Decision 16-04-006 April 7, 2016

**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA**

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| Application of Pacific Gas and Electric Company for Compliance Review of Utility Owned Generation Operations, Electric Energy Resource Recovery Account Entries, Contract Administration, Economic Dispatch of Electric Resources, Utility Retained Generation Fuel Procurement, and Other Activities for the Period January 1 through December 31, 2012. | Application 13-02-023 (Filed February 28, 2013) |

# DECISION ON PACIFIC GAS AND ELECTRIC COMPANY 2012 ENERGY RESOURCE RECOVERY ACCOUNT COMPLIANCE REVIEW

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# DECISION ON PACIFIC GAS AND ELECTRIC COMPANY 2012 ENERGY RESOURCE RECOVERY ACCOUNT COMPLIANCE REVIEW

## Summary

This Decision addresses compliance, verification and reasonableness issues related to Pacific Gas and Electric Company's (PG&E) Energy Resource Recovery Account (ERRA) from Record Period January 1, through December 31, 2012 (the Record Period).

Among other things, this decision:

- Determines that all dispatch-related activities that PG&E performed during the Record Period complied with Commission orders and PG&E's Commission-approved Bundled Procurement Plan (BPP).
- Determines that the forced outage at the Belden Powerhouse was not reasonable and ratepayers should not pay for the associated replacement power costs, estimated to be $1.324 million.
- Determines that the forced outage at the Diablo Canyon Power Plant in October, 2012 was not reasonable and ratepayers should not pay for the associated replacement power costs, estimated to be $3.238 million.
- Determines that, with the exception of the forced outages at Belden Powerhouse and Diablo Canyon, PG&E's utility retained generation operations were reasonable.
- Determines that all costs booked by PG&E to the Diablo Canyon Seismic Studies Balancing Account are reasonable.
- Determines that PG&E did not prudently administer three power supply contracts.
- Determines that the remaining aspects of PG&E's contract administration during the Record Period were reasonable.

- Authorizes rate recovery of $25.48 million in the Diablo Canyon Seismic Studies Balancing Account and $3.647 million in the Market Redesign and Technology Upgrade Memorandum Account.

This proceeding is closed.

## 1. Background

Public Utilities (Pub. Util.) Code Section 454.5(d)(2) provides for a procurement plan that would accomplish, among others, the following objective:

> Eliminate the need for after-the-fact reasonableness reviews of an electrical corporation's actions in compliance with an approved procurement plan, including resulting electricity procurement contracts, practices, and related expenses. However, the commission may establish a regulatory process to verify and ensure that each contract was administered in accordance with the terms of the contract, and contract disputes that may arise are reasonably resolved.

In Decision (D.) 02-10-062, the Commission implemented Section 454.5(d) by establishing Energy Resource Recovery Account (ERRA) balancing accounts for Pacific Gas and Electric Company (PG&E) and other utilities, requiring them to track fuel and purchased power revenues against actual recorded costs and to establish an annual ERRA compliance review for the previous year and an annual ERRA fuel and purchased power revenue requirement for the following year. The most recent Commission decision on a PG&E ERRA compliance application was D.14-01-011, for the 2011 Record Period.

In D.12-01-033 and D.12-04-046, the Commission approved with modifications PG&E's BPP, covering the years 2012 through 2022. PG&E's BPP became effective on January 12, 2012, and will remain in effect until December 31, 2022 or the date the BPP is superseded by a subsequent Commission-approved BPP, whichever is earlier. The BPP is the basis for PG&E's 2012 compliance activities.

## 2. Procedural History

On February 28, 2013, PG&E filed Application (A.) 13-02-023 for *Compliance Review of Utility Owned Generation Operations, Electric Energy Resource Recovery Account Entries, Contract Administration, Economic Dispatch of Electric Resources, Utility Retained Generation Fuel Procurement, and Other Activities for the Period January 1 through December 31, 2012*. PG&E requests that the Commission find that during the Record Period PG&E made appropriate entries to its ERRA, Diablo Canyon Seismic Studies Balancing Account (DCSSBA), and Market Redesign and Technology Upgrade Memorandum Account (MRTUMA), and complied with its Commission-approved Bundled Procurement Plan in the areas of fuel procurement for utility retained generation, administration of power purchase contracts, greenhouse gas compliance instrument procurement, and least cost dispatch of electric generation resources. PG&E served prepared testimony in support of its application.

The Commission's Office of Ratepayer Advocates (ORA) protested PG&E's application on April 8, 2013.[1] PG&E responded to ORA's protest on April 12, 2013.

[1] During the pendency of this proceeding, on September 26, 2013 DRA was renamed the Office of Ratepayer Advocates (ORA) pursuant to Senate Bill 96 (Stats. 2013, ch. 356). For purposes of clarity, this decision makes reference only to "ORA."

A prehearing conference (PHC) was held on August 15, 2013. The Scoping Memo was issued on October 4, 2013 and identified eight issues for this proceeding:

1. Whether PG&E administered and managed its own generation facilities prudently;
2. Whether PG&E prudently administered and managed its Qualifying Facility (QF) and non-QF contracts in accordance with the contracts' provisions;
3. Whether PG&E achieved Least Cost Dispatch of its energy resources;
4. Whether the entries in the Energy Resource Recovery Account for 2012 are reasonable;
5. Whether PG&E prudently managed utility-owned generation outages and associated fuel costs;
6. Whether the costs booked to the MRTUMA are reasonable and whether PG&E has met its burden of proof regarding its claim for cost recovery;
7. Whether the costs incurred and recorded in the DCSSBA are reasonable and whether PG&E has met its burden of proof regarding its claim for cost recovery;
8. Whether PG&E's Greenhouse Gas Compliance Instrument Procurement complied with the Bundled Procurement Plan.

Subsequent to the PHC, PG&E informed the assigned Administrative law Judge (ALJ) of two developments that required scheduling a second phase of this proceeding.

First, on September 24, 2013, PG&E requested permission to submit additional testimony in this proceeding to discuss certain hedging transactions which occurred during the Record Period. PG&E and ORA agreed on a schedule that would create a second phase of this proceeding to consider this matter, including separate dates for testimony and hearings, if necessary.

Second, on September 25, 2013, PG&E requested that the assigned ALJ grant PG&E a waiver of the Rule 13.1(b) notice requirement for the October 7-8, 2013 hearings in this proceeding. Rule 13.1(b) requires the following:

> Whenever any electrical, gas, heat, telephone, water, or sewer system utility files an application to increase any rate, the utility shall give notice of hearing, not less than five nor more than 30 days before the date of hearing, to entities or persons who may be affected thereby, by posting notice in public places and by publishing notice in a newspaper or newspapers of general circulation in the area or areas concerned, of the time, date, and place of hearing. Proof of publication and sample copies of the notices shall be filed within 10 days after publication.

In this proceeding, PG&E is requesting a rate increase for recovery of costs related to certain costs authorized by the Commission in prior decisions: the Market Redesign and Technology Upgrade (MRTU) and Diablo Canyon Power Plant seismic studies. For a number of reasons, including delays in the issuance of the scoping memo, PG&E did not provide the required customer notice of the requested rate increase. Rather than grant PG&E's requested waiver of Rule 13.1(b), testimony regarding the requested rate increase was scheduled for the Phase 2 hearings in order to provide sufficient lead time for PG&E to complete the noticing required by Rule 13.1(b).

The only active parties in this proceeding are PG&E and ORA. ORA served Phase 1 testimony on August 30, 2013. PG&E served Phase 1 Rebuttal Testimony on September 27, 2013. PG&E served its Phase 2 testimony on October 14, 2013 and ORA's responsive testimony was served November 22, 2013. PG&E's Phase 2 rebuttal testimony was served December 13, 2013. Evidentiary hearings in Phase 1 were conducted on October 7 and 8, 2013; on January 21, 2014, hearings were conducted to conclude

Phase 1 and Phase 2. Opening Briefs were filed by PG&E and ORA on February 26, 2014; both parties filed Reply Briefs on March 19, 2014. At that time, this proceeding was submitted for a decision by the Commission.

On November 2, 2015 PG&E and ORA filed a joint motion seeking to withdraw an issue from this proceeding. In its testimony, ORA had proposed certain prospective notice and information requirements in future situations where PG&E determined that a procurement transaction was non-compliant with PG&E's procurement authority. According to the joint motion, ORA subsequently made a similar proposal regarding notice and information requirements for non-compliant transactions in the 2014 LTPP proceeding; ORA's proposal was largely adopted by the Commission in D.15-10-031, where the Commission adopted specific notice and information requirements regarding any future non-compliant transactions that are applicable to PG&E, Southern California Edison Company and San Diego Gas and Electric Company.[2] Therefore, PG&E and ORA requested that this issue be removed from this proceeding. On November 24, 2015, the assigned Commissioner issued an amended scoping memo that removed this issue from the scope of this proceeding and extending the statutory deadline for completion of this proceeding to March 1, 2016.

On January 6, 2016, at the request of the assigned ALJ PG&E submitted confidential copies of root cause evaluations related to certain generation outages during the Record Period. These documents are identified as Exhibits PG&E-20C, -21C and -22C, and are admitted into the evidentiary record in this

[2] D.15-10-031, Ordering Paragraph 2.

proceeding. With the admission of these exhibits, the record was closed and the proceeding was submitted to the Commission for its decision as of January 6, 2016.

Finally, with respect to the testimony, briefs, and certain other exhibits submitted by PG&E and ORA, these documents sometimes included confidential material. PG&E and ORA requested confidential treatment of this material pursuant to the Public Utilities Code, Commission Rules and Commission precedent. These requests are addressed at the conclusion of this decision.[3]

## 3. Positions of the Parties

### 3.1. PG&E's Application and Testimony

PG&E requests that the Commission find as follows with regard to PG&E's ERRA compliance activities during the 2013 Record Period:[4]

1. That in 2012 PG&E made appropriate entries to its ERRA;
2. That in 2012 PG&E made entries to its Diablo Canyon Seismic Studies Balancing Account consistent with PG&E's request in seismic studies application (A.10-01-014);
3. That in 2012, contract amendments identified in Chapter 10, table 10-22 of PG&E's Prepared Testimony, and any cost associated with such amendments, are reasonable and should be recovered through ERRA;

[3] For the Exhibits that included confidential material, typically a confidential and a public version of these exhibits were provided were provided by PG&E or ORA. The confidential exhibit is denoted by a "-C" following the exhibit number. If the material cited in this decision is public, the public version of the exhibit will be cited, for example, Exhibit PG&E-1. If the material is confidential, this decision will cite the confidential version of the exhibit, for example, Exhibit PG&E-1- C.

[4] PG&E Application at 13.

4. That in 2012 PG&E made entries to its MRTU MRTUMA that are incremental and incurred to implement the CAISO Market Design Initiatives;
5. That in 2012 PG&E complied with its Bundled Procurement Plan in the areas of fuel procurement for utility retained generation, administration or power purchase contracts, greenhouse gas compliance instrument procurement, and least cost dispatch of electric generation resources; and,
6. That the Commission provide any other relief that the Commission deems appropriate in this proceeding.

### 3.2. ORA

ORA summarizes its positions on PG&E's requests and its resulting recommendations in its Opening Brief.[5] Beginning with regard to PG&E's overall utility-owned generation (UOG) management, ORA asserts the following:

- PG&E's argument that it acted as a reasonable manager because its overall generating portfolio performance was better than industry benchmarks is inconsistent with the Commission's definitions of prudent UOG administration and the reasonable manager standard.
- In the area of fossil UOG, PG&E's application failed to show that it prudently managed its Humboldt Bay Generating Station. ORA found that a December 19, 2012 outage at this plant's Unit 5, which was originally planned for two days but extended by additional 14 days, was unreasonable.
- In the area of nuclear UOG, PG&E's application failed to show that it prudently managed its Diablo Canyon Power Plant. ORA found that a forced outage at this plant's Unit 2, which began on October 11, 2012, was unreasonable.

[5] ORA Opening Brief at 7-8.

- In the area of hydro UOG, PG&E's application failed to show that that it prudently managed its Belden Powerhouse Plant. ORA found that a forced outage at this plant, which began on July 13, 2012, was unreasonable.

Second, with regard to QF contract administration, ORA asserts that PG&E did not prudently administer its QF contracts with the University of California, San Francisco, Amedee Geothermal Venture 1 and Wendel Energy Operations 1, LLC.

Third, with regard to least-cost dispatch (LCD), ORA asserts the following:

- PG&E failed to show compliance with LCD because PG&E's showing lacks precise numerical calculations, which are required by the Commission to determine whether PG&E complied with LCD mandates.
- PG&E's administration of its demand response programs may be inconsistent LCD principles because PG&E's short-term electric supply department is apparently not considering the majority of demand response programs in their dispatch decisions.

Fourth, with regard to the Diablo Canyon Seismic Studies Balancing Account, ORA asserts that $3.76 million out of the $8.2 million costs that PG&E recorded for seismic studies were unreasonable.

Fifth, with regard to PG&E's Electric Portfolio Hedging Plan, ORA found that PG&E implemented corrective actions to address inadvertent non-compliant actions in 2012 that appear to be sufficient to prevent future noncompliance.

In the following sections, we address the requests made in PG&E's application and testimony as well as the issues raised by ORA.

## 4. Standards of Review

There are several standards of review that apply in ERRA compliance proceedings. PG&E discussed these standards in its opening brief, and we summarize that discussion here. ORA does not disagree with PG&E's list of standards, but does disagree with PG&E's suggested interpretation of several of these standards. We address these disagreements as they arise in the remainder of this decision.

As a preliminary matter, PG&E acknowledges that the utility has the burden of proof in ERRA proceedings to demonstrate that its actions were in compliance with its bundled procurement plan. The utility satisfies its burden of proof based on preponderance of the evidence.[6]

Regarding additional specific standards of review for discrete issues in this proceeding, the first is the standard of review for compliance with Standard of Conduct 4 (SOC 4), specifically with regard to least-cost dispatch. This standard has evolved over the years and has often varied in past Commission decisions. The various Commission decisions and statements regarding the standard of review for LCD are addressed in more detail in that section of this Decision.

Second, with regard to utility-owned generation facilities and specifically outages at those facilities, the utilities are held to the "reasonable manager" standard. Under this standard:

[6] PG&E Opening Brief at 5, footnotes omitted.

> [U]tilities are held to a standard of reasonableness based upon the facts that are known or should have been known at the time. The act of the utility should comport with what a reasonable manager of sufficient education, training, experience, and skills using the tools and knowledge at his or her disposal would do when faced with a need to make a decision or act.[7]

The application of the reasonable manager standard to outages at utility-owned generation facilities is described in more detail when we address PG&E outages later in this decision.

Third, the administration of contracts during a Record Period is reviewed to determine if the contracts were prudently administered and managed in compliance with the contract provisions. Here, "prudent management" is the same as the "reasonable manager" standard previously adopted by the Commission.

Fourth, PG&E's application seeks the recovery of certain amounts actually incurred and recorded in the Diablo Canyon Seismic Studies Balancing Account for seismic studies previously approved by the Commission. In D.12-09-008, the Commission directed PG&E to include recovery of these amounts in its ERRA application and to show that these amounts are consistent with PG&E's request in its seismic studies application. The Scoping Memo provided additional guidance, directing that PG&E also demonstrate that the seismic studies costs were reasonably incurred.

Finally, PG&E's application also seeks to recover capital and expense costs related to certain California Independent System Operator (CAISO) market initiatives. The Commission previously directed that these costs be included in

[7] *See* D.90-09-088, 37 CPUC2d 488, 499.

PG&E's ERRA application and that PG&E demonstrate in its application that the costs are verifiable and incremental to the costs recovered in other proceedings. The Scoping Memo also clarified that PG&E must also demonstrate that its CAISO market initiative costs were reasonable.

## 5. Least-Cost Dispatch

PG&E addresses its compliance with the Commission's least-cost dispatch requirements in Chapter 2 of Exhibit PG&E-1, "Least-Cost Dispatch." As noted by PG&E, the Commission's Standard of Conduct 4 (SOC 4) and related Commission decisions mandate that PG&E dispatch its portfolio of existing resources, allocated California Department of Water Resources (CDWR) contracts, and market purchases to meet its electric load obligations during the Record Period in a least-cost manner.[8] PG&E states that it also complied with D.04-07-028 in which the Commission ordered that system reliability and deliverability of power should be included as part of LCD.

PG&E summarizes its LCD compliance by stating that it has fully integrated its generation and contract resources and demand-side programs with the allocated CDWR contracts when managing its electric supply portfolio, consistent with PG&E's Bundled Procurement Plan approved by the Commission in D.12-01-033: "these aggregated resources are considered, along with market opportunities for energy purchases and sales, in the LCD process.

[8] Exhibit PG&E-1 at 2-1. The Commission adopted Standard of Conduct 4 in D.02-10-062 and further elaborated on this Standard in D.02-12-069, D.02-12-074, D.03-06-076, and D.05-01-054.

LCD also considers the procurement of natural gas that is required to support the dispatch of PG&E's electric supply portfolio."[9]

PG&E requests that the Commission find that PG&E dispatched energy in a least-cost manner consistent with relevant Commission decisions and Standard of Conduct 4 during the Record Period.

### 5.1. ORA Analysis and Recommendation

In its testimony, ORA states that it reviewed and analyzed PG&E's least-cost dispatch testimony in order to determine whether PG&E met its least-cost dispatch (LCD) obligations pursuant to SOC 4. ORA concluded that PG&E failed to show compliance with LCD because PG&E's showing lacks precise numerical calculations, which are required by the Commission to determine whether PG&E complied with LCD mandates. ORA recommends that the Commission adopt by reference the results of the LCD workshop and reiterate PG&E's duty to include precise numerical calculations that either demonstrate that it achieved least-cost dispatch during the Record Period, or quantify the amount of overspending in its future LCD showings.

ORA also found that PG&E's administration of its demand response programs may be inconsistent LCD principles because PG&E's short-term electric supply department "is apparently not considering the majority of demand response programs in their dispatch decisions."

Finally, ORA identified a significant number of occurrences where PG&E submitted incorrect bids into the CAISO market and recommended corrective actions to avoid similar situations. PG&E expressed general agreement with ORA's recommendations.

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[9] *Ibid.*

### 5.2. PG&E Rebuttal

PG&E disagrees with ORA's conclusions and recommendations regarding its least-cost dispatch showing. First, PG&E states that ORA's assertion that PG&E's LCD showing in this proceeding is the same as its LCD showing in ERRA compliance proceedings dating back to 2005 is incorrect. PG&E cites hearing transcripts and testimony to support its rebuttal.[10]

Second, PG&E disagrees with ORA over whether the (at that time) not-yet-adopted LCD compliance standards discussed in D.13-10-041, should be applied in this proceeding.

