BEFORE THE
PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Investigation on the Commission's Own Motion into the Rates, Operations, Practices, Services and Facilities of Southern California Edison Company and San Diego Gas and Electric Company Associated with the San Onofre Nuclear Generating Station Units 2 and 3	)	I.12-10-013 (Filed October 25, 2012)
And Related Matters.	)	A.13-01-016 A.13-03-005 A.13-03-013 A.13-03-014

ALLIANCE FOR NUCLEAR RESPONSIBILITY'S PHASE 1 OPENING BRIEF

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I. INTRODUCTION.

Pursuant to Rule 13.11 of the California Public Utilities Commission ("Commission" or "CPUC") Rules of Practice and Procedure, the Alliance for Nuclear Responsibility ("A4NR") respectfully submits its opening brief in Phase 1 of the Commission's investigation into the extended outages at the San Onofre Nuclear Generating Station ("SONGS"), owned by the Southern California Edison Company ("Edison") and the San Diego Gas and Electric Company ("SDG&E").

Fortified perhaps by a whiff of invincibility flowing from the prominence of its former executives in California's electricity regulatory structure, Edison in recent years has allowed a certain swagger to seep into its dealings with the Commission. It simply does not do what it does not choose to do. This proceeding has been no different,[1] and the challenge for the Commission will be to insist that Edison bear the legal burden of proving that its 2012 SONGS-related actions and expenditures were reasonable. The record in Phase 1 establishes that even under the loosest "preponderance of the evidence" standard, this is an impossible burden for Edison to meet.

Looming large against every 2012 decision Edison made at SONGS were the unforgiving economics of an aging nuclear plant's nearly $1 billion revenue requirement, even assuming that both Unit 2 and Unit 3 could operate perfectly. A back-of-the-envelope calculation

[1] A vivid illustration of Edison's scofflaw inclinations emerged from ALJ Darling's questions of Edison witness Russell Worden concerning the attrition of the SONGS workforce and the allocation of savings directed by D.12-11-051 in the last general rate case. Learning that the 500 headcount reduction projected for year-end 2012 had become 273, and that the 100% allocation of savings to ratepayers had transformed ("whether by accident or design," as Mr. Worden put it) into a 50-50 split with shareholders, ALJ Darling spoke for many in the hearing room: "That's astounding." Transcript, pp. 1211 – 1212.

spreading this revenue requirement across the output of both units assuming a 90% capacity factor yields a $57 MWh cost. Rendering one unit inoperable changes that to $114 MWh. Reducing the power output of the remaining unit to 70% (while keeping the capacity factor at 90%) changes that to $163 MWh. By Edison's own account, the price of electricity in the SP 15 market was slightly over $30 MWh in 2012.[2]

Impose a time limit of 2022, the expiration date of the existing SONGS licenses, for the amortization of any steam generator repair/replacement costs and the economic gauntlet becomes not just unforgiving, but fatal. Is it any wonder that the Edison witnesses in Phase 1 testified that no cost/benefit analyses were done to determine their 2012 strategy? Is it any surprise that Edison International CEO Ted Craver's announcement three weeks ago, permanently closing the plant, centered on his acknowledgment that the projected costs of doing otherwise were insurmountable?

Edison has failed to show why this decision could not, and should not, have been made as soon as it became aware of the massive extent of vibratory damage to the steam generator tubes in both Unit 2 and Unit 3.[3] The rates it has collected for an inoperable asset are overcollections which must be refunded under California law. As a non-operating, minority owner, SDG&E's overcollections face the same disgorgement as Edison's.

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[2] Edison quantifies this as $30.20 per MWh from January 9 (the start of Unit 2's scheduled outage) to December 31, 2012, TURN-SCE-002 Q.13.b Response, February 25, 2013. This document is accessible at http://www3.sce.com/sscc/law/dis/SongsOIIDocLibrary.nsf/0/1E96C6D5DEF8243288257B1E0061D03E/$file/TURN-SCE-002%20Q.13.b%20Response.pdf

[3] In early media accounts of the Unit 3 radiation leak, NRC staff quickly focused on the broader problem: *" 'They have inspected 80 percent of the tubes in one of the steam generators at unit 2,' said Victor Dricks, spokesman for the Nuclear Regulatory Commission. 'Two of the tubes have thinning so extensive that they need to be plugged and taken out of service. Sixty nine other tubes have thinning greater than 20 percent of the wall thickness, and a larger number have thinning greater than 10 percent of wall thickness.' The tubes with 10 percent thinning number more than 800, he said."* Orange County Register, February 2, 2012.

II. THE COMMISSION CANNOT IGNORE CAL. PUB. UTIL. CODE §§ 451, 463, AND 728.

The January 28, 2013 Scoping Memo, as elaborated upon by the April 30, 2013 Ruling on Legal Questions, appears to have structured I.12-10-013 in such a fashion that the Commission will defer until Phase 2 its exercise of the authority granted by Cal. Pub. Util. Code § 455.5 to reduce the SONGS rate base and revenue requirement.[4] Significantly, however, the two rulings focused Phase 1 on the deferred first reasonableness review of the SONGS-related expenses sought in A.10-11-015, Edison's general rate case "GRC"), and specifically established that "all 2012 estimated expenses associated with SONGS are available for review."[5] As ALJ Darling announced at the beginning of the evidentiary hearings, Phase 1

> *takes up the deferred GRC reasonableness review of 2012 basic O&M and capital spending in light of the changed circumstances of a nonoperational nuclear power plant.* ***This phase will establish a just and reasonable revenue requirement for 2012 SONGS-related expenses.*** … (emphasis added by A4NR)
>
> ***
>
> *As part of this review, we will also consider other 2012 non-GRC expenses, including the operating and maintenance costs related to the investigation and repair of the steam generators. These will be referred to as incremental SGRP expenses throughout this proceeding.*[6]

A4NR's primary focus in Phase 1 has been these "just and reasonable revenue requirements for 2012." Edison indicated in its December 2012 testimony filed in response to the OII a 2012 SONGS revenue requirement of $739 million[7] while SDG&E identified its 2012

[4] Scoping Memo, p. 4; Ruling on Legal Questions, p. 8.
[5] Ruling on Legal Questions, pp. 15 – 16; Scoping Memo, pp. 3 – 4.
[6] Transcript, pp. 240 – 241.
[7] "SCE's Testimony Regarding Proposed Rate Adjustments for SONGS Units 2 and 3," December 2012, Table III-1, p. 7. A4NR believes that the lower amount referenced at p. 11 in the Ruling on Legal Questions is in error.

SONGS revenue requirement as an additional $252.82 million.[8] These amounts accrue at a monthly rate of $82.65 million, and are overcollections to the extent that the two utilities are unable to prove that they are "just and reasonable."

