UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	Docket Nos. 50-361-CAL
	)	& 50-362-CAL
SOUTHERN CALIFORNIA EDISON CO.	)	
	)	ASLBP No. 13-924-01-CAL-BD01
(San Onofre Nuclear Generating Station,	)	
Units 2 and 3)	)	February 13, 2013
	)	

REPLY BRIEF OF PETITIONER FRIENDS OF THE EARTH

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I. INTRODUCTION

On January 30, 2013, the Commission tasked the Atomic Safety and Licensing Board (ASLB or Board) with determining: (1) whether the process set into motion by the March 27, 2012 Confirmatory Action Letter (CAL) constitutes a *de facto* license amendment proceeding; and, if so, (2) whether Friends of the Earth's (FoE) June 18, 2012 Petition to Intervene meets the standing and contention admissibility requirements of 10 C.F.R. § 2.309.[1] This Reply Brief is submitted in response to Answering Briefs filed by Southern California Edison (SCE or Edison), the NRC Staff (Staff), and an *amicus* brief submitted by the Nuclear Energy Institute (NEI).[2]

II. SUMMARY OF REPLY

Because SCE has not shown that it can meet the structural integrity performance criteria required by the applicable Technical Specification (TS) in its existing license, San Onofre must amend its current license in order to operate Unit 2. SCE refuses to state in its Answering Brief whether Unit 2 can be operated within the requirements of its license at 70% power. SCE has

[1] The Natural Resources Defense Council (NRDC) submitted an *amicus* brief in support of FoE.
[2] FoE has filed an opposition to the motion of NEI to be admitted as *amicus curiae*. To the extent that all three of these parties take a common position, we will refer to them as the "opposing parties."

not demonstrated that it can meet the tube performance criteria in its technical specification for Unit 2 at 100% power, as required in its operating license. Based on these facts the Board must conclude that Unit 2 cannot meet the terms of its preexisting license. To change the applicable TS to limit this requirement to 70% power, SCE must seek a license amendment. Since Unit 2 cannot be restarted without a license amendment, SCE's request to restart necessarily triggers a license amendment proceeding.

In its charge to the Board, the Commission made clear that the Board is to determine whether the CAL and resultant process—such as SCE's Restart Plan[3]—constitute a license amendment proceeding. The Board was subsequently equally clear to the parties that it is the process—not the CAL itself—that is being examined. The opposing parties all misperceive this charge and spend much of their extraordinarily voluminous briefs arguing that a CAL alone is not a license amendment.

In its Opening Brief, FoE demonstrated that under the applicable precedent the CAL process is a *de facto* license amendment. Applicable case law from the NRC and the federal courts establishes that when a licensee seeks authority in excess of that provided for by its existing license, it must obtain a license amendment. Edison's request to operate at 70% power requires authority to operate without meeting the TS, and thus seeks authority in excess of its license.

FoE also showed that under 10 C.F.R. § 50.59, the proposal to restart Unit 2 required a license amendment because it is a "change, test, or experiment" that meets one or more of the criteria of 10 C.F.R. § 50.59(c)(2). The attempts by the opposing parties to declare section 50.59

[3] SCE's "Restart Plan" refers to SCE's October 3, 2012 response to the NRC regarding SONGS Unit 2 and the fulfillment of the corresponding actions identified in the March 27 CAL, including all of the enclosures and attachments. These documents are provided in ADAMS Package No. ML122850320.

off-limits depend upon an erroneously constricted interpretation of the Commission's charge to the Board.

In its Opening Brief, FoE demonstrated that it had standing; that its petition was timely; and that its petition was admissible. SCE's and the Staff's criticisms on these points are ineffectual. It is arguable whether FoE should bear the burden of production under these circumstances. Nevertheless, to the extent FoE is assigned this burden, it has demonstrated it can satisfy it.[4] Having met the burden of production, under NRC precedent the burden of persuasion shifts to SCE to show it is operating within its license.[5]

The underlying issue in this proceeding is whether the ASLB and the public will have a role in evaluating the risks created by operating Unit 2 in its current condition to the health and safety of more than eight million residents of southern California. SCE and the Staff ask this Board to treat this as an enforcement matter to be settled outside the public eye by those two parties. FoE seeks to give the public, and an ASLB, the opportunity to have a role in determining whether and under what conditions the steam generators at San Onofre can be restarted.

III. BECAUSE SCE HAS NOT SHOWN THAT IT CAN MEET THE STRUCTURAL INTEGRITY PERFORMANCE CRITERIA REQUIRED BY UNIT 2'S TECHNICAL SPECIFICATION, SCE MUST AMEND ITS CURRENT LICENSE IN ORDER TO OPERATE

As argued in their opening and amicus briefs, respectively, FOE[6] and NRDC[7] assert that SCE's proposal to operate Unit 2 at 70% power instead of 100% (the full power limit in its

[4] FoE Brief at 40 (stating, "In sum, to the extent that the Board finds it appropriate to assign the typical intervenor's burden of going forward with the evidence—and there is reason to question the appropriateness of even this standard in this instance, for the reasons mentioned above—Petitioner nevertheless contends that it has satisfied this burden, shifting the burden of proof to SCE").

[5] *See, e.g., Metro. Edison Co.* (Three Mile Island Nuclear Station, Unit 1), 16 NRC 1265, 1271 (1982); *and Northeast Nuclear Energy Company,* 53 N.R.C. 22, 27 (2001) (recognizing that the "the ultimate burden of persuasion is on the license applicant").

[6] Opening Brief of Friends of the Earth (FoE Opening Brief) at 6, 8, 15–17, 20, 22–23, 24, 29.

license) requires a license amendment because SCE cannot demonstrate compliance with the tube performance criteria in Technical Specification 5.5.2.11.b.1 of its operating license that requires all in-service steam generator tubes to retain structural integrity over the full range of normal operating conditions, including at full power. As discussed below, none of SCE's arguments succeed in explaining how SCE can demonstrate compliance with the Technical Specification without either: 1) changing it to require something less than integrity over the *full range* of operating conditions specified in its current license; or 2) changing the terms of the operating license to define full power operation as 70%. Either requires a license amendment.

A. San Onofre Cannot Meet the Tube Performance Criteria Currently Specified for In-Service Tubes While Operating at 70%

First, a clarification about what San Onofre's license actually requires is needed, as SCE attempts to obfuscate this point by arguing that San Onofre is not required to retain tube structural integrity at 100% of Rated Thermal Power (RTP).[8] Thus, SCE states, "FOE and NRDC argue that operation of Unit 2 at 70% does not satisfy Technical Specification 5.5.2.11.b.1, because the Technical Specification requires that the tubes retain structural integrity over the full range of normal operating conditions (which, *according to FOE*, means 100% power)."[9] Tellingly, however, SCE does not then go on to offer an alternative explanation for what the "full range of normal operating conditions,"[10] which includes retaining a specific safety factor under "normal steady state *full power operation*,"[11] means if not the full Rated Thermal Power level of 3,438 megawatts-thermal (MWt) for Unit 2, or, in other words, full power operation at 100% power.

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[7] Natural Resources Defense Council's Amicus Response in Support of Friends of the Earth (NRDC Brief) at 2–4, 6–12.
[8] Southern California Edison Company's Brief on Issues Referred by the Commission (SCE Brief) at 49.
[9] *Id.* (emphasis supplied).
[10] San Onofre Nuclear Generating Station Unit 2 Facility Operating License, Technical Specification 5.5.2.11.b.1.
[11] *Id.*

The NRC Staff has stated its opinion on the matter, which concurs with FoE's. Gregory Warnick, NRC chief resident inspector at San Onofre, recently stated, "The spec says that they need to demonstrate tube integrity through all ranges of operation, which would be up to 100 percent, which his [sic] how the license is written."[12] "They need to comply with the words of that specification," said Warnick.[13]

SCE next relies on two straw man arguments, one relating to the power level issue, the other its ability to legally run with damaged tubes. Taking the first, SCE argues that it is not out of compliance with TS 5.5.2.11.b.1 because it "has demonstrated that the in-service Unit 2 steam generator tubes will continue to meet the tube performance criteria at 70% power,"[14] specifically, that the "operational assessments in the Restart Report provide information demonstrating that Unit 2 can be safely operated at 70% power."[15] Safe operation at 70% power (leaving aside the accuracy of this showing) is not what San Onofre's license requires, however; instead, the license requires that the tubes maintain structural integrity at the plant's full Rated Thermal Power level, which is specified in megawatts-thermal in the license.

