Exhibit JAR-1 No. _____
Date: May 17, 2013
Witness: James A. Ross

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

Application of PACIFIC GAS AND ELECTRIC COMPANY, for Authority, Among Other things, to Increase Rates and Charges for Electric and Gas Service Effective on January 1, 2014. (U39E)	Application 12-11-009 (Filed November 15, 2012)

PREPARED DIRECT TESTIMONY OF

JAMES A. ROSS

ON BEHALF OF THE

ENERGY PRODUCERS AND USERS COALITION

MAY 2013

REGULATORY & COGENERATION SERVICES, INC.

PREPARED DIRECT TESTIMONY OF
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Q PLEASE STATE YOUR NAME, OCCUPATION AND BUSINESS ADDRESS.

A My name is James A. Ross. I am a member of the consulting firm of Regulatory & Cogeneration Services, Inc. (RCS), a utility rate and economic consulting firm. My business address is 500 Chesterfield Center, Suite 320, Chesterfield, Missouri 63017. A statement of my qualifications is attached as Appendix A.

Q ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?

A This testimony is presented on behalf of the Energy Producers and Users Coalition (EPUC). EPUC is an ad hoc group representing the electric end-use and customer generation interests of the following companies: Aera Energy LLC, Chevron U.S.A. Inc., Phillips66 Company, Shell Oil Products US, and Occidental Elk Hills, Inc. EPUC members are large industrial power users who are concerned about the cost of their electric power rates.

Q WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A This testimony addresses certain of Pacific Gas and Electric Company's (PG&E) proposals to increase rates and charges for electric service effective January 1, 2014. Other aspects of PG&E's testimony or proposals that are not specifically addressed in this testimony should not be construed as concurrence or support for those unaddressed aspects.

Q PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS.

A My conclusions and recommendations are:

- PG&E's proposal to include nuclear fuel inventory in rate base should be rejected and the current Commission ratemaking treatment should be continued for this test year cycle (*i.e.*, 2014, 2015 and 2016).
  - PG&E's proposal to rate base nuclear fuel inventory would significantly increase rates. In contrast to the current ratemaking treatment, the PG&E proposal represents over a 2,856% increase in the nuclear fuel inventory revenue requirement. That's correct – PG&E's proposal would increase by almost 3,000% the revenue requirement burden of ratepayers for this item (i.e., a revenue requirement increase from less than $1.6 million to over $45 million).

- PG&E's proposed hydro capital expenditures are excessive and should be reduced.
  - Test Year 2014 hydro capital expenditures to maintain reliability and availability are over 92% greater than the capital expenditures recorded in 2011.
  - PG&E's conventional hydro portfolio performance is about 15% better than the industry average performance and the larger portfolio performance is over 26% better than the industry average.
  - Of the total $224.6 million of capital expenditures to maintain reliability and availability in TY 2014, over 62% of the capital projects have a status of N/A which means there is no robust economic assessment for the project presented in the workpapers.
  - PG&E has performed no studies quantifying the cost and probability of adverse consequences due to delaying the capital expenditure projects to maintain reliability and availability until the next GRC.

- Given the significant increase in the level of capital expenditures to maintain reliability and availability and the absence of any obligation to undertake any of the forecasted projects, the most logical source of information to indicate the level of capital expenditures needed to maintain the reliability and availability of the hydro system is the recorded capital expenditures that PG&E actually undertook to maintain reliability and availability of the hydro system.

- EPUC recommends that the hydro capital expenditures to maintain reliability and availability of the hydro system be as follows: $110 million, $114 million, $157 million, $165 million and $130 million; respectively, for years 2012, 2013, 2014, 2015, and 2016.

I.

NUCLEAR FUEL INVENTORY

Q WHAT IS PG&E'S PROPOSED RATEMAKING TREATMENT FOR NUCLEAR FUEL INVENTORY IN THIS PROCEEDING?

A PG&E seeks to include nuclear fuel inventory of $399 million in rate base, instead of recovering the costs through the Energy Resource Recovery Account (ERRA) at the short-term interest rate.

Q HAS PG&E MADE THIS PROPOSAL IN THE PAST?

A Yes, in the 2007 GRC and the 2011 GRC, PG&E sought to recover the carrying cost of nuclear fuel inventory in rate base.

Q WAS PG&E'S PROPOSAL ADOPTED IN THE 2007 AND 2011 GRCs?

A No. Both the 2007 GRC and 2011 GRC were settled and the settlement agreement provides for recovering the carrying cost for nuclear fuel inventory through the ERRA at the short term interest rate.

Q WOULD PG&E'S PROPOSAL DEPART FROM THE COMMISSION'S HISTORIC RATEMAKING TREATMENT FOR NUCLEAR FUEL INVENTORY?

A Yes. For over 20 years the Commission has determined that collecting the carrying cost for nuclear fuel inventory at the utility's short term interest rate is the appropriate ratemaking treatment. Since the 1980s, the Commission has consistently rejected rate base treatment in favor of using short-term debt to finance nuclear fuel inventory. In Application 86-12-047, SCE requested rate base treatment for the portion of the nuclear fuel inventory that SCE owned. While SCE argued that nuclear fuel should be

distinguished from other fuels due to the operating and life cycle characteristics, the Commission found that the differences did not support a different ratemaking treatment. The Commission rejected SCE's arguments and authorized carrying costs based on short term debt and directed that these costs be addressed in the Energy Cost Adjustment Clause (ECAC) proceeding, which was the forerunner of the ERRA.

