1	8.557	128.6	2148.0	8.493	-51.3	2132.0	47.8	83.4	0.0	0.0	2148.0	128.6	0.0	0.0
From 30000 PTSB 7 20.0	1	22.077	157.1	5541.7	22.082	-22.9	63744.1	0.0	88.4	0.0	0.0	5541.7	157.1	0.0	0.0
From 33105 PTSB 5 18.0	1	6.387	153.6	1603.3	6.390	-26.4	20494.2	0.2	88.4	0.0	0.0	1603.3	153.6	0.0	0.0
From 33105 PTSB 5 18.0	2	6.387	153.6	1603.3	6.390	-26.4	20494.1	0.2	88.4	0.0	0.0	1603.3	153.6	0.0	0.0
From 33106 PTSB 6 18.0	1	7.161	152.0	1797.5	7.162	-28.0	22971.1	0.2	88.6	0.0	0.0	1797.5	152.0	0.0	0.0
From 33106 PTSB 6 18.0	2	7.161	152.0	1797.5	7.162	-28.0	22971.0	0.2	88.6	0.0	0.0	1797.5	152.0	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	0.0751	12.7	0.0000	90.0	0.0751	12.7	0.0751	-107.3	0.0751	132.7
30535 TIDEWATR230.0	0.0000	90.0	0.2011	45.6	0.0000	90.0	0.2011	45.6	0.2011	-74.4	0.2011	165.6
30536 TESORO 230.0	0.0000	90.0	0.1615	45.2	0.0000	90.0	0.1615	45.2	0.1615	-74.8	0.1615	165.2
30595 FLOWIND2230.0	0.0000	90.0	0.5943	42.5	0.0000	90.0	0.5943	42.5	0.5943	-77.5	0.5943	162.5
30600 TRES VAQ230.0	0.0000	90.0	0.4936	42.5	0.0000	90.0	0.4936	42.5	0.4936	-77.5	0.4936	162.5
30560 E. SHORE230.0	0.0000	90.0	0.7123	37.4	0.0000	90.0	0.7123	37.4	0.7123	-82.6	0.7123	157.4
30700 SANMATEO230.0	0.0000	90.0	0.7667	32.0								

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 32950 PITSBURG115.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			50094.79			0.00	0.00 Ohms
Prefault voltage,	pu			1.0405				
Fault Current,	pu	80.796	-58.554	99.783	-35.9			
1 Seq impedance,	pu	0.0013	0.0103	0.0104	82.7	7.7550		

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	2.667	138.0	1338.7	2.666	-42.0	1338.5	3.3	79.1	0.0	0.0	1338.7	138.0	0.0	0.0
From 32970 CLAYTN 115.0	4	2.030	134.9	1019.4	2.030	-45.1	1019.3	4.3	82.2	0.0	0.0	1019.4	134.9	0.0	0.0
From 32978 LMEC 115.0	1	10.525	151.0	5284.0	10.525	-29.0	5283.8	0.4	79.1	0.0	0.0	5284.0	151.0	0.0	0.0
From 32978 LMEC 115.0	2	10.525	151.0	5284.0	10.525	-29.0	5283.8	0.4	79.1	0.0	0.0	5284.0	151.0	0.0	0.0
From 32992 BOLLMAN2115.0	2	4.801	147.3	2410.5	4.800	-32.7	2409.9	8.4	74.3	0.0	0.0	2410.5	147.3	0.0	0.0
From 32993 W.P.BART115.0	1	4.375	146.9	2196.6	4.375	-33.1	2196.3	5.8	74.4	0.0	0.0	2196.6	146.9	0.0	0.0
From 33030 COLSTJT1115.0	1	1.417	148.2	711.4	1.417	-31.8	711.3	4.0	74.3	0.0	0.0	711.4	148.2	0.0	0.0
From 33032 KIRKTAP1115.0	3	2.028	135.0	1018.1	2.028	-45.0	1018.1	0.7	84.3	0.0	0.0	1018.1	135.0	0.0	0.0
From 33033 KIRKTAP2115.0	1	1.376	147.5	691.0	1.376	-32.5	691.0	1.1	74.4	0.0	0.0	691.0	147.5	0.0	0.0
From 30526 PITSBG D230.0	12	30.160	141.9	15141.6	31.881	-38.1	8002.7	11.5	89.2	0.0	0.0	15141.6	141.9	0.0	0.0
From 30526 PITSBG D230.0	13	30.160	141.9	15141.6	31.881	-38.1	8002.7	11.5	89.2	0.0	0.0	15141.6	141.9	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	-30.0	0.0000	-150.0
32970 CLAYTN 115.0	0.0000	90.0	0.0656	37.0	0.0000	90.0	0.0656	37.0	0.0656	-83.0	0.0656	157.0
32970 CLAYTN 115.0	0.0000	90.0	0.0656	37.0	0.0000	90.0	0.0656	37.0	0.0656	-83.0	0.0656	157.0
32978 LMEC 115.0	0.0000	90.0	0.0279	50.1	0.0000	90.0	0.0279	50.1	0.0279	-69.9	0.0279	170.1
32978 LMEC 115.0	0.0000	90.0	0.0279	50.1	0.0000	90.0	0.0279	50.1	0.0279	-69.9	0.0279	170.1
32992 BOLLMAN2115.0	0.0000	90.0	0.3037	41.6	0.0000	90.0	0.3037	41.6	0.3037	-78.4	0.3037	161.6
32993 W.P.BART115.0	0.0000	90.0	0.1903	41.3	0.0000	90.0	0.1903	41.3	0.1903	-78.7	0.1903	161.3
33030 COLSTJT1115.0	0.0000	90.0	0.0429	42.5	0.0000	90.0	0.0429	42.5	0.0429	-77.5	0.0429	162.5
33032 KIRKTAP1115.0	0.0000	90.0	0.0106	39.3	0.0000	90.0	0.0106	39.				

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			49270.51			0.00	0.00 Ohms
Prefault voltage,	pu			1.0084				
Fault Current,	pu	78.478	-58.931	98.141	-36.9			
1 Seq impedance,	pu	0.0019	0.0101	0.0103	79.4	5.3281		

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	3.326	146.1	1669.6	3.325	-33.9	1669.3	6.3	73.3	0.0	0.0	1669.6	146.1	0.0	0.0
From 32765 ELCRTJ1 115.0	1	2.204	148.7	1106.6	2.204	-31.3	1106.6	3.8	78.0	0.0	0.0	1106.6	148.7	0.0	0.0
From 32766 EL CRRTO115.0	2	2.212	147.7	1110.7	2.212	-32.3	1110.6	3.8	78.2	0.0	0.0	1110.7	147.7	0.0	0.0
From 32767 ELCRTJ2 115.0	1	0.000	-156.3	0.0	0.000	23.7	0.0	999.9	90.0	0.0	0.0	0.0	-156.3	0.0	0.0
From 32768 RICHMOND115.0	2	0.000	-155.7	0.0	0.000	24.4	0.0	999.9	90.0	0.0	0.0	0.0	-155.7	0.0	0.0
From 32806 SNPBLTP1115.0	2	1.915	141.9	961.6	1.914	-38.1	961.1	11.9	78.9	0.0	0.0	961.6	141.9	0.0	0.0
From 32808 SNPBLTP2115.0	1	1.917	141.9	962.4	1.916	-38.1	962.0	10.4	78.9	0.0	0.0	962.4	141.9	0.0	0.0
From 33006 GRIZLYJ1115.0	1	10.330	145.3	5185.9	10.330	-34.7	5185.9	0.1	45.0	0.0	0.0	5185.9	145.3	0.0	0.0
From 33008 GRIZLYJ2115.0	2	7.196	143.7	3612.5	7.196	-36.3	3612.5	0.1	45.0	0.0	0.0	3612.5	143.7	0.0	0.0
From 33014 ALHAMTP1115.0	1	4.771	151.7	2395.1	4.768	-28.3	2393.5	11.1	72.7	0.0	0.0	2395.1	151.7	0.0	0.0
From 33020 MORAGA 115.0	1	22.537	141.6	11314.5	22.535	-38.4	11313.6	2.6	77.7	0.0	0.0	11314.5	141.6	0.0	0.0
From 30540 SOBRANTE230.0	1	21.507	141.6	10797.5	21.985	-38.4	5518.8	12.3	88.9	0.0	0.0	10797.5	141.6	0.0	0.0
From 30540 SOBRANTE230.0	2	20.333	141.6	10207.9	20.785	-38.4	5217.5	13.0	89.0	0.0	0.0	10207.9	141.6	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	0.1586	39.4	0.0000	90.0	0.1586	39.4	0.1586	-80.6	0.1586	159.4
32765 ELCRTJ1 115.0	0.0000	90.0	0.0628	46.8	0.0000	90.0	0.0628	46.8	0.0628	-73.2	0.0628	166.8
32766 EL CRRTO115.0	0.0000	90.0	0.0641	46.0	0.0000	90.0	0.0641	46.0	0.0641	-74.0	0.0641	166.0
32767 ELCRTJ2 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
32768 RICHMOND115.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	-30.0	0.0000	-150.0
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			60240.16			0.00	0.00 Ohms
Prefault voltage,	pu			1.0250				
Fault Current,	pu	182.871	-155.403	239.983	-40.4			
1 Seq impedance,	pu	0.0006	0.0042	0.0043	82.1	7.2375		

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	5.567	139.4	1397.3	5.560	-40.6	1395.6	16.7	82.1	0.0	0.0	1397.3	139.4	0.0	0.0
From 30500 BELLOTA 230.0	1	12.111	134.4	3040.0	12.073	-45.6	3030.7	28.3	81.0	0.0	0.0	3040.0	134.4	0.0	0.0
From 30505 WEBER 230.0	1	12.482	133.0	3133.3	12.467	-47.0	3129.5	17.6	80.9	0.0	0.0	3133.3	133.0	0.0	0.0
From 30622 EIGHT MI230.0	1	7.351	138.7	1845.1	7.339	-41.3	1842.3	18.8	82.2	0.0	0.0	1845.1	138.7	0.0	0.0
From 30625 TESLA D 230.0	1	62.978	142.6	15808.7	62.978	-37.4	15808.7	4.0	86.2	0.0	0.0	15808.7	142.6	0.0	0.0
From 30630 NEWARK D230.0	1	22.997	132.4	5772.6	22.958	-47.6	5762.9	14.9	87.2	0.0	0.0	5772.6	132.4	0.0	0.0
From 30670 WESTLEY 230.0	1	28.501	138.2	7154.2	28.470	-41.7	7146.5	8.6	80.1	0.0	0.0	7154.2	138.2	0.0	0.0
From 30703 RAVENSWD230.0	1	13.135	129.3	3297.2	13.097	-50.7	3287.6	27.0	87.2	0.0	0.0	3297.2	129.3	0.0	0.0
From 30632 TESL_GEN230.0	1	11.946	145.9	2998.7	11.946	-34.1	2998.7	0.6	84.6	0.0	0.0	2998.7	145.9	0.0	0.0
From 30632 TESL_GEN230.0	2	11.946	145.9	2998.7	11.946	-34.1	2998.7	0.6	84.6	0.0	0.0	2998.7	145.9	0.0	0.0
From 33852 TESLA 2M 13.8	2	51.813	142.8	13006.0	52.953	-37.2	221535.5	0.0	-89.1	0.0	0.0	13006.0	142.8	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	90.0	0.0000	90.0
30489 STAGG-J2230.0	0.0000	90.0	0.1753	41.6	0.0000	90.0	0.1753	41.6	0.1753	-78.4	0.1753	161.6
30500 BELLOTA 230.0	0.0000	90.0	0.6449	35.4	0.0000	90.0	0.6449	35.4	0.6449	-84.6	0.6449	155.4
30505 WEBER 230.0	0.0000	90.0	0.4152	33.9	0.0000	90.0	0.4152	33.9	0.4152	-86.1	0.4152	153.9
30622 EIGHT MI230.0	0.0000	90.0	0.2604	40.9	0.0000	90.0	0.2604	40.9	0.2604	-79.1	0.2604	160.9
30625 TESLA D 230.0	0.0000	90.0	0.4772	48.8	0.0000	90.0	0.4772	48.8	0.4772	-71.2	0.4772	168.8
30630 NEWARK D230.0	0.0000	90.0	0.6463	39.6	0.0000	90.0	0.6463	39.6	0.6463	-80.4	0.6463	159.6
30670 WESTLEY 230.0	0.0000	90.0	0.4629	38.3	0.0000	90.0	0.4629	38.3	0.4629	-81.7	0.4629	158.3
30703 RAVENSWD230.0	0.0000	90.0	0.6675	36.5	0.0000	90.0	0.6675	36				

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

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		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			14748.52			0.00	0.00 Ohms
Prefault voltage,	pu			1.0124				
Fault Current,	pu	25.360	-14.830	29.377	-30.3			
1 Seq impedance,	pu	0.0096	0.0331	0.0345	73.8	3.4449		