ALJ Darling announced at the beginning of the evidentiary hearings that, while the "incremental SGRP expenses"[9] will be established in Phase 1, "no refunds will occur as to these costs until Phase 3 in which we will allocate cost responsibility for the failures of the steam generator replacement project."[10] Regarding the much larger potential refunds from any overcollections of the 2012 SONGS revenue requirements, A4NR presumes that the rubric laid out in the final ordering paragraph of the Ruling on Legal Questions will apply:

> *4. If the post-2011 SONGS-related expenses finally approved in this OII are less than the associated revenue amounts for which recovery was preliminarily allowed in D.12-11-051, then the Commission may* ***immediately order equalizing refunds to ratepayers****.*[11] (emphasis added by A4NR)

Even if it delays application of Cal. Pub. Util. Code §455.5 until Phase 2, the Commission will have to apply §§ 451, 463 and 728[12] to its determination of which 2012 expenditures for an inoperable SONGS can be determined to have been "just and reasonable." As the Commission is well aware, §451 establishes that unjust and unreasonable rates are unlawful ("it is impossible to ignore §451" according to the Ruling on Legal Questions[13]) and §728 requires that, when the Commission finds a utility's rates unreasonable or unlawful, it "shall determine and fix, by order, the just, reasonable, or sufficient rates, classifications, rules, practices, or

[8] "Prepared Testimony of San Diego Gas & Electric Company Regarding Proposed Rate Adjustments for SONGS Units 2 and 3," December 17, 2012, Table III-1, p. 4.
[9] The total "incremental SGRP expenses" amount for 2012 was identified by Edison as $130.1 million.
[10] Transcript, p. 241.
[11] Ruling on Legal Questions, p. 18.
[12] Unless otherwise identified, all references to code sections are to the California Public Utilities Code.
[13] Ruling on Legal Questions, p. 10.

contracts to be thereafter observed and in force."[14] While not relied upon in the Ruling on Legal Questions, the Commission is unlikely to avoid for long §463's "clarification" of existing Commission authority enacted by the Legislature in 1985[15] in the wake of similarly non-operating nuclear reactors at Humboldt Bay and San Onofre Unit 1.

[14] *Id.*

[15] Section 463 provides*: (a) For purposes of establishing rates for any electrical or gas corporation, the commission shall disallow expenses reflecting the direct or indirect costs resulting from any unreasonable error or omission relating to the planning, construction, or operation of any portion of the corporation's plant which cost, or is estimated to have cost, more than fifty million dollars ($50,000,000), including any expenses resulting from delays caused by any unreasonable error or omission. Nothing in this section prohibits a finding by the commission of other unreasonable or imprudent expenses. This subdivision is a clarification of the existing authority of the commission, is not intended to limit or restrict any power or authority of the commission conferred by any other provision of law, and applies to all matters pending before the commission. This section does not prohibit the commission from establishing rates for an electrical or gas corporation on a basis other than an allowed rate of return on undepreciated capital costs.*

(b) Whenever an electrical or gas corporation fails to prepare or maintain records sufficient to enable the commission to completely evaluate any relevant or potentially relevant issue related to the reasonableness and prudence of any expense relating to the planning, construction, or operation of the corporation's plant, the commission shall disallow that expense for purposes of establishing rates for the corporation. This subdivision does not apply where the commission determines that a reasonable person could not have anticipated either the relevance or potential relevance, to an evaluation of costs incurred on the project, of preparing or maintaining the records or the extent of recordkeeping required to adequately evaluate those costs.

(c) For purposes of this section:

(1) "Planning" includes, but is not limited to, activities related to the initial and subsequent assessments of the need for a plant construction project; the selection of contractors and the negotiation of contract provisions; certification; project organization; and site selection, including the investigation and interpretation of environmental factors such as seismic conditions and other external factors affecting the construction, operation, and safety of the plant.

(2) "Construction" includes, but is not limited to, activities related to engineering such as the development and use of specifications, drawings, and procedures; the preparation and use of construction plans, including blueprints; procurement activities; repairs, replacement, redesign, or repositioning of equipment and facilities; startup activities; and quality assurance and quality control activities.

(3) "Operation" includes, but is not limited to, activities related to decisions affecting the timing and nature of the use of the plant; dispatch and control activities and decisions; and plant operation, fuel loading, and maintenance.

(4) "Error" includes, but is not limited to, any action or direction which causes an avoidable (i) increase in the time required to bring the plant to full commercial operation, (ii) change in the number or types of personnel or firms required to bring the plant to full commercial operation, (iii) increase in the number of worker hours required to complete any portion of the plant construction project, or (iv) change of equipment, configuration, design, schedule, or program.

(5) "Omission" includes, but is not limited to, any failure to act or to provide direction which causes an avoidable (i) increase in the time required to bring the plant to full commercial operation, (ii) change in the number or types of personnel or firms required to bring the plant to full commercial operation, (iii) increase in the number of worker hours required to complete any portion of the plant construction project, or (iv) change of equipment, configuration, design, schedule, or program.

III. THE COMMISSION KNOWS WHAT "PRUDENT" AND "REASONABLE" MEAN.

The standards which the Commission uses in assessing a utility's decisionmaking are well understood, but perhaps never more exhaustively summarized than in D.05-08-037[16] evaluating SDG&E's response to the 2003 wildfires. As with the SONGS outage, the tumultuous circumstances were fraught with public safety concerns. The firestorm was the largest disaster of its type ever to occur in California. Nearly 400,000 acres were burned, 16 lives lost, and more than 2,400 homes destroyed in San Diego County alone. SDG&E experienced severe damage to its infrastructure with approximately 3,200 power poles, 700 spans of wire, 400 transformers and more than 100 other pieces of related equipment damaged and needing to be replaced.

> *The Commission's standard[17] in a reasonableness review of managerial action is settled. In a reasonableness review of the 2003 Wildfires, and consistent with previous statements of the standard, SDG&E should be held to the following standard:*
>
> > *Utilities are held to a standard of reasonableness based upon the facts that are known or should be known at the time.*
>
> *While this reasonableness standard can be clarified through the adoption of guidelines, the utilities should be aware that guidelines are only advisory in nature and do not relieve the utility of its burden to show that its actions were reasonable in light of circumstances existent at the time. Whatever guidelines are in place, the utility always will be required to demonstrate that its actions are reasonable through clear and convincing evidence.[18]*
>
> *Thus, the reasonableness of a particular management action depends on what the utility knew or should have known at the time that the managerial decision was made, not how the decision holds up in light of future developments. The Commission has affirmed this standard of review in numerous decisions over many years.*

[16] D.05-08-037, pp. 4 – 5.
[17] *Id.,* citing D.02-08-064.
[18] *Id.,* citing D.88-03-036.