Despite further requests, the Commission has continued to embrace this approach, as evidenced in its treatment of SCE's nuclear fuel (D.06-05-016, at 271-275).

Q WHAT IS PG&E'S STATED REASON FOR PROPOSING THIS CHANGE?

A PG&E states that the reasons for the change are: (1) the need for short-term credit has changed as a result of restructuring and the California energy crisis; (2) there is a reduced supply of credit; and (3) a reduction in PG&E's credit quality and limitations on PG&E's capability to issue short-term debt at a reasonable cost.

Q DOES PG&E DESIGNATE SPECIFIC SHORT-TERM DEBT ISSUANCES TO SPECIFIC ELEMENTS FINANCED BY THAT DEBT?

A My understanding is that PG&E procures short-term debt to finance an entire category of costs without targeting specific debt to any specific element in that category.

Q HAS PG&E BEEN UNABLE TO OBTAIN SHORT-TERM DEBT DURING THE YEARS 2010 TO PRESENT?

A No. In response to a data request by EPUC, PG&E states:

> *The PG&E tapped the bank credit market twice in the period 2010 to present (June 2010 and May 2011)* ***and was able to obtain credit both times****, though several banks declined to participate and in one instance a bank was not able to commit additional capital beyond its prior commitment.* (Emphasis supplied)

Arguably, the referenced situation demonstrates PG&E's ability to continue to operate under the Commission's historical ratemaking treatment for nuclear fuel

inventory. Moreover, PG&E's position that this example highlights the potential limits of capacity with individual banks does not support the notion that such potential limits preclude obtaining the necessary financing.

Q PG&E PROVIDES AN EXAMPLE OF THE NEED FOR UNEXPECTED REPURCHASES OF AUCTION RATE NOTES IN FEBRUARY 2008 AS SUPPORT FOR CHANGING THE NUCLEAR FUEL INVENTORY RATEMAKING TREATMENT, WHAT IS THE AMOUNT OF AUCTION RATE NOTES OUTSTANDING TODAY?

A In contrast to the $450 million cited in Exhibit PG&E-10 on page 11-11, PG&E states that it does not have any auction rate notes outstanding as of today.

Q HAS PG&E PROVIDED ANY EVIDENCE WITH RESPECT TO ITS NUCLEAR FUEL INVENTORY THAT IT EXPECTS TO BE UNABLE TO LIQUIDATE ASSETS TO SERVICE DEBT OR OBTAIN REPLACEMENT FINANCING WHEN SHORT-TERM DEBT COMES DUE?

A No. In contrast, PG&E's testimony in Exhibit PG&E-10 at page 11-2 states that its commercial paper rating is A2 by Standard & Poor's, Inc. This means that PG&E has satisfactory capacity to meet its financial commitments; however, it is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions compared to companies with the highest category rating.

Q IN THE PG&E TESTIMONY ADDRESSING SHORT-TERM DEBT FINANCING DOES THE $2.5 BILLION FIGURE REFER SOLELY TO NUCLEAR FUEL INVENTORY FINANCING?

A No. PG&E's testimony in Exhibit PG&E-10 at page 11-5 states that PG&E cannot refinance $2.5 billion with short-term debt; however, this figure encompasses nuclear fuel inventory, CWIP, and vehicles. The nuclear fuel inventory amount for TY 2014 is $399 million, which means that the Test Year short-term financing requirements are only about 16% of the total figure that is the subject of the PG&E testimony. In other words,

the PG&E testimony extolling the adverse effects associated with short-term financing are aimed at the $2.5 billion figure and not solely at the continued ratemaking treatment for nuclear fuel inventory.

Q WHAT IS THE IMPACT ON RATEPAYERS IF PG&E'S PROPOSAL TO RATE BASE NUCLEAR FUEL INVENTORY IS ADOPTED?

A PG&E's proposal to rate base nuclear fuel inventory would significantly increase rates. In contrast to the current ratemaking treatment, the PG&E proposal represents over a 2,856% increase in the nuclear fuel inventory revenue requirement. That's correct – PG&E's proposal would increase by almost a 3,000% the revenue requirement burden of ratepayers for this item (*i.e.*, a revenue requirement increase from less than $1.6 million to over $45 million). The following table details the revenue requirement calculation for nuclear fuel inventory with data provided to EPUC in a PG&E data request response.

Table I-1
Pacific Gas and Electric Company
Nuclear Fuel Inventory Revenue Requirement
PG&E Proposal vs. Adopted Ratemaking Per D.06-05-016
(thousands of dollars)

Line No.	Description	PG&E GRC Request	Per D.06-05-016	Change	% Change
1	Inventory Balance	399,363	399,363		
2	Carrying Rate	11.82%	0.40%		
3	Revenue Requirement	47,210	1,597	45,613	2856%

Q IN PRIOR DECISIONS ON THIS ISSUE, HAS THE COMMISSION EXPRESSED RATEPAYER COSTS AS ONE OF THE RATIONALES FOR ITS LONG TIME POLICY TO EXCLUDE FUEL INVENTORY COSTS FROM RATE BASE?

A Yes, the impact on ratepayer costs has been cited as a primary reason. In a recent decision that extensively reviewed the history of the Commission's treatment of fuel inventory costs, the Commission unambiguously explained its reasoning.

"*Fuel inventory was excluded from rate base because of the cost to ratepayers, the balancing account treatment for fuel expenses, and the low risk nature of fuel inventories*." (D.06-05-016, at 274.)