Finally, PG&E disagrees that it did not appropriately consider demand response programs in its LCD decisions.

### 5.3. Discussion

We agree that for reasons of timing, PG&E's LCD showing more closely resembled its showings dating back from the 2011 and 2010 record periods, and arguably earlier. However, PG&E correctly notes that D.13-10-041 was issued eight months after PG&E's filed the instant Application, and that D.13-10-041 stated that the standards discussed in that decision would not apply until the 2014 record period. Of course we cannot fault PG&E for not complying with a decision that was issued eight months after PG&E filed this application. Indeed, the methodology that ORA would have PG&E follow to demonstrate compliance with LCD for the 2012 Record Period was not finalized and adopted by the Commission until May, 2015.[11] The decision cited by ORA, D.13-10-041, did make certain findings regarding the sufficiency of PG&E's LCD showing for the

[10] PG&E Reply Brief at 5-7.

[11] *See,* D.15-05-005, Ordering Paragraphs 1 and 2.

2010 record period, but ordered that development of a methodology for use on a going-forward basis should take place in a workshop process; that process culminated in the issuance of D.15-05-005. More to the point, PG&E's testimony documented interim steps taken by PG&E to improve its LCD showing that began with the 2011 record period (A.12-02-010) and extended through the instant proceeding.[12] ORA was an active participant—indeed, the only participant—in these interactions with PG&E. For these reasons, we have summarized PG&E's LCD showing for the Record Period, but rather than faulting PG&E for this showing, we commend the company and its witnesses for engaging with the process put in place by the Commission to improve LCD showings in the future. Similarly, questions regarding how PG&E considered demand response programs in its LCD decisions will be addressed as part of the new LCD methodology established by D.15-05-005. ORA recommended no disallowances related to PG&E's demand response activities during the Record Period.

Based on our review of PG&E's testimony and the record in this proceeding, we conclude that the Commission should accept PG&E's LCD showing for the 2012 Record Period as adequate because it is consistent with Commission decisions addressing LCD compliance showings prior to the Commission's adoption of D.13-10-041.

### 6. Utility-Owned Generation – Hydroelectric

In Chapter 3 of Exhibit PG&E-1 "Utility-Owned Generation – Hydroelectric" PG&E describes the operation of its utility-owned hydroelectric facilities during the Record Period. PG&E's hydro generating portfolio consists

[12] Exhibit PG&E-3 at 6-2 to 6-5.

of 67 conventional powerhouses with 106 generating units and one pumped storage powerhouse with three pump generator units. PG&E's hydro generating portfolio has an aggregate nameplate capacity of 3,895.2 megawatts (MW) and produces an average of 11,371 gigawatt-hours (GWh) of energy in a normal precipitation year. Included in PG&E's hydro portfolio is 283 MW of Renewables Portfolio Standard-eligible small hydro facilities.[13]

PG&E asserts that it has demonstrated that its utility-owned hydroelectric facilities were operated in a reasonable manner during the Record Period. PG&E further asserts that the Commission should consider the overall performance of PG&E's portfolio in applying the "reasonable manager" standard to its assessment of PG&E's operation of its utility-owned hydroelectric facilities: "The level of performance of PG&E's hydro portfolio compared to industry benchmarks indicates that PG&E is operating its hydro portfolio as a reasonable manager would. ORA's narrow focus on individual forced outages does not account for the overall performance PG&E achieved with its hydro portfolio."[14]

### 6.1. Contested Issues

In its testimony, ORA states that it has addressed the prudence of PG&E's management of its utility-owned hydroelectric facilities during the Record Period with an emphasis on outage avoidance and mitigation.[15] ORA states that it found one "substantive indication" of PG&E's failure to act as a reasonable manager would have acted in its operation, excluding dispatch, of its hydro facilities. Specifically, ORA asserts that PG&E failed to show that it acted as a

[13] Exhibit PG&E-1 at 3-1.

[14] PG&E Opening Brief at 28-30.

[15] Exhibit ORA-1 at 2-1.

reasonable manager with respect to the outage at the Belden Powerhouse that began July 13, 2012 and lasted until September 16, 2012. During the 65-day duration of this outage, it was necessary for PG&E to purchase replacement power due to the water that was spilled or bypassed around Belden during the outage. ORA recommends that the Commission impose a disallowance in the amount of at least $1,324,811.

### 6.2. The Belden Powerhouse Outage

The Belden Powerhouse is a 43-year-old untended 125 MW generating station located on the North Fork of the Feather River in Plumas County.[16] It is remotely controlled from PG&E's Caribou Switching Center. On July 13, 2012, Belden Powerhouse tripped off-line due to a failed pipe fitting on its bearing oil lubricating system, the system that lubricates the bearings on the generator. Belden is equipped with oil spill prevention equipment; the objective of PG&E's Oil Spill Prevention (OSP) program is to "systematically reduce the risk of spills from all hydropower assets equipment or storage where a petroleum product can potentially enter 'waters of the United States' as defined by the U.S. Army Corps of Engineers."[17] The equipment at Belden includes a component called an Oil Spill Prevention Program pump skid (OSPP skid). The purpose of the OSPP skid is to provide cooling of the lubricating oil pumped to, and returned from, the upper guide and thrust bearing reservoir on the generating unit.

[16] Reporter's Transcript (RT) at 254.

[17] Exhibit PG&E-20C, "Belden Oil Spill and Unit Trip Investigation", lines 477-480.

In simple terms, a review of the record indicates that the sequence of events that led to the outage may be summarized as follows:

- On March 7, 2012, during routine testing, the device that monitors the oil level of the upper guide bearing tub on the generating unit was inadvertently disabled.[18]
- On May 16, 2012 PG&E disabled a liquid leak detection alarm at Belden. The purpose of this device is to alert the Caribou Switching Center of any fluid leaks on the OSPP skid.[19]
- On the morning of July 13, 2012 an oil pump pressure gauge sheared off, causing an oil leak.
- Because the oil level monitoring device that is designed to shut the unit down immediately was not working, the oil continued to leak.
- Because the liquid leak detection device had been disabled and removed from service for repair, the Caribou Switching Center did not receive an alarm.
- As the oil leaked, the level of lubricating oil fell, causing the bearings to overheat, causing damage to the bearings.
- At this point, the unit tripped off, the Caribou Switching Center was alerted, and a roving operator was dispatched to Belden.
- Oil was still spraying from the broken fitting 90 minutes later when the roving operator arrived. Approximately 1,600 gallons of oil leaked into the station's basement, where it remained without any release of oil to the environment.

[18] *Id.* at 3.

[19] *Id.* at 5.

Following the outage, PG&E conducted a root cause analysis (RCA) of the incident, which determined the following:[20]

- The oil pump pressure gauge fitting sheared off because it was installed in a location that increased the likelihood that it would break off.
- The oil level monitoring device did not work because, at the time it was routinely inspected four months earlier, the individual who reassembled the device did so in a way that rendered the device inoperable.
- A liquid leak detection device had been removed from service for repair, which prevented Caribou Switching Center from receiving an alarm when the threaded nipple failed in service.

### 6.3. ORA Analysis and Recommendation

ORA makes two arguments that PG&E failed to show that it acted as a reasonable manager with respect to the Belden outage.

First, ORA faults PG&E for the cause of the outage because it deviated from the original design when installing the pressure gauge and installed the pressure gauge in a manner that did not adequately consider the high level of vibrations and Belden's larger size compared to previously modified units. Based on these two critiques, ORA asserts that a reasonable manager would have located the pressure gauge in a manner consistent with the conceptual design and considered the larger size of the Belden powerhouse compared to previously modified units.

[20] Exhibit PG&E-20C at lines 152-162 and 12-14.

Second, ORA faults PG&E for creating conditions at Belden that prevented PG&E from responding effectively to the outage once it took place:

- PG&E failed to test or visually inspect the bearing low level alarm that was the only alarm remaining in place to alert PG&E to a potential oil spill; and
- PG&E failed to provide written instructions to powerhouse personnel detailing which equipment they should test/inspect to safeguard against potential oil spills or leaks.

ORA asserts that a reasonable manager would have tested or at least visually inspected the bearing low level alarm and provided written instructions to test/inspect equipment to safeguard against potential oil spills or leaks.

Based on its analysis and testimony, ORA calculated a recommended disallowance intended to reflect the cost to purchase replacement power during the 65-day outage, when water was spilled or bypassed around Belden and thus no longer available to generate electricity.[21] Following hearings, ORA agreed with PG&E's method for calculating ORA's proposed disallowance. As a result, ORA recommends that the Commission impose a disallowance in the amount of at least $1,324,811 based on a finding that PG&E did not act in accordance with the reasonable manager standard in its management of the Belden Powerhouse.[22]

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[21] *See*, Exhibit PG&E-3 at 3-8: "ORA failed to recognize that PG&E held back water during the Belden outage so that PG&E customers could get the benefit of that water after the outage had ended…ORA should have simply calculated the amount of energy and the cost of the energy lost at Belden due to the water that was spilled or bypassed around Belden during the outage."

[22] ORA Opening Brief at 27.

### 6.4. PG&E Rebuttal

PG&E offers three responses to ORA, asserting that it did act as a reasonable manager with regard to the Belden facility. As noted above, PG&E also asserted that ORA's original disallowance calculation was overstated; PG&E and ORA now agree on the proper calculation methodology.

First, with regard to ORA's criticisms of PG&E's management of the original design and installation of the OSPP skid, PG&E asserts that it was reasonable for PG&E to accept the vendor's installation of the OSPP skid, including the location of the pressure gauge: according to PG&E, the vendor that constructed and installed the OSPP skid had extensive experience fabricating skids, having supplied similar skid packages to industry since the 1960s.

Second, with regard to ORA's criticisms of PG&E for creating conditions at Belden that prevented PG&E from responding effectively to the outage once it took place, PG&E asserts that it was reasonable for PG&E not to re-test the low oil level device upon taking the liquid leak detection alarm out of service: "it would not be logical to test one simply because the other is taken out of service, because they have separate functions and operate independently of each other."[23] PGE explains in its Opening Brief that the two alarms have different functions:

- The liquid leak detection alarm is an informational alarm, typically referred to in the industry as a trouble alarm, the purpose of which is to advise the operator of a potential problem that should be investigated. It is simply an alarm, and one of a general nature that gives no indication of the precise problem.

[23] PG&E Opening Brief at 33, reordered here for clarity.

- In contrast, the purpose of the low oil level device is to protect the unit from damage by shutting it down.

PG&E argues that the two devices have different functions and are not intended to "backstop" one another: "consequently, it does not follow as a matter of logic that one would test the low oil level alarm just because the liquid leak detection device had been taken out of service."[24]

PG&E also asserts that it was reasonable for PG&E not to have contingency plans or other protocols in place relating to inoperable OSPP skid liquid leak detection alarms: most of PG&E's powerhouses do not have OSPP skids, and of those that do, many do not have liquid leak detection alarms since they are not a required or otherwise necessary component of a hydro unit.[25]

### 6.5. Discussion

As PG&E and ORA agree, the Commission has established that generation plant outages should be evaluated in conjunction with the "reasonable manager" standard in determining whether the outage is reasonable or unreasonable for the purposes of ERRA compliance reviews.[26] In prior ERRA compliance decisions, we recognized that inappropriate actions, root causes, or apparent causes that are identified in a post-incident evaluation may not translate directly into unreasonable actions on the part of a utility. Given the purposes of our ERRA compliance proceedings, the utility's actions and identified root causes must be evaluated in conjunction with the "reasonable manager" standard in

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[24] *Id.* at 32.

[25] *Id.* at 36-37.

[26] D.10-07-049, Conclusion of Law 5: RCEs [root cause evaluations] must be evaluated in conjunction with the "reasonable manager" standard in determining whether the outage is reasonable or unreasonable for the purposes of this proceeding.

determining whether the outage is reasonable or unreasonable and whether a disallowance based upon power replacement costs is warranted. As such, with respect to the Belden RCA we do not take the conclusions on face value for the purpose of determining whether a disallowance is appropriate in this case. However, it is entirely appropriate for the Commission to use the facts underpinning an RCA in our analysis of whether PG&E complied with the reasonable manager standard. We discuss the outage at PG&E's Belden Powerhouse with this principle in mind.

As explained below, we find that PG&E failed to show that it acted as a reasonable manager with respect to the outage at the Belden Powerhouse. Based on this finding, we reach two conclusions. First, we conclude that we should impose a disallowance on PG&E of $1,324,811 to reflect the amount of energy and the cost of the energy lost at Belden due to the water that was spilled or bypassed around Belden during the outage.

Second, we conclude that we should develop a record, in PG&E's currently open General Rate Case proceeding (A.15-09-001) regarding the costs of repairs to Belden equipment and the cleanup costs, as well as the ratemaking accounting for these costs. The purpose of developing this record is to enable the Commission to review the manner in which ratepayers have paid these costs vis-a-vis any related revenue requirements previously approved for generation maintenance.

#### 6.5.1. PG&E's Overall Portfolio Performance

We preface our discussion of the Belden outage by addressing PG&E's assertion that that the Commission should consider the overall performance of PG&E's portfolio in any decision that applies the reasonable manager standard to its review of specific outages.

> …notwithstanding the complexity and extent of PG&E's conventional hydro system … ORA has recommended a disallowance related to a single outage, at the Belden powerhouse hydroelectric facility. Yet, even considering the Belden forced outage, PG&E's 2008-2012 performance of its hydro portfolio was better than industry benchmarks. PG&E believes the Commission should recognize PG&E's overall performance when considering ORA's disallowance recommendation.[27]

We disagree with PG&E's analysis and logic on this matter. There is nothing in the plain language of the reasonable manager standard that supports PG&E's assertion. Therefore, we reject PG&E's position. The reasonable manager standard applies in the context of specific plant outages, not with respect to annual or multi-year statistics regarding the overall performance of PG&E's portfolio of utility-owned generating facilities. PG&E's qualification that it "is not suggesting that specific outages be disregarded by the Commission [but] simply that the overall performance of PG&E's portfolio should be part of the analysis of whether PG&E acted as a reasonable manager of its UOG resources" [28] conflates two completely separate concepts into an illogical standard that would excuse all but the most significant of possible plant outages.

Turning now to the specifics of PG&E's rebuttal to ORA, the question we must resolve is whether PG&E acted as a reasonable manager in the period before the forced outage at the Belden powerhouse. As we explain below, we find PG&E's rebuttal unconvincing.

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[27] PG&E Opening Brief at 30.

[28] *Id.* at 28.

### 6.5.2. Original Installation of the OSPP Skid

PG&E begins by asserting that it was reasonable for PG&E to accept the vendor's installation of the OSPP skid at Belden, including the location of the pressure gauge that failed due to fatigue, causing the oil leak that damaged the bearings on the generating unit. ORA asserted that the pressure gauge was installed in a manner that did not adequately consider the high level of vibrations and Belden's larger size compared to other units previously modified by PG&E.[29] PG&E makes four points in rebuttal to ORA; we discuss each point below.

First, PG&E states that it has a number of other similar OSPP skids that were similarly designed and installed prior to the installation at Belden in 2011 that have operated satisfactorily for years and have never experienced a failure similar to the unit at Belden.[30] This statement standing alone has little evidentiary value with respect to whether PG&E acted reasonably in this instance, and we give it no weight in our decision today. The fatigue-related failure of the equipment at Belden could have been the first in a series of similar failures at other "similar OSPP skids" but this is unknowable because, according to the RCA, "the location of the pressure taps for all OSPP skid pressure gauges will be moved to a location where a fractured connection because of cyclic fatigue will be reduced."[31]

[29] ORA Opening Brief at 27-30.

[30] PG&E Opening Brief at 35.

[31] Exhibit PG&E-20C at 8.

Second, PG&E states that the third-party fabricator of the skid had determined that the location of the gauge was appropriate, and that "PG&E reasonably relied on the vendor's expert assessment that the location of the gauge was appropriate given the vendor's substantial expertise with skid design, fabrication and installation."[32] The record in this proceeding contradicts PG&E's statement. According to the RCA, "after review of the skid print it was brought to our attention the final installed schematics of the gauges deviated from the original design. This deviation was attributed to time constraints and low resources of personnel."[33] There is no evidence in this proceeding that at the time the OSPP skid was installed at the Belden Powerhouse, PG&E personnel made an informed decision to approve the location of the gauge.

Third, PG&E states that the vendor indicated that other customers have installed OSPP heat exchanger/pump skids with the pressure gauges located between the pump and the expansion joint, identical to the as-built unit at Belden.[34] As we noted above, the fatigue-related failure of the equipment at Belden could have been the precursor of similar failures at other customer sites. We know that PG&E has now changed the location of the pressure gauge in question for all affected units. Therefore, we have no basis in our record beyond the untested assertion of the vendor for weighing this claim, and thus we give it no evidentiary weight.

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[32] *Id.* at 35.

[33] Exhibit PG&E-20C at 5, emphasis added.

[34] PG&E Opening Brief at 35.

Finally, PG&E states that "just because the 'conceptual design' showed the pressure gauge on one side of the expansion joint [i.e., the lower-vibration side] does not suggest it was unreasonable to install it on the opposite side [i.e., the higher-vibration side]. A 'conceptual design' is not intended to convey such detailed installation requirements."[35] PG&E's argument is unconvincing. As we noted above, the RCA found that this deviation was attributed to time constraints and low resources of personnel; these are not reasonable explanations for deviating from the conceptual design. Furthermore, PG&E offered no evidence that its personnel had identified--or analyzed the implications of--the trade-off at the time the OSPP skid was installed. Forgoing such an analysis is not the act of a reasonable manager.

Based on our review of the four reasons that PG&E offers to support its assertion that it was reasonable for PG&E to accept the vendor's installation of the OSPP skid, including the location of the pressure gauge, we find that there is evidence that a reasonable manager would have determined that the pressure gauge had been installed in a manner that had not adequately considered the higher level of vibrations due to Belden's larger size compared to units previously modified by PG&E.

[35] *Id.* at 36.

