

**PREPARED DIRECT TESTIMONY OF DAVID ASHUCKIAN ON BEHALF OF THE
CALIFORNIA ENERGY COMMISSION REGARDING THE ISSUE OF PLANNING
RESERVE MARGIN AS ADDRESSED IN THE LONG-TERM PROCUREMENT
PLANS OF PACIFIC GAS & ELECTRIC COMPANY (PG&E)**

DOCKET	
06-IEP-1J	
DATE	_____
RECD.	JUN 19 2007

1 **PREPARED DIRECT TESTIMONY OF DAVID ASHUCKIAN ON BEHALF OF THE**
2 **CALIFORNIA ENERGY COMMISSION REGARDING THE ISSUE OF PLANNING**
3 **RESERVE MARGIN AS ADDRESSED IN THE LONG-TERM PROCUREMENT**
4 **PLANS OF PACIFIC GAS & ELECTRIC COMPANY (PG&E)**
5

6 **Q1: Please state your name and business address.**

7 **A1:** My name is David Ashuckian. My business address is California Energy
8 Commission, 1516 9th Street, Sacramento, California 95814.
9

10 **Q2: Please briefly describe your responsibilities at the California Energy**
11 **Commission.**

12 **A2:** I am employed as manager of the Electricity Analysis Office of the Systems
13 Assessment & Facilities Siting Division of the California Energy Commission (Energy
14 Commission). In this capacity, my responsibilities include managing the work of
15 professional staff engaged in conducting independent, objective analyses of California's
16 electricity and natural gas systems, market, and operations.
17

18 **Q3: Please summarize your educational and professional background.**

19 **A3:** I am a Professional Engineer registered in the State of California. I obtained my
20 Bachelor of Science degree in Mechanical Engineering in 1992 from California State
21 University Sacramento, in addition to my Bachelors degree in Criminal Justice which
22 was obtained in 1981 from California State University Sacramento. My employment at
23 the California Energy Commission began in 1998. My professional experience at the
24 Energy Commission includes managing the activities of the Electricity Analysis Office
25 (EAO) for the last 4 years. The function of the Electricity Analysis Office is to provide

1 independent, objective analysis of the electricity market and electrical system operation.
2 As manager of the Electricity Analysis Office, I supervise 35 professionals who have
3 expertise in the following subject matter areas: Electric Generation Systems Electrical
4 Engineering Mechanical. In my capacity as Manager of the EAO, I am responsible for
5 managing the development of the Summer Outlook Report, and a number of the
6 electricity and natural gas reports that Energy Commission staff have developed for the
7 2003, 2004, and 2005 Integrated Energy Policy Reports. I have also served as policy
8 advisor to Commissioner Boyd, supervised the Commission's Transportation
9 Technology Program and have served as the Energy Commission's spokesperson on
10 electricity system need before the Governor's Office, Legislature, and the Joint Agency
11 Energy Action Plan.

12
13 **Q4: Please state the purpose of your testimony.**

14 **A4:** The purpose of my testimony is to sponsor the position of the Energy Commission
15 in this proceeding on the issue of the planning reserve margin (PRM) by providing the
16 California Public Utilities Commission ("CPUC") with an evaluation of Pacific Gas &
17 Electric Company's ("PG&E's") Long Term Procurement Plan ("LTPP") on that issue.
18 The PRM issue is addressed by PG&E in Vol. 1, Section IV, C. *Supply Forecasts*, and
19 Vol. 2, Section IV, A, The commission should increase the current Planning Reserve
20 Margin of 15% to 17% reserves on a 1-in-2 peak demand to 16% reserves on a 1-in-10
21 peak demand., of its LTPP.

22
23 Specifically, the purpose of this testimony is to provide:
24
25

1. Identification of the requirements of the Assigned Commissioner's Ruling and Scoping Memo on the Long-term Procurement Phase of R.06-02-013, dated September 25, 2006 ("Scoping Memo") that are applicable to IOUs with respect to PRM;
2. Identification of the pertinent recommendations set forth in the Energy Commission's 2005 Integrated Energy Policy Report ("IEPR") and associated report entitled "*Transmittal of 2005 Energy Report Range of Need and Policy Recommendations to the California Public Utilities Commission*" ("Transmittal Report") that are applicable to the PRM requirements set forth in the Scoping Memo (item 1 above);
3. A description of the substance of the IOU's Long Term Procurement Plan (LTPP) with respect to PRM issues;
4. An analysis of whether the IOU's LTPPs comply with the requirements of the Assigned Commissioner's Ruling and Scoping Memo on the Long-Term Procurement Phase of R.06-02-103 ("Scoping Memo") with respect to the PRM issues identified in item 1 above;
5. An analysis of whether the IOUs' LTPPs comply with the requirements of the IEPR with respect to the PRM issues in item 2 above;
6. On behalf of the Energy Commission, present the Energy Commission's written recommendations concerning the course of action that CPUC should take in this proceeding with respect to each IOU's LTPP as it relates to PRM.