The term 'reasonable and prudent' means that at a particular time any of the practices, methods, and acts engaged in by a utility follows the exercise of reasonable judgment in light of facts known or which should have been known at the time the decision was made. The act or decision is expected by the utility to accomplish the desired result at the lowest reasonable cost consistent with good utility practices. Good utility practices are based upon cost effectiveness, reliability, safety, and expedition.

> *A 'reasonable and prudent' act is not limited to the optimum practice, method, or act to the exclusion of all others, but rather encompasses a spectrum of possible practices, methods, or acts consistent with the utility system needs, the interest of the ratepayers and the requirements of governmental agencies of competent jurisdiction.*[19]

The standard of reasonableness does not derive from the consequences of managerial action, but the soundness of the utility's decision-making process that led to the decision and the consequences:

> *Thus, a decision may be found to be reasonable and prudent if the utility shows that its decision making process was sound, that its managers considered a range of possible options in light of information that was or should have been available to them, and that its managers decided on a course of action that fell within the bounds of reasonableness, even if it turns out not to have led to the best possible outcome. As we have previously stated, the action selected should logically be expected, at the time the decision is made, to accomplish the desired result at the lowest reasonable cost consistent with good utility practices.*[20]

The Commission has noted that this standard can prove difficult to apply:

> *The reasonable and prudent act is not limited to the optimum act, but includes a spectrum of possible acts consistent with the utility system need, the interest of the ratepayers, and the requirements of governmental agencies of competent jurisdiction.*[21]

And:

> *The burden rests heavily upon a utility to prove with clear and convincing evidence, that it is entitled to the requested rate relief and not upon the Commission, its staff, or any interested party to prove the contrary*[22]

[19] *Id.,* citing D.87-06-021.
[20] *Id.,* citing D.89-02-074.
[21] *Id.,* citing D.90-09-088 as "based on language in D.87-06-021, and quoted with approval in D.98-09-040."
[22] *Id.*

Thus, although the utility need not show that it has undertaken the optimal act, it must show that its course of action was reasonable and that the utility took care in making its decision.

As discussed in greater detail below, based on Edison's proffered evidence of what it knew, or should have known, about the condition of the Unit 2 and Unit 3 steam generators in the immediate aftermath of the January 31, 2012 tube leak, it is impossible to characterize the managerial decision making as sound, logical, reasonable, or prudent. Edison's conduct fell so far short of "lowest reasonable cost consistent with good utility practices" as to be reckless, let alone "consistent with the utility system need, the interest of the ratepayers, and the requirements of governmental agencies of competent jurisdiction."

IV. EDISON FAILS EVEN THE LESSER STANDARD OF "PREPONDERANCE OF THE EVIDENCE" BUT WHY RESORT TO A DILUTED BURDEN OF PROOF?

Aware that the Commission has articulated a preference for the weaker "preponderance of evidence" standard since the Edison GRC in 2009,[23] A4NR joined in I.12-10-

[23] In a single paragraph, D.09-03-025 changed decades of CPUC practice in applying the "clear and convincing evidence" standard in rate cases, explaining lamely at p. 22: *"With the burden of proof placed on the applicant in rate cases, the Commission has held that the standard of proof the applicant must meet is that of a preponderance of evidence, which the Commission has, at times, incorrectly referred to as 'clear and convincing' evidence. Evidence Code 190 defines proof as the establishment by evidence of a "requisite degree of belief." We have analyzed the record in this proceeding within these parameters."* Curiously, and with uncertain ramification for SONGS, this conscious weakening of the evidentiary standard was not applied to contract administration reviewed through Edison's ERRA filing the next year: *"We expect utility contract administration to be active, and require an affirmative showing in ERRA filings that meets the utility's burden of proof by presentation of clear and convincing evidence. This responsibility applies to all contract terms, as necessary for the utility to carry its burden of proof."* D.10-06-004, p. 7.

013 fully cognizant that this diminished evidentiary standard would apply.[24] Although Edison's abject failure during five days of evidentiary hearings to satisfy even this reduced requirement has rendered the Commission's choice of standard moot in I.12-10-013, the utility's slipshod approach to attempting to satisfy ***any*** burden of proof has caused A4NR to rethink its willingness to acquiesce in the debasement of an earlier regulatory requirement. The Commission's tortured rationalizations in decisions over the past several years for making this discretionary choice are circular and distasteful:

- *The Commission also indicated that this standard was incorrectly referred to as 'clear and convincing' in a number of previous decisions. TURN and DRA indicate that the clear and convincing standard should be affirmed. However, by principally citing previous decisions where the term 'clear and convincing' was used and where the Commission has since stated that such characterization was incorrect, TURN and DRA have not provided sufficient reason for reversing the latest decision on this matter.*[25]

- *We have frequently adopted the 'clear and convincing' standard in general rate cases, but as the Decision notes in a footnote, it can be unclear whether the Commission means 'clear and convincing' in a lay sense, or is actually adopting the more technical 'clear and convincing' standard.*[26]

- *Regardless of whether there is waiver or not, there is no legal requirement that the standard must be 'clear and convincing evidence' standard. In fact, we have wide latitude to determine what standards should be used in our proceedings. 'Subject to statute and due process, the Commission may establish its own procedures.' (Cal.Const., art. XII, §2).) This has been affirmed by the California Supreme Court, which has held there 'is …a strong presumption of the correctness of the findings and conclusions of the Commission which may choose its own criteria or method of arriving at its decision, even if irregular, provided unreasonableness is not 'clearly established… .' (Pacific Telephone and Telegraph Co. v. Public Utilities Commission (1965) 62 Cal.2d 634, 647.) In light of*

[24] A4NR Motion for Party Status, December 7, 2012, at p. 1 paraphrased the Commission's language in D. 12-11-051, the most recent Edison GRC: *"Because the OII is a ratesetting matter, SCE has the burden of affirmatively establishing by a preponderance of the evidence that its actions have been reasonable and that it is entitled to recover its expenditures as just and reasonable costs necessary for safe and reliable service. No party has the legal burden of proving the unreasonableness of SCE's actions, although A4NR expects to do so."*

[25] D.11-05-018, p. 34.

[26] D.09-07-024, p. 2.

this, it is for the Commission to decide what standard of proof applies to the instant proceeding, unless there is a law to the contrary, which there is not.[27]

- *TURN has failed to show by clear and convincing evidence that President Peevey has an unalterably closed mind regarding the outcome of the application. Therefore, President Peevey does not need to remove himself from the proceeding.*[28]

A4NR strongly doubts that over a period of several decades the assorted Commissioners, Administrative Law Judges, CPUC attorneys, utilities and other parties represented by counsel all failed to distinguish between the "lay" meaning of the phrase "clear and convincing" and the "technical" meaning associated with the "clear and convincing" evidentiary standard. Nor is there a clear line of reasoning that the Commission of recent years has articulated that would explain when the less stringent "preponderance" standard should apply and when it should not. A4NR concedes the Commission's legal authority to select the appropriate standard to apply to any particular case,[29] and acknowledges that consistency is not required.