As illustrated in Table I-1 above, the Commission is well aware that including nuclear fuel in rate base, as proposed by PG&E, dramatically increases the ratepayer cost of carrying nuclear fuel inventory because the authorized rate of return on rate base includes a return on equity component. The cost of using equity rather than debt is higher to the ratepayer because of the income taxes that must be recovered.

Q WHAT RATEMAKING TREATMENT FOR NUCLEAR FUEL INVENTORY SHOULD THE COMMISSION ADOPT IN THIS PROCEEDING FOR PG&E?

A The Commission should, as it has consistently for over 20 years, reject the utility's proposal to rate base nuclear fuel inventory and authorize the carrying cost for nuclear fuel inventory to be determined and collected through the ERRA at the short term interest rate. This action, as stated recently by the Commission in D.09-03-025, will *"maintain the status quo and should not result in a worsening view by rating agencies."* Moreover, maintaining the status quo in this proceeding will result in lower rates than PG&E's proposal and still provide PG&E a fair opportunity to recover its costs. This is consistent with the Commission's responsibilities in general and with long-established Commission policy regarding nuclear fuel inventory ratemaking treatment.

II.

PG&E's PROPOSED HYDRO CAPITAL EXPENDITURES

Q WHAT IS PG&E'S PROPOSAL FOR HYDRO CAPITAL EXPENDITURE?

A PG&E proposes that the Commission adopt its capital expenditure forecast of $262 million for 2012, $261 million for 2013 and $345 million for 2014. Moreover, Test Year (TY) 2014 hydro capital expenditures to maintain reliability and availability are over 92% greater than the capital expenditures recorded in 2011.

Q WHAT IMPACT DO PG&E'S PROPOSED HYDRO CAPITAL EXPENDITURES HAVE ON ITS RATEPAYERS?

A The estimated increase in revenue requirement is about $115 million.

Q WHAT ARE THE COST CATEGORY GROUPINGS INCLUDED IN PG&E'S PROPOSAL FOR HYDRO CAPITAL EXPENDITURE?

A Table II-1 summarizes the PG&E proposal. Note that PG&E's present GRC testimony provides a more granular presentation of some of the Major Work Categories (MWC) than was shown in the previous GRC (i.e., PG&E's 2011 GRC). Table II-1 shows the mapping of the previous MWC group to the present MWC.

Table II-1
Pacific Gas and Electric Company
PG&E Proposed Hydro Operations Costs
Capital Expenditures by Major Work Category
(Thousands of Dollars)

Line No.	Previous GRC Category Grouping	2014 GRC MWC	Recorded 2011	Forecast 2012	Forecast 2013	Forecast 2014
1	License and License Conditions	11	30,707	26,408	39,566	45,176
2	Implement Environment Projects	12	8,045	7,535	5,958	8,320
3	Tools & Equipment	05	898	231	880	2,906
4	Power Gen Safety	2F	*1,648*	*3,235*	*3,735*	*14,050*
		2L	*86,207*	*108,246*	*59,953*	*49,614*
		Subtotal	87,855	111,481	63,688	63,664
5	Maintain Reliability & Availability	2M	*68,520*	*82,391*	*109,278*	*121,702*
		2N	*43,645*	*30,668*	*36,116*	*86,244*
		2P	*4,531*	*3,761*	*5,477*	*16,652*
		Subtotal	116,695	116,820	150,870	224,598
6	**Total**		**244,201**	**262,475**	**260,963**	**344,664**
7	Percent Increase			7.5%	-0.6%	32.1%

PG&E also provided specific forecasts of capital expenditures for 2015 and 2016.

Q WHAT MWC CATEGORY GROUP COMPRISES THE LARGEST PERCENT OF THE TOTAL FORECAST HYDRO CAPITAL EXPENDITURES?