	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	29.377	149.7	14748.5	29.377	-30.3	14748.5	0.1	45.0	0.0	0.0	14748.5	149.7	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	90.0	0.0000	90.0
	33014 ALHAMTP1115.0	0.0000	90.0	0.0208	14.7	0.0000	90.0	0.0208	14.7	0.0208	-105.3	0.0208	134.7

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 30565 BRENTWOD230.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			18142.71			0.00	0.00 Ohms
Prefault voltage,	pu			1.0128				
Fault Current,	pu	59.388	-41.193	72.276	-34.7			
1 Seq impedance,	pu	0.0023	0.0138	0.0140	80.7	6.0994		

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	49.067	147.2	12316.6	49.057	-32.8	12314.1	7.3	81.6	0.0	0.0	12316.6	147.2	0.0	0.0
From 30569 KELSO 230.0	1	23.298	141.2	5848.1	23.283	-38.8	5844.5	13.0	82.1	0.0	0.0	5848.1	141.2	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	180.0	0.0000	90.0	0.0000	180.0	0.0000	60.0	0.0000	-60.0
30525 C.COSTA 230.0	0.0000	90.0	0.6756	48.8	0.0000	90.0	0.6756	48.8	0.6756	-71.2	0.6756	168.8
30569 KELSO 230.0	0.0000	90.0	0.5731	43.3	0.0000	90.0	0.5731	43.3	0.5731	-76.7	0.5731	163.3
0.0000 90.0 0.0058	48.7	0.0000	90.0	0.0058	48.7	0.0058	-71.3	0.0058	168.7			
30523 CC SUB 230.0	0.0000	90.0	0.0587	53.3	0.0000	90.0	0.0587	53.3	0.0587	-66.7	0.0587	173.3
30479 BDLSWSTA230.0	0.0000	90.0	0.3208	54.2	0.0000	90.0	0.3208	54.2	0.3208	-65.8	0.3208	174.2
30543 ROSSTAP1230.0	0.0000	90.0	0.4380	40.9	0.0000	90.0	0.4380	40.9	0.4380	-79.1	0.4380	160.9
30544 ROSSTAP2230.0	0.0000	90.0	0.4387	41.1	0.0000	90.0	0.4387	41.1	0.4387	-78.9	0.4387	161.1
30565 BRENTWOD230.0	0.0000	90.0	0.2110	41.7	0.0000	90.0	0.2110	41.7	0.2110	-78.3	0.2110	161.7
30567 LONETREE230.0	0.0000	90.0	0.0751	33.3	0.0000	90.0	0.0751	33.3	0.0751	-86.7	0.0751	153.3
30575 WND MSTR230.0	0.0000	90.0	0.5121	43.0	0.0000	90.0	0.5121	43.0	0.5121	-77.0	0.5121	163.0
30585 LS PSTAS230.0	0.0000	90.0	0.4100	33.9	0.0000	90.0	0.4100	33.9	0.4100	-86.1	0.4100	153.9
99980 MIRPKCC1230.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
99981 MIRPKCC2230.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
99985 MIRCCCC1230.0	0.0000	90.0	0.0000	-90.0	0.0000	90.0	0.0000	-90.0	0.0000	150.0	0.0000	30.0
99986 MIRCCCC2230.0	0.0000	90.0	0.0000	-90.0	0.0000	90.0	0.0000	-90.0	0.0000	150.0	0.0000	30.0
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	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	0.3927	61.7	0.0000	90.0	0.3927	61.7	0.3927	-58.3	0.3927	-178.3
33117 C.COS 7 18.0	0.0000	90.0	0.3927	61.7	0.0000	90.0	0.3927	61.7	0.3927	-58.3	0.3927	-178.3

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 30523 CC SUB 230.0

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		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			33596.13			0.00	0.00 Ohms
Prefault voltage,	pu			1.0130				
Fault Current,	pu	112.873	-71.920	133.839	-32.5			
1 Seq impedance,	pu	0.0013	0.0075	0.0076	80.5	5.9550		

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	28.023	152.8	7034.3	28.018	-27.2	7033.0	7.4	79.4	0.0	0.0	7034.3	152.8	0.0	0.0
From 30525 C.COSTA 230.0	1	101.961	146.0	25594.1	101.960	-34.0	25593.9	1.4	79.5	0.0	0.0	25594.1	146.0	0.0	0.0
From 33000 CC SUB 115.0	3	4.012	148.8	1007.2	3.862	-31.2	1938.6	5.1	88.6	0.0	0.0	1007.2	148.8	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	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
30479 BDLSWSTA230.0	0.0000	90.0	0.3940	52.2	0.0000	90.0	0.3940	52.2	0.3940	-67.8	0.3940	172.2
30525 C.COSTA 230.0	0.0000	90.0	0.2676	45.4	0.0000	90.0	0.2676	45.4	0.2676	-74.6	0.2676	165.4
33000 CC SUB 115.0	0.0000	90.0	0.1481	57.4	0.0000	90.0	0.1481	57.4	0.1481	-62.6	0.1481	177.4

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 33000 CC SUB 115.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			13577.30			0.00	0.00 Ohms
Prefault voltage,	pu			1.0442				
Fault Current,	pu	21.393	-16.545	27.044	-37.7			
1 Seq impedance,	pu	0.0026	0.0385	0.0386	86.1	14.6355		

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	149.7	422.5	0.842	-30.3	422.5	1.2	66.7	0.0	0.0	422.5	149.7	0.0	0.0
From 33047 CC JCT 115.0	1	2.150	152.8	1079.4	2.150	-27.2	1079.4	0.2	73.1	0.0	0.0	1079.4	152.8	0.0	0.0
From 30523 CC SUB 230.0	3	22.567	140.8	11329.7	23.453	-39.2	5887.3	18.8	88.6	0.0	0.0	11329.7	140.8	0.0	0.0
From 33050 CC SUB 60.0	1	1.539	146.0	772.8	1.481	-34.0	1424.6	8.4	84.9	0.0	0.0	772.8	146.0	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	45.0	0.0000	90.0	0.0000	45.0	0.0000	-75.0	0.0000	165.0
33046 FIBRJCT2115.0	0.0000	90.0	0.0076	36.3	0.0000	90.0	0.0076	36.3	0.0076	-83.7	0.0076	156.3
33047 CC JCT 115.0	0.0000	90.0	0.0037	45.9	0.0000	90.0	0.0037	45.9	0.0037	-74.1	0.0037	165.9
30523 CC SUB 230.0	0.0000	90.0	0.8328	49.3	0.0000	90.0	0.8328	49.3	0.8328	-70.7	0.8328	169.3
33050 CC SUB 60.0	0.0000	90.0	0.3446	50.9	0.0000	90.0	0.3446	50.9	0.3446	-69.1	0.3446	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 32970 CLAYTN 115.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			28994.27			0.00	0.00 Ohms
Prefault voltage,	pu			1.0225				
Fault Current,	pu	47.484	-32.874	57.753	-34.7			
1 Seq impedance,	pu	0.0033	0.0174	0.0177	79.1	5.1929		

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	19.777	148.3	9928.6	19.773	-31.7	9927.0	3.3	79.1	0.0	0.0	9928.6	148.3	0.0	0.0
From 32950 PITSBURG115.0	4	15.059	145.2	7560.1	15.058	-34.8	7559.9	4.3	82.2	0.0	0.0	7560.1	145.2	0.0	0.0
From 32971 MEDW LNE115.0	1	1.589	134.1	797.6	1.588	-45.9	797.5	5.0	78.2	0.0	0.0	797.6	134.1	0.0	0.0
From 32974 LAKEWD-M115.0	2	3.288	138.1	1650.9	3.288	-41.9	1650.8	4.1	73.5	0.0	0.0	1650.9	138.1	0.0	0.0
From 33032 KIRKTAP1115.0	3	15.041	145.3	7551.0	15.039	-34.7	7550.2	3.6	81.6	0.0	0.0	7551.0	145.3	0.0	0.0
From 33035 LKWD_JCT115.0	1	3.097	139.9	1555.0	3.097	-40.1	1554.9	4.1	73.5	0.0	0.0	1555.0	139.9	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	180.0	0.0000	90.0	0.0000	180.0	0.0000	60.0	0.0000	-60.0
32950 PITSBURG115.0	0.0000	90.0	0.4864	47.4	0.0000	90.0	0.4864	47.4	0.4864	-72.6	0.4864	167.4
32950 PITSBURG115.0	0.0000	90.0	0.4864	47.4	0.0000	90.0	0.4864	47.4	0.4864	-72.6	0.4864	167.4
32971 MEDW LNE115.0	0.0000	90.0	0.0606	32.4	0.0000	90.0	0.0606	32.4	0.0606	-87.6	0.0606	152.4
32974 LAKEWD-M115.0	0.0000	90.0	0.1015	31.5	0.0000	90.0	0.1015	31.5	0.1015	-88.5	0.1015	151.5
33032 KIRKTAP1115.0	0.0000	90.0	0.4080	47.0	0.0000	90.0	0.4080	47.0	0.4080	-73.0	0.4080	167.0
33035 LKWD_JCT115.0	0.0000	90.0	0.0956	33.4	0.0000	90.0	0.0956	33.4	0.0956	-86.6	0.0956	153.4

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 30528 DEC PTSG230.0

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		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			52570.07			0.00	0.00 Ohms
Prefault voltage,	pu			1.0147				
Fault Current,	pu	176.483	-112.754	209.427	-32.6			
1 Seq impedance,	pu	0.0007	0.0048	0.0048	81.3	6.5547		

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	89.082	146.0	22361.2	89.082	-34.0	22361.2	0.8	70.5	0.0	0.0	22361.2	146.0	0.0	0.0
From 30526 PITSBG D230.0	2	89.082	146.0	22361.2	89.082	-34.0	22361.2	0.8	70.5	0.0	0.0	22361.2	146.0	0.0	0.0
From 33107 DEC STG1 24.0	1	10.030	155.5	2517.6	10.030	-24.5	24129.2	0.3	88.9	0.0	0.0	2517.6	155.5	0.0	0.0
From 33108 DEC CTG1 18.0	1	7.656	154.6	1921.9	7.657	-25.4	24559.1	0.2	88.8	0.0	0.0	1921.9	154.6	0.0	0.0
From 33109 DEC CTG2 18.0	1	6.974	156.0	1750.6	6.975	-24.0	22370.5	0.2	88.8	0.0	0.0	1750.6	156.0	0.0	0.0
From 33110 DEC CTG3 18.0	1	6.974	156.0	1750.6	6.975	-24.0	22370.5	0.2	88.8	0.0	0.0	1750.6	156.0	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	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	0.1333	36.5	0.0000	90.0	0.1333	36.5	0.1333	-83.5	0.1333	156.5
30526 PITSBG D230.0	0.0000	90.0	0.1333	36.5	0.0000	90.0	0.1333	36.5	0.1333	-83.5	0.1333	156.5
33107 DEC STG1 24.0	0.0000	90.0	0.4702	64.4	0.0000	90.0	0.4702	64.4	0.4702	-55.6	0.4702	-175.6
33108 DEC CTG1 18.0	0.0000	90.0	0.4987	63.4	0.0000	90.0	0.4987	63.4	0.4987	-56.6	0.4987	-176.6
33109 DEC CTG2 18.0	0.0000	90.0	0.4542	64.8	0.0000	90.0	0.4542	64.8	0.4542	-55.2	0.4542	-175.2
33110 DEC CTG3 18.0	0.0000	90.0	0.4542	64.8	0.0000	90.0	0.4542	64.8	0.4542	-55.2	0.4542	-175.2

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

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		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			20106.51			0.00	0.00 Ohms
Prefault voltage,	pu			1.0054				
Fault Current,	pu	33.561	-21.855	40.050	-33.1			
1 Seq impedance,	pu	0.0062	0.0243	0.0251	75.7	3.9170		

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	18.648	148.5	9362.2	18.648	-31.5	9362.2	0.1	45.0	0.0	0.0	9362.2	148.5	0.0	0.0
From 32974 LAKEWD-M115.0	1	21.414	145.6	10750.5	21.414	-34.4	10750.5	0.1	45.0	0.0	0.0	10750.5	145.6	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	0.0132	13.5	0.0000	90.0	0.0132	13.5	0.0132	-106.5	0.0132	133.5
32974 LAKEWD-M115.0	0.0000	90.0	0.0151	10.6	0.0000	90.0	0.0151	10.6	0.0151	-109.4	0.0151	130.6

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			20139.74			0.00	0.00 Ohms
Prefault voltage,	pu			1.0053				
Fault Current,	pu	33.575	-21.954	40.116	-33.2			
1 Seq impedance,	pu	0.0062	0.0243	0.0251	75.8	3.9464		