But reflecting upon the indifference with which Edison approached its burden of proof in Phase 1, A4NR sees a clear correlation with a debased evidentiary standard. Believing itself

[27] D.11-12-023, p. 2.
[28] D.12-12-031, p. 37.
[29] The Fourth District Court of Appeal came to just that decision in denying a petition for writ of review of the Commission's use of the "preponderance" standard in approving the Sunrise Powerlink CPCN. Bizarrely, the Commission made the argument that *"it had limited application of the clear and convincing standard to 'general rate cases and reasonableness reviews which are specialized proceedings.' " Utility Consumers' Action Network v. Public Utilities Com'n of State of California* (2010)187 Cal.App.4th 688, 698. The decision added the useful dicta: *"The difference between the two standards of proof is easy to articulate, but often difficult to apply. Witkin states that "[t]he phrase 'preponderance of evidence' is usually defined in terms of probability of truth, e.g., 'such evidence as, when weighed with that opposed to it, has more convincing force and the greater probability of truth.' " (1 Witkin, Cal. Evidence (4th ed. 2000) Burden of Proof and Presumptions, § 35, p. 184; see CACI No. 200 ["more likely true than not true"].) In contrast, the phrase "clear and convincing" is defined as " 'clear, explicit and unequivocal, 'so clear as to leave no substantial doubt,' and sufficiently strong to command the unhesitating assent of every reasonable mind.' [Citation.] Otherwise stated, a preponderance calls for probability, while clear and convincing proof demands a high probability." (1 Witkin, Cal. Evidence, supra, Burden of Proof *699 and Presumptions, § 38, p. 187; see CACI No. 201 ["it is highly probable that the fact is true"].)" Id.,* pp. 698 – 699.

entitled to a presumption of the reasonableness of its conduct, Edison's exhibits and witnesses provided a lackluster showing, at times willfully misleading, that was ultimately contradicted in several material ways by the stunning post-hearings plant closure announcement by Edison International CEO Ted Craver. The laxity which the Commission has allowed to creep into its ad hoc selection of burden of proof standards has been accompanied by a degraded regulatory process. A consumer-oriented Commission would want this to change.

While Edison's debilitated effort renders the choice of standard of no consequence in Phase 1, A4NR encourages the Commission to apply the "clear and convincing" requirement. There should be no substantial doubt, and the unhesitating consent of every reasonable mind, if a utility owner is to be financially excused from the sudden demise of its most valuable generation asset -- jeopardizing an entire region's electric reliability, failing to devise a coherent asset recovery strategy, and all the while charging its customers twice for the electricity the asset was supposed to generate.

V. THE UNINFORMED AND UNINFORMATIVE MR. PEREZ.

Why Edison elected to put forward Mr. Jose Luis Perez, Principal Manager of Generation Regulatory[30], as the principal witness for most of its prepared testimony is likely to remain one of the unsolved mysteries associated with SONGS. He was unable to answer many questions concerning the written exhibits he sponsored, apart from admissions of what Edison had not

[30] The seven-member organization which Mr. Perez heads had previously been known, up until shortly before the Phase 1 hearings, as Generation Planning and Strategy, but the renaming did not reflect any change in the unit's responsibilities. Transcript, p. 470.

done in 2012 and inadvertent revelations of the peculiarly inscrutable manner in which "incremental SGRP expenses" had been commingled on a month-to-month basis with "base O&M."[31] He stated that Edison's policy is to select the appropriate witness by determining who is the most knowledgeable about the content of the testimony.[32] On the critical questions that would enable the Commission to evaluate the reasonableness of Edison's responses to what it learned from its initial inspections of the four steam generators, however, he was useless.

Despite his prepared testimony describing Edison's adherence to Electric Power Research Institute ("EPRI") guidelines for "a comprehensive, performance-based approach to managing SG performance"[33] and execution of a degradation assessment during refueling outage ("RFO"),[34] Mr. Perez was ignorant concerning:

- which other steam generators were used to establish expectations of tube degradation before the Unit 2 RFO.[35] He later supplemented his testimony with a list of 14 units,[36] but could not explain how they had been selected or why they were different from the four units used in Edison's root cause evaluation ("RCE") to define comparable industry operating experience;[37]

[31] *Id.*, pp. 624, 633 – 634. The unorthodox nature of this accounting was reinforced by a candid exchange between Edison witness Douglas Snow and ALJ Darling in which Mr. Snow testified that he didn't make the decision, he wasn't aware of any options considered, and he did not know what the reasoning behind the decision was. *Id.*, pp. 1004 – 1006.
[32] *Id.,* p. 474.
[33] SCE-04, p. 79.
[34] *Id.,* p. 81.
[35] Transcript, p. 300.
[36] *Id.,* pp. 687 – 688.
[37] *Id.,* pp. 696 – 697. A4NR-1 is Edison's response to a data request concerning the basis for the stated assumptions about industry operating experience contained in Edison's root cause evaluation concerning tube-to-AVB and tube-to-TSP wear: *"Question 27: At page 14 of SCE's Unit 3 Root Cause Evaluation, the following statement is made regarding tube-to-AVB and tube-to-TSP wear in both Unit 2 and Unit 3: 'The wear rate from this mechanism [i.e., turbulence induced vibration] is lower than that associated with FEI and, based on industry OE [i.e., operating experience], decreases over time.' Please identify the specific steam generators at other nuclear*

- whether Edison makes projections of tube wear beyond the time horizon of the next operating cycle, although he said that it had been done in the past;[38]
- what level of wear the EPRI guidelines projected for the A690 TT tubes like those in the Unit 2 and Unit 3 steam generators;[39]
- what level of tube wear Edison expected to find prior to commencement of its inspections, beyond his sense that it would be similar to other new steam generators at their first outage;[40]
- whether this expectation would be consistent with the EPRI guidelines for A690 TT tubes of 5 tube failures per steam generator at end of life.[41] He later supplemented his testimony to say that Edison expected not to plug any tubes during the Unit 2 RFO, but that it had directed the vendor performing the RFO inspection to be prepared to plug 10 tubes;[42]

Mr. Perez testified that he did not know whether any long-term cost effectiveness analysis had been performed to determine the repair path to take with respect to either Unit 2 or Unit 3,[43] or who would know.[44] Similarly, he said that Edison had not performed any

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power plants which SCE was referring to in making this statement. Response to Question 27: Calvert Cliffs, St. Lucie, Waterford, and the SONGS Original Steam Generators (OSGs).” Of these four, the only unit included in Mr. Perez’s list is Waterford.