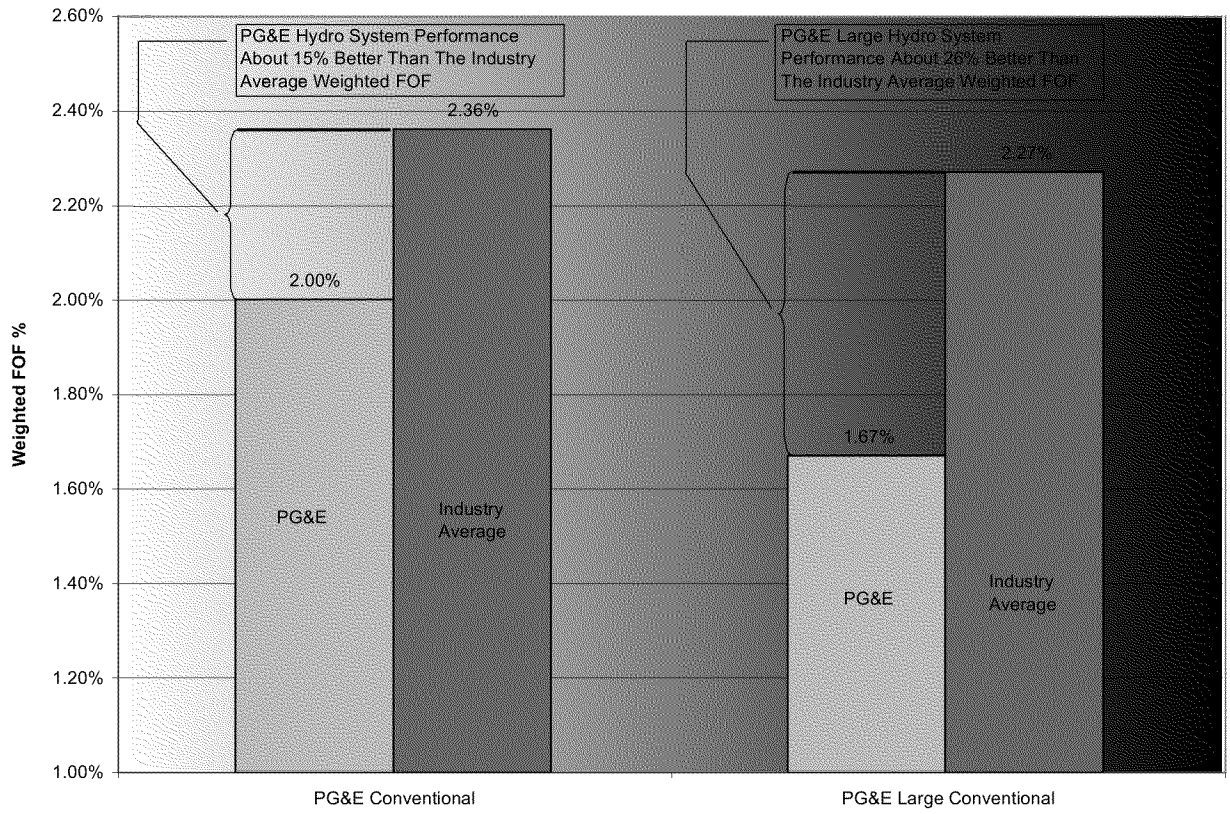
A The previous GRC Major Work Category grouping entitled "Maintain Reliability & Availability" is comprised of MWC 2M, MWC 2N and MWC 2P and reflects the single largest "grouping" of forecast capital expenditures. For example, the 2014 forecast of $224.6 million, for this MWC group, comprises over 65% of the total $344.7 million in forecast hydro capital expenditures in 2014. This is more than 3.5 times larger than the second largest "Power Generation Safety" MWC group forecast of $63.7 million.

Q DOES PG&E CITE REDUCED HYDRO PERFORMANCE AS A JUSTIFICATION FOR THE PROPOSED CAPITAL EXPENDITURES TO "MAINTAIN RELIABILITY & AVAILABILITY?"

A No. As described in Exhibit PG&E-6 at Section B.3.b. of Chapter 2, PG&E's conventional hydro portfolio had a 5-year average FOF of 2.00 percent and compares favorably to the 5-year average industry benchmark at 2.36 percent. For the portfolios larger than 30 MW powerhouses, the FOF was 1.64 percent, which is significantly better than the industry 5-year average industry benchmark of 2.27 percent.

As shown in Figure II-1, PG&E's conventional hydro portfolio performance is about 15% better than the industry average performance and the larger portfolio performance is over 26% better than the industry average.

Figure II-1
Pacific Gas and Electric Company
PG&E Conventional Hydro Forced Outage Factor
Compared To The
Industry Average Forced Outage Factor
(Five Year Average)



Q WHAT IS THE FORCED OUTAGE FACTOR?

A The forced outage factor (FOF) for a facility is the ratio of the number of hours that the facility is unable to operate due to a forced outage (*i.e.*, an unplanned component failure or other condition that requires the unit to be removed from service) to the total number of hours in the period; FOF is usually expressed as a percentage. For example, a generating unit that is out of service because of forced outages for 876 hours in a year with 8760 hours has an FOF equal to 10% (876 ÷ 8760 = 0.10 or 10.0%). Thus, a high FOF reflects poor performance in comparison to a lower FOF.

Q HAS PG&E PROVIDED PROJECT-SPECIFIC FORECASTS IN SUPPORT OF ITS PROPOSED HYDRO CAPITAL EXPENDITURES TO "MAINTAIN RELIABILITY & AVAILABILITY" FOR THE YEARS 2012 THROUGH 2016?

A Yes. These project-specific forecasts are summarized in the workpapers for PG&E's Exhibit PG&E-6 on pages WP 2-99 through WP 2-104. Furthermore, the workpapers for Exhibit PG&E-6, on pages WP 2-107 through WP 2-838, provide more detailed project information including for some of the projects' Job Estimate and Project Justification documentation.

Q WHAT DOCUMENTATION HAS PG&E PROVIDED IN SUPPORT OF THE SIGNIFICANT INCREASES IN CAPITAL EXPENDITURES PROPOSED BY PG&E FOR THE MAINTAIN RELIABILIY AND AVAILABILITY MWC GROUP?

A For projects over $1 million in the Maintain Reliability & Availability MWC group, PG&E provided documentation in their workpapers. Depending on the status of the project (e.g., Advanced Job Estimate (AJE), Job Estimate (JE), Advanced Authorization (AA), Not Applicable (N/A)), the documentation contained varying levels of project justification including some economic analyses if a project has Job Estimate and Project

Justification documentation (e.g., Net Present Value (NPV) calculations). However, the vast majority of the PG&E forecast capital expenditures for the Maintain Reliability & Availability MWC group do not have Job Estimate and Project Justification documentation (i.e., documentation that contains the more robust cost effectiveness analyses contained in the workpapers). For example, PG&E proposes hydro capital expenditures totaling over $224 million in Test Year (TY) 2014 for the Maintain Reliability & Availability MWC group. The number of capital expenditure projects with a status of N/A (i.e., there is no Job Estimate and Project Justification documentation) total about $140 million. In other words, over 60% of the Test Year capital expenditures proposed by PG&E are not supported by a robust economic assessment. The following Table II-2 presents a comparison of the capital expenditures for status N/A projects with the total PG&E proposed capital expenditures for the Maintain Reliability & Availability MWC group.