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	12.744	149.4	6398.2	12.744	-30.6	6397.8	4.1	73.5	0.0	0.0	6398.2	149.4	0.0	0.0
From 32973 LAKEWD-C115.0	1	18.140	149.3	9106.8	18.140	-30.7	9106.8	0.1	45.0	0.0	0.0	9106.8	149.3	0.0	0.0
From 32976 LK_REACT115.0	9	9.363	138.4	4700.4	9.363	-41.6	4700.4	9.0	89.6	0.0	0.0	4700.4	138.4	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	90.0	0.0000	90.0
32970 CLAYTN 115.0	0.0000	90.0	0.3935	42.9	0.0000	90.0	0.3935	42.9	0.3935	-77.1	0.3935	162.9
32973 LAKEWD-C115.0	0.0000	90.0	0.0128	14.3	0.0000	90.0	0.0128	14.3	0.0128	-105.7	0.0128	134.3
32976 LK_REACT115.0	0.0000	90.0	0.6367	48.0	0.0000	90.0	0.6367	48.0	0.6367	-72.0	0.6367	168.0

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 32978 LMEC 115.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			46781.64			0.00	0.00 Ohms
Prefault voltage,	pu			1.0408				
Fault Current,	pu	75.737	-54.286	93.183	-35.6			
1 Seq impedance,	pu	0.0014	0.0111	0.0112	82.7	7.7592		

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	35.868	142.4	18007.3	35.867	-37.6	18006.8	0.4	79.1	0.0	0.0	18007.3	142.4	0.0	0.0
From 32950 PITSBURG115.0	2	35.868	142.4	18007.3	35.867	-37.6	18006.8	0.4	79.1	0.0	0.0	18007.3	142.4	0.0	0.0
From 33111 LMECCT2 18.0	1	7.140	149.7	3584.7	7.141	-30.3	22903.8	0.2	88.6	0.0	0.0	3584.7	149.7	0.0	0.0
From 33112 LMECCT1 18.0	1	7.140	149.7	3584.7	7.141	-30.3	22903.8	0.2	88.6	0.0	0.0	3584.7	149.7	0.0	0.0
From 33113 LMECST1 18.0	1	7.349	152.8	3689.4	7.349	-27.2	23573.0	0.2	89.0	0.0	0.0	3689.4	152.8	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	90.0	0.0000	90.0
32950 PITSBURG115.0	0.0000	90.0	0.0950	41.6	0.0000	90.0	0.0950	41.6	0.0950	-78.4	0.0950	161.6
32950 PITSBURG115.0	0.0000	90.0	0.0950	41.6	0.0000	90.0	0.0950	41.6	0.0950	-78.4	0.0950	161.6
33111 LMECCT2 18.0	0.0000	90.0	0.3428	58.3	0.0000	90.0	0.3428	58.3	0.3428	-61.7	0.3428	178.3
33112 LMECCT1 18.0	0.0000	90.0	0.3428	58.3	0.0000	90.0	0.3428	58.3	0.3428	-61.7	0.3428	178.3
33113 LMECST1 18.0	0.0000	90.0	0.3528	61.8	0.0000	90.0	0.3528	61.8	0.3528	-58.2	0.3528	-178.2

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 30550 MORAGA 230.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			30985.88			0.00	0.00 Ohms
Prefault voltage,	pu			0.9993				
Fault Current,	pu	99.128	-73.561	123.440	-36.6			
1 Seq impedance,	pu	0.0015	0.0080	0.0081	79.6	5.4718		

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	10.850	147.4	2723.5	10.835	-32.6	2719.7	19.1	81.4	0.0	0.0	2723.5	147.4	0.0	0.0
From 30467 PARKWAY 230.0	1	11.031	148.7	2769.1	11.015	-31.3	2765.1	19.8	81.4	0.0	0.0	2769.1	148.7	0.0	0.0
From 30543 ROSSTAP1230.0	1	18.152	148.1	4556.4	18.151	-31.9	4556.1	4.2	81.9	0.0	0.0	4556.4	148.1	0.0	0.0
From 30544 ROSSTAP2230.0	2	18.181	148.4	4563.8	18.180	-31.6	4563.5	4.2	81.9	0.0	0.0	4563.8	148.4	0.0	0.0
From 30554 CASTROVL230.0	1	15.678	134.7	3935.6	15.671	-45.3	3933.7	11.3	81.7	0.0	0.0	3935.6	134.7	0.0	0.0
From 30555 SANRAMON230.0	1	13.165	144.5	3304.7	13.151	-35.5	3301.2	17.0	82.6	0.0	0.0	3304.7	144.5	0.0	0.0
From 30551 MRAGA_1M 13.2	1	12.170	139.3	3054.8	12.170	-40.7	53228.0	0.0	89.7	0.0	0.0	3054.8	139.3	0.0	0.0
From 30552 MRAGA_2M 13.2	2	12.170	139.3	3054.8	12.170	-40.7	53228.0	0.0	89.7	0.0	0.0	3054.8	139.3	0.0	0.0
From 30553 MRAGA_3M 13.2	3	12.532	139.1	3145.7	12.532	-40.9	54811.9	0.0	89.7	0.0	0.0	3145.7	139.1	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	0.3917	48.8	0.0000	90.0	0.3917	48.8	0.3917	-71.2	0.3917	168.8
30467 PARKWAY 230.0	0.0000	90.0	0.4117	50.1	0.0000	90.0	0.4117	50.1	0.4117	-69.9	0.4117	170.1
30543 ROSSTAP1230.0	0.0000	90.0	0.1443	50.0	0.0000	90.0	0.1443	50.0	0.1443	-70.0	0.1443	170.0
30544 ROSSTAP2230.0	0.0000	90.0	0.1445	50.3	0.0000	90.0	0.1445	50.3	0.1445	-69.7	0.1445	170.3
30554 CASTROVL230.0	0.0000	90.0	0.3343	36.4	0.0000	90.0	0.3343	36.4	0.3343	-83.6	0.3343	156.4
30555 SANRAMON230.0	0.0000	90.0	0.4219	47.1	0.0000	90.0	0.4219	47.1	0.4219	-72.9	0.4219	167.1
30551 MRAGA_1M 13.2	0.0000	90.0	0.3259	49.0	0.0000	90.0	0.3259	49.0	0.3259	-71.0	0.3259	169.0
30552 MRAGA_2M 13.2	0.0000	90.0	0.3259	49.0	0.0000	90.0	0.3259	49.0	0.3259	-71.0	0.3259	169.0
30553 MRAGA_3M 13.2	0.0000	90.0	0.3356	48.8	0.0000	90.0	0.3356	48.8	0.3356	-71.2	0.3356	168.8

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 30537 NDUBLIN 230.0

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		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			10240.34			0.00	0.00 Ohms
Prefault voltage,	pu			1.0176				
Fault Current,	pu	32.320	-24.893	40.795	-37.6			
1 Seq impedance,	pu	0.0046	0.0245	0.0249	79.3	5.2967		

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	22.758	147.9	5712.8	22.747	-32.1	5710.0	2.9	82.5	0.0	0.0	5712.8	147.9	0.0	0.0
From 35224 VINEYD_D230.0	1	18.274	135.5	4587.2	18.135	-44.4	4552.3	12.1	81.3	0.0	0.0	4587.2	135.5	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	-45.0	0.0000	90.0	0.0000	-45.0	0.0000	-165.0	0.0000	75.0
30530 CAYETANO230.0	0.0000	90.0	0.1237	50.4	0.0000	90.0	0.1237	50.4	0.1237	-69.6	0.1237	170.4
35224 VINEYD_D230.0	0.0000	90.0	0.4138	36.9	0.0000	90.0	0.4138	36.9	0.4138	-83.1	0.4138	156.9

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 30630 NEWARK D230.0

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		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			46582.86			0.00	0.00 Ohms
Prefault voltage,	pu			1.0062				
Fault Current,	pu	142.424	-118.969	185.575	-39.9			
1 Seq impedance,	pu	0.0013	0.0053	0.0054	76.6	4.2108		

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	11.467	149.0	2878.4	11.455	-31.0	2875.4	17.7	80.6	0.0	0.0	2878.4	149.0	0.0	0.0
From 30624 TESLA E 230.0	1	26.699	138.1	6701.9	26.654	-41.9	6690.6	14.9	87.2	0.0	0.0	6701.9	138.1	0.0	0.0
From 30631 NEWARK E230.0	1	89.259	144.0	22405.6	89.259	-36.0	22405.6	0.4	45.0	0.0	0.0	22405.6	144.0	0.0	0.0
From 30703 RAVENSWD230.0	1	30.235	131.9	7589.6	30.230	-48.1	7588.3	6.7	85.8	0.0	0.0	7589.6	131.9	0.0	0.0
From 35219 VINEYARD230.0	1	9.018	149.7	2263.6	8.976	-30.2	2253.1	13.2	80.8	0.0	0.0	2263.6	149.7	0.0	0.0
From 30627 NWRK_9M 13.2	9	10.000	129.7	2510.1	9.780	-50.3	42775.3	0.1	89.7	0.0	0.0	2510.1	129.7	0.0	0.0
From 30626 NWRK_7M 13.2	7	10.127	127.0	2542.1	9.907	-53.0	43331.9	0.1	90.0	0.0	0.0	2542.1	127.0	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	180.0	0.0000	90.0	0.0000	180.0	0.0000	60.0	0.0000	-60.0
30585 LS PSTAS230.0	0.0000	90.0	0.3831	49.7	0.0000	90.0	0.3831	49.7	0.3831	-70.3	0.3831	169.7
30624 TESLA E 230.0	0.0000	90.0	0.7503	45.4	0.0000	90.0	0.7503	45.4	0.7503	-74.6	0.7503	165.4
30631 NEWARK E230.0	0.0000	90.0	0.0631	9.0	0.0000	90.0	0.0631	9.0	0.0631	-111.0	0.0631	129.0
30703 RAVENSWD230.0	0.0000	90.0	0.3801	37.8	0.0000	90.0	0.3801	37.8	0.3801	-82.2	0.3801	157.8
35219 VINEYARD230.0	0.0000	90.0	0.2237	50.6	0.0000	90.0	0.2237	50.6	0.2237	-69.4	0.2237	170.6
30627 NWRK_9M 13.2	0.0000	90.0	0.3194	39.4	0.0000	90.0	0.3194	39.4	0.3194	-80.6	0.3194	159.4
30626 NWRK_7M 13.2	0.0000	90.0	0.3041	37.0	0.0000	90.0	0.3041	37.0	0.3041	-83.0	0.3041	157.0

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 30631 NEWARK E230.0

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		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			46699.24			0.00	0.00 Ohms
Prefault voltage,	pu			1.0063				
Fault Current,	pu	143.066	-118.923	186.039	-39.7			
1 Seq impedance,	pu	0.0013	0.0053	0.0054	76.6	4.1869		

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	13.812	144.6	3467.1	13.798	-35.4	3463.6	16.2	81.6	0.0	0.0	3467.1	144.6	0.0	0.0
From 30562 TES JCT 230.0	1	11.284	148.5	2832.4	11.266	-31.5	2827.9	21.1	82.5	0.0	0.0	2832.4	148.5	0.0	0.0
From 30630 NEWARK D230.0	1	88.750	140.2	22277.9	88.750	-39.8	22277.9	0.4	45.0	0.0	0.0	22277.9	140.2	0.0	0.0
From 30635 NWK DIST230.0	1	33.963	137.3	8525.4	33.963	-42.7	8525.4	0.2	81.9	0.0	0.0	8525.4	137.3	0.0	0.0
From 30655 ADCC 230.0	2	26.812	145.0	6730.4	26.776	-35.0	6721.2	11.9	83.5	0.0	0.0	6730.4	145.0	0.0	0.0
From 30628 NWRK_11M 13.2	11	12.091	125.9	3035.2	11.826	-54.1	51722.9	0.0	89.4	0.0	0.0	3035.2	125.9	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	0.4235	46.2	0.0000	90.0	0.4235	46.2	0.4235	-73.8	0.4235	166.2
30562 TES JCT 230.0	0.0000	90.0	0.4495	51.0	0.0000	90.0	0.4495	51.0	0.4495	-69.0	0.4495	171.0
30630 NEWARK D230.0	0.0000	90.0	0.0628	5.2	0.0000	90.0	0.0628	5.2	0.0628	-114.8	0.0628	125.2
30635 NWK DIST230.0	0.0000	90.0	0.0120	39.2	0.0000	90.0	0.0120	39.2	0.0120	-80.8	0.0120	159.2
30655 ADCC 230.0	0.0000	90.0	0.6037	48.5	0.0000	90.0	0.6037	48.5	0.6037	-71.5	0.6037	168.5
30628 NWRK_11M 13.2	0.0000	90.0	0.3222	35.3	0.0000	90.0	0.3222	35.3	0.3222	-84.7	0.3222	155.3

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 30526 PITSBG D230.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			59103.14			0.00	0.00 Ohms
Prefault voltage,	pu			1.0119				
Fault Current,	pu	195.234	-131.612	235.453	-34.0			
1 Seq impedance,	pu	0.0006	0.0043	0.0043	82.4	7.5041		