### 6.5.3. Re-test of the Low Oil Level Device

Second, we address PG&E's assertion that it was reasonable for PG&E not to re-test the low oil level device upon taking the liquid leak detection alarm out of service. We note that the Root Cause Analysis contradicts PG&E's claim that "because they have separate functions and operate independently of each other, it would not be logical to test one simply because the other is taken out of service". The RCA concludes that one of the three "causal factors" of the forced outage was that the "OSPP skid leak detection alarm feature [was] inoperative."[36] The RCA explains that "another significant factor is that the OSPP leak detection device was removed from service for repair. This prevented Caribou Switching Center from receiving an alarm when the threaded nipple failed in service."[37] Both devices are intended to "alarm" when an oil leak occurs from areas such as the upper guide bearing tub: one device alarms based on falling oil levels, and the second device alarms when it detects oil in the skid, where it should not be.[38] Based on our review of the RCA, we find that there is evidence that a reasonable manager should have re-tested the low oil level device upon taking the liquid leak detection alarm out of service.

### 6.5.4. Contingency Plans or Other Protocols

Third and finally, we address PG&E's assertion that it was reasonable for PG&E not to have contingency plans or other protocols in place relating to inoperable OSPP skid liquid leak detection alarms. ORA asserts that once the OSPP alarm was taken out of service for repair, a reasonable manager would

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[36] Exhibit PG&E-20C at 13.

[37] *Id.* at 2.

[38] RT at 248-249.

have tested or at least visually inspected the bearing low level alarm and provided written instructions to test/inspect equipment to safeguard against potential oil spills or leaks. ORA bases this assertion on the fact that the purpose of both alarms is to detect oil leaks, even if they were installed for different purposes. Thus, knowing that only one alarm remained in place, PG&E should have either tested it or inspected it; had it done so, PG&E would have discovered the pinched wire due to incorrect reassembly that prevented the alarm from working as designed.

PG&E offers two claims in rebuttal to ORA; we discuss each point below.

First, PG&E states that "most of PG&E's powerhouses do not have OSPP skids, and of those that do, many do not have liquid leak detection alarms since they are not a required or otherwise necessary component of a hydro unit. Thus, it was reasonable not to have a contingency plan or other protocol in place for when such alarms were not operable. There simply was (and there remains) no need for such protocols."[39] Here, we agree with ORA's statement in its Reply Brief:

> Just because other plants do not have alarms like the one disabled at Belden does not mean that when PG&E disabled the alarm it can continue acting as if nothing happened. That is not reasonable. PG&E should have increased the inspection schedule, established contingency plans in case of failure, instituted additional safeguards, and probably changed operating procedures to try and ensure the plant was operated in as safe a manner as possible.[40]

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[39] PG&E Opening Brief at 37, footnotes omitted.

[40] ORA Reply Brief at 15.

Second, PG&E states that "even if such protocols were appropriate, it would be reasonable for them not to include a requirement to retest the low oil level device since, as discussed above, such devices have a separate function and operate independently of liquid leak detection alarms."[41]

We have already noted above that PG&E's own RCA contradicts this statement by PG&E, concluding that "another significant factor is that the OSPP leak detection device was removed from service for repair. This prevented Caribou Switching Center from receiving an alarm when the threaded nipple failed in service." Furthermore, in making this argument, PG&E appears to be missing the point made by ORA. ORA asserts that because PG&E knew on May 7 (when it took the liquid leak detection alarm out of service for repairs) that the only remaining alarm was the oil level monitoring device, a reasonable manager would have acted to check to ensure that this device was operating normally. Indeed, that device was in fact inoperable because at the time it was routinely inspected four months earlier, the individual who reassembled the device did so in a way that rendered the device inoperable.[42] Indeed, the RCA states that the third causal factor in the outage was that "the Mercoid switch wires were too long" and recommends the distribution of "a '5 minute meeting – tailboard' to Maintenance Crews emphasizing the importance of long wire pinch risk in Magnatrol devices."[43] We conclude that PG&E has not provided a

[41] PG&E Opening Brief at 37, emphasis in the original.

[42] The record and the RCA are silent on how a reasonable manager at PG&E could have failed to ensure that such a critical device, the failure of which resulted in the plant being out of service for over two months, could have been reassembled incorrectly without some sort of back-up review of the work.

[43] Exhibit PG&E-20C at 14.

convincing rebuttal to ORA; nor has PG&E explained why its own RCA offers conclusions and corrective recommendations that are consistent with ORA's analysis.

In summary, PG&E's rebuttal to ORA asserts that it was in fact reasonable not to have contingency plans or other protocols in place relating to the inoperable OSPP skid liquid leak detection alarm. We find that there is evidence that a reasonable manager would have tested or at least visually inspected the bearing low level alarm and provided written instructions to test/inspect equipment to safeguard against potential oil spills or leaks.

### 6.6. Conclusion

Based on the discussion and our findings as explained above, we conclude that the evidence supports ORA's position that PG&E failed to show that it acted as a reasonable manager would have acted with respect to its actions prior to the forced outage at the Belden powerhouse. Ratepayers should not pay for the associated cost of replacement power.

With respect to the amount of the disallowance, as noted above ORA originally recommended a disallowance of $1,968,220 for PG&E's failure to prudently manage its Belden Powerhouse facility.[44] PG&E responded that ORA did not consider the value of held-back water and that the actual cost of the replacement power as a result of spilling or bypassing water around Belden during the 65-day outage was $1,324,811.[45] In its reply brief, ORA agrees that a

[44] In its replacement power cost calculation, ORA used a proxy period to estimate an average hourly net California Independent System Operator award of megawatts and assumed that Belden would have been dispatched in this amount during each hour of the July 13, 2012 to September 16, 2012 outage.

[45] *See*, Exhibit PG&E-3-C, Appendix C (Belden Replacement Power Calculation).

reduction from ORA's calculated disallowance figure could be made, but states that it has no way of knowing or calculating how much water could have been stored.

Based on our review of ORA's testimony, PG&E's rebuttal testimony, testimony at hearings, and the discussion of the disallowance amount in PG&E and ORA briefs, we agree that the method used to calculate the corrected amount is reasonable. Therefore, we impose a disallowance due to the July 13, 2012 forced outage at Belden powerhouse of $1,324,811. PG&E should appropriately reflect this disallowance in its Energy Resource Recovery Account.

One item regarding the Belden Powerhouse outage remains unresolved. We reached the conclusions presented above after a thorough review of the record in this proceeding, and we consider the matter of the disallowance for the cost of replacement power to be closed as of the date that this decision becomes final. However, in the course of our review of the record, we found no mention of the cost of the cleanup of the spilled oil and of the cost of the repairs to the generator that were necessitated by this forced outage. PG&E states that "the oil spill contaminated the powerhouse basement and the sumps and required a significant cleanup effort."[46] The outage lasted 65 days, which reasonably raises the question of whether the repairs to the unit may have been significant and, thus, costly to ratepayers. Unfortunately, this information is not in the record in this proceeding, because ERRA compliance reviews include within their scope the question of whether a utility "administers and manages its own generation facilities prudently." As such, any disallowance imposed after findings of

[46] Exhibit PG&E-1 at 3-35.

imprudent management is based on the net cost to ratepayers of replacement power that a utility had to purchase due to forced outages and not, for example, the cost of repairs. Nevertheless, of course, the total cost to ratepayers due to a forced outage is certainly a matter of concern to the Commission. This information is provided to the Commission as part of reporting requirements adopted in recent PG&E General Rate Cases.[47] In order to identify the total costs of the Belden outage, we should develop a record in PG&E's currently open General Rate Case proceeding (A.15-09-001) regarding the costs of the post-outage cleanup and the subsequent repairs to equipment at the Belden powerhouse, as well as the ratemaking accounting for these costs. PG&E shall prepare and submit a stand-alone exhibit, with supporting workpapers, that itemizes in detail the total costs incurred due to the forced outage at the Belden powerhouse (i.e., for replacement power, clean-up activities, repairs to Belden's equipment, as well as any and all other costs not listed here) and explains and demonstrates the ratemaking accounting for these costs, including, specifically, how the disallowance for replacement costs that we adopt today is accounted for so that it is borne by shareholders rather than ratepayers. We emphasize that our purpose in ordering PG&E to prepare and submit this information in its GRC proceeding is to gather information so that the Commission may understand the entirety of the costs incurred by ratepayers and, at times, shareholders when a forced outage occurs due to imprudent maintenance; the Commission can decide

[47] *See*, D.11-05-018, Conclusion of Law 5: "In order for the Commission to better understand the ongoing effects of reprioritizations and deferrals, PG&E should provide expense and capital expenditure information for electric distribution, electric generation, and gas distribution…"

the import of that information in the GRC proceeding once it has reviewed PG&E's testimony in A.15-09-001.

## 7. Utility-Owned Generation – Solar Photovoltaic and Fuel Cells

In Chapter 4 of Exhibit PG&E-1, Solar Photovoltaic and Fuel Cells, PG&E describes its operation of its utility-owned photovoltaic (PV) and fuel cell facilities during the Record Period. In 2012 PG&E owned, operated and maintained seven ground-mounted PV solar stations. These facilities were built as part of the utility-owned generation portion of PG&E's 5-year solar PV program approved in D.10-04-052. PG&E also owned, operated and maintained two fuel cell facilities, which were installed pursuant to PG&E's application to install fuel cells on state-owned property, approved in D.10-04-028. Together PG&E's PV and fuel cell facilities have a combined maximum 24 normal operating capacity of 105 MW.

In its testimony, PG&E states that it has in place "a comprehensive management structure, with adequate internal controls, to prudently oversee the operation of its PV and fuel cell facilities."[48] PG&E describes the five forced outages during the Record Period (none lasting longer than two and a half days) and asserts that it acted reasonably in responding appropriately to the equipment failure that caused these forced outages.

[48] Exhibit PG&E-1 at 4-15.

ORA did not address PG&E's management of its PV and fuel cell facilities in its testimony.

We have reviewed PG&E's testimony regarding its operation of its PV and fuel cell facilities and the outages that occurred in 2012. Based on our review, we conclude that PG&E acted as a reasonable manager with respect to its PV and fuel cell facilities during the 2012 Record Period.

## 8. Utility-Owned Generation – Fossil

In Chapter 5 of Exhibit PG&E-1 "Utility-Owned Generation – Fossil" PG&E describes the operation of its utility-owned fossil-fuel generating facilities. During the Record Period, PG&E owned, operated and maintained three fossil-fuel generating stations: (1) Gateway Generating Station (GGS); (2) Colusa Generating Station (CGS); and (3) Humboldt Bay Generating Station (HBGS). These generating units have a combined maximum normal operating capacity of 1,400 megawatts (MW). PG&E states that during the Record Period there were only three forced outages lasting longer than 24 hours in duration and, in each case, PG&E asserts that it acted reasonably in either responding appropriately to equipment failures or initiating a forced outage to resolve operational issues. PG&E concludes that it has demonstrated that its utility-owned fossil-fuel facilities were operated in a reasonable manner during the Record Period.

### 8.1. Contested Issues

In its testimony, ORA states that it reviewed PG&E's generation outage information (including the underlying factors for certain outages) to ensure that ratepayers did not suffer any economic losses due to PG&E's unreasonable management of any outages. ORA's review focused on whether PG&E

prudently operated its facilities in an acceptable manner according to the "reasonable manager" standard.[49]

Upon completion of its review, ORA identified one forced outage of concern. A planned, two-day maintenance outage at HBGS, Unit 5 was extended from two days, as originally planned, to 16 days. In its testimony, ORA discusses this outage, the circumstances that led to it, and the implications of the outage. ORA concludes that in this instance PG&E failed to act as a "reasonable manager" and minimize ratepayer costs.[50] After further discovery and discussions with PG&E, ORA recommends that the Commission impose a disallowance of at least $664.[51]

### 8.2. The Humboldt Bay Generating Station Unit 5 Outage

In the testimony included with its application, PG&E appears to treat the outage at HBGS Unit 5 as a "routine preventative maintenance-related outage."[52] As ORA established in its testimony, this was not the case, and we admonish PG&E to take greater care in preparing its testimony in future ERRA compliance proceedings. In fact, the original two-day maintenance outage was scheduled because:

[49] Exhibit ORA-1-C at page 3-1 to page 3-2.

[50] *Id.* at 3-4.

[51] ORA Opening Brief at 21.

[52] PG&E Exhibit 1-C, Table 5-5 ("Routine Preventative Maintenance-Related Maintenance Outages for HBGS"), line 10: Unit 5 outage lasting from 12/19/12 00:08 to 12/31/12 23:59 (311.9 hours), Turbocharger Inspection.

> in November 2012, the turbocharger manufacturer, ABB, contacted PG&E about a service news bulletin they issued advising turbocharger owners to inspect nozzle ring bolts and sleeves. Experience with turbochargers at other sites had shown that these bolts may loosen over time. This maintenance work included an inspection of the nozzle ring bolts and sleeves to assure that they are not loose.

As ORA established through discovery, during the original maintenance outage for Unit 5, PG&E's maintenance team found that the turbine blades of the turbocharger were damaged.[53] Upon further investigation, PG&E determined that this damage was caused by:

> [P]ieces of metal coming from broken pieces on the inner liner at the exhaust gas manifold expansion joints just upstream of the turbocharger turbine. As a result of the turbocharger turbine damage, the compressor wheel and turbine had to be reconditioned at the ABB shop in southern California. This extended the outage.[54]

As further related by ORA, following the outage PG&E asked the manufacturer of the failed component to conduct a root cause analysis of the cause of the failure. The manufacturer found that the breakage on the inner liner appeared to be caused by a manufacturing defect. ORA notes with concern that the manufacturer failed to provide any resulting recommendations based on its root cause analysis, as it was required to do.

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[53] Exhibit ORA-1-C at 3-5, citing PG&E's response to ORA Data Request 17 (received July 19, 2013).

[54] *Ibid.*, again citing PG&E's response to ORA Data Request 17.

### 8.3. ORA Analysis and Recommendation

ORA states that it "accepts that the cracks to the inner liner developed due to a manufacturing defect."[55] However, ORA found that the extended duration of the December 29, 2012 outage derived not only from the manufacturing defect in the parts that PG&E purchased, but also PG&E's imprudent management of the outage. ORA concludes that PG&E failed to: (1) demonstrate that it sufficiently verified the credentials of the vendor of the parts; (2) follow the recommended maintenance schedule for the components acquired; and (3) meet its obligation to minimize costs to ratepayers by ensuring—when it contracted for the construction of the plant—that the manufacturer would bear the costs of foregone energy from HBGS in the event of component failure due to manufacture or installation errors. ORA also expresses concern over PG&E's decision to have the engine manufacturer investigate the cause of the turbocharger damage, stating that a conflict of interest was presented by such an arrangement.

### 8.4. PG&E Rebuttal

PG&E argues that ORA's analysis is flawed for five reasons: (1) PG&E did follow the engine manufacturer's recommended maintenance schedule and could not have discovered the problem simply by following that recommended maintenance schedule; (2) the engine manufacturer was properly chosen to design, construct, and install the engines; (3) warranty issues are outside the scope of this proceeding; (4) even if the warranty issue is in scope, the HBGS warranty was commercially reasonable; and (5) the engine manufacturer did not have a conflict of interest and its root cause analysis was appropriate. Finally,

[55] *Id.* at 3-10.

PG&E asserts that ORA's disallowance calculation is flawed. PG&E concludes that its rebuttal demonstrates that PG&E did act as a prudent and reasonable manager of HBGS.[56]

### 8.5. Discussion

As explained below, we find no evidence that PG&E failed to act as a reasonable manager with respect to the HBGS Unit 5 outage. While we commend ORA for its due diligence in identifying this forced outage, something that PG&E failed to do in its testimony, ORA has not established that PG&E acted in an imprudent or unreasonable manner.

#### 8.5.1. Did PG&E fail to demonstrate that it sufficiently verified the credentials of the manufacturer?

In its testimony, ORA asserts that PG&E failed to demonstrate that it used the judgment of a reasonable manager in selecting the company to manufacture and install the engine components at HBGS and that PG&E failed to provide proof that the company had a track record of reliable installations equal to or higher than industry standards.[57] In response, PG&E first asserts that the issue of the engine manufacturer's credentials is not properly within the scope of this proceeding. Furthermore, PG&E notes that evidence in the proceeding establishes that "the overall performance of HBGS undermines wholesale ORA's claim that PG&E acted unreasonably in selecting the engine manufacturer since HBGS has performed at a reliability level that significantly exceeds reciprocating engine industry benchmarks."[58]

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[56] PG&E Opening Brief at 41-49.

[57] Exhibit DRA-1 at 3-11.

[58] PG&E Opening Brief at 42.

We agree that the issue of the engine manufacturer's credentials is not properly within the scope of this proceeding.

#### 8.5.2. Did PG&E fail to follow the recommended maintenance schedule for the components acquired?

A not insignificant volume of the record and pleadings in this proceeding concerns a dispute over whether PG&E properly responded to a discovery request propounded by ORA, seeking maintenance records related to this outage.[59] Based on its analysis of PG&E's response, ORA concluded that PG&E failed to demonstrate that it complied with the manufacturer's recommended maintenance schedule or that the outage could not have been prevented by following that maintenance plan. We have reviewed both sides of this dispute and conclude that the wording of ORA's request could have been reasonably, albeit unintentionally, confusing to PG&E's witness. We agree with PG&E that the witness responded to the request as he interpreted that request, and that the witness would have no incentive not to provide the information requested by ORA.

Even after receiving all the maintenance information from PG&E, which demonstrated that PG&E did in fact follow the manufacturer's recommended schedule, ORA continued to assert that PG&E failed to demonstrate that it prudently managed the outage at HBGS. ORA states that plant personnel should have visually noticed certain changes in the operation of Unit 5 after pieces broke

[59] Briefly, ORA requested that PG&E provide "evidence of any inspections or maintenance activities relating to the turbocharger components". At hearing, PG&E's witness explained that he interpreted the request to be for activities performed only by the maintenance group at HBGS, not for activities performed by the organizationally separate operations crews. (*See*, RT at 277-278.)

off the inner liner, or detected changes based on the sound of the generator or its vibration, and thus prevented the damage to Unit 5. PG&E responds to ORA by explaining the operation of the plant in more detail (e.g., maintenance procedures and noise levels) and notes that ORA cannot cite any record evidence to support its assertions.

We agree with PG&E. As noted, after the initial confusion ORA did receive all the maintenance records it originally requested, and those records established that PG&E did follow recommended procedures. ORA does not explain how "PG&E failed to demonstrate that it complied with [the manufacturer's] recommended maintenance schedule or that the outage could not have been prevented by following such maintenance plan."[60] PG&E appears to have provided records that demonstrate that PG&E did follow recommended procedures—this is the demonstration that ORA requested. Furthermore, ORA's speculation regarding what the plant operators should have seen, heard or felt after the offending part broke is not fact-based, and thus we give it no weight.