[38] *Id.,* pp. 301-302

[39] *Id.,* p. 303.

[40] *Id.,* p. 304.

[41] *Id.,* pp. 304 – 305. The EPRI projections place end of life at 51.00 EFPY (effective full-power years). A4NR-3.

[42] *Id.,* pp. 688 – 689.

[43] *Id.,* pp. 324, 326 – 327.

[44] *Id.,* p. 522.

"detailed study" of the decline in costs if SONGS were permanently shut down;[45] that he had not "performed any study with respect to permanently shutting San Onofre in the last years worth of recorded cost for 2012;"[46] that there was no way for him to know if anyone else had because "(t)here is a lot of people there in the office of Edison;"[47] but that he was "unaware" of any such study or analysis done by anyone at Edison. [48] He also testified that he didn't know if Edison was seeking recovery for each of the different types of tube damage in its NEIL claim;[49] that he didn't know why Edison's "conceptual preliminary" assessment of converting either Unit 2 or Unit 3 to a synchronous condenser has not proceeded further;[50] that Edison could not segregate safety-related costs from other SONGS costs, despite the Commission's direction six months earlier in D.12-11-051 to do so;[51] that Edison couldn't identify how much of the $130.1 million identified in SCE-4 to investigate causes of tube-to-tube wear could be allocated to Unit 2 versus Unit 3;[52] that when Edison placed Unit 3 in a "preservation mode", it anticipated a restart in the fourth quarter of 2013[53] despite no amount being budgeted for doing so.[54]

Mr. Perez clarified his prepared testimony that Unit 3 was placed in an extended shutdown pending development of an acceptable repair plan by Mitsubishi Heavy Industries ("MHI")[55] with the acknowledgment,

[45] *Id.,* p. 282.
[46] *Id.,* p. 283.
[47] *Id.,* p. 284.
[48] *Id.,* pp. 283 – 284.
[49] *Id.,* pp. 331 – 332.
[50] *Id.,* pp. 329 – 330.
[51] *Id.,* pp. 378 – 381.
[52] *Id.,* pp. 417 – 419. Mr. Perez ultimately supplemented his testimony to attribute $36 million for tube plugging in Unit 2 and $35 million for tube plugging in Unit 3. *Id.,* pp. 1247 – 1248.
[53] *Id.,* pp. 573 – 574.
[54] *Id.,* p. 341.
[55] SCE-4, p.77.

Think all of the activities including repairs to the plant and operation of the plant is ultimately Edison's responsibility.[56]

VI. THE EXTEMPORANEOUS RAMBLINGS OF MR. PALMISANO.

Mr. Thomas Palmisano, Vice President of Engineering Projects and Site Support at SONGS, was enlisted midway through the evidentiary hearings after Mr. Perez proved incapable of answering questions concerning the late 2012 Edison-MHI correspondence regarding the absence of a long-term repair or replacement plan for the Unit 2 and Unit 3 steam generators. Having joined Edison in December 2011, shortly before the SONGS outages, Mr. Palmisano described his responsibilities as:

> *With respect to the outages with the start of the planned refueling outage for Unit 2 for all the engineering support and implementation of a number of the projects for the Unit 2 refueling outage, and then with the tube leak in Unit 3 and the subsequent steam generator working on both units, I've been responsible for the engineering piece of the restart activities for Unit 2, the analysis of the causes in Unit 2 and Unit 3. And the long-term steam generator team is also my responsibility for the technical work.*[57]

Untethered to any prepared testimony of his own, in addition to answering questions about the SCE-10 timeline and the heated exchanges between Edison and MHI in SCE-15, SCE-16, SCE-17, SCE 20, SCE-21, SCE-22, SCE-23, and SCE-24, Mr. Palmisano was willing to opine on a variety of questions touching directly on the steps Edison took in 2012 to formulate its approach to the sudden inoperability of SONGS. In the course of doing so, he suggested:

[56] Transcript, p. 333.
[57] *Id.,* p. 707.

- he wasn't persuaded tube-to-tube wear was actually present in Unit 2. "Tube-to-tube wear occurred in Unit 3. Did not occur in Unit 2."[58]
- well, maybe a little bit. "Tube-to-tube wear occurred in Unit 3. Slight indication in Unit 2."[59]
- or certainly the potential for it. "We identified two tubes in Unit 2 that had signs of tube-to-tube wear much less extensive but certainly told us the potential existed for Unit 2."[60]
- but it's pretty hard to detect. "We found two tubes with the early signs potentially of tube-to-tube wear. And I say 'potentially' because this was right at the limit of the ability to detect it."[61]
- and maybe it's not real. "It was sized around 14 percent through wall. There was some thinking it maybe only 7 percent. The equipment is good at about 15 percent limits. So we're right at the limit of the ability to say it's real or not real."[62]
- in fact, what's the big deal? "It is more likely that Unit 2 will be returned to service [compared to Unit 3] because it has not been damaged."[63]

In order to reach this conclusion about Unit 2's damage-free condition, it is unavoidably necessary to look past the extraordinary amounts of non-tube-to-tube wear discovered in Unit

[58] *Id.,* p. 898.
[59] *Id.*
[60] *Id.,* p. 769.
[61] *Id.,* p. 852.
[62] *Id.,* pp. 852 – 853.
[63] *Id.,* p. 970. This statement was made on May 16, 2017, three weeks before Edison International CEO Ted Craver called President Peevey to inform him of the decision to permanently close SONGS. Despite Mr. Craver's mention of this call during his June 7, 2013 teleconferences with investment analysts and reporters, A4NR notes that Edison has yet to file the Notice of Ex Parte Contact required by Commission Rules 8.1 thru 8.4.

2 during the RFO inspections. As indicated by Edison's own November 28, 2012 Proof of Loss filed with NEIL,[64]

> *The following chart summarizes our current understanding of the extent of the damage to the Unit 2 steam generators, which resulted from components (tubes and tube supports) unexpectedly coming in contact with one another:*

Type of Contact Causing Damage	***Unit 2 (# of tubes impacted by a given type of contact)***
Tube-to-Tube	*2 tubes*
Tube-to-Anti-Vibration Bar	*1399 tubes*
Tube-to-Tube Support Plate	*299 tubes*
Tube-to-Retainer Bar	*6 tubes*

Mr. Palmisano acknowledged that this "other type of wear is important and not acceptable for the longer term"[65] but believed that they, "with respect to Unit 2 especially, are manageable and the plant can be operated. We have industry experience on how to monitor that and trend that."[66] The Commission must place this extraordinary claim in context. The

[64] A4NR-11, p. 2.
[65] Transcript, p. 838.
[66] *Id.,* pp. 772 – 773. Despite his confidence about monitoring and trending, Mr. Palmisano was unable to explain why Edison's review of third refueling cycle inspection results from St. Lucie Unit 2 had slipped from September 2012 to May 2013 or whether it had been completed. The Unit 2 root cause evaluation had specified this review of St Lucie Unit 2 as an important comparison for AVB wear rates at SONGS. *Id.,* pp. 721 – 723.