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	121.613	147.4	30527.2	121.613	-32.6	30527.2	0.4	45.0	0.0	0.0	30527.2	147.4	0.0	0.0
From 30528 DEC PTSG230.0	1	15.498	155.9	3890.4	15.498	-24.1	3890.4	0.8	70.5	0.0	0.0	3890.4	155.9	0.0	0.0
From 30528 DEC PTSG230.0	2	15.498	155.9	3890.4	15.498	-24.1	3890.4	0.8	70.5	0.0	0.0	3890.4	155.9	0.0	0.0
From 30555 SANRAMON230.0	1	10.642	138.1	2671.3	10.631	-41.9	2668.6	17.2	81.7	0.0	0.0	2671.3	138.1	0.0	0.0
From 30561 TASSAJAR230.0	1	10.491	132.7	2633.6	10.485	-47.3	2631.8	14.0	78.2	0.0	0.0	2633.6	132.7	0.0	0.0
From 99995 MIRCCPB1230.0	1	21.672	153.4	5440.1	21.672	-26.6	5440.1	0.4	90.0	0.0	0.0	5440.1	153.4	0.0	0.0
From 32950 PITSBURG115.0	12	12.471	143.3	3130.4	11.798	-36.7	5923.0	3.2	89.2	0.0	0.0	3130.4	143.3	0.0	0.0
From 32950 PITSBURG115.0	13	12.471	143.3	3130.4	11.798	-36.7	5923.0	3.2	89.2	0.0	0.0	3130.4	143.3	0.0	0.0
From 38950 VSC_PTSB180.5	1	17.262	125.7	4333.0	17.262	-54.3	5521.3	9.9	88.2	0.0	0.0	4333.0	125.7	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	0.0860	12.4	0.0000	90.0	0.0860	12.4	0.0860	-107.6	0.0860	132.4
30528 DEC PTSG230.0	0.0000	90.0	0.0232	46.4	0.0000	90.0	0.0232	46.4	0.0232	-73.6	0.0232	166.4
30528 DEC PTSG230.0	0.0000	90.0	0.0232	46.4	0.0000	90.0	0.0232	46.4	0.0232	-73.6	0.0232	166.4
30555 SANRAMON230.0	0.0000	90.0	0.3463	39.8	0.0000	90.0	0.3463	39.8	0.3463	-80.2	0.3463	159.8
30561 TASSAJAR230.0	0.0000	90.0	0.2776	30.9	0.0000	90.0	0.2776	30.9	0.2776	-89.1	0.2776	150.9
99995 MIRCCPB1230.0	0.0000	90.0	0.0169	63.4	0.0000	90.0	0.0169	63.4	0.0169	-56.6	0.0169	-176.6
32950 PITSBURG115.0	0.0000	90.0	0.2870	52.5	0.0000	90.0	0.2870	52.5	0.2870	-67.5	0.2870	172.5
32950 PITSBURG115.0	0.0000	90.0	0.2870	52.5	0.0000	90.0	0.2870	52.5	0.2870	-67.5	0.2870	172.5
38950 VSC_PTSB180.5	0.0000	90.0	0.5221	33.9	0.0000	90.0	0.5221	33.9	0.5221	-86.1	0.5221	153.9
0.0000 90.0 0.7667	32.0	0.7667	-88.0	0.7667	152.0							
30000 PTSB 7 20.0	0.0000	90.0	0.2399	65.4	0.0000	90.0	0.2399	65.4	0.2399	-54.6	0.2399	-174.6
33105 PTSB 5 18.0	0.0000	90.0	0.3693	62.0	0.0000	90.0	0.3693	62.0	0.3693	-58.0	0.3693	-178.0
33105 PTSB 5 18.0	0.0000	90.0	0.3693	62.0	0.0000	90.0	0.3693	62.0	0.3693	-58.0	0.3693	-178.0
33106 PTSB 6 18.0	0.0000	90.0	0.4587	60.6	0.0000	90.0	0.4587	60.6	0.4587	-59.4	0.4587	-179.4
33106 PTSB 6 18.0	0.0000	90.0	0.4587	60.6	0.0000	90.0	0.4587	60.6	0.4587	-59.4	0.4587	-179.4
3 0.0106 -80.7 0.0106	159.3											
33033 KIRKTAP2115.0	0.0000	90.0	0.0113	41.8	0.0000	90.0	0.0113	41.8	0.0113	-78.2	0.0113	161.8
30526 PITSBG D230.0	0.0000	90.0	0.6942	51.1	0.0000	90.0	0.6942	51.1	0.6942	-68.9	0.6942	171.1
30526 PITSBG D230.0	0.0000	90.0	0.6942	51.1	0.0000	90.0	0.6942	51.1	0.6942	-68.9	0.6942	171.1

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

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		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			18042.82			0.00	0.00 Ohms
Prefault voltage,	pu			1.0000				
Fault Current,	pu	58.538	-41.711	71.878	-35.5			
1 Seq impedance,	pu	0.0026	0.0137	0.0139	79.2	5.2569		

	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	71.878	144.5	18042.8	71.878	-35.5	18042.8	0.8	70.3	0.0	0.0	18042.8	144.5	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	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0	0.0000	90.0
30543	ROSSTAP1230.0	0.0000	90.0	0.1069	34.9	0.0000	90.0	0.1069	34.9	0.1069	-85.1	0.1069	154.9

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 30700 SANMATEO230.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			29666.66			0.00	0.00 Ohms
Prefault voltage,	pu			1.0206				
Fault Current,	pu	84.414	-82.716	118.185	-44.4			
1 Seq impedance,	pu	0.0017	0.0085	0.0086	78.9	5.0919		

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	22.224	145.7	5578.5	22.216	-34.2	5576.7	9.8	82.0	0.0	0.0	5578.5	145.7	0.0	0.0
From 30527 PITSBG E230.0	1	9.949	147.3	2497.4	9.901	-32.7	2485.3	47.6	83.4	0.0	0.0	2497.4	147.3	0.0	0.0
From 30695 MARTIN C230.0	1	10.283	125.0	2581.3	10.017	-54.9	2514.5	19.7	86.5	0.0	0.0	2581.3	125.0	0.0	0.0
From 30703 RAVENSWD230.0	1	23.794	134.6	5972.8	23.786	-45.4	5970.7	7.1	85.1	0.0	0.0	5972.8	134.6	0.0	0.0
From 30703 RAVENSWD230.0	2	23.794	134.6	5972.8	23.786	-45.4	5970.7	7.1	85.1	0.0	0.0	5972.8	134.6	0.0	0.0
From 30701 SMATEO5M 13.2	5	9.387	129.3	2356.3	9.387	-50.7	41056.8	0.0	90.0	0.0	0.0	2356.3	129.3	0.0	0.0
From 30702 SMATEO6M 13.2	6	9.409	129.3	2361.7	9.409	-50.7	41151.3	0.0	90.0	0.0	0.0	2361.7	129.3	0.0	0.0
From 30704 SMATEO7M 13.2	7	10.262	129.1	2576.0	10.262	-50.9	44885.0	0.0	90.0	0.0	0.0	2576.0	129.1	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	0.4130	47.7	0.0000	90.0	0.4130	47.7	0.4130	-72.3	0.4130	167.7
30527 PITSBG E230.0	0.0000	90.0	0.8914	50.7	0.0000	90.0	0.8914	50.7	0.8914	-69.3	0.8914	170.7
30695 MARTIN C230.0	0.0000	90.0	0.3736	31.6	0.0000	90.0	0.3736	31.6	0.3736	-88.4	0.3736	151.6
30703 RAVENSWD230.0	0.0000	90.0	0.3205	39.7	0.0000	90.0	0.3205	39.7	0.3205	-80.3	0.3205	159.7
30703 RAVENSWD230.0	0.0000	90.0	0.3205	39.7	0.0000	90.0	0.3205	39.7	0.3205	-80.3	0.3205	159.7
30701 SMATEO5M 13.2	0.0000	90.0	0.2626	39.3	0.0000	90.0	0.2626	39.3	0.2626	-80.7	0.2626	159.3
30702 SMATEO6M 13.2	0.0000	90.0	0.2604	39.3	0.0000	90.0	0.2604	39.3	0.2604	-80.7	0.2604	159.3
30704 SMATEO7M 13.2	0.0000	90.0	0.2594	39.1	0.0000	90.0	0.2594	39.1	0.2594	-80.9	0.2594	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 30540 SOBRANTE230.0

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		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			31183.27			0.00	0.00 Ohms
Prefault voltage,	pu			1.0016				
Fault Current,	pu	98.380	-75.853	124.227	-37.6			
1 Seq impedance,	pu	0.0010	0.0080	0.0081	83.2	8.3420		

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	12.275	141.0	3081.3	12.215	-39.0	3066.1	26.2	87.2	0.0	0.0	3081.3	141.0	0.0	0.0
From 30437 CROCKETT230.0	1	16.965	145.0	4258.4	16.961	-35.0	4257.5	5.7	86.0	0.0	0.0	4258.4	145.0	0.0	0.0
From 30535 TIDEWATR230.0	1	33.727	143.9	8466.2	33.720	-36.1	8464.3	5.2	86.9	0.0	0.0	8466.2	143.9	0.0	0.0
From 30536 TESORO 230.0	1	29.961	144.2	7520.7	29.950	-35.8	7518.1	6.5	87.1	0.0	0.0	7520.7	144.2	0.0	0.0
From 33010 SOBRANTE115.0	1	16.158	138.1	4056.0	15.808	-41.9	7936.0	3.2	88.9	0.0	0.0	4056.0	138.1	0.0	0.0
From 33010 SOBRANTE115.0	2	15.276	138.1	3834.5	14.945	-41.9	7502.8	3.4	89.0	0.0	0.0	3834.5	138.1	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	-135.0	0.0000	90.0	0.0000	-135.0	0.0000	105.0	0.0000	-15.0
30435 LAKEVILE230.0	0.0000	90.0	0.6049	48.2	0.0000	90.0	0.6049	48.2	0.6049	-71.8	0.6049	168.2
30437 CROCKETT230.0	0.0000	90.0	0.1838	51.0	0.0000	90.0	0.1838	51.0	0.1838	-69.0	0.1838	171.0
30535 TIDEWATR230.0	0.0000	90.0	0.3320	50.8	0.0000	90.0	0.3320	50.8	0.3320	-69.2	0.3320	170.8
30536 TESORO 230.0	0.0000	90.0	0.3660	51.3	0.0000	90.0	0.3660	51.3	0.3660	-68.7	0.3660	171.3
33010 SOBRANTE115.0	0.0000	90.0	0.3831	47.1	0.0000	90.0	0.3831	47.1	0.3831	-72.9	0.3831	167.1
33010 SOBRANTE115.0	0.0000	90.0	0.3831	47.1	0.0000	90.0	0.3831	47.1	0.3831	-72.9	0.3831	167.1
0.0000 90.0 0.1730	40.8	0.0000	90.0	0.1730	40.8	0.1730	-79.2	0.1730	160.8			
32808 SNPBLTP2115.0	0.0000	90.0	0.1508	40.8	0.0000	90.0	0.1508	40.8	0.1508	-79.2	0.1508	160.8
33006 GRIZLYJ1115.0	0.0000	90.0	0.0073	10.3	0.0000	90.0	0.0073	10.3	0.0073	-109.7	0.0073	130.3
33008 GRIZLYJ2115.0	0.0000	90.0	0.0051	8.7	0.0000	90.0	0.0051	8.7	0.0051	-111.3	0.0051	128.7
33014 ALHAMTP1115.0	0.0000	90.0	0.4006	44.5	0.0000	90.0	0.4006	44.5	0.4006	-75.5	0.4006	164.5
33020 MORAGA 115.0	0.0000	90.0	0.4372	39.3	0.0000	90.0	0.4372	39.3	0.4372	-80.7	0.4372	159.3
30540 SOBRANTE230.0	0.0000	90.0	0.5099	50.5	0.0000	90.0	0.5099	50.5	0.5099	-69.5	0.5099	170.5
30540 SOBRANTE230.0	0.0000	90.0	0.5099	50.5	0.0000	90.0	0.5099	50.5	0.5099	-69.5	0.5099	170.5

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 30561 TASSAJAR230.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]	
Fault Current,	Amps			12723.76			0.00	0.00	Ohms
Prefault voltage,	pu			0.9908					
Fault Current,	pu	41.312	-29.371	50.688	-35.4				
1 Seq impedance,	pu	0.0040	0.0191	0.0195	78.1	4.7515			

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	32.385	150.7	8129.3	32.364	-29.3	8124.0	14.0	78.2	0.0	0.0	8129.3	150.7	0.0	0.0
From 30562 TES JCT 230.0	1	18.803	134.1	4719.8	18.802	-45.9	4719.6	3.6	82.9	0.0	0.0	4719.8	134.1	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	90.0	0.0000	90.0
30526 PITSBG D230.0	0.0000	90.0	0.8568	48.9	0.0000	90.0	0.8568	48.9	0.8568	-71.1	0.8568	168.9
30562 TES JCT 230.0	0.0000	90.0	0.1270	36.9	0.0000	90.0	0.1270	36.9	0.1270	-83.1	0.1270	156.9

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 30640 TESLA C 230.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			41277.37			0.00	0.00 Ohms
Prefault voltage,	pu			1.0223				
Fault Current,	pu	126.384	-105.202	164.439	-39.8			
1 Seq impedance,	pu	0.0006	0.0062	0.0062	84.1	9.6524		