[60] ORA Opening Brief at 13-18.

### 8.5.3. Warranty and Conflict of Interest Issues

Finally, we address two issues raised by ORA with respect to PG&E's legal and business relationship with the engine manufacturer.

First, ORA asserted that when it contracted for the construction of the plant, PG&E should have obtained a warranty providing that the manufacturer would bear the costs of foregone energy from HBGS in the event of component failure due to manufacture or installation errors. We agree with PG&E that if ORA was concerned with such contract-related matters, it should have raised them at the time the Commission approved the contract.

Second, regarding PG&E's decision to have the engine manufacturer investigate the cause of the turbocharger damage, we agree with PG&E that this presents no conflict of interest: logic suggests that the manufacturer would have commercial incentives to investigate and, where indicated, take responsibility for the damage, rather than "minimize its responsibility" as ORA suggests. The record indicates that this is exactly what occurred: "even though the warranty on the engines and engine components has expired, the engine manufacturer not only paid the cost of the root cause analysis, but indicated that it intends to pay a substantial portion of PG&E's claim against it."[61]

### 8.6. Conclusion

We find that PG&E has demonstrated that its utility-owned fossil-fuel facilities were operated in a reasonable manner during the Record Period.

## 9. Utility-Owned Generation – Nuclear

In Chapter 5 of Exhibit PG&E-1 "Utility-Owned Generation – Nuclear" PG&E describes the operation of its utility-owned nuclear generating facility:

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[61] PG&E Opening Brief at 47-48, citing Exhibit PG&E-3-C at 4-11.

during the January 1 to December 31, 2012 Record Period, PG&E owned, operated and maintained one nuclear generating facility, the Diablo Canyon Power Plant (DCPP), located in San Luis Obispo County. DCPP consists of twin pressurized water reactors, Units 1 and 2, rated at a nominal 1,122 MW and 1,118 MW, respectively. PG&E asserts that its testimony demonstrates that DCPP was operated in a reasonable manner during the Record Period.

### 9.1. Contested Issues

In its testimony, ORA states that it has addressed the prudence of PG&E's management of DCPP during the Record Period with an emphasis on outage avoidance and mitigation. ORA states that it found one "substantive indication" of PG&E's failure to act as a reasonable manager would have acted in its operation, excluding dispatch, of DCPP. Specifically, ORA asserts that PG&E failed to show that it acted as a reasonable manager would have acted with respect to the 4.4-day outage at DCPP Unit 2 that occurred in October, 2012. ORA recommends that the Commission impose a $3,238,185 disallowance.

### 9.2. The Diablo Canyon Power Plant Outage

PG&E provides the following summary of the Diablo Canyon outage in its opening brief:

- On October 11, 2012, during a light rain, Unit 2 at DCPP tripped following a flashover on the "A" Phase Coupling Capacitor Voltage Transformer (CCVT).[62]

[62] A CCVT is a transformer used in power systems to step down extra high voltage signals and provide a low voltage signal for metering. According to the root cause evaluation prepared by PG&E following the outage, the CCVT in question is part of DCPP's 500 kV metering system that provides real-time generation and consumption information to the California Independent System Operator.

*Footnote continued on next page*

- PG&E determined that the cause of the flashover was insufficient distance along the CCVT insulator surface from the energized portion to ground (i.e., "creepage distance").[63]
- The short creepage distance, coupled with a high level of contamination (principally salt) on the CCVT silicone polymer insulators, rendered the insulators ineffective at withstanding the applied voltage when the first rain of the season began.
- The rain and contamination allowed for the formation of a conductive film over the surface of the insulators that would have been prevented if an adequate creepage margin had been maintained.
- Unit 2 remained out of service for 4.4 days.

### 9.3. Background of the Diablo Outage

As PG&E explains in its Opening Brief, the CCVT that experienced the flashover was installed in May, 2011 as part of a plant-wide program to replace the previously-installed porcelain CCVTs, bushings, and lightning arrestors on the main bank transformer with silicon polymer insulators. PG&E instituted the replacement program in response to a catastrophic failure of a porcelain bushing in 2008; the replacement program was intended to improve the safety

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A flashover arc occurs due to a breakdown and conduction of the air around or along the surface of an insulator, causing an arc along the outside of the insulator.

[63] The creepage distance for insulators is the shortest distance along the insulator surface between the conductive metal parts at each end of the insulator. Dirt, pollution, salt, and particularly water on the surface of a high voltage insulator can create a conductive path across it, causing leakage currents and flashovers. High voltage insulators for outdoor use are shaped to maximize the length of the leakage path along the surface from one end to the other, called the creepage length, to minimize these leakage currents. https://en.wikipedia.org/wiki/Insulator_(electricity)

performance of the CCVTs, bushings and lightning arrestors so as to avoid future such incidents and the associated potential for significant injuries.

When an incident such as this CCVT flashover occurs at a nuclear facility, Nuclear Regulatory Commission regulations require the plant operator to perform an after-the-fact evaluation of the event. The purpose of the evaluation is to determine the cause of the event, and to establish the "corrective actions" that are required to prevent the event from occurring in the future. For PG&E, these evaluations take the form of a "Root Cause Evaluation" (RCE).

The RCE of the October 11, 2012 Unit 2 outage determined that the root cause was that [Institute of Nuclear Power Operations] INPO 10-005, Principle 4, "Engineers adhere to sound engineering principles," was not followed with regard to the following "Attribute":[64]

> [START QUOTE]
>
> Assumptions and engineering judgment are fully documented and receive thorough independent verification to ensure they are appropriately conservative and consistent with approved codes and standards. Key assumptions and the use of engineering judgment are clearly communicated to decision-makers to ensure the limitations of the technical analyses are fully understood. When possible, assumptions are validated through analysis or testing.[65]

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[64] Exhibit PG&E 22-C, "Root Cause Evaluation Report, Rev. 2, Unit 2"A" Phase CCVT Flashover Results in U2 Trip", at 39.

[65] The Institute of Nuclear Power Operations (INPO) was established by the nuclear power industry in December 1979 to address recommendations of the federal Commission that investigated the March 1979 accident at the Three Mile Island nuclear power plant. Its mission is "to promote the highest levels of safety and reliability – to promote excellence – in the operation of commercial nuclear power plants." INPO website, www.inpo.info/AboutUs.htm.

The departure from Principle 4 resulted in assumptions made during the design process that had not been documented as to their consistency with codes and standards.

Consequently:

a) [Design Criteria Memorandum] DCM S-61B was not updated for minimum creepage distance for high voltage insulators to reflect industry codes and standards; and
b) DCPP design engineers over-relied on PG&E and industry experts at the expense of industry codes and standards as pertained to the selection of the creepage distance.

[END QUOTE]

### 9.4. ORA Analysis and Recommendation

ORA makes three arguments that PG&E failed to show that it acted as a reasonable manager with respect to the DCPP outage. ORA supports each argument by referencing the RCE prepared by PG&E following the outage.

First, ORA asserts that PG&E failed to adhere to sound engineering principles.

Second, ORA faults PG&E for the manner in which it made assumptions about the capability of the new and different parts used in the replacement program.

Third, ORA faults PG&E for failing to adequately consider its own standards for the environmental conditions of the location, as well as those of the Institute of Electrical and Electronics Engineers (IEEE) and the International Electrotechnical Commission (IEC).

### 9.5. PG&E Rebuttal

PG&E offers five responses in rebuttal to ORA, asserting that it did act as a reasonable manager with regard to the DCPP outage.

First, PG&E places the "reasonable manager" standard in the context of Root Cause Evaluations of outages at nuclear plants, noting that RCEs are drafted with the benefit of hindsight and are "intended to be a highly self-critical document that addresses all conceivable causes of an event and recommends broad corrective actions. It is intended to be a conservative document that errs on the side of being over-inclusive in its review and subsequent recommendations."[66] PG&E also notes the Commission's statement in a prior decision regarding RCEs: while it is appropriate for the Commission to use the facts underpinning an RCE in its analysis of whether a utility has complied with the reasonable manager standard, "[w]e also recognize that inappropriate actions, root causes, or apparent causes contained in RCEs may not translate directly into unreasonable actions."[67] PG&E notes that ORA generally agrees with this perspective.

Second, PG&E asserts that although it was not required to do so, PG&E did consider industry standards relating to polymer design requirements, including creepage distance. PG&E describes the standards in question as "recommended guidelines that are subject to modification in appropriate circumstances."[68]

Third, PG&E asserts that it acted reasonably in attempting to reconcile conflicting standards. In this case, PG&E asserts that in designing the CCVT

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[66] Exhibit PG&E-3 at 2-3.

[67] *Id.* at 2-3 to 2-4, citing D.11-10-002 at 10.

[68] *Id.* at 2-5, referencing IEEE C57.19.100 ("Guide for Application of Power Apparatus Bushings") and IEC 60815-3 ("Selection and Dimensioning of High-Voltage Insulators Intended for Use in Polluted Conditions").

replacement project, its engineers had to consider three principal criteria: seismic stability, voltage requirements, and creepage distance. PG&E states that the first criterion (seismic stability) and the third criterion (maintaining creepage distance margin) were in conflict: there was no commercially-available CCVT available that met all three criteria. PG&E asserts that in order to meet both the seismic standards and electric voltage rating of the application, it was necessary to reduce the creepage distance margin: it was not possible to meet the IEEE's recommendation of 502 inches of creepage distance.[69]

Fourth, PG&E asserts that its conclusion that the creepage distance it selected, 400 inches, was adequate for the design was a reasonable conclusion. PG&E argues extensively that the analysis, assumptions and design steps it undertook before selecting the CCVT model (and its associated creepage distance) that would be used in the replacement project were reasonable.

Fifth and finally, PG&E responds that ORA's assertions regarding imprudent management are misplaced, for several reasons. PG&E disagrees with ORA that it should have performed independent hydrophobicity (water repellence) tests on the CCVTs, because it was not industry practice to perform such independent testing of materials guaranteed by a vendor. PG&E disagrees with ORA that it unreasonably made several assumptions about the capability of polymer insulators without validating these assumptions through analysis or testing, or that the RCE states that PG&E should have done so. And PG&E disagrees with ORA's assertion that it should have scientifically measured the level of environmental contamination around DCPP. According to PG&E, "the

[69] *Id.* at 2-7.

existing plant Design Criteria Memorandum already contained information regarding environmental conditions at the site."[70]

### 9.6. Discussion

As explained below, we find that PG&E failed to show it acted as a reasonable manager with respect to the outage at DCPP Unit 2.

We note that PG&E acknowledges that the outage at Unit 2 occurred because the newly installed CCVT did not have sufficient creepage distance.[71] However, PG&E argues that "given the totality of the circumstances, and based on the facts available at the time, it is clear that PG&E's decision to accept a CCVT with 400 inches of creepage distance was reasonable."[72] PG&E concludes that to assert otherwise is to hold PG&E to an "infallible manager" standard that can never be met, does not comport with Commission decisions, and is itself unreasonable.[73]

As explained below, we disagree with PG&E in large part because PG&E's root cause evaluation of the DCPP outage does not support PG&E's assertion that its managerial decisions were reasonable given the circumstances and the facts available to PG&E prior to the outage. Specifically, we demonstrate that each of PG&E's substantive rebuttals to ORA is contradicted by facts contained in the root cause evaluation. For this reason, we find that the evidence supports our conclusion that PG&E did not comply with the reasonable manager standard.

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[70] *Id.* at 2-14.

[71] PG&E Opening Brief at 57.

[72] *Ibid.*

[73] *Ibid.*

Beginning with the first of the five points PG&E makes in its rebuttal testimony, there is no real disagreement between PG&E, ORA and this Commission regarding the place of root cause evaluations in our review of plant outages. As noted earlier, although we have recognized in earlier decisions that inappropriate actions, root causes, or apparent causes contained in RCEs may not translate directly into unreasonable actions, it is nevertheless appropriate for the Commission to use the facts underpinning an RCE in its analysis of whether a utility has complied with the reasonable manager standard. Thus, information in RCEs must be evaluated in conjunction with the "reasonable manager" standard in determining whether a nuclear outage is reasonable or unreasonable for the purposes of this proceeding. We rely on the DCPP RCE for that purpose, and only that purpose.

PG&E's second point of rebuttal is that it did consider industry standards relating to polymer design requirements, including creepage distance, but that these industry standards are only "recommended guidelines that are subject to modification in appropriate circumstances." PG&E appears to state that the guidelines were considered, and intentionally modified in light of the circumstances existing at DCPP.

PG&E's argument fails because it is inconsistent with the RCE's conclusions on this matter. As we documented above, according to the RCE the single root cause of the DCPP outage is that PG&E acted inconsistently with the INPO Principle that "engineers adhere to sound engineering principles," specifically because they made assumptions during the design process that had not been documented as to their consistency with codes and standards. The RCE concludes that "consequently,"

a) DCM S-61B was not updated for minimum creepage distance for high voltage insulators to reflect industry codes and standards; and

b) DCPP design engineers over-relied on PG&E and industry experts at the expense of industry codes and standards as pertained to the selection of the creepage distance.

We interpret these conclusions to mean that whatever decisions PG&E's engineers made, those decisions were based on faulty information because (1) the DCM had not been updated "to reflect industry codes and standards" and (2) the engineers relied too much on "experts" at the expense of the codes and standards. Indeed, the first of four "Corrective Actions to Prevent Recurrence" (CAPR) that would be required pursuant to the RCE "to prevent a similar event, or to minimize its probability of recurrence" is that DCPP should "develop a lesson to be … targeted for the whole Engineering Support Personnel to understand the expectation/procedural requirements to review industry standards and codes when performing design work/evaluations."[74] The second CAPR offers a similar requirement:[75]

> Revise design procedures and process to incorporate an expectation to review current industry codes and standards for information relevant to the design work being performed and to use and understand the standard's guidance as appropriate to ensure correct use of the guidance.

These required corrective actions describe a managerial structure that we would expect a reasonable manager of a nuclear generating facility would have in place on the day the plant began operations. It is not hindsight-based analysis

[74] Exhibit PG&E 22-C at 7.

[75] *Id.* at 9.

or unreasonable for the Commission to conclude that PG&E acted unreasonably because the RCE requires as a corrective action that DCPP plant personnel be trained "to understand the expectation/procedural requirements to review industry standards and codes when performing design work/evaluations."

PG&E's third point of rebuttal is that it acted reasonably in attempting to reconcile conflicting design standards, because in order to meet both the seismic standards and electric voltage rating of the application, it was necessary to reduce the creepage distance margin because there was no CCVT available from any vendor that met all three criteria.

Again, the conclusions of the RCE are contrary to PG&E's reasoning. One of the six required items for the lesson to be developed for all Engineering Support Personnel referenced above is that the lesson "discuss what to do when no product is available to meet design specifications." Since this item is included as part of the "corrective action to prevent recurrence" we conclude that the evidence here does not support PG&E's assertion that it was "necessary" to reduce the creepage distance margin because there was no CCVT available from any vendor that met all three criteria. Rather, we interpret the RCE as requiring plant personnel to be trained to act in a different manner when faced with apparent design conflicts, instead of simply waiving one of the required design criteria.

PG&E's fourth point of rebuttal is that its conclusion that the creepage distance it selected, 400 inches, was adequate for the design was a reasonable conclusion. In evaluating PG&E's argument here, we note that during the post-outage RCE process, PG&E discovered that during the pre-2011 replacement design work it had actually been relying on incorrect information about the creepage distance of the original CCVT. PG&E discovered that there

were two sets of documents regarding the original CCVT: the Standard Technical Data table from the vendor, which showed a creepage distance of 435 inches, and mechanical drawings that showed a creepage distance of 521 inches. While doing the replacement design work, PG&E consulted only the data from the vendor. As it turned out, the actual creepage distance of the original CCVT was 521 inches, the value shown on the mechanical drawings.

PG&E's dependence on the incorrect document had a cascade of consequences because it led PG&E to make a number of design compromises in an effort to replicate what was actually an inadequate creepage distance, 435 inches. First, PG&E determined that the only commercially available CCVT had a creepage distance of 400 inches, shorter that the 435 inches on the CCVT it believed it was trying to replace. Second, PG&E knew that the IEEE recommended a creepage distance of 502 inches in light of the environmental conditions prevalent at DCPP. Thus, PG&E consulted with the vendor that had the 400 inch model available. The vendor stated that the creepage distance of 400 inches was acceptable because polymer insulators give an equivalent or greater creepage distance factor compared to porcelain.[76] Third, PG&E's lead design engineer confirmed this assessment with PG&E's principal engineer for high voltage power systems; based on that individual's assessment, the lead design engineer estimated that the polymer insulator would yield an effective creepage distance of approximately 460 inches as compared to porcelain. Thus, the lead engineer believed the polymer insulators would have a comparatively greater

[76] Exhibit PG&E-3 at 2-8.

creepage distance than the original porcelain CCVT's creepage distance of 435 inches.

Unfortunately, of course, PG&E later discovered that the replacement "goal" should have been 521 inches of creepage distance, not 435 inches.

In its rebuttal, PG&E describes an ill-considered effort to reverse-engineer a justification for using an "off-the-shelf" CCVT with a creepage distance of 400 inches, even though it (mistakenly) was aware that it was replacing a CCVT with a creepage distance of 435 inches. This is compounded by the fact that the 435 inch creepage distance was incorrect because the actual creepage distance of the original CCVT was 521 inches. PG&E had that information in its records, but did not locate it and does not explain why this information could not be located, nor how or why the incorrect figure of 435 inches was in its records, and readily available. PG&E also does not explain why it did not at least consider having a CCVT with the proper creepage distance fabricated, although as noted above the RCE suggests that is what PG&E should have done (CAPR 1: "discuss what to do when no product is available to meet design specifications").[77] Instead, PG&E created a work-around for this "principal" design criterion without adequate justification, and that is not the act of a reasonable manager. Therefore, we disagree with PG&E that the analysis, assumptions and design steps it undertook before selecting the CCVT model that would be used in the replacement project were reasonable. It is certainly not reasonable to rely on incorrect records. PG&E's description of the steps it took to justify installing technically inadequate equipment serves to weaken rather than strengthen its case because PG&E

[77] Exhibit PG&E 22-C at 7.

describes a process that appears intended to justify ignoring technical criteria (IEEE's recommended creepage distance of 502 inches) by reliance on "experts," rather than finding a way to meet that criteria.