SCE goes on to state:

> Furthermore, all of those operational assessments (i.e., SCE's operational assessment, the operational assessment by an SCE contractor for non-TTW wear mechanisms, and the three operational assessments by SCE's contractors for TTW) explicitly use the steam generator tube performance criteria at 70% power, including both the structural integrity performance criteria ("SIPC") and the accident induced leakage performance criteria ("AILPC"). Thus, FOE mischaracterizes the Restart Report when it argues to the contrary.[16]

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[12] Morgan Lee, *NRC raises bar for San Onofre restart*, U-T San Diego, Feb. 12, 2012 at http://www.utsandiego.com/news/2013/feb/12/full-power-only/.
[13] *Id.*
[14] SCE Brief at 112.
[15] *Id.* at 40.
[16] *Id.*

But the fact that the Operational Assessments (OAs) purport to show the tube performance criteria will be met at 70% power is irrelevant for purposes of demonstrating compliance with the full power operation requirement in TS 5.5.2.11.b.1.

As NRDC discusses,[17] NRC Staff stated that SCE has, at least implicitly, acknowledged this "100%" requirement by providing one OA for non-tube-to-tube wear purporting to show that it could comply with the full power condition.[18] SCE's OAs for tube degradation from tube-to-tube wear, however, only address structural integrity requirements at 70% power. As a result, NRC Staff concluded that "SCE has not provided an operational assessment that addresses compliance with TS 5.5.2.11.b.1 for tube-to-tube wear, without reliance on compensatory measures (e.g., limiting reactor power to 70% RTP)"[19] and the Staff thus questions how SCE can demonstrate that it meets the structural integrity performance criterion in TS 5.5.2.11.b.1 "for operation within the current licensed limits up to the licensed RTP."[20]

SCE makes much of its argument that operating at 70% power is just a self-imposed, conservative, "administrative" limit. Nevertheless, were it able to show compliance with the requirements in its license at 100% power, operating at 70% power would be unnecessary. Despite this obvious fact, SCE continues to advance the argument that "operation at 70 percent power is within our existing operating authorization under the tech specs and the license" and "[t]herefore we don't need a license amendment to operate at 70 percent power."[21] Pressing the point, Judge Arnold asked SCE's counsel, Mr. Frantz, in the Scheduling Call between the

[17] NRDC Brief at 9.
[18] San Onofre Nuclear Generating Station, Unit 2 – Request for Additional Information Regarding Response to Confirmatory Action Letter (TAC No. ME9727) (Dec. 26. 2012) Question 32, at p. 8 [hereinafter "Dec. 26 RAI"] (FoE Reply Brief Attachment 2).
[19] *Id.*
[20] *Id.*
[21] December 3, 2012 Scheduling Conference Call [hereinafter "Scheduling Call Transcript"] at 38.

parties, "So you're saying you would feel confident to operate at 99 percent power with those steam generators,"[22] to which Mr. Frantz replied, "I do not say that."[23]

In sum, SCE's refusal to expressly acknowledge that the TS in its license requires demonstrating tube performance at the full power rating of 100% is just another cat-and-mouse game SCE is playing because it knows it cannot meet this standard.

SCE's second straw man argument on the TS requirements concerns its ability to operate with degraded tubes. Specifically, SCE claims that FoE has "mischaracterized" San Onofre's licensing basis in arguing that operating with degraded steam generator tubes is inconsistent with its licensing basis.[24] SCE responds that "the SG Program explicitly provides for operation with degraded steam generator tubes, provided that degradation of in-service tubes does not reach the levels specified in Technical Specification 5.5.2.11."[25] But FoE's argument on the TS, rather, is that SCE cannot show it meets the tube performance criteria requiring *in-service* tubes to retain structural integrity over the "*full range of normal operating conditions*"—not whether the operating limits for the percentage of degraded tubes in the TS have been exceeded.

Last, whether SCE can show that it can operate Unit 2 safely at 70% power for 150 days[26] is not relevant to FoE's arguments regarding compliance with TS 5.5.2.11.b.1. FoE's TS argument is not about safety *per se*,[27] but rather SCE's inability to comply with the terms of its license, specifically the structural integrity performance criteria at full power operation in TS 5.5.2.11.b.1.

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[22] *Id.* at 37.
[23] *Id.* at 38.
[24] SCE Brief at 38–39.
[25] *Id.* at 39.
[26] *Id.* at 40–41.
[27] The rationale underlying compliance with the Technical Specifications in an operator's license is, of course, safety, as the NRC Staff explains: "Technical Specifications ("TS") include those plant conditions most important to safety." NRC Staff Brief at 7.

B. Changing a Technical Specification is Necessarily a Licensing Matter Within the Scope of This Proceeding

Whether SCE can meet the requirements in its Technical Specifications is not, as SCE suggests, a compliance issue outside the scope of this proceeding.[28] SCE's Restart Plan can only comply with TS 5.5.2.11.b.1 if the Technical Specification is amended to require something less than demonstrating tube performance over the full range of operating conditions, or the full Rated Thermal Power level is reduced to 70% power—both of which require amending the license.

NRC precedent is clear that a change to the Technical Specifications automatically requires a license amendment.[29] SCE concedes this,[30] as does the Staff. Specifically, the Staff states, "[b]ecause TSs are specific license requirements, a licensee must obtain a license amendment to depart from the TS."[31]

Both SCE's and the Staff's arguments, then, are dependent on a limited view of the scope of this proceeding, which is treated extensively by FoE in Section IV. SCE seeks to exclude the TS issue by arguing that the Board must decide this proceeding by limiting itself to the four corners of one document,[32] the actual CAL letter issued on March 27[33]; Staff likewise subscribe to this cramped view, arguing that "Per Mr. Karwoski, no change to the technical specifications is needed to perform the steps outlined in the CAL."[34]

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[28] *See, e.g.*, SCE Brief at 41 ("The Board has not been tasked with assessing whether SCE's restart actions…comply with Technical Specification 5.5.2.11").
[29] *See, e.g.*, *In the Matter of Cleveland Electric Illuminating Company* (Perry Nuclear Power Plant, Unit 1), 44 NRC 315 (1996) [hereinafter "*Perry*"] (holding that "[b]ecause technical specifications are part of an operating license, any change to the technical specifications requires a license amendment").
[30] SCE Brief at 38 (citing 50.59's requirement that a change to a TS requires a license amendment).
[31] NRC Staff Brief at 7.
[32] To the contrary, the ASLB itself explicitly stated that "[t]o resolve these issues [whether the CAL process grants SCE any greater operating authority], we must look beyond the four corners of the CAL." US NRC, ASLB, December 7, 2012 Order at 3.
[33] *See, e.g.*, SCE Brief at 25–30.
[34] NRC Staff Brief at 33.