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	17.956	147.9	4507.2	17.955	-32.1	4507.0	3.5	81.8	0.0	0.0	4507.2	147.9	0.0	0.0
From 30600 TRES VAQ230.0	2	17.604	148.1	4419.0	17.601	-31.9	4418.2	6.9	81.9	0.0	0.0	4419.0	148.1	0.0	0.0
From 30625 TESLA D 230.0	1	42.998	137.9	10793.3	42.998	-42.1	10793.3	8.3	88.2	0.0	0.0	10793.3	137.9	0.0	0.0
From 30655 ADCC 230.0	2	27.553	133.7	6916.4	27.553	-46.3	6916.3	1.5	84.4	0.0	0.0	6916.4	133.7	0.0	0.0
From 33856 TESLA 6M 13.8	6	58.871	140.3	14777.8	60.167	-39.7	251718.0	0.0	89.5	0.0	0.0	14777.8	140.3	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	0.1175	49.7	0.0000	90.0	0.1175	49.7	0.1175	-70.3	0.1175	169.7
30600 TRES VAQ230.0	0.0000	90.0	0.2281	50.0	0.0000	90.0	0.2281	50.0	0.2281	-70.0	0.2281	170.0
30625 TESLA D 230.0	0.0000	90.0	0.6711	46.1	0.0000	90.0	0.6711	46.1	0.6711	-73.9	0.6711	166.1
30655 ADCC 230.0	0.0000	90.0	0.0789	38.0	0.0000	90.0	0.0789	38.0	0.0789	-82.0	0.0789	158.0
33856 TESLA 6M 13.8	0.0000	90.0	0.3591	49.8	0.0000	90.0	0.3591	49.8	0.3591	-70.2	0.3591	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 30625 TESLA D 230.0

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		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			62478.73			0.00	0.00 Ohms
Prefault voltage,	pu			1.0253				
Fault Current,	pu	194.168	-155.725	248.900	-38.7			
1 Seq impedance,	pu	0.0006	0.0041	0.0041	82.3	7.3840		

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	14.065	147.8	3530.7	14.064	-32.2	3530.5	4.2	81.4	0.0	0.0	3530.7	147.8	0.0	0.0
From 30580 ALTM MDW230.0	1	19.496	147.5	4894.0	19.495	-32.5	4893.7	3.5	81.0	0.0	0.0	4894.0	147.5	0.0	0.0
From 30624 TESLA E 230.0	1	59.771	137.0	15003.7	59.771	-43.0	15003.7	4.0	86.2	0.0	0.0	15003.7	137.0	0.0	0.0
From 30640 TESLA C 230.0	1	31.191	141.0	7829.5	31.191	-39.0	7829.5	8.3	88.2	0.0	0.0	7829.5	141.0	0.0	0.0
From 37585 TRCY PMP230.0	1	32.474	141.4	8151.7	32.472	-38.6	8151.1	4.5	81.9	0.0	0.0	8151.7	141.4	0.0	0.0
From 37585 TRCY PMP230.0	2	32.474	141.4	8151.7	32.472	-38.6	8151.1	4.5	81.9	0.0	0.0	8151.7	141.4	0.0	0.0
From 33540 TESLA 115.0	1	5.887	140.3	1477.7	5.761	-39.7	2892.0	5.4	89.4	0.0	0.0	1477.7	140.3	0.0	0.0
From 33540 TESLA 115.0	3	5.887	140.3	1477.7	5.761	-39.7	2892.0	5.4	89.4	0.0	0.0	1477.7	140.3	0.0	0.0
From 33854 TESLA 4M 13.8	4	48.039	142.4	12058.6	49.096	-37.6	205399.4	0.0	89.5	0.0	0.0	12058.6	142.4	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	0.1111	49.2	0.0000	90.0	0.1111	49.2	0.1111	-70.8	0.1111	169.2
30580 ALTM MDW230.0	0.0000	90.0	0.1289	48.5	0.0000	90.0	0.1289	48.5	0.1289	-71.5	0.1289	168.5
30624 TESLA E 230.0	0.0000	90.0	0.4529	43.2	0.0000	90.0	0.4529	43.2	0.4529	-76.8	0.4529	163.2
30640 TESLA C 230.0	0.0000	90.0	0.4868	49.2	0.0000	90.0	0.4868	49.2	0.4868	-70.8	0.4868	169.2
37585 TRCY PMP230.0	0.0000	90.0	0.2749	43.3	0.0000	90.0	0.2749	43.3	0.2749	-76.7	0.2749	163.3
37585 TRCY PMP230.0	0.0000	90.0	0.2749	43.3	0.0000	90.0	0.2749	43.3	0.2749	-76.7	0.2749	163.3
33540 TESLA 115.0	0.0000	90.0	0.2360	49.6	0.0000	90.0	0.2360	49.6	0.2360	-70.4	0.2360	169.6
33540 TESLA 115.0	0.0000	90.0	0.2360	49.6	0.0000	90.0	0.2360	49.6	0.2360	-70.4	0.2360	169.6
33854 TESLA 4M 13.8	0.0000	90.0	0.2790	51.9	0.0000	90.0	0.2790	51.9	0.2790	-68.1	0.2790	171.9
.5 0.6675 -83.5 0.6675 156.5												
30632 TESL_GEN230.0	0.0000	90.0	0.0127	50.5	0.0000	90.0	0.0127	50.5	0.0127	-69.5	0.0127	170.5
30632 TESL_GEN230.0	0.0000	90.0	0.0127	50.5	0.0000	90.0	0.0127	50.5	0.0127	-69.5	0.0127	170.5
33852 TESLA 2M 13.8	0.0000	90.0	0.1429	-126.4	0.0000	90.0	0.1429	-126.4	0.1429	113.6	0.1429	-6.4

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			26690.33			0.00	0.00 Ohms
Prefault voltage,	pu			1.0057				
Fault Current,	pu	84.144	-65.003	106.328	-37.7			
1 Seq impedance,	pu	0.0009	0.0094	0.0095	84.3	9.9438		

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	59.545	143.8	14946.9	59.530	-36.2	14943.1	5.8	87.2	0.0	0.0	14946.9	143.8	0.0	0.0
From 30540 SOBRANTE230.0	1	43.080	140.1	10814.0	43.071	-39.9	10811.6	5.2	86.9	0.0	0.0	10814.0	140.1	0.0	0.0
From 33151 FOSTER W 12.5	1	1.878	144.2	471.5	1.878	-35.8	8695.9	0.5	90.0	0.0	0.0	471.5	144.2	0.0	0.0
From 33151 FOSTER W 12.5	2	1.878	144.2	471.5	1.878	-35.8	8695.9	0.5	90.0	0.0	0.0	471.5	144.2	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	0.6546	51.0	0.0000	90.0	0.6546	51.0	0.6546	-69.0	0.6546	171.0
30540 SOBRANTE230.0	0.0000	90.0	0.4241	47.0	0.0000	90.0	0.4241	47.0	0.4241	-73.0	0.4241	167.0
33151 FOSTER W 12.5	0.0000	90.0	0.6010	54.2	0.0000	90.0	0.6010	54.2	0.6010	-65.8	0.6010	174.2
33151 FOSTER W 12.5	0.0000	90.0	0.6010	54.2	0.0000	90.0	0.6010	54.2	0.6010	-65.8	0.6010	174.2

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 30600 TRES VAQ230.0

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			19281.96			0.00	0.00 Ohms
Prefault voltage,	pu			1.0196				
Fault Current,	pu	61.368	-46.201	76.815	-37.0			
1 Seq impedance,	pu	0.0017	0.0132	0.0133	82.4	7.5381		

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	26.541	147.0	6662.2	26.513	-33.0	6655.1	16.8	81.9	0.0	0.0	6662.2	147.0	0.0	0.0
From 30640 TESLA C 230.0	2	50.373	140.9	12644.5	50.364	-39.1	12642.3	6.9	81.9	0.0	0.0	12644.5	140.9	0.0	0.0
From 33171 TRSVQ+NW 9.1	1	0.000	135.0	0.0	0.000	-45.0	0.0	999.9	90.0	0.0	0.0	0.0	135.0	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	0.8426	48.9	0.0000	90.0	0.8426	48.9	0.8426	-71.1	0.8426	168.9
30640 TESLA C 230.0	0.0000	90.0	0.6528	42.8	0.0000	90.0	0.6528	42.8	0.6528	-77.2	0.6528	162.8
33171 TRSVQ+NW 9.1	0.0000	90.0	0.0000	63.4	0.0000	90.0	0.0000	63.4	0.0000	-56.6	0.0000	-176.6

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 30575 WND MSTR230.0

****

		[Real	Imag]	[Mag	Ang]	[x/r]	[Rf	Xf]
Fault Current,	Amps			21490.53			0.00	0.00 Ohms
Prefault voltage,	pu			1.0212				
Fault Current,	pu	68.834	-50.907	85.613	-36.5			
1 Seq impedance,	pu	0.0017	0.0118	0.0119	81.6	6.7749		

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	30.321	147.1	7611.1	30.301	-32.9	7606.2	13.3	81.9	0.0	0.0	7611.1	147.1	0.0	0.0
From 38610 DELTAPMP230.0	1	55.383	141.6	13902.2	55.383	-38.4	13902.2	1.1	75.8	0.0	0.0	13902.2	141.6	0.0	0.0
From 33170 WINDMSTR 9.1	1	0.000	0.0	0.0	0.000	180.0	0.0	999.9	90.0	0.0	0.0	0.0	0.0	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	0.7599	49.0	0.0000	90.0	0.7599	49.0	0.7599	-71.0	0.7599	169.0
38610 DELTAPMP230.0	0.0000	90.0	0.1131	37.4	0.0000	90.0	0.1131	37.4	0.1131	-82.6	0.1131	157.4
33170 WINDMSTR 9.1	0.0000	90.0	0.0000	-90.0	0.0000	90.0	0.0000	-90.0	0.0000	150.0	0.0000	30.0

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	15.6
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	1	1	28	7.6
31820	BCKS CRK	11	2	1	25.2	6.9
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	11.3
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	2.8
38775	BUENAVS1	13.2	2	0	0	0
38775	BUENAVS1	13.2	3	0	0	0
38775	BUENAVS1	13.2	6	1	-13	0
38775	BUENAVS1	13.2	5	1	-13	0
38775	BUENAVS1	13.2	1	0	0	0
38775	BUENAVS1	13.2	4	1	-13	0
38780	BUENAVS2	13.2	3	0	0	0
38780	BUENAVS2	13.2	2	1	-6	0
38780	BUENAVS2	13.2	1	1	-13	0
38780	BUENAVS2	13.2	4	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	133.2
33117	C.COS 7	18	1	1	330	133.2
33850	CAMANCHE	4.16	1	1	3.5	-2
33850	CAMANCHE	4.16	3	1	3.5	0
33850	CAMANCHE	4.16	2	1	3.5	0
37301	CAMINO 1	13.8	1	1	50	5.3
37302	CAMINO 2	13.8	1	1	50	4.6

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
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	2	1	8	4
34652	CHV.COAL	9.11	1	1	2.5	8.3
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	2	0	0	0
31838	CNTRVL12	9.11	1	1	4	0
33832	COG.CAPT	9.11	1	1	4.3	4.2
33818	COG.NTNL	12	1	1	35	17.1
31906	COLEMAN	6.6	1	1	8.7	2.1
32450	COLGATE1	13.8	1	1	147	14
32452	COLGATE2	13.8	1	1	147	14
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	-11.1
37321	COSUMNE1	18	1	1	165	25
37322	COSUMNE2	18	1	1	165	25
37323	COSUMNE3	16.5	1	1	170	25.2
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	2	1	0.8	0
31856	COWCRK	9.11	1	0	0	0
33814	CPC STCN	12.47	1	1	49	16.1
31923	CPVGT1	18	1	1	199	59.6

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

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
31924	CPVGT2	18	2	1	199	59.3
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	2	1	56	15.8
31782	CRBU 4-5	13.8	1	1	55	15.5
32900	CRCKTCOG	18	1	1	240	44.4
32175	CREEDGT1	13.8	3	1	46.3	-5.3
31812	CRESTA	11.5	1	1	28	7.3
31812	CRESTA	11.5	2	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	2	1	1.5	0.1
32164	CTY FAIR	9.11	1	1	0.8	0.1
32921	ChevGen1	13.8	1	1	54	34.2
32922	ChevGen2	13.8	1	1	54	34.2
36854	Cogen	12	1	1	3.3	-1.9
36854	Cogen	12	2	1	3.5	-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	55.2
33109	DEC CTG2	18	1	1	200	55.2
33110	DEC CTG3	18	1	1	200	55.2
33107	DEC STG1	24	1	1	280	77.4
32474	DEER CRK	9.11	1	1	3.1	-2.2
38820	DELTA A	13.2	2	1	0	0
38820	DELTA A	13.2	1	1	0	0
38820	DELTA A	13.2	3	1	0	0
38815	DELTA B	13.2	5	1	0	0
38815	DELTA B	13.2	4	1	0	0
38770	DELTA C	13.2	7	1	0	0
38770	DELTA C	13.2	6	1	0	0
38765	DELTA D	13.2	8	1	0	0
38765	DELTA D	13.2	9	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	15.8
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	-51.2
36412	DIABLO 2	25	1	1	1200	-35.7
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	-8.5

