

**DIVISION OF RATEPAYER ADVOCATES**  
**A.13-02-023 Energy Resource Recovery Acct 2012-Compliance**  
**DRA Response to PG&E DR #4 (Confidential)**

Recipient	Division of Ratepayer Advocates		
PG&E Data Request No.:	PGE_DRA-001		
PG&E File Name:	EnerResourceRecoveryAcct2012-Compliance_DR_PGE_DRA-004/Q1		
Request Date:	September 11, 2013	PG&E Witness:	Redacted
Due Date:	September 18, 2013	DRA Witness:	Yakov Lasko

**Question 4.1**

**Chapter 2 – PG&E’s Management of Utility-Owned Generation - Nuclear and Hydro (Yakov Lasko)**

- 4.1. DRA asserts that “PG&E failed to show that it acted as a reasonable manager would have with respect to the (1) DCPD forced outage that occurred on October 11, 2012.” (p. 2-2, lines 7-8). DRA then quotes extensively from PG&E’s Root Cause Evaluation (RCE) for the outage.
- a. Is it DRA’s position that to the extent the RCE identified certain failings or opportunities for improvement, PG&E necessarily cannot meet its burden in demonstrating that it acted as a “reasonable manager” would have?
  - b. In the alternative, is it DRA’s position that notwithstanding the identification in the RCE of certain failings or opportunities for improvement, PG&E could theoretically still meet its burden in demonstrating that it acted as a “reasonable manager” would have?
  - c. If the latter, in DRA’s view, what specific acts or omissions of PG&E failed to 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 and act?” (p. 2-2, lines 4-6).
  - d. Is it DRA’s position that a “reasonable manager” must always make the correct decision?
  - e. In the alternative, is it DRA’s position that a “reasonable manager” can make an incorrect decision as long as he or she had a reasonable basis for making the incorrect decision?
  - f. Does DRA agree with the statement that “inappropriate actions, root causes, or apparent causes contained in RCEs may not translate directly into unreasonable actions”? D.11-10-002, mimeo p. 10.

DRA Response

- a. Is it DRA’s position that to the extent the RCE identified certain failings or opportunities for improvement, PG&E necessarily cannot meet its burden in demonstrating that it acted as a “reasonable manager” would have?

No. Regardless of whether or not PG&E identifies “certain failings or opportunities for improvement” or not after the fact, the burden is on PG&E to show that PG&E (1) acted reasonably and that (2) “certain failings or opportunities for improvement” identified in PG&E’s RCE after DCPD outage were not known or could not have been known to PG&E at the time the decision was made.

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- b. In the alternative, is it DRA's position that notwithstanding the identification in the RCE of certain failings or opportunities for improvement, PG&E could theoretically still meet its burden in demonstrating that it acted as a "reasonable manager" would have?

Regardless of whether or not PG&E identifies "certain failings or opportunities for improvement" or not after the fact, the burden is on PG&E to show that PG&E (1) acted reasonably and that (2) "certain failings or opportunities for improvement" identified in PG&E's RCE after DCPD outage were not known or could not have been known to PG&E at the time the decision was made.

- c. If the latter, in DRA's view, what specific acts or omissions of PG&E failed to 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 and act?" (p. 2-2, lines 4-6).

DRA's view is that PG&E failed to comport with the "reasonable manager" standard because PG&E's actions were based upon *assumptions* (assumptions that themselves were not verified and validated), when PG&E should have been basing its actions upon *facts* that were known or should have been known at the time.

- d. Is it DRA's position that a "reasonable manager" must always make the correct decision?

DRA's position is not that a "reasonable manager" must always make a correct decision since the utilities are not held to a "perfect manager" standard but a "reasonable manager" standard.

- e. In the alternative, is it DRA's position that a "reasonable manager" can make an incorrect decision as long as he or she had a reasonable basis for making the incorrect decision?

DRA's position is that, if PG&E had a reasonable basis for making decisions based on the *facts*, and not *assumptions*, that were known or should have been known at the time, PG&E could still meet its burden in demonstrating that it acted as a "reasonable manager" would have. However, DRA cannot speculate about PG&E's hypothetical "reasonable factual basis" for making incorrect decisions when such facts have not been provided to DRA for its review.