Since the Commission and the Board have said that the CAL process includes SCE's response to the CAL, the Staff's statement that "no change to the technical specifications is needed to perform the steps outlined in the CAL"[35] must also be rejected as overly literal. Indeed, it cannot be reconciled with the Staff's acknowledgment that "SONGS Units 2 and 3 must continue to meet the technical specifications notwithstanding anything SCE proposes."[36]

The bottom line is that SCE has not shown—and cannot—that its proposal meets the Technical Specifications in its license, as the Staff itself acknowledges. Since, as is argued at length in Section IV, SCE's response to the CAL, including the Restart Plan, is within the proceeding's scope, then SCE must seek a license amendment in order to meet TS 5.5.2.11.b.1. Changing a TS is necessarily a licensing matter, as NRC precedent makes clear.[37] Thus, SCE does not have the option of responding "administratively," as it claims throughout its brief.[38] Similarly, the Staff's assertion that this is an enforcement matter outside the purview of the Board's authority must be rejected.[39]

C. SCE has Forfeited Its Opportunity to Show Compliance with Technical Specification 5.5.2.11.b.1 in this Proceeding

In question 32 of the NRC's Request for Additional Information (RAI) from SCE, the Staff asked SCE to demonstrate how it meets the tube performance criteria specified in TS 5.5.2.11.b.1. Specifically, RAI 32 states in part:

> Therefore, it appears that SCE has not provided an operational assessment that addresses compliance with TS 5.5.2.11.b. for tube-to-tube wear, without reliance on compensatory measures (e.g., limiting reactor power to 70% RTP [rated thermal power]).
>
> Please clarify how the information submitted by SCE demonstrates that the structural integrity performance criterion in TS 5.5.2.11.b.1 is met for operation within current

[35] *Id.*
[36] *Id.*
[37] *See, e.g.*, *Perry*, 44 NRC at 3.
[38] SCE Brief at 10, 34, 36, 75, 77, 93.
[39] NRC Staff Brief at 45.

licensed limits *up to the licensed RTP*, or provide an operational assessment that includes an evaluation of steam generator TTW for operation up to the RTP.[40]

SCE defaults on answering this question in its brief, stating that it has "not yet decided how it will respond to the RAI" and "will inform the Board and the parties of its position once it submits a response to RAI 32."[41] SCE goes on to assert that "[t]he Commission's decision in CLI-12-20 did not direct the Board to assess whether SCE is complying with the Technical Specifications" and "[t]herefore, matters related to RAI 32 are outside the scope of this proceeding."[42]

When a party refuses to address a relevant issue, the Board must conclude that there is no answer. SCE's failure to respond amounts to an admission that SCE cannot comply with the TS and therefore a license amendment is necessary.

As FoE noted above, whether Unit 2 can satisfy the TS is a critical issue in this proceeding. SCE's proposal to submit its answer after FoE has filed its Reply brief would deny the Board the benefit of complete briefing on the issue as well as deny FoE the opportunity to respond to SCE's answer. Having defaulted on answering this question in its brief, SCE cannot subsequently cure this deficiency by filing a response after FoE has concluded its briefing.

IV. SCE, NRC STAFF, AND NEI MISAPPREHEND THE SCOPE OF THIS PROCEEDING

A. The Board Has Made Clear That SCE's Response to the CAL is Within the Scope of This Proceeding

The repeated attempts by SCE, NRC Staff, and NEI to artificially constrain the scope of this proceeding to nothing but the four corners of the CAL are contrary to the Commission's

[40] Dec. 26th RAI, *supra* note 18, at 8 (emphasis supplied).
[41] SCE Brief at 50.
[42] *Id*.

referral order, the clear statements of this Board, and common sense.[43] The Commission's order referring FoE's Petition to the Board directed the Board to consider the entire CAL process, not simply the March 27, 2012 document that initiated the CAL process. Just before the Commission enumerated the two specific issues to be considered by the Board, the Commission wrote:

> Friends of the Earth contends that the "Confirmatory Action Letter" issued to SCE, *including the process for resolving the issues raised in the Letter,* constitutes a *de facto* license amendment proceeding…*We refer this portion of the petition* to the Chief Administrative Judge of the Atomic Safety and Licensing Board Panel for appropriate action consistent with Section 189a of the AEA and 10 C.F.R. § 2.309.[44]

This Board has already made clear that it agrees. On the December 3, 2012 Scheduling Conference Call, the Board stated that this proceeding concerns an evaluation of SCE's actions taken pursuant to the CAL, not just the CAL itself. Judge Baratta said, "In order to [determine whether or not a license amendment is required], we turn to 50.59 which then looks at the impact of safety on any proposed changes. These document[s] [referring to the Restart Plan] do in fact discuss that impact."[45] After counsel for SCE and the NRC Staff expressed a contrary view, the Board went offline and returned to reaffirm its position:

> [I]n order to determine whether the confirmatory action letter constitutes a de facto license amendment[,] [w]e need to determine and take into account the subsequent actions which were authorized by that letter. And that means taking a look at some of the documents including the proprietary information that were in those documents [again, referring to the documents contained in and attached to the Restart Plan].[46]

Judge Arnold was even more pointed:

> If we can determine that starting up Unit 2 right now with those steam generators in there is something that would require a licensing amendment and if this is going to be done

[43] *See*, *e.g.*, NRC Staff Brief at 1, 14–15, 20–24, 32; SCE Brief at 15, 23, 25–30.
[44] *Southern California Edison Co.* (San Onofre Nuclear Generating Station, Units 2 and 3), CLI-12-20, 76 NRC___, slip op. at 4–5 (emphasis supplied) [hereinafter "*Southern California Edison Co.*"].
[45] Scheduling Call Transcript at 11.
[46] *Id*. at 15–16.

> using a process that has been initiated by the CAL, then that process started by the CAL is in fact intended to accomplish that license amendment.[47]

The interpretation urged by SCE, the Staff, and NEI fails the test of common sense as well. If the scope of the matter before the Board were limited to the four corners of the March 27, 2012 letter, the first issue referred to the Board would be little more than a tautology. SCE and the NRC Staff spend much of their briefs battling such a straw man, examining the text of the CAL at great length and arguing that a CAL is an enforcement tool and therefore cannot be a license amendment. Petitioner's argument is not that a CAL document is a license amendment, but rather that the process that is occurring with respect to the San Onofre Replacement Steam Generators (RSGs), which includes the CAL and the Restart Plan that SCE advanced in response to the CAL, constitutes a license amendment process. The error in the reasoning of SCE, the Staff, and NEI is to assume that the inquiry requested by the Commission starts and ends with an examination of the text of a CAL.[48] Thus, their arguments fail to address the question put by the Commission and reiterated by the Board.

As discussed above, to determine whether the CAL process is a license amendment proceeding, the Board has said it will consider SCE's Restart Plan, with attachments, submitted in compliance with the CAL. SCE and the NRC Staff charge that FoE's arguments related to the safety of SCE's proposal are outside the scope of this proceeding.[49] But, as recognized by Judge Baratta on the Scheduling Conference Call, the applicable legal standards in this instance require some analysis of safety issues.[50] For example, 10 C.F.R. § 50.59 directs licensees to evaluate whether a proposed change presents "more than a minimal increase in the likelihood of

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[47] *Id*. at 36.
[48] *See*, *e.g.*, NRC Staff Brief at 1, 14–15, 20–24, 32; SCE Brief at 15, 23, 25–30.
[49] NRC Staff Brief at 63; SCE Brief at 51.
[50] Judge Baratta said, "In order to [determine whether or not a license amendment is required], we turn to 50.59 which then looks at the impact of safety on any proposed changes." Scheduling Call Transcript at 11.

occurrence of a malfunction of a structure, system, or component (SSC) important to safety previously evaluated in the final safety analysis report (as updated)."[51] Likewise, in *Perry*, the Commission held that actions that grant "any 'greater operating authority,' or otherwise 'alter the original terms of a license'" are license amendments subject to hearing rights.[52] Consideration of the safety of a licensee's proposed actions is inherent in the application of these standards. To the extent FoE's Opening Brief discusses safety concerns raised by SCE's Restart Plan, it is in the context of determining whether SCE's actions pursuant to the CAL require a license amendment.