PG&E's fifth and final point of rebuttal is that ORA's assertions regarding imprudent management are misplaced. We have reviewed PG&E's arguments and we are in agreement with each of ORA's assertions. We agree with ORA that PG&E should have performed independent hydrophobicity (water repellence) tests on the CCVTs, even though "it was not industry practice to perform such independent testing of materials guaranteed by a vendor." The RCE includes extensive discussion of hydrophobicity issues and notes that after-the-fact testing found that the failed CCVT exhibited very poor hydrophobicity, both in the as-found contaminated condition and after cleaning.[78] We also agree with ORA's related point that PG&E unreasonably made several assumptions about the capability of polymer insulators without validating these assumptions through analysis or testing. Finally, we agree with ORA that PG&E should have scientifically measured the level of environmental contamination around DCPP even though the existing plant Design Criteria Memorandum already contained information regarding environmental conditions at the site, because a reasonable manager would have included this analysis as part of this replacement project, which was installing insulators manufactured from a different material than the original insulators.

[78] Exhibit PG&E 22-C at 32-33.

### 9.7. Conclusion

For the reasons explained above, we find that PG&E failed to show it acted as a reasonable manager with respect to the outage at DCPP Unit 2. Based on this finding, we reach two conclusions. First, we conclude that we should impose a disallowance on PG&E of $3,238,185 to reflect the costs incurred by ratepayers due to the forced outage. This is the amount calculated and recommended by ORA, and PG&E did not dispute ORA's calculation. ORA's calculation is the sum of (1) the opportunity costs of foregone energy during the forced outage, (2) the opportunity cost of foregone energy during the ramp-up of Unit 2 to its full output following the outage, and (3) the capacity-related costs and other miscellaneous market-related charges incurred due to the outage. We have reviewed ORA's methodology and conclude that it is reasonable.

Second, we conclude that we should develop a record, in PG&E's currently open General Rate Case proceeding (A.15-09-001) regarding the costs of repairs at DCPP due to this outage, as well as the ratemaking accounting for these costs. The purpose of developing this record is to enable the Commission to review the manner in which ratepayers have paid these costs vis-a-vis any related revenue requirements previously approved for DCPP maintenance.

## 10. Diablo Canyon Seismic Studies

In Chapter 7 of Exhibit PG&E-1 "Diablo Canyon Seismic Studies" PG&E presents testimony supporting its request that the Commission authorize PG&E to transfer $25.48 million from its Diablo Canyon Seismic Studies Balancing Account (DCSSBA) to its Utility Generation Balancing Account (UGBA), for recovery in rates.

The purpose of the DCSSBA is to allow PG&E to record, for eventual recovery in rates, its actual costs of implementing what are known as the Diablo Canyon seismic activities. These activities consist of certain seismic studies in the area at and around the Diablo Canyon Power Plant that were recommended by the California Energy Commission (CEC) in 2008. In 2010, PG&E requested and received authority from the Commission to (1) proceed with the CEC-recommended additional seismic studies, and (2) establish a new balancing account to record and recover in rates (via the UGBA) the actual costs of those seismic studies.[79] The Commission authorized recovery of up to $16.73 million for the studies. In 2011 PG&E requested authority to recover an additional $47.5 million above the amount approved in D.10-08-003, for a total of $64.25 million, to perform expanded studies that had been determined to be necessary. The Commission approved PG&E's Application in D.12-09-008 and determined that PG&E should use the same cost recovery and ratemaking method approved in D.10-08-003, and that "costs recorded to the DCSSBA shall be recovered in PG&E's annual ERRA compliance proceedings, where PG&E will provide support for the amounts actually incurred and recorded in the DCSSBA."[80]

In Chapter 7 of Exhibit PG&E-1, PG&E explains that as of the filing of the instant Application, PG&E had already recovered $14.41 million in rates for the Diablo Canyon seismic activities. The total actual costs for the Diablo Canyon seismic activities recorded in the DCSSBA as of December 31, 2012 had reached $39.89 million, and PG&E asserts that this amount is consistent with the costs

[79] D.10-08-003, Ordering Paragraphs (OP) 1-4.

[80] D.12-09-008, OP 4 and OP 5.

and programs approved by the Commission in D.12-09-008. Therefore, PG&E now requests authority to transfer the uncollected amount, $25.48 million, from the DCSSBA to the UGBA.

In its testimony ORA states that it reviews PG&E's DCSSBA entries made between August, 2010 and December 2012: "the objective of ORA's review was to determine whether entries recorded in the account were appropriate, correctly stated, and in compliance with applicable Commission decisions."[81]

Based on its review, ORA recommends a disallowance in the amount of $3.76 million, which was part of the $8.2 million costs that PG&E recorded for "offshore 3-D high-energy seismic surveys" (HESS) in the DCSSBA. These specific costs were incurred by PG&E to contract for the research vessel needed to perform the 3-D HESS as well as to perform nuclear quality assurance (NQA) procedures to certify that the seismic data acquisition equipment to be used on the vessel met NQA standards. As explained below, ORA asserts that given the particular facts and circumstances surrounding the surveys, the $3.76 million does not qualify as operation and maintenance expenses incurred in the ordinary and prudent course of business. ORA states that it found no other exceptions to the recovery requirements and that the remaining entries in the DCSSBA are appropriate, correctly stated, and in compliance with Commission decisions.

[81] Exhibit ORA-1 at 6-1.

The facts that underlie ORA's recommended disallowance are complicated, reflecting what PG&E accurately describes as "the complex regulatory and permitting framework associated with the 3D HESS project."[82] The basic timeline is as follows:

- PG&E initiated its 3-D HESS permitting work in January 2011;
- PG&E also issued a request for proposals in 2011 for a research vessel, ultimately selecting Columbia University, and began working with Columbia University in the Fall of 2011;
- PG&E filed applications for all necessary federal and state permits by the end of April 2012;
- Among the required permits was a Geophysical Survey Permit, issued by the California State Lands Commission (CSLC), and a Coastal Development Permit, issued by the California Coastal Commission (CCC);
- the CSLC was the "lead agency" under CEQA and was tasked with conducting the environmental analysis and preparing an EIR for the project;
- The CCC had substantial input into the final EIR;
- In August 2012, the CSLC approved the Geophysical Survey Permit for the 3-D HESS.
- At that time, the CCC began to consider PG&E's Coastal Development Permit application;
- On November 2, 2012, CCC staff issued a report recommending that the CCC deny PG&E's permit application, primarily on environmental grounds; and
- On November, 12, 2012, the full CCC denied PG&E's Coastal Development Permit application.

[82] PG&E Opening Brief at 60.

PG&E asserts that it needed to attempt to complete the project within a very narrow time window; the timeline above is consistent with PG&E's assertion. Providing additional context, PG&E states that since the 3-D HESS was part of a larger project to ensure the safety of Diablo Canyon, "it was imperative that it be performed expeditiously … the Fukushima Daiichi disaster in March 2011 added an additional sense of urgency to the project given the concerns it raised regarding the safety of nuclear facilities along coastal zones."[83]

ORA asserts that it was imprudent for PG&E to have incurred the $3.76 million costs to contract with the survey vessel and arrange the Nuclear Quality Assurance activities, because it should have waited until after the CCC granted the final permit necessary to proceed. ORA disputes PG&E's assertion that it had a "reasonable expectation" that the CCC would authorize PG&E to conduct the offshore 3-D HESS studies.

In response to ORA, PG&E objects to ORA's assertion that PG&E should have waited until it received the Coastal Development Permit from the CCC before contracting for the research vessel on the basis that it does not acknowledge or address any of the significant permitting, scheduling and cost issues presented by PG&E.

### 10.1. Discussion

We agree with PG&E that it has met its burden of proof in providing support for the amounts actually incurred and recorded in the DCSSBA and in demonstrating that such costs are consistent with PG&E's request in its original seismic studies application, A.10-01-014.[84]

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[83] *Id*. at 63, citing RT at 460, 473 and 474.

[84] D.12-09-008, OP 4.

Given the complex regulatory and permitting process described by PG&E, and what appears to be a largely collaborative and detailed analytical effort on behalf of PG&E and all the involved agencies, including the CCC, we find it logical that PG&E had a reasonable expectation of a favorable decision by the CCC. Furthermore, a fact that ORA ignores, we also find to be reasonable PG&E's explanation regarding the timing difficulties of scheduling the research vessel: both the limited window of the vessel's availability within the specific timeframe of this study, and the long lead-time required to ensure the vessel's availability, given the overall demand for its services. Under these circumstances, PG&E's decision to enter into financially binding agreements even before securing all the necessary permits was reasonable. We approve the entire amount requested by PG&E, including the $3.76 million disputed by ORA.

## 11. Generation Fuel Costs, STARS Alliance Costs, and Gas Hedging

In Chapter 8 of Exhibit PG&E-1, Generation Fuel Costs, STARS Alliance Costs, and Gas Hedging, PG&E reviews a range of activities during the Record Period regarding generation fuel procurement, as well as hedging costs.

### 11.1. Generation Fuel Costs and STARS Alliance Costs

PG&E engaged in fuel procurement activities for:

- PG&E-owned conventional generation;
- California Department of Water Resources (CDWR) tolling agreements;
- PG&E tolling agreements;
- Hydroelectric; and
- Diablo Canyon Power Plant.

PG&E asserts that it engaged in these procurement activities in a manner consistent with its Commission-approved procurement plan, Commission-approved Electricity and Gas Hedging Plans, Commission-approved CDWR Gas Supply Plans (GSP), and Commission decisions addressing procurement.

In addition, pursuant to D.12-05-010, PG&E provides a report concerning its activities and operating costs associated with the STARS Alliance. The STARS Alliance includes utilities that operate nuclear facilities and is intended to reduce costs and increase efficiency for members. In addition to its fuel purchases, PG&E also incurred "limited" costs during the Record Period for its participation in the STARS Alliance; in exchange, PG&E asserts that it received "substantial benefits in terms of reduced costs."[85]

ORA did not address PG&E's fuel purchases in its testimony.

We have reviewed PG&E's testimony regarding its fuel purchases in 2012. Based on our review, we conclude that PG&E prudently administered its fuel contracts during the 2012 Record Period.

### 11.2. Hedging Activities

Pursuant to D.11-07-039, in Chapter 8 of Exhibit PG&E-1 PG&E also provides a "high level" discussion of its internal procedures and controls for ensuring compliance with Commission-approved hedging plans. As noted above, subsequent to the August 15, 2013 PHC PG&E requested permission to submit additional testimony in this proceeding to discuss certain hedging

[85] Exhibit PG&E-1 at 8-25. PG&E is not seeking any Commission determination in this proceeding regarding the STARS Alliance because those issues are addressed in PG&E's General Rate Case. Here, PG&E is reporting these costs to comply with D.12-05-010.

transactions which occurred during the Record Period. The scoping memo created a second phase of this proceeding to consider this matter. PG&E served testimony on October 14, 2013 and ORA served responsive testimony on November 22, 2013. The matter was the subject of one day of hearings conducted on January 21, 2014.

PG&E explains that it had two Commission-approved hedging plans in effect during the 2012 Record Period. During the first eleven days of January 2012, the hedging plan approved in 2006 was in effect. On January 12, 2012, PG&E implemented the Hedging Plan approved by the Commission in D.12-01-033. The Hedging Plan implemented on January 12th included an operating limit that had not been included in the 2006 hedging plan, but when PG&E updated its electronic model that acts as a control for PG&E's hedging activities, the new operating target was inadvertently not included. As a result, during the 2012 Record Period, PG&E executed forty-eight transactions that exceeded this operating target.

PGE explains that some of the non-compliant transactions had already settled by the time they were discovered, but eleven were still open and subject to market fluctuations. Because the open transactions were subject to market risk, and could potentially result in a loss for ratepayers, PG&E entered into four offsetting transactions. As it turned out, the forty-eight non-complaint transactions and four offsetting transactions resulted in a net gain of $416,122.[86] After addressing the immediate transactions, PG&E put in place a number of controls to prevent the reoccurrence of this kind of situation, and has

[86] Exhibit PG&E-16 at 3.

implemented new reporting protocols that will result in PG&E providing hedging transaction reports in the ERRA Quarterly Compliance Reports it submits to the Commission's Energy Division.

In this proceeding, PG&E is requesting that the Commission approve: (1) the forty-eight noncompliant transactions; (2) the four offsetting transactions; and the inclusion of the $416,122 net gain in the ERRA balancing account.

By the time briefs were submitted, PG&E and ORA were in agreement that: (1) the non-compliant hedging transactions did not detrimentally impact ratepayers; (2) the net gain associated with these transactions should be credited to ERRA; (3) there should not be any disallowance or penalties associated with the non-compliant transactions that occurred during the Record Period; and (4) PG&E's corrective actions are reasonable and sufficient to prevent future non-compliance.[87]

### 11.2.1. Discussion

Based on our review of the written testimony of PG&E and ORA witnesses and their testimony at hearings, we approve the forty-eight non-compliant transactions reported by PG&E, as well as the four offsetting transactions. We also approve the inclusion in the ERRA balancing account of the $416,122 net gain realized through these transactions.

## 12. Greenhouse Gas Compliance Instrument Procurement

In Chapter 9 of Exhibit PG&E-1, PG&E reviews its greenhouse gas compliance instrument procurement activity for the 2012 Record Period.

The California Air Resources Board's (CARB) Cap-and-Trade regulation program became effective on January 1, 2012; that program is intended to

[87] PG&E Reply Brief at 27-28.

establish a market-based price for greenhouse gas (GHG) emissions. In D.12-04-046, the Commission authorized PG&E and the other California energy utilities to procure the allowances and offsets necessary for each of the utilities to comply with their respective GHG compliance obligations. The Commission subsequently approved an appendix to PG&E's BPP that included PG&E's GHG procurement strategy consistent with the Commission's direction in D.12-04-046.[88] The Scoping Memo for this proceeding clarified that the issue in this ERRA compliance proceeding is whether PG&E's GHG compliance instrument procurement activity complied with its BPP.

CARB held its first auction for GHG allowances in November 2012. PG&E states that during the 2012 Record Period PG&E implemented its Commission-approved bundled procurement plan strategy for GHG compliance instruments; PG&E describes this activity in greater detail in a confidential portion of its testimony.[89]

ORA did not address PG&E's GHG compliance instrument procurement in its testimony.

We have reviewed PG&E's testimony regarding its GHG compliance instrument procurement in 2012. Based on our review, we conclude that PG&E's GHG compliance instrument procurement was consistent with its Commission-approved BPP during the 2012 Record Period.

[88] Exhibit PG&E-1 at 9-2.

[89] Exhibit PG&E-1-C at 9-2 to 9-3.

## 13. Contract Administration

In Chapter 10 of Exhibit PG&E-1, "Contract Administration," PG&E describes the changes that occurred, the work performed, and the results achieved with regard to contract administration during the Record Period. PG&E requests that the Commission find PG&E's contract management and administration of its agreements during the Record Period to have been in compliance with the terms of those agreements, as well as with Standard of Conduct 4 of the BPP's Standards of Conduct. PG&E also requests that the Commission approve the amendments and the letter agreements identified in Exhibit PG&E-1 (including Table 10-22), for which PG&E seeks approval as part of this Record Period review.

### 13.1. Contested Issues

ORA reviewed PG&E's administration of its contracts with qualifying facilities (QFs). Based on its review, ORA concluded that PG&E did not act as a reasonable manager by prudently administering three contracts. ORA recommends monetary disallowances related to two of the contracts, as well as Commission adoption of corrective actions intended to prevent future adverse impacts for ratepayers. Specifically, in testimony and briefs, ORA states that:

- PG&E failed to prudently administer the Qualifying Facility contract with the University of California, San Francisco (UCSF); and
- PG&E failed to prudently administer the Amedee Geothermal Venture 1 contract and the Wendel Energy Operations 1, LLC contract.

PG&E responds that based on the evidence in this proceeding the Commission should find that PG&E prudently administered and managed all three of the disputed contracts.

### 13.2. The University of California, San Francisco Contract

PG&E entered into a QF contract with UCSF in 1997, and UCSF began to deliver QF generation to PG&E on January 1, 2003. The UCSF campus is served by three 12kV feeders, each of which has a bi-directional meter. In December 1999, PG&E and UCSF agreed to sign a "totalization agreement," under which PG&E would apply an algorithm to calculate the total UCSF net usage and generation, as if only one meter was serving the entire campus.

Twelve years after signing this agreement, PG&E discovered in 2011 that it had not actually used the agreed-upon totalization algorithm: PG&E's QF settlements personnel only received meter data for one of the three meters, and no totalization algorithm was applied to the data. As a result, PG&E's payments to UCSF for net energy usage were underestimated by $1.151 million.

PG&E and UCSF entered into a settlement agreement under which PG&E would adjust payments to UCSF back to January 1, 2003 using the corrected meter data.[90] In October 2012 PG&E made a $1.151 million true-up payment to UCSF pursuant to this settlement; PG&E did not pay interest on this amount.[91] PG&E notes that its payments "simply compensated UCSF for energy that was delivered and used by PG&E's customers, but which was not included in the meter reads as a result of the algorithm not being properly set up."[92] PG&E is requesting Commission approval of the UCSF Settlement Agreement in this ERRA application.

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[90] The settlement agreement is provided in Exhibit PG&E-15.

[91] PG&E Opening Brief at 80.

[92] *Ibid*.

ORA testified that PG&E did not prudently administer this contract with UCSF because PG&E failed to comply with the contract terms. However, since ratepayers were not adversely impacted because the agreed-upon true-up payment did not include interest on the overdue amount, ORA does not recommend a disallowance with regard to this contract. Instead, ORA recommends that the Commission require PG&E to adopt corrective action procedures for the administration of future contracts to prevent ratepayer exposure to rate increases and to ensure reliable service and continuous service.

ORA's recommended corrective actions consist of three components:[93]

- Compliance audits should occur at least every three years and should focus on whether PG&E is complying with its contractual obligations, prudently administering its contracts, and dispatching energy at the lowest possible cost for ratepayers.
- During its contract audits, PG&E should prepare a corrective action report where it: (1) identifies the issue or problem; (2) establishes a root cause evaluation; (3) prepares action steps; (4) establishes improvement benchmarks and timeframes; and (5) PG&E management certifies the contents of the corrective action report.
- After PG&E prepares the root cause evaluation, it should establish Action Steps. The documented Action Steps will specify what PG&E's contract management group will do to meet all applicable contract requirements and establish a consistent compliance process.