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

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
38550	DONPDRO1	13.8	1	1	35	1.3
38552	DONPDRO2	13.8	1	1	35	0.6
38350	DONPDRO3	13.8	1	1	49.9	-1.5
38554	DONPDRO4	13.8	1	1	20	0.5
38750	DOS AMG1	13.2	2	1	-30	0
38750	DOS AMG1	13.2	3	1	-30	0
38750	DOS AMG1	13.2	1	1	-30	0
38755	DOS AMG2	13.2	3	0	0	0
38755	DOS AMG2	13.2	1	0	0	0
38755	DOS AMG2	13.2	2	0	0	0
35023	DOUBLE C	13.8	1	1	42.5	1.6
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	1	1	12.5	4.3
32504	DRUM 1-2	6.6	2	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	2	1	29	5.7
33812	ELECTRA	13.8	3	1	29	5.7
35076	ELKHIL1G	18	1	1	166.8	55.6
35077	ELKHIL2G	18	1	1	166.8	55.6
35078	ELKHIL3G	18	1	1	220.5	59.8
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	25.4
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	4	1	1.1	0

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

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
33840	FLOWD3-6	9.11	3	0	0	0
33840	FLOWD3-6	9.11	2	0	0	0
33840	FLOWD3-6	9.11	5	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	1	0	0	-1
31870	FORKBUTT	9.11	2	0	0	-0.6
33151	FOSTER W	12.47	2	1	45.4	25.2
33151	FOSTER W	12.47	1	1	45.4	25.2
33151	FOSTER W	12.47	3	1	35	19.4
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	2	1	14.7	1.8
34636	FRIANTDM	6.6	3	1	7.8	1
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	-13.9
33119	GATEWAY2	18	1	1	195	-11.8
33120	GATEWAY3	18	1	1	195	-11.8
33830	GEN.MILL	9.11	1	1	2.5	1.5
31435	GEO.ENGY	9.11	2	1	8.9	-3
31435	GEO.ENGY	9.11	1	1	8.9	-3
31822	GERBER F	9.11	1	0	0	0
31412	GEYSER11	13.8	1	1	60	26.1
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	12.5
31422	GEYSER17	13.8	1	1	36	18.4
31424	GEYSER18	13.8	1	1	56	13
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	12.4
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	2	1	9.5	-6
32490	GRNLEAF1	13.8	1	1	40	-14
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	12.1
33807	GWFTRCY2	13.8	1	1	85.9	12.1
34539	GWF_GT1	13.8	1	1	50	-7.9
34541	GWF_GT2	13.8	1	1	50	-7.9
34431	GWF_HEP1	13.8	1	1	50	17
34433	GWF_HEP2	13.8	1	1	50	17
36858	Gia100	13.8	1	0	20.1	5.1
36895	Gia200	13.8	1	0	20.6	5.1
34610	HAAS	13.8	1	1	70	14.9
34610	HAAS	13.8	2	1	70	14.9
32478	HALSEY F	6.6	1	1	8.6	-1.5
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	2	1	2.5	1.3
31846	HATCHET+	9.11	3	0	0	1
31846	HATCHET+	9.11	4	0	0	2.5
31846	HATCHET+	9.11	1	0	0	2.8
31868	HATLOST+	9.11	2	0	0	-0.5
31868	HATLOST+	9.11	3	0	0	-0.2
31868	HATLOST+	9.11	1	0	0	-0.7
32488	HAYPRES+	9.11	2	1	1.9	-2.5
32488	HAYPRES+	9.11	1	0	0	-2
32486	HELLHOLE	9.11	1	0	0	0
34600	HELMS 1	18	1	1	404	18.4
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
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	3	1	16.6	-5.5
31180	HUMB_G1	13.8	4	1	16.6	-5.5
31180	HUMB_G1	13.8	1	1	16.6	-5.5
31181	HUMB_G2	13.8	7	1	16.6	-0.5
31181	HUMB_G2	13.8	6	1	16.6	-0.5
31181	HUMB_G2	13.8	5	1	16.6	-0.5
31182	HUMB_G3	13.8	9	1	16.6	-0.5
31182	HUMB_G3	13.8	8	1	16.6	-0.5
31182	HUMB_G3	13.8	10	1	16.6	-0.5
38825	HYATT 1	12.5	1	1	117	18.2
38830	HYATT 2	12.5	1	1	97	16.9
38835	HYATT 3	12.5	1	1	117	19.1
38840	HYATT 4	12.5	1	1	97	17.7
38845	HYATT 5	12.5	1	1	117	18.7
38850	HYATT 6	12.5	1	1	97	17.3
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	1	1	73.5	28.8
37553	J.F.CARR	13.8	2	1	73.5	28.8
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
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
34344	KERCKHOF	6.6	2	1	6.8	-4
34308	KERCKHOF	13.8	1	1	129	16
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	1	1	60	10
35040	KERNRDGE	9.11	2	1	9	5
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	70.4
35071	LAPLM_G2	21	1	1	230	70.4
35072	LAPLM_G3	21	1	1	229	70.3
35073	LAPLM_G4	21	1	1	230	70.4
35854	LECEFGT1	13.8	1	1	50	35.9
35855	LECEFGT2	13.8	1	1	50	35.9
35856	LECEFGT3	13.8	1	1	50	35.9
35857	LECEFGT4	13.8	1	1	50	35.9
35858	LECEFST1	13.8	1	1	140	38.1
35310	LFC FIN+	9.11	1	0	0	0
33112	LMECCT1	18	1	1	150	5
33111	LMECCT2	18	1	1	150	5
33113	LMECST1	18	1	1	200	9.1
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	-1.7
34621	MCCALL3T	13.2	1	1	0	-6.1
37309	MCCLELLN	13.8	1	1	60	16.3
38352	MCCLURE1	13.8	1	1	35	1.2
38354	MCCLURE2	13.8	1	1	35	1.2
36990	MCSN CK1	13.8	1	1	25	0.6
36992	MCSN CK2	13.8	1	1	25	0.6
34320	MCSWAIN	9.11	1	1	9	2
35881	MEC CTG1	18	1	1	180	48.9

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

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
35882	MEC CTG2	18	1	1	180	48.9
35883	MEC STG1	18	1	1	200	50.5
37561	MELONE1	13.8	1	1	119	23.3
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	70.7
99993	MIR_CT2	16.5	3	0	218.5	75.3
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	21.6
99994	MIR_ST2	13.8	4	0	64	23.4
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	13.7
36410	MORRO 4	18	1	1	300.3	9.1
36405	MOSSLND6	22	1	1	0	64.4
36406	MOSSLND7	22	1	1	750	2
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	2	1	22	12
35064	NAVY 35R	9.11	1	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	1.1
32903	OAKLND 3	13.8	1	1	50	-0.5
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	1	0	1.9	0
33469	OX_MTN	4.16	4	0	1.9	0
33469	OX_MTN	4.16	3	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	2	0	1.9	0
34326	P0435BS1	13.8	2	1	102.5	21
34326	P0435BS1	13.8	1	1	102.5	21
34327	P0435BS2	13.8	3	1	102.5	21
34327	P0435BS2	13.8	4	1	102.5	21
31884	PAC.ENGY	9.11	1	1	9	5.5
31152	PAC.LUMB	13.8	2	1	7.5	-4
31152	PAC.LUMB	13.8	1	1	7.5	-4
31153	PAC.LUMB	2.4	3	1	2.5	0
33848	PARDE 2	7.2	1	1	8	-1.5
33842	PATTERSN	9.11	4	0	0	0
33842	PATTERSN	9.11	3	0	0	0
33842	PATTERSN	9.11	1	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	3	0	0	13.9
38720	PINE FLT	13.8	1	1	52	23.3
31818	PIT 1 U1	11	2	1	20	-23.7
31818	PIT 1 U1	11	1	1	20	-23.5
31802	PIT 3	11.5	3	1	18	2.3
31802	PIT 3	11.5	1	1	18	2.3
31802	PIT 3	11.5	2	1	18	2.3
31766	PIT 4	13.8	2	1	44	3.3
31766	PIT 4	13.8	1	1	44	3.3
31804	PIT 5 U1	11.5	2	1	35	2.5
31804	PIT 5 U1	11.5	1	1	35	2.5
31806	PIT 5 U2	11.5	2	1	35	2.5
31806	PIT 5 U2	11.5	1	1	35	2.5
31772	PIT 6 U1	13.8	1	1	35	3.3
31774	PIT 6 U2	13.8	1	1	35	3.3
31776	PIT 7 U1	13.8	1	1	52	5.2

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	5.2
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	19.6
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	4	0	0	0
31433	POTTRVLY	2.4	3	0	0	0
31433	POTTRVLY	2.4	1	1	3.2	1.3
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
35058	PSE-LVOK	9.11	1	1	43.1	-5.6
35060	PSEMCKIT	9.11	1	1	42.6	22.7
36217	PSWTSTCM	8	1	1	0	25.1
33105	PTSB 5	18	1	1	325	114.8
33106	PTSB 6	18	1	1	325	106.4
30000	PTSB 7	20	1	1	708.8	196.8
32458	RALSTON	13.8	1	1	83	7.3
35304	RCECCTG1	15	1	1	180	30.4
35305	RCECCTG2	15	2	1	180	30.4
35306	RCECSTG1	18	3	1	254	43
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	1.7
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	1	1	20	0
38735	SANLUIS2	13.8	2	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	1	1	64.2	5.5
31400	SANTA FE	13.8	2	0	0	0
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	-6.9
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
37578	SHASTA4	13.8	4	1	120	17
37579	SHASTA5	13.8	5	0	0	0
33141	SHELL 1	12.47	1	1	20	2.1
33142	SHELL 2	12.47	1	1	40	2.2
33143	SHELL 3	12.47	1	1	40	2.2
32177	SHILO	34.5	2	1	150	-63.8
32176	SHILOH	34.5	1	1	140	0
33808	SJ COGEN	13.8	1	1	45.2	22.8
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	5	0	0	1.7
36414	SO VAFB	12.47	3	0	3	1.3
36414	SO VAFB	12.47	2	0	3	1.3

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

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
36414	SO VAFB	12.47	4	0	0	1.7
36414	SO VAFB	12.47	1	0	3	1.3
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	2.3
31880	SPI-HAYF	9.11	1	0	6.8	-2.8
31896	SPI-QUCY	9.11	1	1	19	-1.4
31896	SPI-QUCY	9.11	2	0	0	-0.6
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	34.7
37581	SPRINGCR	13.8	1	1	91	34.7
34078	SPRNG GP	6	1	1	3.9	3.7
33468	SRI INTL	9.11	1	1	4.3	3
37315	SRWTPA	13.8	2	1	10	3.3
37315	SRWTPA	13.8	1	1	40	13.2
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	4.6
35004	SUNSET G	13.8	3	1	75	-0.4
35004	SUNSET G	13.8	2	1	75	-0.4
35004	SUNSET G	13.8	1	1	75	-0.4
37521	SUTTER1	18	1	1	160	3.1
37522	SUTTER2	18	2	1	160	3.1
37523	SUTTER3	18	3	1	155	2.8
30620	TESL_GT1	18	1	1	173	53.2
30621	TESL_GT2	18	1	1	173	53.2
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	71.7
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	7.1
35075	TEXSUN2G	18	1	1	169	7.1

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

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
35079	TEXSUNST	18	1	1	222	53.9
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	1	0	20	0
33171	TRSVQ+NW	9.11	2	0	10	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	2	1	15.7	8.3
32910	UNOCAL	12	1	1	15.7	8.3
32910	UNOCAL	12	3	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	1	0	0	0
33836	USWP_#4	9.11	3	1	4.5	0
31824	VOLTA1-2	9.11	2	1	0.9	0
31824	VOLTA1-2	9.11	1	1	7.8	0.2
38951	VSC_POTR	180.5	1	1	401.4	63
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	22.5
38574	WEC2-CT	13.8	1	1	73.2	19.8
38572	WEC3-ST	13.8	1	1	89.2	22.3
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	3	1	16.6	-1.3
31465	WHEELBR1	9.1	1	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	30.4
38785	WHLR RD1	13.2	2	0	0	0
38785	WHLR RD1	13.2	4	0	0	0
38785	WHLR RD1	13.2	3	0	0	0
38785	WHLR RD1	13.2	1	0	0	0
38785	WHLR RD1	13.2	5	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	2	0	-15	0
38790	WHLR RD2	13.2	4	0	-8	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	2	1	-15	0
38795	WINDGAP1	13.2	1	1	-16	0
38795	WINDGAP1	13.2	3	0	0	0
38800	WINDGAP2	13.2	1	1	-33	0
38800	WINDGAP2	13.2	2	1	-33	0
38805	WINDGAP3	13.2	2	0	0	0
38805	WINDGAP3	13.2	1	1	-33	0
38810	WINDGAP4	13.2	1	0	0	0
38810	WINDGAP4	13.2	2	0	0	0
33170	WINDMSTR	9.11	1	0	0	0
32512	WISE	12	1	1	11.1	-1
34658	WISHON	2.3	4	1	4.5	1
34658	WISHON	2.3	SJ	0	0	0
34658	WISHON	2.3	3	1	4.5	1
34658	WISHON	2.3	2	0	0	0.1
34658	WISHON	2.3	1	0	0	0.1
32185	WOLFSKIL	13.8	1	1	50	6.9
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	-8.3