B. The Facts in This Case Require a License Amendment Proceeding

SCE's response to the CAL, i.e., to restart Unit 2 at 70% rated thermal power for 150 days, without any plan for long-term repair of the defective steam generators or adequate assurance that these operational conditions would cure the defects, moved this particular proceeding from the enforcement realm to the licensing realm, as demonstrated in FoE's Opening Brief.[53]

SCE and the NRC Staff are in error when they suggest that FoE would have the Board determine that all CALs are license amendment proceedings. FoE does not disagree that "both the Atomic Energy Commission and the NRC have used CALs, or their functional equivalent, as part of the enforcement process."[54] However, as discussed above, the scope of the present proceeding extends beyond the March 27, 2012 letter to SCE's proposed actions in compliance with the letter.

[51] 10 C.F.R § 50.59 (c)(2)(ii).
[52] *Perry*, 44 NRC at 326 (internal citations omitted).
[53] *See* FoE Opening Brief at 9–33.
[54] NRC Staff Brief at 24.

The NRC Staff directs the Board's attention to the *Citizens Awareness Network, Inc. v. NRC* (*CAN*)[55] case, in which the First Circuit held that whether an action is a license amendment is a "highly fact specific question."[56] The *CAN* case also said that the substance of the proceeding, not the agency's characterization, determines whether there is a license amendment.[57] The facts in this case establish clearly that a license amendment is necessary. Unit 2 cannot be operated within the confines of the current license.

C. Whether NRC Staff Has Authorized Licensee Action is Not Determinative of Whether the Action Constitutes a License Amendment

SCE and NRC Staff incorrectly argue that the Board can find that an action constitutes a license amendment proceeding "only if the NRC authorizes a licensee to take action that goes beyond existing license authority."[58] First, the Commission's order directs the Board to consider whether "the 'Confirmatory Action Letter' issued to SCE, including the process for resolving the issues raised in the Letter, constitutes a *de facto* license amendment proceeding."[59] This includes an evaluation of whether SCE's requested actions pursuant to the CAL, i.e. the Restart Plan, constitute a license amendment.

Second, the Staff has the cart before the horse when it argues that the CAL proceeding cannot be a license amendment because the Staff has not yet determined whether to approve the Restart Plan. The Staff confuses the Board's appellate role with the role assigned to it here by the Commission. The Commission's charge to the Board here is to determine whether the CAL process constitutes a license amendment subject to the Board's jurisdiction, or a simple enforcement matter, as the Staff argues. If the Boards decides that this proceeding constitutes a

[55] *Citizens Awareness Network, Inc. v. NRC*, 59 F.3d 284, 295 (1st Cir. 1995) [hereinafter "*CAN*"].
[56] NRC Staff Brief at 10.
[57] *CAN*, 59 F.3d at 295.
[58] SCE Brief at 23; NRC Staff Brief at 36 (paraphrasing the same point).
[59] *Southern California Edison Co.*, CLI-12-20 at 4–5 (emphasis supplied).

license amendment, an ASLB panel will then determine whether to grant SCE's requested amendment.

Third, if the Commission had intended the Board to wait until NRC Staff completed their review of the Restart Plan before determining the license amendment issue, the Commission would have said as much in its order. Instead, the Commission ordered the Board to consider whether the entire CAL process, including SCE's response to the CAL, constitutes a license amendment. Thus, in the instant case, Staff action is not a prerequisite to the Board's determination that a license amendment proceeding exists.

D. Under Applicable Case Law, the San Onofre CAL Process is a License Amendment

The NRC Staff does not dispute that, in some instances, a proceeding that should be a license amendment before an ASLB is incorrectly begun, or continued, as an enforcement action by the Staff.[60] And, as the Staff admits, the characterization by the NRC of a matter is not dispositive.[61]

The Staff also agrees that "whether or not something is a *de facto* license amendment is a highly fact specific question" that "centers on whether the action allows the licensee to engage in activities 'beyond the ambit of their original licenses.'"[62] Thus, a license amendment was required where the challenged NRC approval "undeniably supplemented" the original license[63] by allowing the licensee to dismantle major structural components.

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[60] NRC Staff Brief at 10.
[61] *CAN*, 59 F.3d at 295 ("[I]t is the *substance* of the NRC action that determines entitlement to a section 189(a) hearing, *not* the particular label the NRC chooses to assign"); *accord*, *Massachusetts v. NRC*, 878 F.2d 1516, 1521 (1st Cir. 1989) ("The fact that the NRC did not call its decision to restart a 'reinstatement' of the license is not controlling," citing *Columbia Broadcasting System, Inc. v. United States*, 316 U.S. 407, 416 (1942) ("the particular label placed upon [its action] by the Commission is not necessarily conclusive, for it is the substance of what the Commission has purported to do and has done which is decisive").
[62] NRC Staff Brief at 10.
[63] *CAN*, 59 F.3d at 295.

But the Staff "elevates labels over substance"[64] when it tries to shoehorn the San Onofre case into the enforcement category. The cases cited by the staff are all distinguishable from San Onofre. In *In re Three Mile Island Alert, Inc.*, the First Circuit approved an NRC enforcement decision to lift a shutdown order because "the licensee has no greater operating authority by virtue of the May 29, 1985 Order than it had on July 1, 1979 [before the shutdown order was issued]."[65] By contrast, SCE seeks approval for a major change in its license authority when it asks the NRC to approve a Restart Plan that would maintain SCE's preexisting license authority to operate San Onofre Unit 2 at up to 100% power when the company has been unable to demonstrate and will not pledge that the unit is safe at more than 70% power.

In the Matter of Cleveland Electric Illuminating Company, et al. ("*Perry*"), is inapposite in this case.[66] It rejects the view that "any action requiring prior NRC approval is a *de facto* license amendment."[67] Likewise, it rejects the notion that any "licensee action for which NRC approval is required prior to implementation" requires a license amendment.[68] But FoE does not argue for either of these positions, so *Perry* is of no moment here.

Footnote 7 of *In the matter of Yankee Atomic Electric*, which the Staff cites repeatedly for the proposition that an action taken under 10 C.F.R. § 50.59 may be challenged only through a petition under 10 C.F.R. § 2.206,[69] is not authority for that proposition. *Yankee Atomic* holds that decommissioning is authorized under an operating license. Footnote 7, cited by the Respondents, is a mere aside, a classic dictum without precedential value.

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[64] *Id*.
[65] *In re Three Mile Island Alert, Inc. et al.*, 771 F.2d 720, 729 (3d Cir. 1985) [hereinafter "*Three Mile Island*"].
[66] *Perry*, 44 NRC 315.
[67] *Id*. at 5.
[68] *Id*.
[69] *In the matter of Yankee Atomic Electric* (Yankee Nuclear Power Station), 39 NRC 95, 102 (1994) [hereinafter "*Yankee*"].