NRC Atomic Safety and Licensing Board ("ASLB") May 13, 2013 Decision LBP-13-07 characterizes Edison's Unit 2 restart plan as a "test or experiment"[67] and observes:

> *SCE's experience with SONGS Unit 3 forcefully demonstrates that the current analysis used to support the maintenance of steam generator tube integrity is inadequate for the replacement steam generators. More specifically, the current analysis underlying tube inspections to prevent maximum thinning is inadequate to assure tube integrity in light of the accelerated wear mechanism that might occur in this type of steam generator, and that did occur in the Unit 3 steam generators.*[68]

Moreover, as described in the so-called Hirsch Report,[69] about which ASLB Decision LB-13-07 pointedly notes Edison "does not identify particular factual errors:"[70]

> • *The median number of steam generators tubes nationally showing wear after one cycle of operation is – FOUR. San Onofre Unit 2 had 1595 damaged tubes, approximately 400 times the median; San Onofre Unit 3 had 1806.*
>
> • *The median number of indications of wear on steam generator tubes nationally after one cycle of operation is – FOUR. San Onofre Unit 2 had 4271, greater than a thousand times more. San Onofre Unit 3 had 10,284.*
>
> • *The median number of steam generator tubes that were plugged after one cycle of operation is – ZERO. San Onofre Unit 2 had 510; Unit 3 had 807.*[71]

Mr. Palmisano's assurances notwithstanding, these stark facts raise obvious questions about the prudence of Edison's peremptory dismissal in its root cause evaluations of any tube

[67] LBP-13-07, pp. 33 – 37. The ASLB found this to be one of three independent reasons for determining that the Unit 2 70% power restart plan required a license amendment.
[68] *Id.,* p. 36.
[69] Daniel Hirsch and Dorah Shuey, "FAR OUTSIDE THE NORM: The San Onofre Nuclear Plant's Steam Generator Problems in the Context of the National Experience with Replacement Steam Generators," September 12, 2012, commissioned by U.S. Senator Barbara Boxer, Chair of the Senate Environment and Public Works Committee, and admitted into the Senate record in a joint hearing on September 12, 2012, and placed into the record of the NRC briefing on steam generator problems held on February 7, 2013.
[70] LBP-13-07, p. 4, footnote 9.
[71] Hirsch Report, p. i.

wear other than the previously unencountered tube-to-tube contact attributed to in-plane vibration from fluid elastic instability ("FEI"). Despite its extraordinary number of wear indications at both SONGS units, the more common out-of-plane vibration attributed to "turbulence induced vibration" was not considered as worrisome in the causal analyses for which Mr. Palmisano acknowledged responsibility. As Edison's discussion of this phenomenon in all four steam generators put it:

> *… the wear is caused by turbulence induced vibration. The wear rate from this mechanism is lower than that associated with FEI and, based on industry OE* [i.e., operating experience]*, decreases over time…**<u>These tubes do not require additional causal analysis</u>**.*[72] (emphasis added by A4NR)

Similarly, with respect to tube-to-support-plate wear, Edison was equally cavalier: because this wear is attributed to the mundane "turbulence induced vibration" which is postulated to decrease over time, "**<u>(n)o additional causal analysis will be performed</u>** for tube-to-TSP wear..."[73] (emphasis added by A4NR) The suggested substitute for this refusal to perform causal analysis: "increased monitoring of tube wear during mid-cycle outages."[74]

If the ASLB found this nonchalance troublesome, so should the Commission.

Mr. Palmisano couldn't draw any connection between the 70% power restart plan for Unit 2 and the long-term plans for either Unit 2 or Unit 3,[75] assigning responsibility for any long-

[72] SCE's "Root Cause Evaluation: Unit 3 Steam Generator Tube Leak and Tube-to-tube Wear," Condition Report: 201836127, Revision 0, May 7, 2012, p. 14.
[73] *Id.*
[74] *Id.*
[75] Without elaborating, he did say "We also believe we could restart Unit 3 at this similar power level. It will take more time and more work, however." Transcript, p. 853.

term plan to MHI (and not developing other options) apparently as part of a warranty claim strategy:

> *As far as the long term repair, we did not develop other options. We have been working with MHI as the warranty part – the party responsible under the warranty.*[76]

Nor was it clear from his testimony what role long-term thinking played in Edison's operational decisions in 2012:

> *… when you think of the time frame in July, we had formed a long-term repair team under me to separate the activities from restart of Unit 2 and restart of Unit 3 in the short term from the long-term warranty repair of both units.*
>
> ***
>
> *Q: Why did it take that long after the outage? That's some six months after the incident at Unit 3 to set up that team.*
>
> *A: The timing may be misleading to you. We were working on both short- and long-term options from a fairly early on, probably in the March time frame, as we understood the nature of the Unit 3 steam generator wear.*
>
> *I determined by June to July that I needed to separate the groups to put the correct focus on the confirmatory action letter, the short-term restart, separating the focus from the long-term repairs.*
>
> *Q: And what had been the long-term activity with regard to Unit 3 prior to establishment of that team?*
>
> *A: The activity was largely inspection and understanding of the current status of Unit 3 and the cause of the tube damage in Unit 3.*[77]

If the pre-July long-term activities performed by Mr. Palmisano's staff seem murky, they

[76] *Id.,* p. 758.

[77] *Id.,* pp. 713 – 714. As Mr. Palmisano testified, the NRC had conditioned the restart of Unit 2 on Edison's understanding of the causes of the damage to Unit 3 and taking corrective actions to prevent a recurrence in a restarted Unit 2. *Id.,* p. 909.

got no clearer after the specific long-term team was established in July:

> *We staffed our group starting July 24 and considered options by Mitsubishi. We did searches of industry experience to help prepare ourselves to evaluate MHI's options. So we had some staff hours and layered expenditures that we spent in evaluating MHI's options and discussing things with MHI during the second half of the year.*[78]
>
> ***
>
> *Well, again, MHI is the one working on identifying and proposing the options. Edison's work has been to benchmark what others have done successfully so we can better judge MHI's proposals.*[79]