- f. Does DRA agree with the statement that "inappropriate actions, root causes, or apparent causes contained in RCEs may not translate directly into unreasonable actions"? D.11-10-002, mimeo p. 10.

DRA agrees that "inappropriate actions, root causes, or apparent causes contained in RCEs may not translate directly into unreasonable actions," and that the burden is on PG&E to show that PG&E (1) acted reasonably and that (2) despite the "inappropriate actions, root causes, or apparent causes" contained in the RCE, PG&E made decisions based on *facts*, and not *assumptions*, that were known or should have been known at the time.

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**Question 4.2**

**Chapter 2 – PG&E’s Management of Utility-Owned Generation - Nuclear and Hydro (Yakov Lasko)**

4.2. With respect to the October 2012 outage at Diablo Canyon Unit 2, DRA asserts that “performing [Redacted] and other tests may have refuted internal PG&E’s [sic] engineers’ and vendor’s assertions that, [sic] [Redacted] [Redacted]” (p. 2-8, lines 13-15).

- a. What “other tests” is DRA referring to? What testing protocols (timing, procedures, etc.) is DRA suggesting with respect to such “other tests”?
- b. What hydrophobicity testing protocol is DRA suggesting? Testing prior to installation or after operation? What would such hydrophobicity testing consist of?
- c. Is DRA aware of any other utility that performs the type of hydrophobicity testing that DRA is suggesting? If so, please provide details of such testing protocols.

DRA Response

- a. What “other tests” is DRA referring to? What testing protocols (timing, procedures, etc.) is DRA suggesting with respect to such “other tests”?
- b. What hydrophobicity testing protocol is DRA suggesting? Testing prior to installation or after operation? What would such hydrophobicity testing consist of?

DRA is suggesting that any time an engineering decision is made based on assumption(s), the assumption(s) needs to be verified and validated. At the time the decision was being considered, PG&E was acting on an assumption that [Redacted] [Redacted] [Redacted] PG&E was neither making an informed decision based on facts nor independently verified and validated its assumption, such as through [Redacted]

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DRA is referring to the testing of [Redacted] at the plant as described on p. 2-9, lines 18-19 and p. 2-10, lines 16-19. PG&E has not provided DRA with sufficient information regarding its testing protocols for testing [Redacted] [Redacted] that would allow DRA to make specific recommendations. However, DRA notes that PG&E acknowledged in responding to DRA's DR 11.1.2.6.2 that "there was a previous study performed in 1968 that measured [Redacted] [Redacted] [Redacted] In addition, PG&E intends to establish a [Redacted] [Redacted] [Redacted] [Redacted]

- c. Is DRA aware of any other utility that performs the type of hydrophobicity testing that DRA is suggesting? If so, please provide details of such testing protocols.

DRA is not aware of specific facts with any other utility that would be analogous.

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**Question 4.3**

**Chapter 2 – PG&E’s Management of Utility-Owned Generation - Nuclear and Hydro (Yakov Lasko)**

4.3. DRA asserts that “Had PG&E performed testing on [Redacted] its engineers would have noticed that the [Redacted] because the assumptions of [Redacted] were too optimistic.”  
 (Page 2-8, lines 3-6).

- a. What polymer insulator testing protocol is DRA suggesting? Testing prior to installation or after operation? What would such testing consist of?
- b. Is DRA aware of any other utility that performs the type of polymer insulator testing that DRA is suggesting? If so, please provide details of such testing protocols.

DRA Response

Please see reply to question 4.2.

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**Question 4.4:**

**Chapter 2 – PG&E’s Management of Utility-Owned Generation - Nuclear and Hydro (Yakov Lasko)**

4.4. DRA cites to the Institute of Nuclear Power Operations (INPO) 10-005, Principle 4, cited in the RCE, for the proposition that “Redacted Redacted” (p. 2-4, lines 1-2).

- a. What is DRA’s understanding as to when assumptions should be validated through analysis or testing?
- b. Does DRA believe that the more basic an assumption, the less need there is to validate that assumption through analysis or testing, and vice versa? If not, why not?
- c. Should all assumptions inherent in vendor guarantees be validated through analysis or testing? If yes, why? If not, why not? Which assumptions inherent in vendor guarantees should be validated through analysis or testing?
- d. When would the failure to perform analysis or testing necessarily constitute a violation of the “reasonable manager” standard?
- e. What is the basis for DRA’s understanding as to when assumptions should be validated through analysis or testing?
- f. Is DRA aware of any standard practices in the nuclear industry as to which assumptions are typically validated through analysis or testing? If so, please describe such practices.