In the case of San Onofre, the CAL process, including SCE's statement in its Restart Plan that it plans to experiment with operation at 70% power, seeks to allow SCE to operate Unit 2 "beyond the ambit of [its] original license."[70] As Petitioner and *amicus* NRDC argued at length in their Opening Briefs, the San Onofre operating license requires that each unit be capable of operating at full power without compromising the steam generator (SG) design function as a barrier preventing the escape of radioactive fluid from the primary loop of the reactor. In the Restart Plan, and in its brief, SCE has refused to answer the question whether, in its current condition, Unit 2 can meet that license condition.[71] SCE has likewise yet to answer the same question when posed by the Staff's December 26 Request for Information number 32.[72]

Indeed, SCE tacitly admits in the table on page 88 of its brief that Unit 2 cannot meet the license condition. There, SCE purports to show that the risk of operating Unit 2 at 70% power is no greater than operating unnamed comparative units at full power. As a matter of logic, the table also admits the negative pregnant of this point—that the risk of running Unit 2 at full power exceeds that at the other compared units. The Board must therefore conclude that SCE cannot show the damaged RSG can meet the condition in the license. To allow Unit 2 to operate based on a representation that the tubes will maintain their design function only up to 70% power is to request permission to operate "beyond the ambit of [its] original license."[73]

The Staff's brief cites the *Perry* and *Three Mile Island*[74] cases to argue that a license amendment is not necessary to allow Unit 2 to resume operation. But the cases cited will not bear the weight placed on them by the Staff because in neither of those cases was the licensee proposing to restart a damaged reactor that was incapable of meeting the terms of its operating

[70] *CAN*, 59 F.3d at 293.
[71] SCE Brief at 49–50.
[72] Dec. 26 RAI, *supra* note 18.
[73] *CAN*, 59 F.3d at 293.
[74] *Three Mile Island*, 771 F.2d 720.

license. A licensee may be permitted to restart a shutdown reactor if the "NRC approval does not permit the licensee to operate 'in any greater capacity' than originally prescribed and all relevant safety regulations and license terms remain applicable."[75]

In *Three Mile Island,* the court was clear that the lifting of an order to stop operating the undamaged Unit 1 was not considered a license amendment because the licensee would be operating again under the authority of the pre-existing license.

> We hold only that Section 189(a) is not implicated when the Commission enters an order lifting a suspension so that a licensee may operate under existing authority during the course of an enforcement proceeding.[76]

Three Mile Island contrasts starkly with San Onofre. At Three Mile Island, the NRC imposed a number of conditions on the licensee related to personnel and operating procedures in the course of an enforcement proceeding to assure that the unit was operated *within the terms* of its pre-existing license. At San Onofre, by contrast, the licensee asks to be allowed to operate the unit in a condition, and in a manner, that would be *outside the boundaries* of the original license, as discussed in Section IV, above.

V. THE ASLB HAS AUTHORITY TO DETERMINE WHETHER SCE WAS REQUIRED TO SEEK A LICENSE AMENDMENT UNDER 10 C.F.R. § 50.59

Under 10 C.F.R. § 50.59, a licensee is required to seek a license amendment if it undertakes "changes, tests, or experiments" (CTE) that exceed the authority of the Updated Final Safety Analysis Report (UFSAR) and that have any of the eight effects catalogued in section 50.59(c)(2). The licensee is obliged to do the section 50.59 analysis and seek a license amendment if the analysis shows that the proposed CTE requires it. The failure to obtain a license amendment when one is required invalidates the operating license. Whether or not it is

[75] NRC Staff Brief at 11.
[76] *Three Mile Island*, 771 F.2d at 730.

"traditional," in the words of SCE,[77] that the Staff would enforce the failure to obtain a required amendment, nothing in the words of section 50.59 or the Atomic Energy Act (AEA) limit consideration of such failure to the Staff. In the case of San Onofre, the Commission has charged this Board with the question of whether the CAL process, including the proposed restart of Unit 2, requires a license amendment. In order to discharge its obligations, the Board must consider whether section 50.59 requires a license amendment in this instance.

SCE erroneously objects to the Board's considering whether section 50.59 requires an amendment of its license, using a pinched reading of the Commission's charge as a reason. SCE argues for the most literal reading of "de facto license amendment" from the Commission's Order, attempting to limit the Board's consideration to the *Perry/Seabrook* line of cases.[78] But "it is the substance of the NRC action that determines entitlement to a section 189(a) hearing, not the particular label the NRC chooses to assign."[79]

The Staff argues that "operational limits" in SCE's Restart Plan are "not relevant to the determination the Board must make in this proceeding," citing a footnote in an NRC decision that claims a section 50.59 matter must be resolved through a Staff section 2.206 proceeding.[80] But the Staff's reliance on a Commission *dictum* from a single footnote in the *Yankee* case[81] is not sufficient authority to countermand the expressed intent of the Commission's referral in this case, which plainly tasks the Board with reviewing whether SCE must obtain a license amendment in order to restart Unit 2 at San Onofre.[82]

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[77] SCE Brief at 22.
[78] *Id*. at 23.
[79] *CAN*, 59 F.3d at 295.
[80] *Yankee,* 39 NRC at 101 n.7
[81] Staff Brief at 47, citing *Yankee*, 39 NRC at 101, n.7.
[82] *Southern California Edison Co.*, CLI-12-20.

We cannot leave this subject without reference to the underlying question at issue. In this proceeding, the Staff would, by claiming that the application of section 50.59 is an enforcement measure, establish the precedent that even when a significant increase in risk is the result of the licensee's failure to seek a license amendment where section 50.59 demands one, the result will be negotiated between the Staff and the licensee without public input. Nothing in the AEA or 10 C.F.R. § 50.59 deprives the Board of the authority to allow public input, through a license amendment proceeding, on the question of whether to restart a nuclear reactor located within 50 miles of over 8 million people in southern California. NRDC's amicus brief addressed this issue eloquently:

> While over time a steady accretion of exclusionary NRC rules have . . . favored the broad use of the Commission's broad enforcement powers to resolve significant safety issues, nowhere does the statute itself sanction the view that these enforcement powers may be used to preempt or supplant the right to a hearing in matters involving "the granting, suspending, revoking, or amending of any license or construction permit."[83]

VI. SCE AND NRC STAFF ATTEMPT TO USURP THE AUTHORITY OF THE BOARD BY CASTING THE CAL PROCESS AS AN ADMINISTRATIVE ENFORCEMENT ACTION

The NRC Staff position would deprive the ASLB of any authority over the Restart Plan, despite the instructions from the Commission to this Board. The NRC Staff do not even attempt to analyze the Restart Plan. They state instead, "SCE's October 3, 2012 Return to Service Plan for Unit 2, including its plan to limit Unit 2 to 70% power as a basis for restart, is being carefully scrutinized by the Staff outside this proceeding for overall regulatory compliance."[84] Staff then go on to say that, "[a]s part of that review, the Staff will examine whether SCE's October 3,

[83] NRDC Brief at 13–14.
[84] NRC Staff Brief at 35.

2012 Return to Service Plan requires a license amendment"[85]—despite the fact that this position directly contradicts the Commission's explicit charge to the Board.

By casting the scope of this proceeding as limited to a single administrative action, the issuance of the March 27, 2012 letter, the NRC Staff in effect argue that this proceeding is unnecessary because that letter is merely an administrative enforcement action confirming SCE's voluntary commitments to assure that San Onofre can operate in compliance with the terms of its license.[86] This argument is an attempt by the Staff to claim authority over a matter that is within the Board's jurisdiction.

The NRC Staff do not even attempt to analyze SCE's Restart Plan, including its proposal to operate at 70% rated thermal power, in terms of whether that Plan is a license amendment proposal. NRC Staff instead simply characterize the March 27, 2012 letter as "an administrative enforcement action"[87] and assert that the matter ends there. The Staff's arguments are cast in terms of this presumption rather than, as the Board directs, the entire CAL process, including whether SCE's response is a license amendment.[88]

SCE would similarly deprive the Board of any role in the review of the Restart Plan. Unlike the NRC Staff, SCE does address the specifics of its Restart Plan in response to the CAL, but they argue that SCE's proposal to limit Unit 2's operation to 70% rated thermal power is merely an "administrative limit" that does not involve a licensing proceeding before an ASLB.[89] As discussed in Section III, FoE demonstrates that SCE's proposal alters the terms of its license and therefore requires a public licensing proceeding before an ASLB.

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[85] *Id.* at 60.
[86] *Id.* at 21, 23; SCE Brief at 10, 34, 36, 75, 77, 93.
[87] NRC Staff Brief at 31, 35.
[88] *Id.* at 24–36.
[89] SCE Brief at 34.

Staff and SCE propose to artificially segment the process so as to prevent the Board from exercising its authority over this licensing proceeding. The Board should reject this proposal.