Table II-2
Pacific Gas and Electric Company
Comparison of Hydro Capital Expenditures
Major Work Category 2M, 2N, & 2P
"Maintain Reliability & Availability" MWC Group
(Thousands of Dollars)

Line No.	Description	Forecast 2014	Forecast 2015	Forecast 2016
1	Total PG&E Proposal	224,598	303,828	306,313
2	Projects With Status N/A	140,483	222,004	276,885
3	Percent of Total Comprised of N/A Status Projects	62.5%	73.1%	90.4%

Q DOES ADOPTION OF THE PG&E FORECAST ASSURE THAT THE UNDERLYING SPECIFIC PROJECTS WILL BE PERFORMED AS FORECAST?

A No. As PG&E states on page 2-7 of Exhibit PG&E-1, PG&E's position is that: "…it will always be critical that regulators allow flexibility for the Company's managers to make decisions and allocate resources in response to changing system and customer needs and priorities that emerge in the course of running the business." Accordingly, PG&E reserves the right to delay, defer, modify or cancel any specific projects without regard to the cost or timing identified in the filing.

Q DID YOU INQUIRE INTO THE POTENTIAL FOR SIGNIFICANT ADVERSE CONSEQUENCES OCCURRING SHOULD THE PROPOSED HYDRO CAPITAL EXPENDITURES IN THE "MAINTAIN RELIABILITY & AVAILABILITY" MWC GROUP BE POSTPONED?

A Yes. EPUC served a data request on PG&E requesting, among other things, a copy of all studies, analyses or other documentation quantifying the cost and probability of adverse consequences due to delaying until the next GRC each project comprising the $344.7 million of hydro capital expenditures forecast (i.e., the hydro capital expenditures for the MWC shown in the far right column of Table II-1). PG&E's response to this aspect of the request was "PG&E has no studies quantifying the cost and probability of adverse consequences due to delaying these projects until the next GRC."

Q DOES PG&E DELAY HYDRO CAPITAL EXPENDITURES IN THE NORMAL COURSE OF MANAGING THE HYDRO OPERATIONS?

A Yes. In response to a TURN data request, in the previous GRC, asking for a list of delayed projects forecast in the 2007 GRC, PG&E provided the following rationale for the delays:

> Hydro Operations' centralized program management organizes the forecast work by subprogram and MWC, and schedules the work based on priority... Hydro Operations' condition assessment and work management

programs provide data that allow PG&E to assess the physical condition of the Hydro assets, identify the work and resources needed to maintain the facilities, and optimize work schedules and expenditures to minimize the long term cost of production from these generating facilities. It is not uncommon for scheduled reliability and efficiency projects to be delayed as new, more urgent reliability projects emerge. Each specific project is reviewed at critical stages to ensure that the highest priority work is implemented.

Q HAS PG&E CONFIRMED THAT IT HAS DISCRETION TO REALLOCATE FUNDS IN THIS PROCEEDING?

A Yes. In Exhibit PG&E-6 on page 2-57, PG&E states that management has the discretion (and the obligation) to allocate funding to the highest priority work in order to ensure safe and reliable service to customers. Furthermore, PG&E cites two examples on that same page 2-57 where reallocation occurred in 2011: (1) $26.7 million in 2011 expense was reallocated to other PG&E hydro departments; and (2) $15.8 million was reallocated outside hydro entirely.

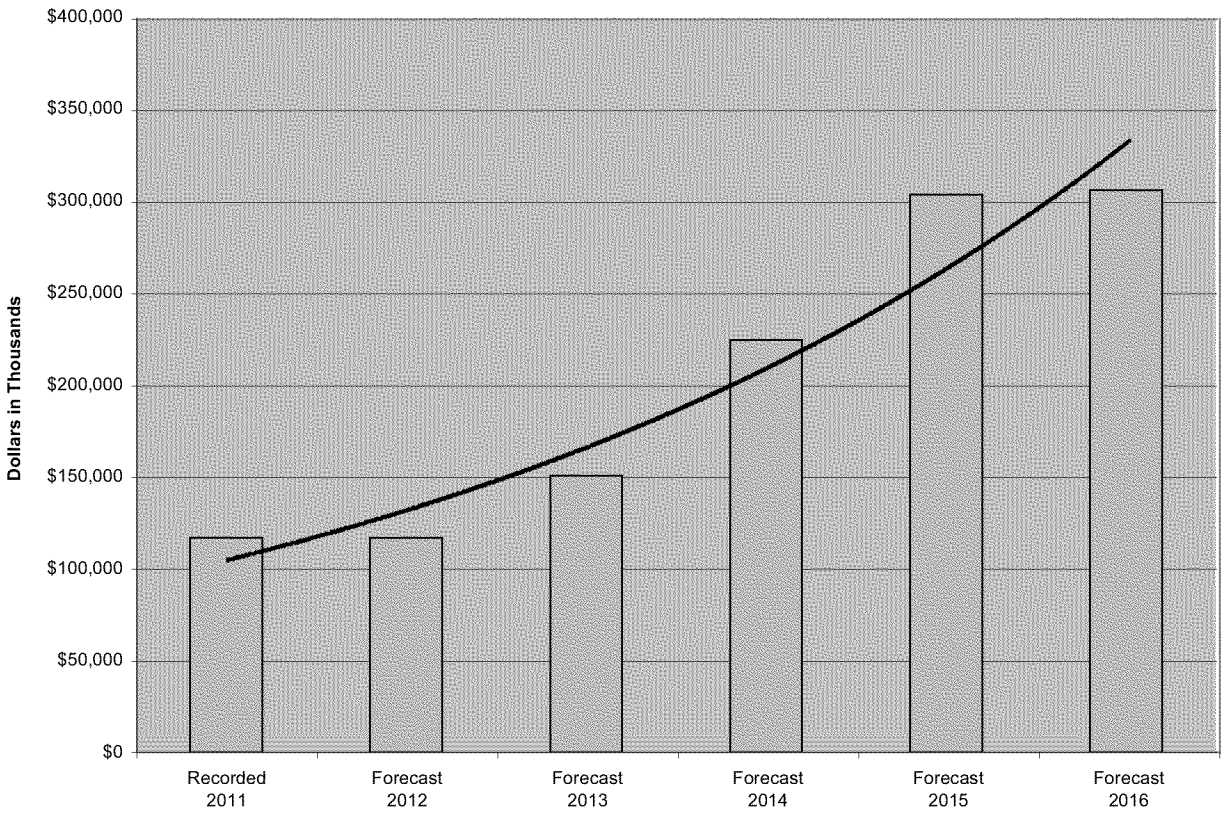
Q IS THE PG&E PROPOSAL TO SIGNIFICANTLY INCREASE THE LEVEL OF HYDRO CAPITAL EXPENDITURE FOR THE "MAINTAIN RELIABILITY & AVAILABILITY" MWC GROUP COMPELLING?