DRA Response

- a. What is DRA’s understanding as to when assumptions should be validated through analysis or testing?

Based on INPO 10-005, Principle 2 attribute, DRA believes that a reasonable manager should conduct a “thorough and complete technical reviews of conditions [and assumptions] that potentially deviate from design requirements or that demonstrate a reduction in operating, design, or safety margins.”

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- b. Does DRA believe that the more basic an assumption, the less need there is to validate that assumption through analysis or testing, and vice versa? If not, why not?

DRA cannot speculate about hypothetical events and facts that have not been subject to DRA's review.

- c. Should all assumptions inherent in vendor guarantees be validated through analysis or testing? If yes, why? If not, why not? Which assumptions inherent in vendor guarantees should be validated through analysis or testing?

DRA cannot speculate about hypothetical events and facts that have not been subject to DRA's review.

- d. When would the failure to perform analysis or testing necessarily constitute a violation of the "reasonable manager" standard?

DRA cannot speculate about hypothetical events and facts that have not been subject to DRA's review.

- e. What is the basis for DRA's understanding as to when assumptions should be validated through analysis or testing?

DRA cannot speculate about hypothetical events and facts that have not been subject to DRA's review.

- f. Is DRA aware of any standard practices in the nuclear industry as to which assumptions are typically validated through analysis or testing? If so, please describe such practices.

DRA is not aware of specific facts with any other utility that would be analogous.

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**Question 4.5:**

**Chapter 2 – PG&E’s Management of Utility-Owned Generation - Nuclear and Hydro (Yakov Lasko)**

4.5. DRA quotes the RCE as follows: “Redacted”  
 Redacted  
 Redacted  
 Redacted (p. 2-4, lines 3-6). Does DRA agree that the absence of documentation does not prove that assumptions were not evaluated as to their consistency with relevant codes and standards?

DRA Response

The absence of documentation cannot be used to prove anything and in this Proceeding the burden of proof lies with PG&E.

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**Question 4.6:**

**Chapter 2 – PG&E’s Management of Utility-Owned Generation - Nuclear and Hydro (Yakov Lasko)**

4.6. What is DRA’s understanding of whether standards promulgated by IEEE and IEC are mandatory on utility facilities?

DRA Response

Until the standards promulgated by IEEE and IEC are codified into rules, they are not mandatory.

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**Question 4.7:**

**Chapter 2 – PG&E’s Management of Utility-Owned Generation - Nuclear and Hydro (Yakov Lasko)**

4.7. Might there be circumstances when it would be reasonable to depart from an industry code or standard? If so, in what circumstances?

DRA Response

Please see reply to question 4.8 below.

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**Question 4.8:**

**Chapter 2 – PG&E’s Management of Utility-Owned Generation - Nuclear and Hydro (Yakov Lasko)**

4.8. If it is not technically possible to follow an industry code or standard, would it be reasonable to depart from that industry code or standard?

DRA Response

Under circumstances when industry codes or standards do not keep up with rapid technological advances that take place, it may be reasonable to depart from what is deemed to be an “outdated” or no longer “applicable” code or standard. However, DRA believes that a reasonable manager, when departing from an industry code or standard, should err on the side of caution, make assumptions that are conservative, and thoroughly and independently verify and validate the assumptions used to make a decision to depart from an industry code or standard.

DRA also believes that INPO 10-005 guidelines could be used as a reference guide to address circumstances of what a reasonable manager should do when a decision is made to depart from an industry code and standard:

According to INPO 10-005, Principle 5 attribute, “Engineers demonstrate a deep personal commitment and obligation to ensure plant conditions and proposed changes are appropriately bounded by plant design requirements and applicable operating, design, and safety margins.”

According to INPO 10-005, Principle 2 attribute, “Engineering leaders set high standards and reinforce expectations for thorough and complete technical reviews of conditions that potentially deviate from design requirements or that demonstrate a reduction in operating, design, or safety margins. If necessary, independent third parties are contracted to ensure sufficient technical reviews are performed.”