I am authorized to present this written testimony on behalf of the Energy Commission.

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1 **Q5: What reserve margin has PG&E requested authority to procure to in its 2006**
2 **LTPP?**

3 **A5:** PG&E has requested permission to procure to a 16 percent reserve margin based
4 on 1-in-10 year peak load conditions.¹ PG&E states that this is the functional equivalent
5 of a 20 percent reserve margin for a 1-in-2 weather condition.² In addition, PG&E has
6 asked to procure an additional 500 MW to deal with selected uncertainties³

7
8 **Q6: Is this reserve margin consistent with the instructions of the Scoping Memo?**
9

10 **A6:** No. The Scoping Memo states:
11

12 "Utilities should assume that they have to meet a minimum of 15-17% planning
13 reserve margin"4
14

15 However, the February 16th Administrative Law Judge's Ruling Denying Moving Parties'
16 Motion to Strike Testimony of Pacific Gas And Electric Company held that "only PG&E's
17 request to augment PG&E's PRM from the current 15-17% reserves on a 1-in-2 peak
18 demand to 16% reserves on a 1-in-10 peak demand is within the scope of this
19 proceeding."⁵ That ruling further stated:
20

21 "Intervenors are to focus in their testimony on whether or not PG&E has
22 demonstrated a need for an increase in its PRM and whether the Commission
23

24 ¹ PG&E LTPP, Vol. 2, Section IV.A

25 ² Id

³ PG&E LTPP, Vol. I, p. IV-80.

⁴ Scoping Memo, Attachment A, at p. 13.

1 should approve PG&E's recommended plan that is based on the increased
2 PRM."⁶
3

4 **Q7: Does PG&E's assessment of the the current reserve margin indicate that it is**
5 **insufficient to meet 1-in-10 peak demand conditions?**

6 **A7:** No. PG&E's assessment of the insufficiency of the 15% PRM to meet 1-in-10
7 peak demand conditions, as described in Section IV.A.1 is flawed.
8

9 PG&E claims that Table Vol. 2, IVA-1 illustrates that "[t]he current planning reserves do
10 not provide sufficient margin to cover load increases due to 1-in-10 or hotter
11 temperatures."⁷ However, the following entries in the table result in the table merely
12 illustrating that the current reserve margin would fail to prevent a Stage 1 alert under
13 conditions more adverse than once in ten years.
14

- 15 • By including minimum operating reserves equal to seven percent of the peak
16 load, PG&E is effectively assessing the PRM needed to avoid a Stage 1 alert, not
17 to avoid involuntary load shedding.
- 18 • The inclusion of 429 MW to meet regulation needs assumes that, at the moment
19 that load is at its *very highest*, additional capacity is needed to handle upward
20
21
22

23
24 ⁵ Administrative Law Judge's Ruling Denying Moving Parties' Motion to Strike Testimony of Pacific Gas
and Electric Company, CPUC Docket R.06-02-013, February 16, 2007

25 ⁶ Id.

⁷ Vol2, p. IV-1

1 fluctuations in demand. The definition of “peak demand” precludes this capacity
2 from being necessary.⁸

- 3 • In assuming 500 MW is necessary for “higher forced outages”, PG&E is
4 assessing the amount of capacity needed to protect against a joint occurrence (of
5 loads and available capacity) that is rarer than 1-in-10. Energy Commission staff
6 estimates the probability of forced outages in NP26 totaling 1,600 MW or more at
7 the time of the peak to be on the order of 1-in-10. The joint probability of two
8 independent 1-in-10 events is 1-in-100.