A No. The PG&E proposal is not supported by: (1) the need to improve hydro system reliability; (2) persuasive cost/benefit analysis for all projects; or (3) studies or other documentation quantifying the cost and probability of adverse consequences if projects are postponed. Nevertheless, the PG&E forecast of hydro capital expenditures in the "Maintain Reliability & Availability" MWC group are significantly greater than the corresponding historical recorded hydro capital expenditures.

Q HOW DOES PG&E'S FORECAST OF CAPITAL EXPENDITURES TO "MAINTAIN RELIABILITY & AVAILABILITY" COMPARE TO RECORDED AMOUNTS?

A The capital expenditures in the "Maintain Reliability & Availability" MWC group are forecast by PG&E to grow at an almost exponential rate from 2011 recorded amounts (*i.e.*, from the total recorded $116.7 million). PG&E proposes over $224.6 million in capital expenditures for this category in 2014 – about 1.9 times the total amount recorded in 2011. Figure II-2 shows the projected growth of capital expenditures in the "Maintain Reliability & Availability" MWC group for the years 2011 through 2016.

Figure II-2
Pacific Gas and Electric Company
PG&E Capital Expenditures
Maintain Reliability & Availability MWC Group
(Thousands of Dollars)



Q DOES PG&E REQUEST CAPITAL EXPENDITURE AUTHORIZATION FOR INDIVIDUAL HYDRO PROJECTS IN ORDER TO "MAINTAIN RELIABILITY & AVAILABILITY" OF THE HYDRO SYSTEM?

A No. According to PG&E, the Commission does not "authorize" hydro capital expenditures for individual projects; instead, PG&E presents a forecast of hydro capital expenditures to support its request for the Commission to adopt a level of generation revenue requirements. Thus, PG&E's project specific hydro capital expenditure forecasts are akin to a "to do list" of desired projects with no obligation as to the priority or timing of the undertaking -- none of which must be undertaken as forecast. In comparison, the recorded hydro capital expenditures are more reflective of reasonable costs to "maintain

reliability and availability" of the hydro system.

Q GIVEN THE SIGNIFICANT INCREASE IN THE LEVEL OF CAPITAL EXPENDITURES AND THE ABSENCE OF ANY OBLIBATION TO UNDERTAKE ANY OF THE FORECASTED PROJECTS, WHAT INFORMATION PROVIDES THE MOST LOGICAL INDICATION OF THE LEVEL OF CAPITAL EXPENDITURE NEEDED TO MAINTAIN THE RELIABILITY AND AVAILABILITY OF THE HYDRO SYSTEM?

A The most logical source of information is the recorded capital expenditures that PG&E actually undertook to maintain reliability and availability of the hydro system.

Q DO YOU HAVE AN ALTERNATIVE RECOMMENDATION TO PG&E'S PROPOSAL FOR THE "MAINTAIN RELIABILITY & AVAILABILITY" MWC GROUP HYDRO CAPITAL EXPENDITURES?

A Yes. The "Maintain Reliability & Availability" MWC group hydro capital expenditures should be primarily comprised of an amount based on an average of recorded capital expenditures for recent years. Additional consideration should be given to PG&E's forecast capital expenditures for projects associated with hydro facilities experiencing average FOF above the industry average.

Q DO THE CAPITAL EXPENDITURES RECORDED TO THE "MAINTAIN RELIABILITY & AVAILABILITY" MWC GROUP APPEAR TO CONTAIN ATYPICAL EXPENDITURES?

A Yes. PG&E provided, in its workpapers, a list of recorded capital expenditures over $1 million that were not forecasted in the 2011 GRC. These capital expenditures were identified as "Emergent Capital Expenditures" indicating that they were atypically incurred costs arising unexpectedly.

Q ABSENT THESE "EMERGENT CAPITAL EXPENDITURES," WHAT IS THE LEVEL OF RECORDED CAPITAL EXPENDITURES TO "MAINTAIN RELIABILITY AND AVAILABILITY" OF THE HYDRO SYSTEM FOR THE RECENT THREE YEAR PERIOD FOR WHICH PG&E PROVIDED DATA?