VII. SHOULD IT BECOME RELEVANT, FOE DOES NOT BEAR THE BURDEN OF PROOF ON THE FIRST ISSUE BEFORE THE BOARD

As an initial matter, too much could be made of this question, which is relevant to the first issue referred to the Board only in the unlikely event that all of the arguments and evidence resulted in "absolute equipoise."[90] That said, FoE must correct several erroneous assertions made by the Staff and SCE in their responses to this question.

A. FoE Does Not Concede It Bears the Burden of Production

SCE incorrectly states that, "FOE acknowledges this burden [of production] by quoting that the 'proponent of the contention has the initial burden.'"[91] This statement mischaracterizes FoE's position. In its entirety, the text from FoE's brief reads:

> Prospective intervenors typically bear the burden of going forward with the evidence—i.e., introducing enough evidence on an issue to have the issue decided by the fact finder rather than against the party in a peremptory ruling—either by direct evidence or cross-examination. *See, e.g.*, *Northeast Nuclear Energy Company*, 53 N.R.C. 22, 27 (2001) (stating that the "proponent of the contention has the initial burden of coming forward with factual issues, not merely conclusory statements and vague allegations," "[a]lthough the ultimate burden of persuasion is on the license applicant").[92]

After setting out this general standard, however, FoE then goes on to provide the exception: this burden has been found to be inappropriate in certain instances, such as where the licensee controls the relevant information.[93] Staff, in particular, argue against finding a similar situation here on the basis that the only material that need be considered is the March 27 CAL[94]—this argument, however, is entirely premised on the Staff's extremely limited view of the scope of

[90] Scheduling Call Transcript at 20.
[91] SCE Brief at 78.
[92] FoE Opening Brief at 38.
[93] *Id.* at 39.
[94] NRC Staff Brief at 19.

this proceeding and has little traction if SCE's Response to the CAL is considered part of the CAL process, as the Board has stated.[95]

In sum, it is arguable whether FoE should bear the burden of production under these circumstances. As explained in its Opening Brief, however, FoE's argument remains that, *to the extent* it is assigned this burden, it has demonstrated it can satisfy it.[96] Having met the burden of production, NRC precedent makes clear that the burden of persuasion thus shifts to the licensee to show that it is operating within its license.[97]

B. The Staff's Argument that FoE Has Not Provided Clear Evidence Showing the Issuance of the CAL Was Improper Is a Red Herring

The Staff also argue that FoE "has the burden to provide clear evidence that Staff's issuance of the March 27, 2012 CAL to SCE was improper."[98] This argument, however, mistakes FoE's position. FoE does not argue that Staff did not have the authority to issue the March 27 CAL, or that doing so in and of itself was incorrect.

Rather, FoE's position, as explained at length throughout its Opening and Reply Briefs, is that what may have begun as an enforcement action has since evolved into a licensing proceeding by virtue of the fact that SCE seeks, through its response to the CAL and its Restart Plan, authority not provided for in its license. Judge Arnold put it well when he said:

> If we can determine that starting up Unit 2 right now with those steam generators in there is something that would require a licensing amendment and if this is going to be done using a process that has been initiated by the CAL, then that process started by the CAL is in fact intended to accomplish that license amendment.[99]

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[95] Scheduling Call Transcript at 36.
[96] FoE Brief at 40 (stating, "In sum, to the extent that the Board finds it appropriate to assign the typical intervenor's burden of going forward with the evidence—and there is reason to question the appropriateness of even this standard in this instance, for the reasons mentioned above—Petitioner nevertheless contends that it has satisfied this burden, shifting the burden of proof to SCE).
[97] *See, e.g., Metro. Edison Co.* (Three Mile Island Nuclear Station, Unit 1) 16 NRC 1265, 1271 (1982); *and Northeast Nuclear Energy Company,* 53 N.R.C. 22, 27 (2001) (recognizing that the " the ultimate burden of persuasion is on the license applicant").
[98] NRC Staff Brief at 20–22.
[99] Scheduling Call Transcript at 36.

In sum, Staff's argument on this point is misplaced and fails to shift the burden to FoE.

VIII. NRC STAFF AND SCE PROVIDE INCORRECT OR INCOMPLETE RESPONSES TO MAJOR FACTUAL ISSUES

SCE and Staff offer a number of erroneous or incomplete responses to issues raised in FoE's Opening Brief, which FoE rebuts with the additional information supplied in this Section.

A. Technical Rebuttal of SCE's and NRC's Claims

In their reports, FoE's experts postulate the root cause of the excessive tube wear at San Onofre as the combination of several design elements in the RSGs that differed from the OSGs: the removal of the stay cylinder in order to increase the number of tubes; the placement of the additional tubes in the middle of the bundle where the stay cylinder had been on the OSGs; the use of anti-vibration bars that were designed not to exert clamping force on the tubes; and the use of broached plate supports on the straight legs of the tubes rather than the egg crate supports of the OSG. The combination of changes led to a high void fraction within the U-bend region of the tubes, and the alteration of coolant flow around the tube bundle led to fluid elastic instability (FEI). Together, these phenomena resulted in unprecedented wear in the RSGs of Units 2 and 3.

FoE's expert John Large has prepared an affidavit analyzing SCE's and Staff's responses to the expert affidavits filed with FoE's Opening Brief.[100] Mr. Large's affidavit addresses the following five points.

1. Comparison with Unnamed Plants. As evidence that Unit 2 can run safely at 70% power, SCE refers to a comparison with five unnamed nuclear plants referenced in the Tube-to-Tube Report[101] to answer the Board's question (v)[102] regarding the similarity of San Onofre's

[100] 2d Affidavit of John Large, *Comments on the NRC and SCE Responses of January 30, 2013*, Feb. 13, 2013 (FoE Reply Brief Attachment 1) [hereinafter "2d Large Affidavit"].
[101] Operational Envelope for Large U-bend Steam Generators, SONGS U2C17 Steam Generator Operational Assessment for Tube-to-Tube Wear [hereinafter "Tube-to-Tube Report"].

RSG design to those plants used as reference cases.[103] Mr. Large points out that comparisons based on "a few physical similarities"[104] provide only "the bases of a somewhat meaningless comparison."[105]

Strikingly, SCE has chosen to withhold the identity of these five comparison plants.[106] To be clear, SCE is using these "other plants," as it refers to them, as support for its argument that San Onofre is safe to operate at 70% power because it is of a similar design—and yet none of the parties, or even the Board, is permitted to know their identity? Specifically, the NRC Staff state: "With regard to issue v., the Staff does not presently know the identity of the plants compared to SONGS in Figure 4-3; therefore, the Staff cannot provide an assessment of the similarity of the tube material, tube spacing, and support structures."[107]

The Board should not countenance such decision-making on the part of SCE. Rather, the Board should require SCE to turn over all relevant information for Staff and the public. SCE may not be allowed to rely on data that no-one else can verify—much less the regulator—because SCE refuses to disclose the plants' identities.

SCE contests the analysis by FoE's experts concluding that San Onofre's RSGs are substantially different in design than other RSGs, arguing that "[t]his conclusion is based on speculation of the design of steam generators at other plants, and is controverted by the table provided above that shows the similarities between the RSGs and the steam generators at the other plants."[108] SCE's argument that San Onofre is similar in design to other U.S. nuclear plants with replaced steam generators is erroneous because the only other set of MHI steam

[102] Board December 7 Order at 6–7.
[103] SCE Brief at 86–90.
[104] 2d Large Affidavit at ¶ 5.3.
[105] *Id.* at ¶5.2
[106] SCE Brief at 86–90.
[107] NRC Staff Brief at 61.
[108] SCE Brief at 89.

generators in the U.S. is at the Fort Calhoun plant, which are far smaller than San Onofre's RSGs. And as discussed at length in Petitioner's Opening Brief, the tube wear at San Onofre is far worse than the norm nationally.[109] Thus, comparing San Onfore to unnamed reactors with different, non-defective steam generator designs by different manufacturers does not provide the Board with meaningful information.