9
10 **Q. Does PG&E demonstrate that the probability of involuntary load curtailments**
11 **is unacceptably high if the current PRM is maintained?**

12 **A.** No. While PG&E presents Figure Vol. 2, IVA-1 to illustrate that short-term load
13 uncertainties are such that the probability of involuntary curtailments exceeds one day
14 in ten years at the currently allowed PRM, PG&E presents an insufficient amount of
15 information in its filing so as to allow for evaluation of the claim. The results displayed in
16 the figure are driven by the assumed standard deviation of 1,299 for the error in the
17 near-term load forecast,⁹ but there is no information presented regarding how this value
18 was derived, thus precluding an assessment of its accuracy or validity. For example,
19 historical analysis based on a short data series that includes 2001 and 2002 would
20 be skewed by two years which witnessed an unprecedented level of conservation due
21 to the energy crisis. The resulting estimate of the standard deviation would over-
22 estimate its true value.

23 _____
24 ⁸ In addition, regulation is considered by the WECC to be a component of the minimum
25 operating requirement.

⁹ See Alvarez_Volume 2 Workpapers.xls

1 **Q. Does PG&E demonstrate that it is in its customers' interest to procure to a**
2 **higher reserve margin?**

3 **A.** No, PG&E does not present enough data to demonstrate that customers would
4 benefit from a higher reserve margin. The costs and benefits can only be estimated
5 from the filing for a single year; this estimate does not indicate that the net benefits from
6 a higher reserve margin are necessarily positive.

7
8 The costs to customers are equal to the cost of procuring additional capacity; the
9 benefits to customers depend upon the associated reduction in expected unserved
10 energy and the value of lost load. PG&E estimates the annual cost of procuring to the
11 higher reserve margin at \$50 million - \$100 million per year, based on a need for
12 "approximately 1,000 MW" of additional capacity.¹⁰

13
14 Based on the information provided, benefits can only be estimated for 2014. In Table
15 Vol. 1, VIB-4, PG&E provides estimates of reductions in energy not served of 474 MWh
16 (Scenarios 1 and 3), 1,610 MWh (Scenario 2) and 3,405 MWh (Scenario 4). The
17 possible value of these reductions is indicated by data presented in Table Vol. 2, IV.A-2,
18 which indicates that the system-wide value of reducing ENS is \$11 - \$18/kWh,
19 depending on the duration of the outage avoided and whether prior notice of curtailment
20 is given. Under scenarios 1 and 3, therefore, the value of the higher reserve margin is
21 \$5.2 - \$8.5 million; for scenario 2, \$17.7 - \$29.0 million, and for scenario 4, \$37.5 -
22 \$61.3 million. Only under the latter scenario might the higher reserve margin be
23 justified,

1 **Q. Does PG&E's request to procure to a higher reserve margin for its service area**
2 **solely have an impact on its customers?**

3 **A.** No, the consequences of approving the higher reserve margin would be that PG&E
4 would be authorized to acquire extra capacity resources that would be paid for by all
5 LSEs. This is an undue burden for other LSEs, who would not have the option of
6 determining how to best meet the reliability needs of their customers. The decision to
7 allow PG&E to procure to a higher reserve margin effectively allows PG&E to determine
8 the tradeoff between cost and reliability for the customers of all LSEs in its service area.

10 **Q.** Is the current proceeding the appropriate forum in which to consider a higher reserve
11 margin?

12 **A.** No. Not only does a higher reserve margin have an impact on non-PG&E customers,
13 the purported need for it is based upon numerous assumptions regarding load
14 forecasting errors, long-run planning decisions by other LSEs, the availability of
15 resources outside the PG&E service area, demand for NP26 generation outside the
16 zone, etc. As such, consideration of the appropriate reserve margin, if deemed
17 necessary, should be undertaken in the Energy Commission's IEPR process.

19 **Q. Should the CPUC approve PG&E's request to be allowed to procure to the**
20 **levels commensurate with 1-in-10 peak demand conditions and a 16 percent**
21 **PRM?**

22 **A.** No. Based on the the above, PG&E should not be allowed to procure to the reserve
23 margin for which authorization is requested.

25 ¹⁰ Based on Tables Vol. 1, IVE – 1 – 4 (lines 29 and 36), the values vary slightly by
scenario and range from 998 – 1,008 MW in 2009, increasing to 1,142 – 1,191 MW in

1 **Q9: Does this conclude your testimony?**

2 **A9: Yes.**

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Docket Optical System - Fwd: Re: Can you docket the staff testimony in the CPUC's LTPP here at the Commission under 06-IEP-

From: David Vidaver
To: Docket Optical System
Date: 6/19/2007 4:26 PM
Subject: Fwd: Re: Can you docket the staff testimony in the CPUC's LTPP here at the Commission under 06-IEP-
CC: Michael Doughton
Attachments: Michael Doughton

DOS,

Can you Please docket the attached electronic files in 06-IEP-1J?

thanks.