A The PG&E workpapers show recorded capital expenditures for the period 2009 through 2011. The recorded capital expenditures and "emergent" capital expenditures for the period 2009 through 2011 are shown in Table II-3.

Table II-3
Pacific Gas and Electric Company
PG&E Recorded Hydro Capital Expenditures
"Maintain Reliability & Availability" MWC Group
(Thousands of Dollars)

Line No.	Description	2009	2010	2011	Average
1	Total Recorded	60,168	70,602	116,695	
2	Emergent Capital Expenditures	146	538	161	
3	Total less "Emergent"	60,022	70,064	116,534	
4	Total less "Emergent" (Constant 2012 Dollars)	64,173	72,447	116,534	84,385

Q HOW DID YOU DEVELOP THE RECORED DATA COMPONENT OF YOUR RECOMMENDED ALTERNATIVE TO PG&E'S HYDRO CAPITAL EXPENDITURES PROPOSAL?

A The development of the recorded data based component of the EPUC recommendation for hydro capital expenditures for the "Maintain Reliability and Availability" MWC group is shown in the following Table II-4.

Table II-4
Pacific Gas and Electric Company
EPUC Recommended Hydro Capital Expenditures
Based on Historical Recorded Data
(Thousands of Dollars)

Line No.	Description	Average 2009 - 2011	2012	2013	2014	2015	2016
1	Total Recorded Expenditures (Constant 2011 Dollars)	84,676					
2	Emergent Capital Expenditures (Constant 2011 Dollars)	291					
3	Total Recorded less "Emergent" (Constant 2011 $)	84,385					
4	Hydro Capital Escalation Rate		1.50%	1.90%	3.40%	3.70%	1.80%
5	Record Data Recommendation (Nominal Years Dollars)		85,650	87,278	90,245	93,584	95,269

Q WHY ARE YOU RECOMMENDING THAT THE COMMISSION ADOPT HYDRO CAPITAL EXPENDITURES IN ADDITION TO YOUR RECORDED DATA BASED CALCULATON FOR THE MAINTAIN RELIABILITY AND AVAILABILITY MWC GROUP?

A Although the PG&E hydro system as a whole exhibits performance better than the industry average, there are specific conventional hydro units that have shown performance worse than the industry average. Accordingly, EPUC recommends that the Commission also adopt additional capital expenditures due to reliability considerations based on the PG&E forecast capital expenditures for specific projects associated with individual hydro facilities experiencing average FOF above the industry average

Q WHICH PG&E PROPOSED PROJECT SPECIFIC FORECASTS OF CAPITAL EXPENDITURES DID YOU RELY UPON TO DEVELOP THE COMPONENT OF YOUR RECOMMENDATION THAT IS DUE TO SPECIAL RELIABILITY CONSIDERATIONS?

A I relied upon the PG&E forecasts shown in Schedule 1 to Exhibit JAR-1. Schedule 1 is based on the PG&E forecast hydro capital expenditure for units identified with average weighted FOF above the industry average weighted FOF of 2.36%. EPUC is

recommending that the total amount of the expenditures shown at line 47 on page 2 of Schedule 1 be adopted for the years 2012 through 2014 and that the 2015 and 2016 expenditures be considered for purposes of attrition.

Q PLEASE SUMMARIZE EPUC'S RECOMMENDED MAINTAIN RELIABILITY AND AVAILABILITY MWC GROUP CAPITAL EXPENDITURES FOR PG&E'S HYDRO FACILITIES?

A EPUC's recommended capital expenditures for the "Maintain Reliability & Availability" MWC group is presented in Table II-5. EPUC is recommending that the hydro capital expenditures shown in Table II-5 be adopted for the years 2012 through 2014 and that the 2015 and 2016 expenditures be considered for purposes of attrition.

Table II-5
Pacific Gas and Electric Company
EPUC Recommended Capital Expenditures
"Maintain Reliability & Availability" MWC Group
(Thousands of Dollars)

Line No.	Description	2012	2013	2014	2015	2016
1	Recorded Data Based	84,385	85,988	88,911	92,201	93,861
2	Reliability Consideration for Units with FOF above Industry Average	25,734	27,827	67,751	72,609	36,200
4	**Total EPUC Recommended**	**110,119**	**113,814**	**156,663**	**164,810**	**130,061**

Q DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A Yes, it does.

QUALIFICATIONS OF JAMES A. ROSS

Mr. Ross is a graduate of the University of Missouri, with the degrees of Bachelor of Science in Electrical Engineering and Master of Science in Engineering Management. After graduation in 1971, he was employed by Union Electric Company, a utility, which provides service to Metropolitan St. Louis, Missouri, and surrounding areas. While assigned to the Power Operation Function, Mr. Ross was responsible for system operation-related engineering evaluations, which included long-range and intermediate planning studies, various economic studies and computer simulation of system operations. In 1977, he was assigned to the Corporate Planning Function with responsibilities in capacity planning coordination activities and special studies.

Mr. Ross served on Edison Electric Institute committees and task forces, and participated in reliability, capacity planning, power plant siting and contract negotiation activities.