2. Tube Wear Modes and Rates. Mr. Large is critical of the statements of SCE that the tube wear modes and rates were as "'expected for the RSGs . . .although the extent was higher than the industry average'." Mr. Large concludes that this statement "is clearly not borne out by comparisons with the data presented by authoritative bodies such as EPRI."[110]

3. Vibration Reduction Operating at 70% Power. Mr. Large doubts SCE's assurance that vibration will be reduced if Unit 2 is allowed to operate at 70% power. "Since the retainer bar vibration is induced by random fluid processes, there can be no guarantee that this and other non-FEI sources of excitation will be eliminated by reducing the power level to 70% RTP."[111]

4. 95% Probability and 50% Confidence. Mr. Large expresses "strong doubt over the reliability of the AREVA *Tube-to-Tube Report* probabilistic prediction of individual tube motion,"[112] noting that the reasons for this doubt are detailed in his 1st Affidavit filed with FoE's Opening Brief (at ¶ 5.7.46–52).

5. Test and Experiment. Mr. Large notes that the affidavit of Mr. Brabec, on behalf of the Staff, acknowledges that the SCE restart proposal amounts to an experiment.[113]

[109] FoE Opening Brief at 35–37.
[110] *Id.* at ¶ 6.1.
[111] *Id*. at ¶ 6.8.
[112] *Id.* at ¶ 7.1.
[113] *Id*. at ¶8.1–8.2

B. The Hirsch Report Was Commissioned by a U.S. Senator and Thus Should be Considered by the Board

The Hirsch Report referenced in FoE's Opening Brief, entitled "Far Outside the Norm: The San Onofre Nuclear Plant's Steam Generator Problems in the Context of the National Experience with Replacement Steam Generators," uses data submitted to the NRC by utilities operating nuclear reactors with replacement steam generators to compare San Onofre to the experience of RSGs nationally.[114] It was commissioned by Senator Barbara Boxer, Chair of the Senate Environment and Public Works (EPW) Committee, and admitted into the Senate record in a joint hearing on September 12, 2012 of the full Senate EPW Committee and its Subcommittee on Clean Air and Nuclear Safety, entitled "Oversight Hearing: NRC's Implementation of Recommendations for Enhancing Nuclear Reactor Safety in the 21st Century."[115] At Senator Boxer's request, the NRC Commissioners agreed to read the Hirsch Report and respond to its contents with Senator Boxer's staff.

SCE contends that because FoE did not provide an affidavit for the Report's author, Daniel Hirsch, the Board should not consider any factual statements contained in the Report.[116] It is relevant to note that SCE relies on factual assertions in a number of documents, such as the Operational Assessments, for which no affidavits were provided. Consistency demands that SCE would have these factual statements struck as well.

Finally, it is worth noting that the NRC Commissioners have subsequently placed the Hirsch Report into the record of the Commission briefing on steam generator problems held on

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[114] FoE Brief at 15.
[115] *Oversight Hearing: NRC's Implementation of Recommendations for Enhancing Nuclear Reactor Safety in the 21st Century,* 112th Cong. (Sept. 12, 2012) (statement of Barbara Boxer, Chair, Senate Environment and Public Works Comm.), video at http://www.epw.senate.gov/public/index.cfm?fuseaction=hearings.hearing&hearing_id=9831bf72-802a-23ad-4f25-00be1102f3b0, minute 59:40-1:00:35 (Sept. 12, 2012).
[116] SCE Brief at 14.

February 7, 2013, entitled "Commission Meeting: Briefing on Steam Generator Tube Degradation, February 7, 2013," at which Daniel Hirsch was invited to testify.[117]

SCE's demand that the Board disregard any factual statements from the Hirsch Report for failure to submit an accompanying affidavit is baseless insofar as SCE implies the document lacks veracity.

IX. FOE HAS STANDING TO PARTICIPATE IN THE LICENSING PROCEEDING BEFORE THE BOARD

FoE has demonstrated sufficient standing to participate in the license amendment proceeding. NRC Staff and SCE again apply their crabbed view of the scope of this proceeding to the question of whether FoE has sufficiently demonstrated standing in its June 18, 2012 Petition to Intervene. FoE's standing arguments must be read against the proper scope of this proceeding, which includes the effects of SCE's Restart Plan. Considered in that light, FoE provides sufficient basis for standing, as explained at length in its Petition and Opening Brief.[118]

X. FOE'S PETITION TO INTERVENE IS TIMELY

FoE's Petition to Intervene was timely filed. If the Commission thought the Petition was untimely, it could have raised the issue in its Order referring the Petition to the Board, but it did not. The NRC Staff recognize as much in their Answering Brief: "The Staff assumes that the Commission determined that FOE timely filed the initial Petition to Intervene because the Commission's regulations do not provide exact definitions regarding timeliness."[119]

In its challenge to the timeliness of FoE's Petition, SCE again presumes the more constricted view of this proceeding that the Commission and Board have rejected. SCE would

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[117] *Briefing on Steam Generator Tube Degradation,* Nuclear Regulatory Commission, (Feb. 7, 2013) (statement of Daniel Hirsch, Comm. to Bridge the Gap), video at http://video.nrc.gov, minute 2:16; see also NRC website, posting Hirsch Report at http://www.nrc.gov/reading-rm/doc-collections/commission/slides/2013/20130207/hirsch-statement-20130207.pdf.

[118] Petition to Intervene at 5–9; Opening Brief at 44–49.

[119] NRC Staff Brief at 69, n.356.

have the Board measure the timeliness of the Petition in terms of 60 days from the March 27, 2012 CAL letter.[120] However, this proceeding is not like other licensing proceedings where the commencement of the proceeding is made clear by the filing of a license application, announced via notice in the Federal Register or on the NRC's website.

NRC Staff attempt to cast FoE's Contention, as supplemented by the Opening Brief, as an untimely amendment. However, the Board has not yet recognized that there is a proceeding in which to amend a contention. Once the Board affirms the existence of a license amendment proceeding, FoE will properly amend its Contention.

XI. FOE'S CONTENTION IS ADMISSIBLE

FoE's Opening Brief and Petition to Intervene, when applied to the actual scope of the proceeding, show that FoE's Contention is admissible. Neither opposing party offers an analysis of FoE's Contention as against the proper scope of the proceeding, which includes SCE's actions in response to the CAL, not just the NRC's singular action of issuing the March 27, 2012 letter. NRC Staff and SCE allege that FoE's Contention is inadmissible based on a misapprehension of the scope of this proceeding.[121]

In any event, FoE will have an opportunity to file either an amended contention or a new petition, once the Board has ruled that a licensing proceeding is underway, to address more thoroughly information that has come to light since the original June 18, 2012 filing.[122]

XII. CONCLUSION

Based on the foregoing reasons, the Board should find in this case that the CAL process is a license amendment proceeding requiring a public hearing and that FoE has demonstrated standing and an admissible Contention in its June 18, 2012 Petition to Intervene.

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[120] SCE Brief at 55.
[121] NRC Staff Answering Brief at 66; SCE Answering Brief at 69–73.
[122] The NRC Staff appear to agree with FoE's position on this point. *See* NRC Answering Brief at 70.