Mr. Palmisano admitted that Edison had not provided MHI with the criteria for what it expected from a long-term plan prior to July 27, 2012. He said these criteria had been provided in several meetings with MHI since then, and that his staff met with MHI on virtually a daily basis. These were informal meetings however, and the only "system used to keep track of things" was correspondence like the November 8, 2012 letter identified as SCE-24.[80] The furthest Edison went, by Mr. Palmisano's account, in actually initiating any long-term plan was to ask "several consultants such as AREVA or Westinghouse for ideas, suggestions on long-term plans and MHI was part of those discussions, listening to them."[81] But, these discussions were informal ("They may have provided PowerPoint slides but there were no meeting minutes per se."[82]) and Mr. Palmisano could not say whether any consultant costs would be attributed to his long-term group ("I'm not an accounting guy so I can't answer that.") or even estimate what dollar amounts might be involved.[83]

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[78] *Id.,* p. 758.
[79] *Id.,* pp. 762 – 763.
[80] *Id.,* pp. 926 – 927. Mr. Palmisano said there may have been some PowerPoint presentations from MHI prior to November 2012, but he did not know if there had been any written letter. *Id.,* p. 726.
[81] *Id.,* p. 942.
[82] *Id.,* pp. 942 – 943.
[83] *Id.*

In fact, based on Mr. Palmisano's testimony and the Edison-MHI correspondence in SCE-15, SCE-16, SCE-17, SCE 20, SCE-21, SCE-22, SCE-23, and SCE-24, it appears indisputable that Edison consciously limited its role to hectoring MHI to produce an acceptable[84] long-term plan to restore the Unit 2 and Unit 3 steam generators to their original condition.[85] "We told them they owe us. You know, they are responsible for a proposal for a permanent repair."[86] Edison acknowledged that an "acceptable" permanent repair might require several steps:

> *I think we made it pretty clear to MHI going back to SCE-24 with the four criteria what an acceptable repair was going to be. And if something didn't meet that and they proposed a multiple step repair, we would look at that and then decide what would be interim as opposed to permanent.*[87]

But Edison was emphatically clear that this "permanent" repair, even if delivered in "interim" steps, was completely separate from its Unit 2 low power restart proposal: "It has nothing to do with the 70 percent restart plan."[88]

This separation may be logical from the standpoint of pursuing a warranty claim, and A4NR has no desire – nor should the Commission – to insert itself between the two parties in the Edison – MHI arbitration process. But charging Edison and SDG&E's customers for the costs of an asset that is neither used nor useful while Edison plays out its arbitration strategy cannot be considered just and reasonable ratemaking under the California statutes.

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[84] *Id.,* pp. 729 – 730: "ultimately an option that is selected has to be acceptable to Southern California Edison."
[85] *Id.,* "Basically to restore it to original condition," p. 724; "We want to see the steam generators return to full capability," p. 737; "With respect to both units, we expect a comprehensive repair proposal that would restore the steam generators to full power for the full 40-year life," p. 738.
[86] *Id.,* p. 928.
[87] *Id.,* p. 731.
[88] *Id.,* p. 915.

Unsurprisingly, Mr. Palmisano reaffirmed that cost considerations did not factor into Edison's operational decisions in 2012:

- *My role was to lead the technical work related to both units, particularly the steam generators. I was not involved in any cost effective or cost analysis of options at that* [April 23, 2012] *point.*[89]
- *I am not aware of any analyses in that* [April 23, 2012] *time frame.*[90]
- *With respect to Unit 2 and start up and filing the confirmatory action letter, in 2012 cost was not factored into my knowledge in the discussion that is I was in.*[91]
- *That is correct. The cost was not a dominant factor.*[92]
- *I did not have discussions with him* [Chief Nuclear Officer Peter Dietrich] *about the cost of restarting Unit 2.*[93]
- *To my knowledge, we have not done a cost/benefit of a long-term repair or replacement plan...I would expect I would provide technical information to it...I'm not aware that analysis has been done but I would be, yeah.*[94]

VII. TED CRAVER'S EXTRAORDINARY JUNE 7, 2013 COST REVELATIONS.

Notwithstanding what Edison's witnesses told the Commission in I.12-10-013 about the absence of cost-effectiveness analyses, Edison International CEO Ted Craver's announcement less than three weeks after the evidentiary hearings that SONGS will be permanently shut down

[89] *Id.,* p. 771.
[90] *Id.*
[91] *Id.,* p. 951.
[92] Mr. Palmisano added that he was not familiar with any additional cost evaluations later in 2012 that led to or influenced expenditures in 2012 relative to the Unit 2 restart plan, nor was cost a factor in discussions with MHI his team held in 2012 regarding long-term options. *Id.,* pp. 955 – 956.
[93] *Id.,* p. 964.
[94] *Id.,* p. 944.

suggested that someone was looking at costs. As indicated in his prepared statement, posted on the Edison web site,

> *Once we understood the cause of the steam generator tube wear, and that we could mitigate it through operating Unit 2 at reduced power,* ***we had to determine if it was economical to do so.*** *As a regulated utility, we have an obligation to serve all customers in our service territory. Along with that requirement, is* ***an obligation to serve our customers in a cost effective manner.***
>
> ***We examined the costs of the alternatives to running SONGS,*** *including closing the plant and simply buying replacement power from the market, and shutting the plant and building replacement generation and transmission lines. The analysis showed that* ***even if Unit 3 never restarted****, and we were only able to run Unit 2 at 70% power for the remaining 9 years of the license period (that is, out to 2022), it was the least cost alternative. However, every day that SONGS is not running, is another day that we incur replacement power costs, and the costs of keeping the plant ready for restart. These readiness costs amount to about one million dollars a day, or approximately $30 million a month. Every day of delay in restarting Unit 2 also means there is one less day of operating this lower cost source of generation. So, at some point, with enough delay, there is a cross over point where operating Unit 2 is no longer less costly than the alternatives*
>
> *... In this case,* ***we believe we must be able to represent to our customers; to the public; and to the regulators; that we are pursuing the least cost alternative****.*[95] (emphases added by A4NR)

Mr. Craver elaborated on his remarks later that same day in a telephone press conference. His exchange with Eileen O'Grady of Reuters focused on the cost analysis:

> **Eileen O'Grady:**
>
> *Mr. Craver, you mentioned the double costs at San Onofre and the uncertain -- uncertainty about the timing of the restart for making this plant uneconomic or not having the nuclear advantage any longer by the end of the year. But actually, when is 70% -- how would your 70% plant have faired* (sic) *against that? Surely, operating at 70% for 5 months and not really knowing the future was also not really a good plan economically.*

[95] http://www.edison.com/files/EIX%20SONGS%20Update%20Call%20CEO%20Prepared%20Remarks%206-7-2013.pdf

Theodore F. Craver - Chairman, Chief Executive Officer and President:

Yes. Actually, the way we evaluated that was as part of the conservatism and baking in additional safety margin, we determined that we could stop the fluid elastic instability by running the unit at reduced power. The point of the 5 months was to be extra cautious on how long that we would actually run the plant before taking it down and reinspecting all of the tubes again to ensure that we were not having the fluid elastic instability reoccur. The intention, of course, would be once we went through that inspection that we would put the plant back in service and for some period of time, continue at a 70% power. I think, we had in our minds that perhaps that power to be moved up, that power level to be moved up over time. But when I made the comments about the -- ***evaluating the alternatives, we assumed Unit 3 would not operate*** *and that Unit 2 would operate at 70% power for the remaining license period. So that means out until 2022. And the total costs associated with that, without worrying about, in the analysis, how it might be dillied up between ratepayers, Mitsubishi and all the rest of the stuff, but just the total cost of that alternative was less than the total cost of the other principal alternative, which is to shut both units down and buy the power out of the market. So that --* ***when I made the comment in the investor call this morning, that was the way the analysis was done. So it did assume 70% power through each of the subsequent fuel cycles, all the way out to 2022. And it did assume Unit 3 would be shut down.*** *That was still less expensive than the alternatives. The problem is the longer the plant sits idle, waiting for a definitive yes-or-no answer, we're racking up, in a sense, double cost. We have the replacement power costs, but we also have the cost to keep the plant ready so that we could restart it when we got approval to do so. And that double cost ends up eroding that cost advantage over time, plus every day you delay, you have one less day that you can run the low-cost alternative. And so it creates a crossover point. And roughly speaking, that crossover point was at the end of the year.* ***So the evaluation became, okay, we know we're tripping away at the economic advantage every day that it delays*** *-- restart, what is the -- what is our view of the reality of getting through the approval process and all the kind of inevitable legal challenges, appeals, the emotions and what have you, even after the NRC staff would approve the unit restarting. And our conclusion was we couldn't get through all of those different components of the process by the end of the year. And in fact, it could very well be late into next year or even after that.* ***And that risk just wasn't worth continuing to push this thing forward and continue to rack up those costs.***[96] (emphases added by A4NR)

In determining whether Edison has met its burden of proof, the Commission should

[96] http://seekingalpha.com/article/1488572-edison-international-s-ceo-hosts-san-onofre-nuclear-generating-station-update-conference-transcript?page=2&p=qanda&l=last

ponder several questions about the cost evaluation Mr. Craver claims[97] was performed:

- why was this analysis not placed in the evidentiary record of Phase 1, where the credibility of its underlying assumptions could be evaluated and its conclusions better understood?
- why were Edison's witnesses in Phase 1 allowed to testify that no such cost assessments were performed in 2012?
- does the assumption that Unit 3 would not operate corroborate the impression created by A4NR-18[98] that Edison had effectively abandoned Unit 3?

[97] A4NR accepts the veracity of Mr. Craver's statement at face value, but notes that an earlier challenge in C.13-02-013 to the accuracy of his statements to investment analysts about the SONGS steam generators has resulted in material changes to Edison's financial disclosures regarding use of the Handy Whitman Index to escalate costs.

[98] A4NR-18 is a transcript excerpt from the July 31, 2012 Edison International quarterly earnings call which contains the following exchange:

Jonathan P. Arnold - Deutsche Bank AG, Research Division
Okay. Is there anything else you can do for us to sort of try and frame what your -- the terminology, I think you used extensive as the possible additional repair work that might be needed on Unit 3 could mean at this exit of multiples of Unit 2 or just moderately more. Anything you can -- any additional framing you can put on that?

Theodore F. Craver - Chairman, Chief Executive Officer and President
Jonathan, this is Ted. Just a quick part on that. I think the main thing we're really trying to signal there is you -- we probably can't address entirely the issue of keeping this phenomena, this fluid elastic instability phenomenon from reocurring by simply operating at reduced power in the case of Unit 3. So what we're really trying to signal is it needs more than reduced power types of operations. So that's really what we're referring to. We haven't gone far enough down the road at this point with Unit 3 to really come up with anything more definitive than that in terms of exactly what would be required to restore it.

Jonathan P. Arnold - Deutsche Bank AG, Research Division
Okay. Can I just try one other thing on this topic, Ted, is there any, when you -- as you analyze these scenarios around what's the best deal for customers or the costs you're looking at, is there any question that fixing it is the right option?

Theodore F. Craver - Chairman, Chief Executive Officer and President
Well, I think at this stage, you'd expect us to have all the options on the table. At this juncture, we're just trying to do this in the most disciplined, systematic kind of step-by-step approach. And these are complex technical issues. It's a first-of-a-kind type of issue that we're dealing with, meaning this tube-to-tube wear. So we're just taking it one step at a time without trying to get too far ahead of ourselves. But yes, at this point, of course, all options are on the table...

- to what extent did this cost analysis inform Edison's operational decisions in 2012?
- if the cost analysis did not play a role in 2012 operational decision making, why didn't it?

VIII. CONCLUSION.

The fundamental questions in front of the Commission in Phase 1 are clear:

- Has Edison affirmatively proven that, based on what it knew or should have known at the time, its 2012 SONGS-related decisions were reasonable at the time they were made?
- Has Edison affirmatively proven that its 2012 SONGS-related practices, methods, and acts followed the exercise of reasonable judgment in light of the facts known or which should have been known at the time its decisions were made?
- Has Edison affirmatively proven that its 2012 SONGS-related acts and decisions were each expected by the utility to accomplish the desired result at the lowest reasonable cost consistent with good utility practices based upon cost effectiveness, reliability, safety, and expedition?
- Has Edison affirmatively proven that its 2012 SONGS-related practices, methods, and acts were consistent with the utility system needs, the interest of the ratepayers and the requirements of governmental agencies of competent jurisdiction?

- Has Edison affirmatively proven that its 2012 SONGS-related decision making process was sound, that its managers considered a range of possible options in light of the information that was or should have been available to them, and that its managers decided on a course of action that fell within the bounds of reasonableness and should have logically been expected, at the time the decisions were made, to accomplish the desired result at the lowest reasonable cost consistent with good utility practices?
- Has Edison affirmatively proven that even if it did not undertake the optimal act, its chosen course of action was reasonable and that the utility took care in making its decision?

Anyone familiar with the threadbare showings by Edison in Phase 1 knows that none of these questions can be answered in the affirmative, whether the standard applied is "preponderance of the evidence" or "clear and convincing evidence" or even, more bluntly, the "red face" test. The Commission should follow the commitment made in the earlier Ruling on Legal Issues[99] and order immediate equalizing refunds to ratepayers of the overcollection of the Edison's and SDG&E's 2012 SONGS revenue requirements.

Respectfully submitted,

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[99] Ruling on Legal Questions, Ordering Paragraph 4, p. 18.

Date: June 28, 2013

Attorney for
ALLIANCE FOR NUCLEAR RESPONSIBILITY