PG&E responds that ORA's proposed corrective actions are unnecessary, costly, and will likely result in few benefits. In rebuttal testimony, PG&E also describes ORA's recommendation that PG&E audit compliance with "contractual

[93] Exhibit ORA-1 at 4-4 to 4-5.

obligations" and "prudent administration" of contracts as "very broad and open ended." Furthermore, PG&E asserts that the recommendation "is unrelated to the situation that occurred with UCSF" and it is unclear how an audit would account for or catch such a situation because ORA's proposed corrective actions do not appear to be related to the metering issues. Finally, PG&E notes that "corrective action was immediately taken by PG&E upon discovery of the meter issues with the … UCSF contract, which identified the root cause, and PG&E has taken steps to educate and minimize the chances of this type of error occurring again."[94] PG&E asks the Commission to deny ORA's proposal.

#### 13.2.1. Discussion

Based on the facts regarding PG&E's administration of its QF contract with UCSF, we conclude that PG&E failed to prudently administer this contract. The basis for payment under the terms of the contract was the "totalization agreement" negotiated with UCSF. PG&E failed to implement this calculation from the inception of power deliveries from UCSF, and did not discover the error for twelve years. A reasonable manager would have protocols in place to verify proper calculation of payments to a contractual counterparty. PG&E concedes that it had no such measures in place. The fact that PG&E is now implementing such measures is reassuring, but has no relevance for our evaluation of PG&E's past actions regarding this particular contract.

Although we conclude that PG&E failed to prudently administer this contract, we decline to adopt the remedies recommended by ORA. A review of each utility's compliance with our existing requirements for contract administration is already an essential function of our annual ERRA compliance

[94] Exhibit PG&E-3 at 5-6.

proceedings. Indeed, PG&E brought the UCSF situation to our attention in its opening testimony, as it is required to do under existing rules in order to receive approval of the settlement with UCSF. We find that this procedure is adequate and therefore do not see the need to adopt ORA's recommendations regarding additional audit activities.

Finally, we conclude that the Commission should approve the settlement agreement between PG&E and UCSF. Pursuant to Rule 12.1(d) of the Commission's Rules of Practice and Procedure, the Commission will not approve a settlement, whether contested or uncontested, unless it is found to be reasonable in light of the whole record, consistent with law, and in the public interest. ORA agrees with PG&E that the payment to UCSF under the settlement agreement simply compensates UCSF for energy that was delivered to and used by PG&E's customers. As such, the settlement agreement is reasonable in light of the whole record, consistent with law, and in the public interest.

### 13.3. The Amedee Geothermal Venture 1 Contract and the Wendel Energy Operations 1, LLC Contract

Amedee Geothermal Venture 1 (Amedee) and Wendel Energy Operations 1, LLC (Wendel) are small geothermal projects located in the Lassen Municipal Utilities District (LMUD) control area. PG&E has QF power purchase agreements with both facilities. Deliveries from these geothermal QFs count toward meeting PG&E's Renewables Portfolio Standard (RPS) compliance obligation.

In 2009, LMUD changed the voltage on the line that transports energy from the two facilities to PG&E from a 34.5 kilo-volt (kV) transmission line to a 12.47 kV distribution line. PG&E was notified of the voltage change, but did not make a corresponding adjustment to the "meter constant" that is used at these facilities to calculate payments due to Amedee and Wendel for the generation

they provide to PG&E. As a result of the incorrect meter constant, both facilities' meters indicated that they were providing more energy to PG&E than was actually being provided, and thus both facilities were overpaid. PG&E states that as soon as it discovered the meter constant issue in 2012, it promptly corrected the meter constant and sought to recover the overpayments from Amedee and Wendel.

During discussions with each facility regarding the overpayment, both Amedee and Wendel explained that return of the full amounts "may not be possible based on certain financial considerations." PG&E states that it independently verified these financial considerations.[95] Finally, PG&E states that because of these considerations, and in order to ensure the continued operation of RPS-eligible resources, PG&E negotiated letter agreements with both Amedee and Wendel that provided for them to return to PG&E some, but not all, of the overpayments. More specifically, the Amedee letter agreement provided for the return of approximately 18% of the overpayment. The Wendel letter agreement provided for the return of up to approximately 28% of the overpayment over time, via monthly payments.

PG&E is requesting Commission approval of these two letter agreements through this application.

[95] These financial considerations are described in more detail in Confidential Exhibit PG&E 11-C, which consists of PG&E's responses to ORA data requests regarding this matter.

Based on its analysis of the circumstances described above, ORA concludes PG&E failed to prudently administer its contracts with Amedee and Wendel because it did not correct its meters to reflect the change in line voltage, and did not notice this error for almost three years (from 2009 to 2012). This oversight caused it to overpay for energy purchased under the contracts, but PG&E's settlement agreements with the two facilities prevent it from obtaining full repayment of the overpaid amounts. If the Commission approves these agreements, ratepayers will be required to pay the cost of the difference between the overpaid amounts and the sums recovered in the settlement agreements.

ORA concludes that PG&E's actions represent a violation of SOC 4, which requires PG&E to minimize ratepayer cost in the administration of its contracts. ORA recommends that the Commission impose a disallowance on PG&E consisting of the difference between the overpaid amounts and the sums recovered in the settlement agreements.

PG&E responds that its actions were prudent because its agreement to these letter agreements "allowed the parties to resolve the overpayment issue in a manner that reasonably reduced additional cost and uncertainty."[96] PG&E asserts that if it had decided to pursue collection of the full amount of the overpayments, it would have incurred costs in doing so and it is uncertain whether these amounts would have been collected. PG&E argues that "the Commission has recently approved settlement agreements in which PG&E only recovered a portion of an amount owed by a QF in order to avoid the cost and uncertainties of litigation and because the QF's financial condition made full

[96] PG&E Opening Brief at 77.

recovery unlikely." According to PG&E, "the situation here is similar."[97] Finally, according to PG&E, "recovering the full amount could have jeopardized the ongoing performance of a QF that provides RPS-eligible energy to PG&E's customers."[98]

PG&E also states that it has initiated actions to ensure that similar metering issues do not occur again: PG&E's Energy Procurement organization has worked with the Customer Care organization, which oversees metering, to ensure that information is promptly shared between the organizations. PG&E also implemented a training program to address communications between the various departments within PG&E.[99]

#### 13.3.1. Discussion

Based on the facts regarding PG&E's administration of its QF contracts with Amedee and Wendel, we conclude that PG&E failed to prudently administer each contract. PG&E has not minimized ratepayer cost in the administration of these contracts, and only PG&E is at fault for this outcome.

First, a reasonable manager would have ensured that the change in transmission voltage was promptly reflected in accurate meter constants at each facility, regardless of their location. Second, our examination of the record, including the confidential material in Exhibit PG&E 11-C, yields no factual information to support PG&E's assertions that the return of the full amounts "may not be possible based on certain financial considerations" or that the agreed-upon letter agreements were in fact the best possible outcome for PG&E's

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[97] *Ibid.*, citing D.12-05-026, Finding of Facts 14 and 15 and Conclusion of Law 2.

[98] *Ibid.*

[99] Exhibit PG&E-3 at 5-5 to 5-6.

ratepayers. We reach the same conclusion regarding PG&E's assertion that pursuing recovery of the full overpayments could have jeopardized the ongoing performance of QFs that provide RPS-eligible energy. There is nothing in our record that independently verifies or validates PG&E's concerns. Finally, we have reviewed D.12-05-026 and conclude that it does not in fact describe a situation that is similar to these contracts, as PG&E asserts. In D.12-05-026 we approved a settlement between PG&E and two insolvent, non-operating cogeneration facilities with which PG&E had power purchase agreements. PG&E recovered a "modest amount of damages". In the instant proceeding, the two entities were going concerns at the time and, most significantly, PG&E was at fault for the creation of the undercollection, not the counterparties.

PG&E has essentially reached two deals to forego pursuit of ratepayer funds from two entities that received those funds and now seeks Commission approval of the resulting agreements. That approval would absolve PG&E for any responsibility for a financial loss of its own creation. We find that a reasonable manager would have ensured that the change in transmission voltage was promptly reflected in accurate meter constants at each facility and would take responsibility for this error and either pursue recovery or assume responsibility for the loss, rather than try to collect those funds from a party that had nothing to do with the transactions or the settlements.

We impose a disallowance on PG&E consisting of the difference between the overpaid amounts and the sums recovered by means of each letter agreement. Based on an underpayment to Amedee of $20,062 and an

underpayment to Wendel of $106,109, we impose a total disallowance of $126,171.[100]

## 14. CAISO Settlements and Monitoring

In Chapter 11 of Exhibit PG&E-1, CAISO Settlements and Monitoring, PG&E describes the procurement costs and revenues associated with its participation in the California Independent System Operator's (CAISO) Day-Ahead and Real-Time electricity markets. PG&E explains that it received revenue for the electric generation it provided to the CAISO markets and was charged for demand representing PG&E's bundled customer load. The net expense incurred by PG&E for its participation in the CAISO markets in 2012 was $610,180,512.[101] PG&E described the various elements of this net expense and explained the validation and settlement process it uses to ensure that the CAISO-imposed costs are appropriate. CAISO revenues and costs are included in PG&E's ERRA balancing account. PG&E states that it is not requesting a specific finding regarding CAISO settlements and monitoring during the Record Period, but has provided this information as one element of the costs and revenues included in the ERRA balancing account.

ORA did not address PG&E's CAISO settlements or monitoring in its testimony.

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[100] *See*, Exhibit PG&E-3 at 5-1 and 5-4.

[101] Exhibit PG&E-1 at 11-1.

## 15. Demand Response Contract Administration

In Chapter 12 of Exhibit PG&E-1, Demand Response Contract Administration, PG&E reviews its contract administration activities for its Aggregator Managed Portfolio (AMP) Demand Response (DR) contracts for the Record Period.

PG&E explains that DR contracts provide PG&E with the right to call on and receive an agreed-upon reduction in electricity use from bundled electric service and direct access customers in PG&E's service area. PG&E entered into these contracts pursuant to a Commission directive requiring PG&E to issue a Request for Proposals to third-party aggregators to seek bilateral contracts for new demand response.[102]

PG&E states that during the Record Period, its Demand Response Department administered four AMP DR contracts. PG&E discusses its DR contract management processes and summarizes the changes in its portfolio of AMP DR Contracts for the Record Period. PG&E requests the Commission find that PG&E's management and administration of its DR contracts during the Record Period complied with the terms of those agreements, as well as with Standard of Conduct 4.

[102] Exhibit PG&E-1 at 12-1, footnote 1: "In Decision 06-11-049, the Commission directed PG&E to issue RFPs to third-party aggregators to seek bilateral contracts for new DR (Conclusion of Law 21). PG&E issued an RFP, agreements were negotiated with five successful bidders, and the resulting contracts (AMP contracts) were approved by the Commission on May 3, 2007 in Decision 07-05-029.

ORA did not address PG&E's management and administration of its DR contracts in its testimony.

We have reviewed PG&E's testimony regarding its management and administration of its DR contracts in 2012. Based on our review, we conclude that PG&E's management and administration of its DR contracts during the Record Period complied with the terms of those agreements, as well as with Standard of Conduct 4.

## 16. ERRA Balancing Account Entries

In Chapter 13 of Exhibit PG&E-1, ERRA Balancing Account Entries, PG&E provided a monthly breakdown of each line item in the ERRA balancing account and the revenues and costs associated with each item. PG&E also described tariff changes, advice letters and significant events that impacted the ERRA balancing account during the Record Period.

As PG&E explains in its overview of the ERRA balancing account, the purpose of the ERRA is to record the actual ERRA revenues and electric procurement costs, to ensure recovery of those costs. PG&E's annual ERRA revenue requirement, and the resulting rates, are determined in a separate ERRA forecast proceeding.

Costs recorded in the ERRA include the cost of fuel for utility-retained generation, Qualifying Facility contracts, inter-utility contracts, California Independent System Operator charges, irrigation district contracts and other Power Purchase Agreements, bilateral contracts, forward hedges, pre-payments and collateral requirements associated with electric procurement and ancillary services, along with other authorized power procurement costs. The ERRA excludes costs associated with the California Department of Water Resources contracts and non-fuel URG costs.

In addition to the monthly revenues collected from ratepayers, revenues from surplus power sales and Reliability-Must-Run revenues are also recorded in the ERRA to offset PG&E's power costs.

PG&E submits ERRA balancing account activity reports each month to the Commission's Energy Division. According to PG&E, these monthly reports enable the Commission to review monthly transactions in advance of this annual ERRA Compliance Review application.

As of December 31, 2012, the balance in the ERRA was over-collected by $74.2 million. PG&E requests that, upon verification and review of the costs and revenues recorded to the ERRA, the Commission find that the ERRA entries presented in Table 13-2 for the Record Period are accurate and in compliance with Commission decisions.

In its testimony, ORA describes its review of PG&E's ERRA balancing account. According to ORA, its objective was "to determine whether entries recorded in the accounts were appropriate, correctly stated, and in compliance with applicable Commission decisions."[103] ORA concludes that its review did not note any items of a material nature requiring adjustments to PG&E's ERRA, and ORA noted no exceptions to the recovery requirements adopted by the Commission for this account.

Based on our review of the testimony of PG&E and ORA, we find that the ERRA entries presented in Table 13-2 of Exhibit PG&E 1-C for the Record Period are accurate and in compliance with Commission decisions.

[103] Exhibit ORA-1 at 8-1.

## 17. CAISO Market Design Initiative Expenses

In Chapter 14 of Exhibit PG&E-1, CAISO Market Design Initiative Expenses, PG&E describes its incremental California Independent System Operator (CAISO) Market Design Initiative costs that were incurred to meet the requirements of the releases that became operational in 2012.

PG&E requests that the CPUC find reasonable and recoverable in rates PG&E's recorded incremental capital expenditures of $3.583 million associated with the CAISO's December 2011, Spring 2012 and Fall 2012 Releases. PG&E also requests that the CPUC find reasonable and recoverable in rates PG&E's recorded incremental IT expenses of $0.064 million which supported the capital projects, as well as specific work PG&E initiated in order to effectively operate in the CAISO's newly redesigned markets.

In its testimony, ORA describes its review of PG&E's Market Redesign & Technology Upgrade Memorandum Account (MRTUMA) for projects that became operational in 2012. According to ORA, its objective was "to determine whether entries recorded in the accounts were appropriate, correctly stated, and in compliance with applicable Commission decisions."[104]

ORA did not note any items of a material nature requiring adjustments to PG&E's recorded incremental capital expenditures of $3.583 million associated with the CAISO's December 2011 market design release. ORA's review did not note any items of a material nature requiring adjustments to PG&E's recorded incremental IT expenses of $0.064 million, which supported the capital projects, as well as the expenses due to the specific work PG&E initiated in order to effectively operate in the CAISO's newly redesigned markets.

[104] Exhibit ORA-1 at 7-1.

Based on our review of the testimony of PG&E and ORA, we approve the $3.58 million in capital expenditures and $0.064 million in incremental expenses incurred by PG&E associated with the CAISO Market Initiatives.

## 18. Cost Recovery and Revenue Requirements

In Chapter 15 of Exhibit PG&E-1, Cost Recovery and Revenue Requirements, PG&E describes its cost recovery proposal for the incremental Information Technology (IT) capital and expense related expenditures that were placed into service or incurred during the Record Period related to the CAISO's Market Design Initiatives, and associated revenue requirements for 2012 through 2013, and presents the Diablo Canyon Seismic Studies revenue requirement for 2012.

PG&E requests that the Commission approve its cost recovery proposals to recover the following revenue requirements through its Utility Generation Balancing Account:

1. The 2012 and 2013 revenue requirements associated with the incremental capital expenditures incurred for releases of the CAISO Market Design Initiatives that are determined to be reasonable in this proceeding.
2. The revenue requirements associated with the incremental CAISO Market Design Initiatives expenses recorded in the MRTUMA that are determined to be reasonable in this proceeding.
3. The revenue requirements associated with the Diablo Canyon Seismic Studies actual costs recorded in the DCSSBA that are presented in this proceeding and not yet included in rates for recovery.

As PG&E explains in its Opening Brief, "most of the issues in ERRA compliance proceedings do not involve cost recovery or revenue requirements. However, because the CAISO Market Design Initiatives and Diablo Canyon

seismic studies involve costs and expenditures, PG&E included a specific cost recovery and revenue requirement proposal for these aspects of its application."[105] PG&E asserts that its testimony demonstrated the reasonableness of its revenue requirement and cost recovery proposal by summarizing the expenses, describing the revenue requirement methodology, and explaining the Results of Operations calculations and cost recovery process.

ORA did not address PG&E's cost recovery and revenue requirement proposal in its testimony.

We have reviewed PG&E's cost recovery and revenue requirement proposal. Based on our review, we approve PG&E's proposal.

## 19. Requests and Motions for Confidential Treatment

The testimony, briefs, and certain other exhibits submitted by PG&E and ORA sometimes included confidential material. As explained below, PG&E and ORA requested confidential treatment of this material pursuant to the Public Utilities Code, Commission Rules and Commission precedent. Rule 11.5 addresses sealing all or part of an evidentiary record. D.06-06-066 addresses Commission practices regarding confidential information, such as electric procurement data (that may be market sensitive) submitted to the Commission. GO 66-C addresses access to records in the Commission's possession.

### 19.1. PG&E

Pursuant to D.06-06-066 and Rule 11.5, PG&E requests leave to request to treat as confidential, its Exhibits PG&E -1C, -3C, -4C, -11C, -12C, -13C, -16C, -19C, -20C, -21C and -22C. PG&E states that these documents contain information that complies with the confidentiality requirements of the above listed decision and

[105] PG&E Opening Brief at 87.

Rule, and should therefore be treated confidentially. We agree that the information contained in these exhibits is market-sensitive, electric procurement-related information. Therefore, pursuant to D.06-06-066 and Rule 11.5, we grant PG&E's request to treat as confidential its Exhibits PG&E -1C, -3C, -4C, -11C, -12C, -13C, -16C and -19C, 20-C, 21-C and 22-C, as detailed in the ordering paragraphs of this Decision. The confidential version of each of these exhibits will be denoted by a "C" after the number of the exhibit.