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

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	15.9
33773	ALTA-CGE	60	1	1	4	-1
33175	ALTAMONT	9.11	1	0	0	0
35029	BADGERCK	13.8	1	1	46.3	2.5
36202	BAF COG1	13.8	1	1	38	18
36203	BAF COG2	13.8	1	1	75	32.5
34624	BALCH 1	13.2	1	1	31	5.6
31820	BCKS CRK	11	1	1	28	7.7
31820	BCKS CRK	11	2	1	25.2	6.9
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	23.3
33804	BELLTA T	13.8	1	1	0	37.7
34334	BIO PWR	9.11	1	1	21.8	7.1
34612	BLCH 2-2	13.8	1	1	52	6.2
34614	BLCH 2-3	13.8	1	1	52	11.5
31840	BLCKBUTT	9.11	1	1	2.2	-1
31421	BOTTLERK	13.8	1	1	55	10.4
32480	BOWMAN	9.11	1	1	2.5	-1
31798	BRNYFRST	13.2	1	1	26.6	3
38775	BUENAVS1	13.2	2	0	0	0
38775	BUENAVS1	13.2	3	0	0	0
38775	BUENAVS1	13.2	6	1	-13	0
38775	BUENAVS1	13.2	5	1	-13	0
38775	BUENAVS1	13.2	1	0	0	0
38775	BUENAVS1	13.2	4	1	-13	0
38780	BUENAVS2	13.2	3	0	0	0
38780	BUENAVS2	13.2	2	1	-6	0
38780	BUENAVS2	13.2	1	1	-13	0
38780	BUENAVS2	13.2	4	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	3	1	3.5	0
33850	CAMANCHE	4.16	2	1	3.5	0
37301	CAMINO 1	13.8	1	1	50	5.6
37302	CAMINO 2	13.8	1	1	50	4.9

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	0.8
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	3.5
32462	CHI.PARK	11.5	1	1	37.9	8.2
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	-5.4
35032	CHV-CYMR	9.11	1	1	13.5	-0.4
34652	CHV.COAL	9.11	2	1	8	4
34652	CHV.COAL	9.11	1	1	2.5	8.3
34305	CHWCHLA2	13.8	1	1	12.5	7.3
36205	CIC COGN	12.47	1	1	28	10.2
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	2	0	0	0
31838	CNTRVL12	9.11	1	1	4	0
33832	COG.CAPT	9.11	1	1	4.3	5.1
33818	COG.NTNL	12	1	1	35	17.6
31906	COLEMAN	6.6	1	1	8.7	2.2
32450	COLGATE1	13.8	1	1	147	14.6
32452	COLGATE2	13.8	1	1	147	14.6
31894	COLLINS	9.11	1	1	8.3	1.4
38102	COLLRVL1	13.8	1	1	89.3	49.9
38104	COLLRVL2	13.8	1	1	89.3	49.9
34654	COLNGAGN	9.11	1	1	34	-9.8
37321	COSUMNE1	18	1	1	165	25.9
37322	COSUMNE2	18	1	1	165	25.9
37323	COSUMNE3	16.5	1	1	170	26.1
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	2	1	0.8	0
31856	COWCRK	9.11	1	0	0	0
33814	CPC STCN	12.47	1	1	49	16.6
31923	CPVGT1	18	1	1	199	60.1

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
31924	CPVGT2	18	2	1	199	59.7
31925	CPVST1	18	3	1	317	105
31808	CRBOU2-3	11.5	1	1	20	12.4
31808	CRBOU2-3	11.5	2	1	20	11.6
31810	CRBU 1	11.5	1	1	20	-6.1
31782	CRBU 4-5	13.8	2	1	56	16
31782	CRBU 4-5	13.8	1	1	55	15.7
32900	CRCKTCOG	18	1	1	240	43.2
32175	CREEDGT1	13.8	3	1	46.3	-5.2
31812	CRESTA	11.5	1	1	28	7.4
31812	CRESTA	11.5	2	1	28	7.4
31842	CSC HYDR	9.11	2	1	0.3	0
31842	CSC HYDR	9.11	1	0	0	-1
32164	CTY FAIR	9.11	2	1	1.5	0.1
32164	CTY FAIR	9.11	1	1	0.8	0.1
32921	ChevGen1	13.8	1	1	54	34.2
32922	ChevGen2	13.8	1	1	54	34.2
36854	Cogen	12	1	1	3.3	-1.9
36854	Cogen	12	2	1	3.5	-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	49.1
33109	DEC CTG2	18	1	1	200	49.1
33110	DEC CTG3	18	1	1	200	49.1
33107	DEC STG1	24	1	1	280	68.9
32474	DEER CRK	9.11	1	1	3.1	-2.2
38820	DELTA A	13.2	2	1	0	0
38820	DELTA A	13.2	1	1	0	0
38820	DELTA A	13.2	3	1	0	0
38815	DELTA B	13.2	5	1	0	0
38815	DELTA B	13.2	4	1	0	0
38770	DELTA C	13.2	7	1	0	0
38770	DELTA C	13.2	6	1	0	0
38765	DELTA D	13.2	8	1	0	0
38765	DELTA D	13.2	9	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	16.2
34186	DG_PAN1	13.8	1	1	49	-19.4
32150	DG_VADIX	13.8	1	1	49	8.8
36411	DIABLO 1	25	1	1	1180	-41.3
36412	DIABLO 2	25	1	1	1200	-26.3
34648	DINUBA E	13.8	1	1	11	6.8
35062	DISCOVRY	13.8	1	1	44	22
34058	DONNELLS	13.8	1	1	64.2	-8.2

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
38550	DONPDRO1	13.8	1	1	35	1.4
38552	DONPDRO2	13.8	1	1	35	0.7
38350	DONPDRO3	13.8	1	1	49.9	-1.2
38554	DONPDRO4	13.8	1	1	20	0.6
38750	DOS AMG1	13.2	2	1	-30	0
38750	DOS AMG1	13.2	3	1	-30	0
38750	DOS AMG1	13.2	1	1	-30	0
38755	DOS AMG2	13.2	3	0	0	0
38755	DOS AMG2	13.2	1	0	0	0
38755	DOS AMG2	13.2	2	0	0	0
35023	DOUBLE C	13.8	1	1	42.5	1.8
33161	DOWCHEM1	13.8	1	1	15.3	2.3
33162	DOWCHEM2	13.8	1	1	22	8
33163	DOWCHEM3	13.8	1	1	22	8
32504	DRUM 1-2	6.6	1	1	12.5	4.3
32504	DRUM 1-2	6.6	2	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	9.3
32502	DTCHFLT2	6.9	1	1	24.5	4
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	-5.7
36865	DVRaST3	13.8	1	1	30	-6.9
36864	DVRbGT2	13.8	1	1	45	-6.3
32513	ELDRADO1	21.6	1	1	10	-2.7
32514	ELDRADO2	21.6	1	1	10	-2.7
33812	ELECTRA	13.8	1	1	29	5.9
33812	ELECTRA	13.8	2	1	29	5.9
33812	ELECTRA	13.8	3	1	29	5.9
35076	ELKHIL1G	18	1	1	166.8	57
35077	ELKHIL2G	18	1	1	166.8	57
35078	ELKHIL3G	18	1	1	220.5	61.2
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	1.2
30464	EXXON_BH	12.47	1	1	52	24.8
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	4	1	1.1	0

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
33840	FLOWD3-6	9.11	3	0	0	0
33840	FLOWD3-6	9.11	2	0	0	0
33840	FLOWD3-6	9.11	5	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	0.5
31870	FORKBUTT	9.11	1	0	0	-1
31870	FORKBUTT	9.11	2	0	0	-0.6
33151	FOSTER W	12.47	2	1	45.4	24.9
33151	FOSTER W	12.47	1	1	45.4	24.9
33151	FOSTER W	12.47	3	1	35	19.2
32451	FREC	13.8	1	1	50	6.2
34485	FRESNOWW	12.47	1	1	9	0
34636	FRIANTDM	6.6	4	0	2.3	0.4
34636	FRIANTDM	6.6	2	1	14.7	1.9
34636	FRIANTDM	6.6	3	1	7.8	1
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	2	1	8.9	-3
31435	GEO.ENGY	9.11	1	1	8.9	-3
31822	GERBER F	9.11	1	0	0	0
31412	GEYSER11	13.8	1	1	60	25.6
31414	GEYSER12	13.8	1	1	31	5.8
31416	GEYSER13	13.8	1	1	68	23.6
31418	GEYSER14	13.8	1	1	54	6
31420	GEYSER16	13.8	1	1	64	12
31422	GEYSER17	13.8	1	1	36	17.7
31424	GEYSER18	13.8	1	1	56	12.6
31426	GEYSER20	13.8	1	1	52	7.3
31408	GEYSER78	13.8	1	1	39	14.9
31408	GEYSER78	13.8	2	1	32	12.2
31406	GEYSR5-6	13.8	2	1	39	14.1
31406	GEYSR5-6	13.8	1	1	39	14.1
35850	GLRY COG	13.8	1	1	80.5	20.4
35850	GLRY COG	13.8	2	1	41.5	10.5
32174	GOOSEHGT	13.8	2	1	46.3	-5.2
31900	GRIZZLYG	6.9	1	1	16.8	-4
32490	GRNLEAF1	13.8	2	1	9.5	-5.8
32490	GRNLEAF1	13.8	1	1	40	-14
32492	GRNLEAF2	13.8	1	1	49	16.7

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
35851	GROYPKR1	13.8	1	1	48.7	-6.7
35852	GROYPKR2	13.8	1	1	48.7	-6.7
35853	GROYPKR3	13.8	1	1	48.7	-6.7
33131	GWF #1	9.11	1	1	12.7	-2.6
33132	GWF #2	13.8	1	1	12.3	4.9
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	4.2
34650	GWF-PWR.	13.8	1	1	23	6.4
33805	GWFTRCY1	13.8	1	1	85.9	12.6
33807	GWFTRCY2	13.8	1	1	85.9	12.6
34539	GWF_GT1	13.8	1	1	50	-7.4
34541	GWF_GT2	13.8	1	1	50	-7.4
34431	GWF_HEP1	13.8	1	1	50	17.3
34433	GWF_HEP2	13.8	1	1	50	17.3
36858	Gia100	13.8	1	0	20.1	5.1
36895	Gia200	13.8	1	0	20.6	5.1
34610	HAAS	13.8	1	1	70	15.1
34610	HAAS	13.8	2	1	70	15.1
32478	HALSEY F	6.6	1	1	8.6	-1.3
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	2	1	2.5	1.3
31846	HATCHET+	9.11	3	0	0	1
31846	HATCHET+	9.11	4	0	0	2.5
31846	HATCHET+	9.11	1	0	0	2.8
31868	HATLOST+	9.11	2	0	0	-0.5
31868	HATLOST+	9.11	3	0	0	-0.2
31868	HATLOST+	9.11	1	0	0	-0.7
32488	HAYPRES+	9.11	2	1	1.9	-2.5
32488	HAYPRES+	9.11	1	0	0	-2
32486	HELLHOLE	9.11	1	0	0	0
34600	HELMS 1	18	1	1	404	19.7
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	7.1
34632	HERNDN2T	13.2	1	1	0	9.7
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	2.7
31170	HMBOLDT1	13.8	1	0	50	14.5
31172	HMBOLDT2	13.8	1	0	50	13.2

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
36986	HOLM 1	13.8	1	1	17	2.1
36988	HOLM 2	13.8	1	1	17	2.1
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	3	1	16.6	-5.5
31180	HUMB_G1	13.8	4	1	16.6	-5.5
31180	HUMB_G1	13.8	1	1	16.6	-5.5
31181	HUMB_G2	13.8	7	1	16.6	-0.5
31181	HUMB_G2	13.8	6	1	16.6	-0.5
31181	HUMB_G2	13.8	5	1	16.6	-0.5
31182	HUMB_G3	13.8	9	1	16.6	-0.5
31182	HUMB_G3	13.8	8	1	16.6	-0.5
31182	HUMB_G3	13.8	10	1	16.6	-0.5
38825	HYATT 1	12.5	1	1	117	18.8
38830	HYATT 2	12.5	1	1	97	17.5
38835	HYATT 3	12.5	1	1	117	19.7
38840	HYATT 4	12.5	1	1	97	18.3
38845	HYATT 5	12.5	1	1	117	19.3
38850	HYATT 6	12.5	1	1	97	17.9
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	1	1	73.5	29.4
37553	J.F.CARR	13.8	2	1	73.5	29.4
37305	JAYBIRD1	13.8	1	1	60	0.2
37306	JAYBIRD2	13.8	1	1	60	0.4
31768	JBBLACK1	13.8	1	1	82	6.5
31770	JBBLACK2	13.8	1	1	83	6.6
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	3.4
31166	KEKAWAK	4.16	1	1	4.5	3.7
31834	KELLYRDG	9.11	1	1	0	-0.4
34344	KERCKHOF	6.6	1	0	0	0
34344	KERCKHOF	6.6	3	0	0	0
34344	KERCKHOF	6.6	2	1	6.8	-4
34308	KERCKHOF	13.8	1	1	129	16
35006	KERN 1	13.8	1	0	0	0
35008	KERN 2	13.8	1	0	0	0