Subsequent to his approximate ten-year employment with Union Electric Company, Mr. Ross entered the field of utility rate and economic consulting. His experience includes evaluations related to various aspects of utility ratemaking, utility operation, utility planning, rate forecasting, contract negotiations and cogeneration activities. Mr. Ross is a member of Regulatory & Cogeneration Services, Inc. (RCS), utility rate and economic consultants. Through its offices in Chesterfield, Missouri and Vancouver, Washington, RCS provides a wide range of utility rate and economic consulting services. The members of RCS have extensive utility operation, planning, and rate-related experience and have for several years been engaged in providing electric and gas utility-related consulting services to some of the largest corporations in the United States.

Mr. Ross has testified as an expert witness on utility rates, planning, contract negotiations and related matters before the regulatory commissions of Alabama, Arizona, California, Colorado, Florida, Idaho, Illinois, Kansas, Kentucky, Louisiana,

Massachusetts, Michigan, Nevada, New York, Pennsylvania, South Carolina, Texas, Utah and Wyoming. Mr. Ross has also testified before the Federal Energy Regulatory Commission.

Pacific Gas and Electric Company
PG&E Project Specific Forecasts To Maintain Reliability & Availability (MWC 2M, 2N, & 2P)
Used to Develop Reliability Component of EPUC Recommendation
(Thousands of Nominal Dollars)

Line No.	Planning No.	Description	2012 Forecast	2013 Forecast	TY 2014 Forecast	2015 Forecast	2016 Forecast
1	5747177	Bucks Cr Replace Trub Brg / Shaft	0	0	300	1,700	100
2	5745660	Bucks Rebuild Portal Road	0	115	0	3,000	0
3	5745661	Bucks Rebuild TSV's	0	202	800	0	0
4	5747185	Butt Valley Replace VH Bridge	0	0	0	132	1,050
5	5744039	Caribou 1 Rebuild TSV's	131	195	912	0	0
6	5734298	Caribou 1 Replace Governors	30	0	250	400	600
7	5720725	Caribou 1 Replace U1 Runner	0	0	0	350	3,200
8	5720727	Caribou 1 Replace U3 Runner	0	0	0	0	350
9	5720656	Caribou 1-1 Rewind Unit 1	0	0	0	150	1,200
10	5720657	Caribou 1-2 Rewind Unit 2	0	0	0	0	150
11	5724778	Caribou Automate Powerhouses	1,165	1,193	2,472	0	0
12	5741178	Caribou Road Capital Improvements	0	0	500	1,500	0
13	5743220	Centerville New Penstock inlet structure	7	0	504	3,004	17,005
14	5734959	Coal Canyon Replace M Mio 6/1 Flume	353	1,415	0	0	0
15	5718918	Coal Canyon Replace M. Miocene 9/1 Flume	366	1,447	0	0	0
16	5739326	Coleman Replace Asbury Pipe	219	69	0	410	2,367
17	5724338	Coleman Replace Wicket Gates	0	305	800	30	0
18	5735379	Cresta Replace Transformer	0	60	800	600	600
19	5720663	Cresta Replace Wickets / FPs	0	0	0	1,265	6,500
20	5729440	DeSabla Consolidate Switching Centers	10	800	800	295	0
21	5741544	DeSabla PH Replace Governor	188	400	1,633	0	0
22	5720654	DeSabla Replace Runner	0	0	0	0	400
23	5735785	Drum - South Canal Shotcrete	15	2,000	2,000	3,500	3,500
24	5735784	Drum - Wise Canal Shotcrete	0	2,000	500	3,500	3,500
25	5729667	Drum Canal YB 137 - New Gate Controller	111	526	600	0	0
26	5704239	Drum Canal/Gunite Work (Cap)	0	2,000	1,800	13,500	13,500
27	5747214	Drum U5 Replace Transformer	0	0	400	1,600	0
28	5744479	Halsey Forebay LLO Assessment	74	344	695	0	0
29	5729708	Halsey PH - Replace TSV's	0	0	500	1,000	0
30	5745692	Kerckhoff 1 - U3 Replace Transformer	0	205	1,662	4	0
31	5740890	Kerckhoff 1- U3 Field Poles Refirb/Colla	0	1,104	3	0	0
32	5725479	Kern - Repl Valve & Establish Sluiceway	1,244	392	1,279	2,201	0
33	5729502	Kern Canyon - Replace Runner	562	1,543	919	9,145	12
34	5720840	Kern Canyon Rewind Unit-Cap	163	597	2,051	2,699	5
35	5720731	Lime Saddle Replace Penstock	0	0	0	0	1,000
36	5741553	Poe Replace CW Strainer System	200	510	1,286	0	0

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Line No.	Planning No.	Description	2012 Forecast	2013 Forecast	TY 2014 Forecast	2015 Forecast	2016 Forecast
37	5720683	Poe U1 Replace Runner, Wickets & FPs	1,824	6,006	699	0	0
38	5734683	Potter Valley Replace Transformer	0	250	1,760	0	0
39	5724402	Potter Valley Replc Upper Wood Penstock	0	0	0	475	1,350
40	5724404	Potter Valley: Repl low Wood & Metal Penstock	228	443	500	11,436	5,520
41	5729671	Spaulding 1 - Replace Generator Sw Gear	104	300	1,000	0	0
42	5744498	Spaulding 1 PRV Discharge	4,908	684	51	0	0
43	5747308	Spaulding Bypass Tunnel	0	0	250	400	10,000
44	5736379	Spaulding-Replace Discharge Liner/Cauldron	455	631	0	0	0
45	5735790	Wise - Replace Intake Gate Operators	0	0	0	500	700
46	5720815	Wishon Dam Repl Slabs/Joints	0	0	100	4,956	0
47		**Total**	**12,358**	**25,734**	**27,827**	**67,751**	**72,609**