### 19.2. ORA

Pursuant to Rules 11.4 and 11.5, D.06-06-066, and General Order (GO) 66-C, ORA requests leave to treat as confidential its Exhibits ORA-1C, -2C, -4C, -5C, -10C and -11C. Rule 11.4 addresses confidentiality of filed documents. Because ORA's testimony was served, not filed, we do not use Rule 11.4. GO 66-C addresses access to records in the Commission's possession. Since ORA's request addresses information that we have deemed confidential in Section 19.1 above, and is in compliance with applicable rules, general orders, and decisions, we grant ORA's request to treat as confidential its Exhibits ORA-1C, -2C, -4C, -5C, -10C and -11C, as detailed in the ordering paragraphs of this Decision. The confidential version of each of these exhibits will be denoted by a "C" after the number of the exhibit.

On February 13, 2014 ORA filed a motion to file under seal a confidential excerpt of ORA's testimony provided as an attachment to an ORA notice of ex parte communication which occurred on February 12, 2014. ORA states the attachment contains information identified by PG&E as confidential pursuant to D.06-06-066 and General Order 66-C and, as such, is not subject to public disclosure. ORA requests that the Commission grant leave to file its confidential brief under seal in this docket. ORA's request is granted.

On February 26, 2014 ORA filed a motion to file under seal confidential portions of its opening brief. ORA states that its brief contains information identified by PG&E as confidential pursuant to D.06-06-066 and General Order 66-C and, as such, is not subject to public disclosure. ORA requests that the Commission grant leave to file its confidential brief under seal in this docket. ORA's request is granted.

## 20. Comments on Proposed Decision

The proposed decision (PD) of the assigned ALJ in this matter was mailed to the parties in accordance with Section 311 of the Public Utilities Code and comments were allowed under Rule 14.3 of the Commission's Rules of Practice and Procedure. Comments were filed on March 24, 2016 by PG&E and ORA. Reply comments were filed on March 29, 2016 by PG&E and ORA.

ORA supports the PD and does not recommend any changes. PG&E asserts that on three issues, the PD reaches conclusions that are inconsistent with the evidence in this proceeding and inconsistent with Commission precedent. Two of these issues relate to the disallowances in the PD for recovery of the cost of replacement power associated with two forced outages at PG&E's utility-owned generation facilities. The third issue concerns a disallowance in the PD for recovery of costs related to two power supply contracts administered by PG&E.

Pursuant to Rule 14.3 (c), comments shall focus on factual, legal or technical errors in the proposed decision and in citing such errors shall make specific references to the record or applicable law. Comments which fail to do so will be accorded no weight. Comments proposing specific changes to the proposed decision shall include supporting findings of fact and conclusions of law.

### 20.1. The ERRA Compliance Proceeding Standard of Review Regarding Forced Outages

PGE first addresses the disallowances of recovery of the cost of replacement power associated with outages at PG&E's Diablo Canyon Power Plant and Belden Powerhouse. PG&E asserts that the PD's findings on these two outages are not supported by "substantial evidence" as required by California Public Utilities Code section 1757(a)(4) because for both outages, the PD overlooks the prepared testimony of PG&E's witnesses and the testimony of those witnesses at hearings, and, as a result, misinterprets the root cause evaluations (RCEs) that PG&E conducted after each outage and are part of the evidentiary record in this proceeding. According to PG&E, "because the PD overlooks most of the evidence, it reaches conclusions that are unsupported by the record or the RCEs themselves."[106] Finally, PG&E asserts that the PD also fails to acknowledge previous Commission decisions addressing utility-owned generation (UOG) outages, and thus does not proceed in a manner required by law as mandated by Section 1757(a)(2).

The sections of the PU Code cited by PG&E concern judicial review of Commission decisions, following a decision on a rehearing application by the Commission, by the court of appeal or the Supreme Court for the purpose of having the lawfulness of the original order or decision or of the order or decision on rehearing inquired into and determined.

As cited by PG&E, PU Code Section 1757(a) provides, in relevant part, that the review by the court shall not extend further than to determine, on the basis of the entire record which shall be certified by the Commission, whether any of the

[106] PG&E Comments on PD at 1.

following occurred: (2) the Commission has not proceeded in the manner required by law, or (4) the findings in the decision of the Commission are not supported by substantial evidence in light of the whole record.

To support its assertions with respect to Section 1757(a), PG&E first summarizes the standard of review for UOG outages and what PG&E considers to be relevant Commission precedent for these matters.

Regarding the relevant standard of review, PG&E states (and ORA agrees) that the Commission's standard is the "reasonable manager" standard:

> [U]tilities are held to a standard of reasonableness based upon the facts that are known or should have been known at the time. The act of the utility should comport with what a reasonable manager of sufficient education, training, experience, and skills using the tools and knowledge at his or her disposal would do when faced with a need to make a decision or act.

This standard is in fact correctly invoked in Section 4 of the PD decision. PG&E further suggests that "the reasonable manager standard does not require 'perfection,' or even that every decision made by the utility be correct" and cites ORA's agreement with this interpretation.

PG&E then reviews prior Commission decisions that applied the reasonable manager standard to UOG outages in ERRA compliance review proceedings. PG&E describes three instances where the Commission did disallow replacement power costs associated with forced outages, and three instances where it did not disallow the replacement costs. PG&E provides this interpretation of the Commission's reasoning in those proceedings:[107]

[107] *Id*. at 4.

> In short, the Commission has determined that an outage is unreasonable when there are previous, similar incidents that the utility has not corrected, the utility acknowledges that an outage was foreseeable, instructions are unclear and plant procedures are not followed, or the utility knowingly operates a facility beyond recommended operating parameters.
>
> The Commission has found outages reasonable in situations, like this one, where the only evidence is a self-critical RCE that is explained by the utility, or the utility followed industry practice, did not have prior knowledge of any incidents, and took some preventative measures.

Based on its description of the forced outages reviewed in prior ERRA compliance proceedings, and its interpretation of the Commission's decision-making in those instances, PG&E concludes that with respect to the DCPP and Belden outages, "in this proceeding, the PD disregards: (1) all of the evidence in the record, except for the RCEs; and (2) Commission precedent in earlier ERRA compliance proceedings."[108]

As we discuss below, PG&E's analysis of the law, Commission precedent, and the PD's consideration of the evidentiary record in this proceeding is incorrect.

### 20.2. The Outage at Diablo Canyon Power Plant

PG&E asserts that it was a reasonable manager with regard to the DCPP outage. PG&E repeats the DCPP outage background provided in Section 9 of the PD and argues that the DCPP outage is "remarkably similar" to two forced outages in Southern California Edison's (SCE) system in 2008 and 2009.[109] In both of those prior cases, according to PG&E,

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[108] *Ibid.*

[109] *Id.* at 6.

> although SCE's RCE was self-critical, SCE's testimony explained in detail that its actions were reasonable based on its knowledge at the time, and thus the Commission determined SCE acted as a reasonable manager. PG&E presented similar testimony in this proceeding explaining the RCE and why PG&E's conduct was reasonable.

According to PG&E, the PD "relies almost exclusively on a selective reading of portions of the RCE, ignoring PG&E's prepared testimony, as well as testimony at the hearing."[110] PG&E then provides a detailed discussion to support its assertion that the PD is factually and legally erroneous.

First, PG&E states that the PD fails to consider "the primary causal factors" identified in the PD, and asserts that the PD focuses on the CCVT creepage distance factor, and "ignores other outage factors in the RCE". PG&E cites text in the RCE "explaining three factors contributing to outage and noting that primary factor was poor performance of material."[111] PG&E concludes that "the PD's decision to all but ignore other outage factors constitutes clear legal error."[112]

PG&E has incorrectly cited and misrepresented the evidence in its own RCE to support its argument. In fact, the RCE states that "[t]he primary causes of the CCVT failure are insufficient creepage design and inappropriate material performance,"[113] not "poor performance of material" alone. Indeed, the text cited by PG&E contains discussions of four "Corrective Actions to Prevent Recurrence" of the outage, and seven additional overall forward-looking

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[110] *Ibid.*

[111] *Id.* at 8, citing the DCP RCE, Exhibit 22-C at 9-10.

[112] *Ibid.*

[113] Exhibit 22-C at 27.

"Corrective Actions" and does not explain the factors contributing to the outage or state that the primary factor was poor performance of material.

Furthermore, the PD does not ignore causal factors other than the insufficient creepage design (i.e., inappropriate performance of insulator material and environmental conditions at DCPP). The PD reviews each of PG&E's five substantive rebuttals to ORA's evidentiary support for its recommended disallowance, including ORA's faulting of PG&E for its failure to adequately test the new insulators and for its failure to adequately analyze and consider environmental conditions at DCPP. The PD reviews ORA's arguments and PG&E's rebuttal and concludes that PG&E is contradicted by facts contained in the root cause evaluation. For that reason, the PD finds that the evidence in the RCE supports the conclusion that PG&E did not comply with the reasonable manager standard. PG&E cites as "evidence" its blind adherence to standard industry practice irrespective of the conditions on the ground at DCPP, conditions that we expect PG&E to know in great detail and weigh against industry standards. Thus we disagree with PG&E's assertion: "[t]he fact that the insulator material did not perform as expected and the environmental conditions were substantially worse than expected does not mean that PG&E was an unreasonable manager. Indeed, these conditions only became obvious in hindsight…".[114] The PD weighs the evidence of PG&E's actions against ORA's argument that location-specific evidence supports a finding of imprudent management, and sides with ORA. This is proper weighing of the substantial

[114] PG&E Comments at 8.

evidence in light of the whole record, not legal error. We do not modify this aspect of the PD in response to PG&E's comments.

PG&E also asserts that the PD ignores evidence regarding PG&E's root cause evaluation in reaching its conclusion that PG&E's engineers relied on faulty information and failed to consider industry standards in the CCVT design process. PG&E cites the written testimony of PG&E's witness, and that witness' testimony in hearings. According to PG&E, its witness testified that the section of the RCE later relied upon by the PD "was addressing documentation, not that PG&E failed to consider industry standards."[115] PG&E states that its witness explained that "the concern being addressed by this portion of the RCE was the failure to fully document assumptions that were made based on industry standards, conversations with the vendor and PG&E experts, and other information relied on for the creepage distance decision."[116]

We have reviewed the testimony cited by PG&E and do not find it credible, because the witness appears to mis-characterize the fundamental conclusion of the RCE by selectively and partially quoting that document. According to the witness,

> [t] he RCE states that PG&E ran afoul of INPO 10-005, Principle 4 because "assumptions made during the design process [ ] had not been documented as to their consistency with codes and standards." Thus, the issue concerned the *failure to document* the consistency of certain assumptions with codes and standards.[117]

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[115] *Id.* at 8-9.

[116] *Id.* at 8, citing Exhibit PG&E-3 at page 2-2, line 27 to page 2-13, line 17 and RT at page 183, line 11 to page 186, line 2.

[117] Exhibit PG&E-3 at page 2-13, emphasis in the original.

In fact, as quoted in its entirety by the PD (see Section 9.3; emphasis added here), the RCE states that

> The departure from Principle 4 resulted in assumptions made during the design process that had not been documented as to their consistency with codes and standards.
>
> Consequently:
>
> c) [Design Criteria Memorandum] DCM S-61B was not updated for minimum creepage distance for high voltage insulators to reflect industry codes and standards; and
>
> d) DCPP design engineers over-relied on PG&E and industry experts at the expense of industry codes and standards as pertained to the selection of the creepage distance.

PG&E's witness appears to characterize the portion of the RCE that actually identifies the root cause of the outage as simply faulting PG&E for failing to document actions taken during the design process; the witness' testimony at hearing, cited by PG&E here, appears to be attempting to make much the same point. The plain language of the RCE, quoted and cited in Section 9.3 of the PD, simply does not say what the witness suggests it says. We do not modify this aspect of the PD in response to PG&E's comments.

PG&E next asserts that the PD "misinterprets the design specification issue" because the PD "points to a sentence in the RCE which states that PG&E personal should 'discuss what to do when no product is available to meet design specifications' and then wrongly concludes that such discussions did not occur here, and that PG&E 'simply waiv[ed] one of the required design criteria.'"[118]

[118] PG&E Comments at 9.

PG&E mischaracterizes the PD: the reference to "a sentence in the RCE" is in fact a reference to the first recommended "Corrective Action to Prevent Recurrence" (CAPR) offered by the RCE: "discuss what to do when no product is available to meet design specifications". Given that evidence in the record indicates that PG&E did not "discuss what to do when no product is available to meet design specifications" it is not legal error to give great weight to that evidence, and to reach a conclusion that is supported by that evidence. We do not modify this aspect of the PD in response to PG&E's comments.

PG&E also asserts that "the PD's reliance on the difference in design drawings for the porcelain CCVT is misplaced." PG&E notes that the PD points to the difference between the two creepage distances noted in the vendor documents for the original porcelain CCVT as evidence that PG&E was an unreasonable manager for relying on incorrect records, and asserts that "the PD misunderstands this issue."[119] PG&E then repeats essentially the same narrative provided over several pages in Section 9.6 of the PD and concludes that the PD has somehow ignored this "undisputed evidence." In fact, the PD weighs the same evidence cited by PG&E, but reaches a different conclusion because it weighs the evidence differently. This is not legal error. We do not modify this aspect of the PD in response to PG&E's comments.

PG&E's final objection to the PD with respect to the outage at DCPP is that "the PD creates an unreasonable standard" that "requires the utilities to conduct unspecified tests that are not standard industry practice simply based on

[119] *Id*. at 10.

hindsight."[120] According to PG&E, the PD criticizes PG&E for not conducting certain tests, even though it acknowledges that some of these tests are not "industry practice" and fails to provide any evidence that a reasonable manager would conduct other tests. PG&E cites the section of the PD that states that PG&E should have performed independent hydrophobicity (water repellence) tests on the CCVTs, even though "it was not industry practice to perform such independent testing of materials guaranteed by a vendor" and agrees with ORA that PG&E unreasonably made several assumptions about the capability of polymer insulators without validating these assumptions through analysis or testing, because "the RCE includes extensive discussion of hydrophobicity issues and notes that after-the-fact testing found that the failed CCVT exhibited very poor hydrophobicity, both in the as-found contaminated condition and after cleaning." PG&E objects because its vendor "confirmed the creepage distance and indicated that it was not aware of any CCVT failure of this type. PG&E took proactive measures by thoroughly evaluating the proper creepage distance, and only in hindsight should it have conducted more testing."[121]

PG&E asserts that the PD is inconsistent with the Commission's determination regarding the two SCE outages referenced above, "where the Commission determined that SCE acted reasonably when it complied with industry practices, was not required to proactively act to address a situation that has not occurred and could not reasonably be known, and could not be found

[120] *Id*. at 10, 11.

[121] *Ibid.*

unreasonable in hindsight for failing to take preventive actions that could have prevented the outage."[122]

PG&E's characterization of the PD is inaccurate: the PD does not find PG&E "unreasonable in hindsight for failing to take preventive actions that could have prevented the outage," nor does the PD require PG&E to "proactively act to address a situation that has not occurred and could not reasonably be known." First, reliance upon the facts in the RCE is not in and of itself a hindsight-based analysis. As stated in the PD, the Commission has already stated that it is entirely appropriate for the Commission to use the facts underpinning a root cause evaluation in our analysis of whether PG&E complied with the reasonable manager standard.[123] Utilities are held to a standard of reasonableness based upon the facts that are known or should have been known at the time. This is the approach taken by the PD: given the intentional hindsight-based analysis in the RCE, do the facts presented in that RCE support a finding that PG&E acted unreasonably? The PD determines that the facts do support this conclusion: the PD finds that PG&E acted unreasonably because the RCE establishes that PG&E failed to take preventive actions that could have prevented the outage, and because PG&E failed to proactively act to address a situation that had not occurred but should have reasonably been known. We do not modify this aspect of the PD in response to PG&E's comments.

### 20.3. The Outage at Belden Powerhouse

PG&E asserts that it was a reasonable manager with regard to the Belden outage. PG&E faults the PD for relying upon—and misreading—"a single piece

[122] PG&E Comments at 10.

[123] D.11-10-002 at 10.

of evidence", the root cause analysis that PG&E prepared following the outage, and "ignoring PG&E's prepared testimony and testimony at hearing. PG&E asserts that the PD errs in three specific areas.

First, PG&E disputes the PD's finding that PG&E's placement of the pump pressure gauge was unreasonable, which the RCE attributed to "time constraints and low resources of personnel". PG&E asserts that the PD dismisses, without justification, undisputed testimony that the equipment fabricator determined the location of the gauge was appropriate and that the vendor further indicated that other customers had gauges located in similar locations to Belden. PG&E further asserts that the PD is legally erroneous because it relies on PG&E's subsequent effort to move gauges on units other than Belden, contrary to Evidence Code section 1151, which makes evidence of subsequent corrective measures inadmissible to prove negligence.[124]

Section 6.5.2 of the PD discusses and, contrary to PG&E's assertions, addresses the evidence cited by PG&E in its comments. The PD accords this evidence little or no weight, and explains its reasons for doing so. Finally, PG&E's suggestion that even though it understaffed and rushed the installation job it was acceptable to trust the vendor is illogical. We do not modify this aspect of the PD in response to PG&E's comments.

Second, PG&E disputes the PD's conclusion that PG&E should have re-tested the oil level monitoring device when the liquid leak alarm was removed from service. According to PG&E, the PD fails to cite a single piece of evidence regarding re-testing, and holds PG&E to a standard that is inconsistent with

[124] *Id.* at 12.

industry practice, unsupported by PG&E's operating procedures, and ignores the fact that the two alarms had very different purposes: "This is certainly not the 'reasonable manager' standard adopted by the Commission."[125]

We disagree with PG&E. One of the root causes of the Belden outage was the failure of PG&E personnel to properly reassemble the oil level monitoring device, such that a pinched wire prevented the device from doing its job when the pump pressure gauge broke due to excessive vibration. That was preventable human error. This Commission does, in fact, expect that it is standard industry practice to avoid preventable human error, and that this practice is part of PG&E's operating procedures as well. We do not modify this aspect of the PD in response to PG&E's comments.

Third, PG&E disputes the PD's finding that there is evidence that a reasonable manager would have tested or at least visually inspected the bearing low level alarm and provided written instructions to test/inspect equipment to safeguard against potential oil spills or leaks. PG&E again asserts that the PD misreads the RCE and ignores testimony offered at the hearing. We have reviewed the hearing testimony cited by PG&E and disagree that the PD ignores this testimony. The witness affirms PG&E counsel's description of the RCE and describes the forward-looking nature of the "pinched wire" recommendation. The PD, on the other hand, notes that the RCE itself found that one of the three causal factors in the Belden outage was that "the Mercoid switch wires were too long" and recommends the corrective action described by PG&E's witness. The PD gives greater weight to the failure of PG&E managers to have plans in place

[125] *Id.* at 13.

that would have identified the pinched wire in time to prevent the failure of the device. This is consistent with the requirement of the "reasonable manager" standard that the act of the utility should comport with what a reasonable manager of sufficient education, training, experience, and skills using the tools and knowledge at his or her disposal would do when faced with a need to make a decision or act. We do not modify this aspect of the PD in response to PG&E's comments.