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	1	1	60	10
35040	KERNRDGE	9.11	2	1	9	5
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	2.9
36982	KIRKWD 2	13.8	1	1	19	2.9
36984	KIRKWD 3	13.8	1	1	19	-0.1
34671	KRCDPCT1	13.8	1	1	50	3
34672	KRCDPCT2	13.8	1	1	50	3
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	1	230	71.6
35071	LAPLM_G2	21	1	1	230	71.6
35072	LAPLM_G3	21	1	1	229	71.5
35073	LAPLM_G4	21	1	1	230	71.6
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	39.8
35310	LFC FIN+	9.11	1	0	0	0
33112	LMECCT1	18	1	1	150	0.5
33111	LMECCT2	18	1	1	150	0.5
33113	LMECST1	18	1	1	200	4.6
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	0.8
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	-5.7
37309	MCCLELLN	13.8	1	1	60	16.6
38352	MCCLURE1	13.8	1	1	35	1.8
38354	MCCLURE2	13.8	1	1	35	1.8
36990	MCSN CK1	13.8	1	1	25	0.9
36992	MCSN CK2	13.8	1	1	25	0.9
34320	MCSWAIN	9.11	1	1	9	2
35881	MEC CTG1	18	1	1	180	49.9

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
35882	MEC CTG2	18	1	1	180	49.9
35883	MEC STG1	18	1	1	200	51.5
37561	MELONE1	13.8	1	1	119	25.4
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	10.2
32456	MIDLFORK	13.8	2	1	64.5	10.2
35034	MIDSUN +	13.8	1	1	24.5	15.2
99991	MIR_CT1	16.5	1	1	218.5	70.8
99993	MIR_CT2	16.5	3	1	218.5	70.8
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	1	64	20.5
99994	MIR_ST2	13.8	4	1	64	20.5
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	0	330	39.2
36410	MORRO 4	18	1	1	78.5	36.4
36405	MOSSLND6	22	1	1	0	64.4
36406	MOSSLND7	22	1	1	750	10.7
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	3.3
32468	NARROWS2	9.11	1	1	45	1.7
35064	NAVY 35R	9.11	2	1	22	12
35064	NAVY 35R	9.11	1	1	22	12
38106	NCPA1GY1	13.8	1	1	35	3.6
38108	NCPA1GY2	13.8	1	1	35	3.6
38110	NCPA2GY1	13.8	1	1	36	3
38112	NCPA2GY2	13.8	1	1	36	3
31621	NEO REDB	13.8	1	1	50	5.9
32460	NEWCSTLE	13.2	1	0	0	1.5
37645	NIMBUS12	4.2	1	1	6	3.6
37645	NIMBUS12	4.2	2	0	0	0
32901	OAKLND 1	13.8	1	1	50	-3

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
32902	OAKLND 2	13.8	1	1	50	0.9
32903	OAKLND 3	13.8	1	1	50	-0.8
35028	OILDALE	9.11	1	1	32	-10
35860	OLS-AGNE	9.11	1	1	29.6	6.6
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	1	0	1.9	0
33469	OX_MTN	4.16	4	0	1.9	0
33469	OX_MTN	4.16	3	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	2	0	1.9	0
34326	P0435BS1	13.8	2	1	102.5	22.1
34326	P0435BS1	13.8	1	1	102.5	22.1
34327	P0435BS2	13.8	3	1	102.5	22.1
34327	P0435BS2	13.8	4	1	102.5	22.1
31884	PAC.ENGY	9.11	1	1	9	5.5
31152	PAC.LUMB	13.8	2	1	7.5	-4
31152	PAC.LUMB	13.8	1	1	7.5	-4
31153	PAC.LUMB	2.4	3	1	2.5	0
33848	PARDE 2	7.2	1	1	8	-1.5
33842	PATTERSN	9.11	4	0	0	0
33842	PATTERSN	9.11	3	0	0	0
33842	PATTERSN	9.11	1	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	3	0	0	13.9
38720	PINE FLT	13.8	1	1	52	23.3
31818	PIT 1 U1	11	2	1	20	-23.7
31818	PIT 1 U1	11	1	1	20	-23.5
31802	PIT 3	11.5	3	1	18	2.4
31802	PIT 3	11.5	1	1	18	2.4
31802	PIT 3	11.5	2	1	18	2.4
31766	PIT 4	13.8	2	1	44	3.7
31766	PIT 4	13.8	1	1	44	3.7
31804	PIT 5 U1	11.5	2	1	35	2.9
31804	PIT 5 U1	11.5	1	1	35	2.9
31806	PIT 5 U2	11.5	2	1	35	2.9
31806	PIT 5 U2	11.5	1	1	35	2.9
31772	PIT 6 U1	13.8	1	1	35	3.6
31774	PIT 6 U2	13.8	1	1	35	3.6
31776	PIT 7 U1	13.8	1	1	52	5.7

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
31778	PIT 7 U2	13.8	1	1	52	5.7
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	19.7
31792	POE 2	13.8	1	1	51	19.7
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	4	0	0	0
31433	POTTRVLY	2.4	3	0	0	0
31433	POTTRVLY	2.4	1	1	3.2	1.2
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	0.4
35058	PSE-LVOK	9.11	1	1	43.1	-5.2
35060	PSEMCKIT	9.11	1	1	42.6	22.7
36217	PSWTSTCM	8	1	1	0	26.4
33105	PTSB 5	18	1	1	325	108.4
33106	PTSB 6	18	1	1	325	100.6
30000	PTSB 7	20	1	1	708.8	180.1
32458	RALSTON	13.8	1	1	83	7.6
35304	RCECCTG1	15	1	1	180	32.3
35305	RCECCTG2	15	2	1	180	32.3
35306	RCECSTG1	18	3	1	254	45.2
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	17.5
37602	REP2	13.8	1	1	50	17.5
37603	REP3	13.8	1	1	50	17.5
35020	RIOBRAVO	9.11	1	1	8.3	1.9
38351	RIPN_1	13.8	1	1	45	-2.8
38353	RIPN_2	13.8	1	1	45	-2.8
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	14.6
31788	ROCK CK2	13.8	1	1	51	23.3
32476	ROLLINSF	9.11	1	1	12	-1
38116	ROSEVCT1	13.8	1	0	16.3	9.1

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	5.1
38730	SANLUIS1	13.8	2	1	20	0
38730	SANLUIS1	13.8	1	1	20	0
38735	SANLUIS2	13.8	1	1	20	0
38735	SANLUIS2	13.8	2	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	1	1	64.2	5.3
31400	SANTA FE	13.8	2	0	0	0
36200	SARGCN G	13.8	1	1	33.7	3.8
35312	SEAWESTF	9.11	1	1	0.1	0
35046	SEKR	9.11	1	1	27	-6.5
33467	SFAERP	13.8	1	1	50.5	9.9
37575	SHASTA1	13.8	1	1	120	17.5
37576	SHASTA2	13.8	2	1	120	17.5
37577	SHASTA3	13.8	3	1	120	17.6
37578	SHASTA4	13.8	4	1	120	17.6
37579	SHASTA5	13.8	5	0	0	0
33141	SHELL 1	12.47	1	1	20	1.7
33142	SHELL 2	12.47	1	1	40	1.6
33143	SHELL 3	12.47	1	1	40	1.6
32177	SHILO	34.5	2	1	150	-63.5
32176	SHILOH	34.5	1	1	140	0
33808	SJ COGEN	13.8	1	1	45.2	23.3
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	8.1
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	19.6
33461	SMATO3SC	13.2	1	1	0	20
31800	SMPSN-AN	12.47	1	1	42	0.3
31430	SMUDGEO1	13.8	1	1	33	10.9
36414	SO VAFB	12.47	5	0	0	1.7
36414	SO VAFB	12.47	3	0	3	1.3
36414	SO VAFB	12.47	2	0	3	1.3

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
36414	SO VAFB	12.47	4	0	0	1.7
36414	SO VAFB	12.47	1	0	3	1.3
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	-0.8
33810	SP CMPNY	13.8	1	1	37.7	13.4
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	2.8
31880	SPI-HAYF	9.11	1	0	6.8	-2.8
31896	SPI-QUCY	9.11	1	1	19	-1.3
31896	SPI-QUCY	9.11	2	0	0	-0.6
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	35.5
37581	SPRINGCR	13.8	1	1	91	35.5
34078	SPRNG GP	6	1	1	3.9	3.7
33468	SRI INTL	9.11	1	1	4.3	3
37315	SRWTPA	13.8	2	1	10	3.3
37315	SRWTPA	13.8	1	1	40	13.4
37316	SRWTPB	13.8	1	1	40	12.7
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	4.9
35004	SUNSET G	13.8	3	1	75	0.5
35004	SUNSET G	13.8	2	1	75	0.5
35004	SUNSET G	13.8	1	1	75	0.5
37521	SUTTER1	18	1	1	160	4.3
37522	SUTTER2	18	2	1	160	4.3
37523	SUTTER3	18	3	1	155	4
30620	TESL_GT1	18	1	1	173	55.3
30621	TESL_GT2	18	1	1	173	55.3
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	74.3
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	7.7
35075	TEXSUN2G	18	1	1	169	7.7

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
35079	TEXSUNST	18	1	1	222	54.8
33806	TH.E.DV.	13.8	1	1	19.6	4.8
38700	THERMLT1	13.8	1	1	32	3.3
38705	THERMLT2	13.8	1	1	22	3.1
38710	THERMLT3	13.8	1	1	22	3.1
38715	THERMLT4	13.8	1	1	22	3.1
33822	TIGR CRK	11	1	1	26.7	0.9
33822	TIGR CRK	11	2	1	27	0.9
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	23.7
37590	TRINTY12	13.8	1	1	53	23.7
33171	TRSVQ+NW	9.11	1	0	20	0
33171	TRSVQ+NW	9.11	2	0	10	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
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
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	2	1	15.7	8
32910	UNOCAL	12	1	1	15.7	8
32910	UNOCAL	12	3	1	15.7	8
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	1	0	0	0
33836	USWP_#4	9.11	3	1	4.5	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	71.6
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

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	23.1
38574	WEC2-CT	13.8	1	1	73.2	20.4
38572	WEC3-ST	13.8	1	1	89.2	22.9
31404	WEST FOR	13.8	1	1	12.1	5.8
31404	WEST FOR	13.8	2	1	12	5.7
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	-13.9
31465	WHEELBR1	9.1	3	1	16.6	-1.1
31465	WHEELBR1	9.1	1	1	16.6	-1.1
31465	WHEELBR1	9.1	4	1	7.8	-0.5
31465	WHEELBR1	9.1	2	1	16.6	-1.1
37318	WHITERK1	13.8	1	1	80	30.6
37319	WHITERK2	13.8	1	1	80	30.8
38785	WHLR RD1	13.2	2	0	0	0
38785	WHLR RD1	13.2	4	0	0	0
38785	WHLR RD1	13.2	3	0	0	0
38785	WHLR RD1	13.2	1	0	0	0
38785	WHLR RD1	13.2	5	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	2	0	-15	0
38790	WHLR RD2	13.2	4	0	-8	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	2	1	-15	0
38795	WINDGAP1	13.2	1	1	-16	0
38795	WINDGAP1	13.2	3	0	0	0
38800	WINDGAP2	13.2	1	1	-33	0
38800	WINDGAP2	13.2	2	1	-33	0
38805	WINDGAP3	13.2	2	0	0	0
38805	WINDGAP3	13.2	1	1	-33	0
38810	WINDGAP4	13.2	1	0	0	0
38810	WINDGAP4	13.2	2	0	0	0
33170	WINDMSTR	9.11	1	0	0	0
32512	WISE	12	1	1	11.1	-0.8
34658	WISHON	2.3	4	1	4.5	1
34658	WISHON	2.3	SJ	0	0	0
34658	WISHON	2.3	3	1	4.5	1
34658	WISHON	2.3	2	0	0	0.1
34658	WISHON	2.3	1	0	0	0.1
32185	WOLFSKIL	13.8	1	1	50	7.2
32156	WOODLAND	9.11	1	1	25	5
31794	WOODLEAF	13.8	1	1	55	0
38356	WOODLMID	13.8	1	1	41.1	-7.6

BUS-NO	NAME1	KV1	ID	ST	PGEN	QGEN
38357	WOODMID2	13.8	1	1	75	-19.6
32496	YCEC	13.8	1	1	50	3.9
32494	YUBA CTY	9.11	1	1	41.3	10.8
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.