### 20.4. Disallowances Regarding PG&E Contract Administration

PG&E also addresses the PD's disallowance of costs related to two power supply contracts and asserts that the PD incorrectly determines that these contracts were imprudently administered. According to PG&E, the record does not support the PD's determination on this issue. PG&E cites confidential Exhibit PG&E 11-C, which describes in more detail the financial considerations cited by PG&E as the reason it negotiated partial repayment of overpayments to the counterparties that had resulted from the initial PG&E error. PG&E asserts that the PD dismisses the evidence in Exhibit PG&E 11-C but "fails to explain why this undisputed evidence is insufficient."

In its comments, PG&E confuses the PD's analysis of Exhibit PG&E 11-C with the PD's finding that PG&E did not act as a reasonable manager in managing the two contracts in question. Exhibit PG&E 11-C documents the relatively large amounts of the overpayments by PG&E, in comparison to the incomes of the counterparties. Based on this disparity, PG&E decided to negotiate partial repayments of the overpaid amounts. However, the PD's finding that PG&E did not act as a reasonable manager is based on the factual circumstances regarding the initial occurrence of the overpayments: PG&E failed to act as a reasonable manager to ensure that the change in transmission voltage

was promptly reflected in accurate meter constants at each facility. There is no "undisputed evidence" in Exhibit PG&E 11-C that explains this failure on the part of PG&E. We do not modify this aspect of the PD in response to PG&E's comments.

## 21. Assignment of Proceeding

Michel Peter Florio is the assigned Commissioner and Stephen C. Roscow is the assigned ALJ in this proceeding.

## Findings of Fact

1. PG&E's application was accompanied by exhibits and testimony in support of the reasonableness of its fuel procurement, administration of power supply contracts, and LCD activities for the 2012 Record Period.

2. PG&E assembled its showing on LCD in a manner consistent with its showing in prior years' applications.

3. The Commission has adopted a new methodology for LCD showing that will be followed by PG&E for record year 2014.

4. The forced outage at the Belden Powerhouse began July 13, 2012 and lasted until September 16, 2012. ORA analyzed the outage in light of the reasonable manager standard.

5. Evidence shows that a reasonable manager would have determined that the pressure gauge that failed at the Belden Powerhouse had been installed in a manner that had not adequately considered the higher level of vibrations due to Belden's larger size compared to units previously modified by PG&E.

6. Evidence shows that a reasonable manager would have re-tested the [low oil level device] upon taking the liquid leak detection alarm out of service.

8. Evidence shows that a reasonable manager would have tested or visually inspected the bearing low level alarm and provided written instructions to plant

personnel to test or inspect equipment to safeguard against potential oil spills or leaks.

9. The method proposed by PG&E to calculate the disallowance amount of $1,324,811 due to the water that was spilled or bypassed around Belden during the 65-day outage is reasonable.

10. The record in this proceeding does not indicate the total cost to ratepayers due to forced outage at the Belden Powerhouse.

11. A planned, two-day maintenance outage at Humboldt Bay Generating Station, Unit 5 was extended for 14 additional days as an unplanned outage. ORA analyzed the outage in light of the reasonable manager standard.

12. The evidence does not support ORA's position that PG&E's actions with respect to the unplanned outage at Humboldt Bay Generating Station, Unit 5 were not reasonable.

13. The evidence shows that the unplanned outage at Humboldt Bay Generating Station, Unit 5 did not adversely impact PG&E's utility-owned fossil generating plant fuel costs.

14. A forced outage at the Diablo Canyon Power Plant began October 11, 2012 and lasted 4.4 days. ORA analyzed the outage in light of the reasonable manager standard.

15. The evidence shows that a reasonable manager should have ensured that DCPP plant personnel were trained to understand the expectations and procedural requirements that they review industry standards and codes when performing design work and evaluations.

16. The evidence does not support PG&E's assertion that it was necessary to waive a required design criterion because plant personnel perceived conflicts with other required design criteria.

17. The purpose of the Diablo Canyon Seismic Studies Balancing Account (DCSSBA) is to allow PG&E to record, for eventual recovery in rates, its actual costs of implementing Diablo Canyon seismic studies. ORA reviewed PG&E's DCSSBA entries made between August, 2010 and December 2012 to determine whether entries recorded in the account were appropriate, correctly stated, and in compliance with applicable Commission decisions. ORA recommends a disallowance in the amount of $3.76 million, which is a portion of the $8.2 million costs that PG&E recorded for Offshore 3-D high-energy seismic surveys.

19. Because of the complex regulatory and permitting framework associated with the 3D HESS project, the evidence shows that the $3.76 million expenditure qualifies as operation and maintenance expenses incurred by PG&E in the ordinary and prudent course of business.

20. PG&E has met its burden of proof by providing support for the amounts actually incurred and recorded in the DCSSBA and in demonstrating that such costs are consistent with PG&E's request in its original seismic studies application, A.10-01-014.

21. During the Record Period, PG&E's fuel procurement for its utility-owned generation and contracted resources complied with its Commission-approved Bundled Procurement Plan.

22. During the Record Period PG&E executed forty-eight hedging transactions that were not in compliance with its Commission-approved hedging plan. PG&E and ORA agree that the non-compliant transactions did not detrimentally impact ratepayers, and that the net gain associated with these transactions should be credited to ERRA balancing account.

23. PG&E's administration and management of its power contracts are reviewed in ERRA compliance proceedings. ORA concluded that PG&E did not

act as a reasonable manager by prudently administering three QF contracts: Amedee Geothermal Venture 1, Wendel Energy Operations 1, LLC, and the University of California San Francisco.

24. Evidence shows that PG&E did not have protocols in place to verify proper calculation of payments to the University of California San Francisco, but ORA has not provided evidence that supports its recommendation for additional audit procedures beyond the contract review that already occurs in ERRA compliance proceedings.

25. Evidence shows that PG&E failed to minimize ratepayer costs in the administration of the Amedee Geothermal Venture 1 and Wendel Energy Operations 1, LLC contracts because PG&E did not act promptly to update revised meter constants for billing purposes.

26. The costs booked to the Market Redesign and Technology Upgrade Memorandum Account are reasonable and PG&E has met its burden of proof regarding its claim for recovery of these costs.

27. The purpose of the ERRA balancing account is to record the actual ERRA revenues and electric procurement costs, to ensure recovery of those costs.

28. Costs recorded in the ERRA include the cost of fuel for utility-retained generation, Qualifying Facility contracts, inter-utility contracts, California Independent System Operator charges, irrigation district contracts and other Power Purchase Agreements, bilateral contracts, forward hedges, pre-payments and collateral requirements associated with electric procurement and ancillary services, along with other authorized power procurement costs.

29. As of December 31, 2012, the balance in the ERRA was over-collected by $74.2 million.

30. ORA reviewed PG&E's ERRA balancing account to determine whether entries recorded in the accounts were appropriate, correctly stated, and in compliance with applicable Commission decisions. ORA's review did not note any items of a material nature requiring adjustments to PG&E's ERRA, and ORA noted no exceptions to the recovery requirements adopted by the Commission for this account.

31. PG&E's ERRA entries for the Record Period are accurate and in compliance with Commission decisions.

32. Rule 11.5 addresses sealing all or part of an evidentiary record.

33. D.06-06-066 addresses our practices regarding confidential information.

34. Rule 11.4 addresses confidentiality of filed documents. Because ORA's testimony was served, not filed, we do not use Rule 11.4.

35. GO 66-C addresses access to records in the Commission's possession.

## Conclusions of Law

1. All dispatch-related activities performed by PG&E during the Record Period complied with Commission orders and PG&E's bundled procurement plan.

2. The Commission should evaluate root cause analyses of forced outages in conjunction with the "reasonable manager" standard when determining whether an outage is reasonable or unreasonable for the purposes of ERRA compliance proceedings.

3. The evidence supports ORA's position that PG&E failed to show that it acted as a reasonable manager would have acted with respect to its actions prior to the forced outage at the Belden powerhouse. Ratepayers should not pay for the associated cost of replacement power.

4. The Commission should develop a record in PG&E's currently open General Rate Case proceeding, A.15-09-001, regarding the costs of post-outage cleanup and subsequent repairs to equipment at the Belden powerhouse, and the ratemaking accounting for those costs.

5. With the exception of the forced outage at the Belden powerhouse during the Record Period, PG&E administered and managed its utility-owned hydroelectric generation facilities prudently and consistent with the reasonable manager standard.

6. PG&E acted as a reasonable manager with respect to its solar and fuel cell facilities during the 2012 Record Period.

7. PG&E has demonstrated that its utility-owned fossil-fuel facilities were operated in a reasonable manner during the Record Period.

8. The evidence supports ORA's position that PG&E failed to show that it acted as a reasonable manager would have acted with respect to its actions prior to the forced outage at the Diablo Canyon Power Plant. Ratepayers should not pay for the associated cost of replacement power.

9. The Commission should develop a record in PG&E's currently open General Rate Case proceeding, A.15-09-001, regarding the post-outage costs at the Diablo Canyon Power Plant, and the ratemaking accounting for these costs.

10. With the exception of the October, 2012 forced outage at the Diablo Canyon Power Plant during the Record Period, PG&E administered and managed its utility-owned nuclear generation facilities prudently, consistent with the reasonable manager standard, including associated fuel costs.

11. The costs booked to the Diablo Canyon Seismic Studies Balancing Account are reasonable. These costs are reflected in Exhibit PG&E-1, Table 15-2, as corrected by Exhibit PG&E-2.

12. The revenue requirements proposed by PG&E for costs associated with the DCSSBA in Exhibit PG&E-1, Table 15-3, as corrected by Exhibit PG&E-2, are reasonable and should be collected in rates

13. PG&E prudently administered its fuel contracts during the 2012 Record Period.

14. The forty-eight non-compliant hedging transactions and four offsetting transactions identified in Exhibit PG&E-16 should be approved and the net gain from these transactions should be recorded to the ERRA balancing account.

15. PG&E's greenhouse gas compliance instrument procurement during the Record Period complied with its Commission-approved Bundled Procurement Plan.

16. With the exception of its contracts with Amedee Geothermal Venture 1, Wendel Energy Operations 1, LLC and the University of California San Francisco, during the Record Period PG&E prudently administered its Qualifying Facility (QF) and non-QF contracts in accordance with the contract provisions.

17. The settlement agreement between PG&E and UCSF is reasonable in light of the whole record, consistent with law, and in the public interest because it simply compensates UCSF for energy that was delivered to and used by PG&E's customers. The settlement agreement should be approved.

18. With the exception of its contracts with Amedee Geothermal Venture 1 and Wendel Energy Operations 1, LLC the transactions identified in Table 10-22 of Exhibit PG&E-1 are reasonable and any costs associated with these amendments should be recovered through the Energy Resource Recovery Account.

19. For the Amedee Geothermal Venture 1 and Wendel Energy Operations 1, LLC contracts, PG&E should appropriately reflect a disallowance in its Energy Resource Recovery Account consisting of the difference between the amounts that PG&E overpaid each counterparty and the sums that PG&E recovered from each counterparty by means of the letter agreements for which PG&E seeks approval in this proceeding.

20. PG&E's management and administration of its demand response contracts during the Record Period complied with the terms of those agreements, as well as with Standard of Conduct 4.

21. The revenue requirements proposed by PG&E for costs associated with the MRTUMA in Exhibit PG&E-1, Table 15-3, as corrected by Exhibit PG&E-2, should be collected in rates.

22. PG&E's request to seal the confidential versions of its testimony should be granted, as detailed herein.

23. ORA's request to seal the confidential version of its testimony and opening brief should be granted, as detailed herein.

## O R D E R

**IT IS ORDERED** that:

1. Pacific Gas and Electric Company shall appropriately reflect a $1,324,811 disallowance associated with 65 day outage at the Belden Powerhouse in its Energy Resource Recovery Account.

2. Pacific Gas and Electric Company (PG&E) shall prepare and submit a stand-alone exhibit, with supporting workpapers, that itemizes in detail the total costs incurred due to the forced outage at the Belden powerhouse (i.e., for replacement power, clean-up activities, repairs to Belden's equipment, as well as

any and all other costs not listed here) and explains and demonstrates the ratemaking accounting for these costs, including, specifically, how the disallowance for replacement power costs adopted in this decision is accounted for so that it is borne by PG&E shareholders rather than PG&E ratepayers.

3. Pacific Gas and Electric Company shall appropriately reflect a $3,238,185 disallowance associated with 4.4 day outage at the Diablo Canyon Power Plant, in its Energy Resource Recovery Account.

4. Pacific Gas and Electric Company (PG&E) shall prepare and submit a stand-alone exhibit, with supporting workpapers, that itemizes in detail the total costs incurred due to the forced outage at the Diablo Canyon Power Plant (i.e., for replacement power, as well as any and all other costs) and explains and demonstrates the ratemaking accounting for these costs, including, specifically, how the disallowance for replacement power costs adopted in this decision is accounted for so that it is borne by PG&E shareholders rather than PG&E ratepayers.

5. Pacific Gas and Electric Company is authorized to transfer $25.48 million from its Diablo Canyon Seismic Studies Balancing Account to its Utility Generation Balancing Account, for recovery in rates.

6. The forty-eight non-compliant hedging transactions and four offsetting transactions identified in Exhibit PG&E-16 are approved. Pacific Gas and Electric Company shall record to the Energy Resource Recovery Account balancing account the net gain from these transactions.

7. The settlement agreement between Pacific Gas and Electric Company (PG&E) and the University of California, San Francisco is approved, and PG&E is authorized to recover the costs of that settlement agreement.

8. With the exception of its contracts with Amedee Geothermal Venture 1, Wendel Energy Operations 1 and the University of California San Francisco, Pacific Gas and Electric Company is authorized to recover the costs associated with the contract amendments identified in Table 10-22 of Exhibit PG&E-1 through the Energy Resource Recovery Account.

9. For the Amedee Geothermal Venture 1 and Wendel Energy Operations 1, LLC contracts, Pacific Gas and Electric Company (PG&E) shall reflect a disallowance in its Energy Resource Recovery Account consisting of the difference between the amounts that PG&E overpaid each counterparty and the sums that PG&E recovered from each counterparty by means of the letter agreements for which PG&E seeks approval in this proceeding. Based on an underpayment to Amedee of $20,062 and an underpayment to Wendel of $106,109, the total disallowance equals $126,171.

10. Pacific Gas and Electric Company shall recover in rates its recorded incremental capital expenditures of $3.583 million associated with the California Independent System Operator's December 2011, Spring 2012 and Fall 2012 Releases for its Market Redesign & Technology Upgrade.

11. Pacific Gas and Electric Company (PG&E) shall recover in rates its recorded incremental IT expenses of $0.064 million which supported the Market Redesign & Technology Upgrade capital projects, as well as specific work PG&E initiated in order to effectively operate in the California Independent System Operator's newly redesigned markets.

12. Pacific Gas and Electric Company's (PG&E) request to treat as confidential, its Exhibits PG&E -1C, -3C, -4C, -11C, -12C, -13C, -16C, -19C, -20C, -21C and -22C is granted. These exhibits shall remain sealed and confidential for a period of three years after the date of this order, and shall not be made

accessible or disclosed to anyone other than the Commission staff or on further order or ruling of the Commission, the assigned Commissioner, the assigned Administrative Law Judge (ALJ), the Law and Motion Judge, the Chief ALJ, or the Assistant Chief ALJ, or as ordered by a court of competent jurisdiction. If PG&E believes that it is necessary for this information to remain under seal for longer than three years, PG&E may file a new motion stating the justification of further withholding of the information from public inspection. This motion shall be filed at least 30 days before the expiration of this limited protective order.

13. The Office of Ratepayer Advocates' (ORA) request to treat Exhibits ORA-1C, -2C, -4C, -5C, -10C and -11C as confidential, is granted. These exhibits shall remain sealed and confidential for a period of three years after the date of this order, and shall not be made accessible or disclosed to anyone other than the Commission staff or on further order or ruling of the Commission, the assigned Commissioner, the assigned Administrative Law Judge (ALJ), the Law and Motion Judge, the Chief ALJ, or the Assistant Chief ALJ, or as ordered by a court of competent jurisdiction. If ORA believes that it is necessary for this information to remain under seal for longer than three years, ORA may file a new motion stating the justification of further withholding of the information from public inspection. This motion shall be filed at least 30 days before the expiration of this limited protective order.

14. The Office of Ratepayer Advocates' (ORA) February 13, 2014 motion to file under seal a confidential excerpt of ORA's testimony provided as an attachment to an ORA notice of ex parte communication which occurred on February 12, 2014 is granted. The confidential excerpt shall remain sealed and confidential for a period of three years after the date of this order, and shall not be made accessible or disclosed to anyone other than the Commission staff or on

further order or ruling of the Commission, the assigned Commissioner, the assigned Administrative Law Judge (ALJ), the Law and Motion Judge, the Chief ALJ, or the Assistant Chief ALJ, or as ordered by a court of competent jurisdiction. If ORA believes that it is necessary for this information to remain under seal for longer than three years, ORA may file a new motion stating the justification of further withholding of the information from public inspection. This motion shall be filed at least 30 days before the expiration of this limited protective order.

15. The Office of Ratepayer Advocates' (ORA) February 26, 2014 motion to file under seal confidential portions of its opening brief is granted. The confidential version of ORA's opening brief shall remain sealed and confidential for a period of three years after the date of this order, and shall not be made accessible or disclosed to anyone other than the Commission staff or on further order or ruling of the Commission, the assigned Commissioner, the assigned Administrative Law Judge (ALJ), the Law and Motion Judge, the Chief ALJ, or the Assistant Chief ALJ, or as ordered by a court of competent jurisdiction. If ORA believes that it is necessary for this information to remain under seal for longer than three years, ORA may file a new motion stating the justification of further withholding of the information from public inspection. This motion shall be filed at least 30 days before the expiration of this limited protective order.

16. Application 13-02-023 is closed.

This order is effective today.

Dated April 7, 2016, at San Francisco, California.

MICHAEL PICKER
President
MICHEL PETER FLORIO
CATHERINE J.K. SANDOVAL
CARLA J. PETERMAN
LIANE M. RANDOLPH
Commissioners