Respectfully submitted,

/Signed (electronically) by/
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List of Attachments

Attachment 1 – Comments of the NRC and SCE Responses of January 30, 2013, Declaration/2^{d} Affidavit of John Large

Attachment 2 – NRC, San Onofre Nuclear Generating Station, Unit 2 – Request for Additional Information Regarding Response to Confirmatory Action Letter (TAC No. ME9727), (Dec. 26. 2012)

Attachment 1

Comments of the NRC and SCE Responses of January 30, 2013
Declaration of John Large

(Disclosure Pending Review per Board Order)

Attachment 2

NRC, San Onofre Nuclear Generating Station, Unit 2 – Request for Additional Information Regarding Response to Confirmatory Action Letter (TAC No. ME9727), (Dec. 26. 2012)

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

December 26, 2012

Mr. Peter T. Dietrich
Senior Vice President and Chief Nuclear Officer
Southern California Edison Company
San Onofre Nuclear Generating Station
P.O. Box 128
San Clemente, CA 92674-0128

SUBJECT: SAN ONOFRE NUCLEAR GENERATING STATION, UNIT 2 – REQUEST FOR ADDITIONAL INFORMATION REGARDING RESPONSE TO CONFIRMATORY ACTION LETTER (TAC NO. ME9727)

Dear Mr. Dietrich:

On March 27, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12087A323), the U.S. Nuclear Regulatory Commission (NRC) issued a Confirmatory Action Letter (CAL) to Southern California Edison (SCE) regarding the San Onofre Nuclear Generating Station (SONGS), Units 2 and 3. The CAL confirms certain actions that SCE will take to address steam generator tube degradation issues at both units. The CAL also confirms that SCE will not resume power operation at either unit until the NRC completes its review of those actions and formally communicates its permission to restart in written correspondence.

By letter dated October 3, 2012 (ADAMS Accession No. ML12285A263), SCE submitted its response to the CAL for SONGS Unit 2. The NRC staff is conducting its detailed review of SCE's CAL response for SONGS Unit 2 and has determined that additional information is needed in order to complete our evaluation. The staff's questions are provided in the enclosed request for additional information (RAI). The staff previously issued these RAI questions in draft form, on November 30, 2012 (ADAMS Accession No. ML12338A110), on December 10, 2012 (ADAMS Accession No. ML12345A427), and on December 20, 2012 (ADAMS Accession No. ML12356A198). Based upon clarifying discussions on RAI questions 1-31 between NRC and SCE at a public meeting on December 18, 2012, the enclosed final version of these questions is unchanged from the previous draft versions. In that meeting, SCE stated that it expects to provide responses to RAI questions 1-31 by mid-January of 2013. Please provide an estimated date for your response to RAI question 32. The NRC staff expects to issue additional RAIs to SCE as our review continues.

If you have any further questions regarding this letter, please contact me at (301) 415-4032 or via e-mail at randy.hall@nrc.gov.

Sincerely,

BRIAN BENNEY FOR

James R. Hall, Senior Project Manager
San Onofre Special Projects Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-361

Enclosures:
Request for Additional Information

cc w/Encl Distribution via Listserv

OFFICE OF NUCLEAR REACTOR REGULATION
REQUEST FOR ADDITIONAL INFORMATION
SOUTHERN CALIFORNIA EDISON
SAN ONOFRE NUCLEAR GENERATING STATION, UNIT 2
RESPONSE TO MARCH 27, 2012, NRC CONFIRMATORY ACTION LETTER
DOCKET NO. 50-361
TAC NO. ME9727

By letter dated October 3, 2012, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12285A263), Southern California Edison (SCE) submitted its response to the NRC Confirmatory Action Letter (CAL) dated March 27, 2012, for San Onofre Nuclear Generating Station (SONGS), Unit 2. The details of SCE's response to the CAL are provided in Enclosure 2 to that October 3, 2012, letter (Reference 1). The NRC staff is conducting its detailed review of SCE's CAL response for SONGS Unit 2 and has determined that additional information is needed in order to complete our evaluation. The staff's additional questions are stated in this request for additional information (RAI) below. The staff previously issued these RAI questions in draft form, on November 30, 2012 (ADAMS Accession No. ML12338A110), on December 10, 2012 (ADAMS Accession No. ML12345A427), and on December 20, 2012 (ADAMS Accession No. ML12356A198). Based upon clarifying discussions between NRC and SCE at a public meeting on December 18, 2012, the final version of these questions is unchanged from the previous draft versions.

1. The Operational Assessment (OA) in Attachment 6, Appendix A (Reference 2), reports the 3 times normal operating pressure differential as being 4290 psi for 100% power conditions. This is the same value assumed in the Condition Monitoring Assessment provided in Attachment 2. This value is significantly higher than the values ranging from 3972-3975 psi for 100% power reported in Attachment 6, Appendices B, C, and D (References 3-5). Describe the reason for the differences.

2. The Operational Assessment in Attachment 6, Appendix C (Reference 4), pages 3-2 and 4-12, appears to state that tube-to-tube wear (TTW) growth rates are based on the maximum TTW depths observed in Unit 3 at EOC 16 divided by the first Unit 3 operating period (0.926 years at power). Provide justification for the conservatism of this assumption. This justification should address the following:

    a. Reference 4, page 3-2 defines "wear index" for a degraded tube and states that the existence of TTW and distribution of TTW depths are strongly correlated to the wear index. This is pictured in Figures 4-4 in terms of TTW initiation. This figure shows that TTW is not expected to have initiated until a threshold value of wear index is reached. This threshold value varies from tube to tube according

to a cumulative probability distribution shown in the figure. This figure illustrates that TTW is not expected to have initiated until sometime after BOC 16. This suggests that the observed TTW depth at EOC 16 developed over a smaller time interval than the 0.926 years assumed in the analysis.

b. An independent analysis in Reference 3 also indicates an extremely low probability of instability onset at BOC 16 as illustrated in Figure 8-3. Reference 3, page 106 interprets this figure as indicating that the probability of instability only reaches 0.22 after 3 months and only becoming "high" after 4 months.

c. Reference 3 also considered a variety of different wear rate models to estimate how long it took to develop the observed TTW depths at Unit 3 after instability occurred. These analyses are documented in Appendix A of Reference 3 and produced estimates in the range of 2.5 to 11 months.

3. Regarding Reference 4, describe the sensitivity of the results in Figure 5-4 to the definition of "wear index." If alternate definitions significantly affect the results, what is the justification for the definition being used?

4. Regarding Reference 4, does the definition of "wear index" include summing the depths of 2-sided wear flaws at a given AVB intersection? If not, explain why SCE's approach is conservative.

5. Regarding Reference 4, third paragraph from the bottom of page 4-3, why is non-detected wear only assigned to no degradation detected (NDD) tubes and not to NDD tube/AVB intersections in tubes with detected wear at other intersections?

6. Regarding Reference 4, page 4-5, it seems that depths of undetected flaws are assumed to be associated with probability of detection (POD) ≤ 0.05. Why is this conservative? Is there a possibility that some undetected flaws may be associated with higher values of POD?

7. Regarding Reference 4, page 4-5, what is meant by the words, "each active wear location" in the 1350 NDD tubes? How are the "active wear" locations determined?

8. It is stated in Reference 4, page 4-6, second paragraph that, "It has been observed that the number of AVB supports that develop wear in the second cycle of operation can increase dependant on the number of worn AVB indications at the beginning of the second cycle. These data were used in the OA to add AVB locations at the start of Cycle 17 from a statistical representation of this data." Provide a more complete description of the model used to add AVB locations that will develop wear during the

second cycle. Confirm that this model applies to both the 560 tubes with existing tube support wear and the 1350 NDD tubes.

9. It is stated in Reference 4, at the top of page 4-9 that the simulation results of the bench marking process are shown in Figure 4-6. Provide additional detail on what Figure 4-6 is showing and how it relates to the benchmarking process. As part of this additional detail, explain the meaning of the ordinate label "number of observations" in the figure.

10. Technical Specification (TS) 3.4.13.d allows 150 gallons per day primary to secondary leakage. The Return to Service Report (Enclosure 2 of Reference 1), Section 9.4.1 states, "The plant operating procedure for responding to a reactor coolant leak has been modified to require plant Operators to commence a reactor shutdown upon a valid indication of a primary-to-secondary SG tube leak at a level less than allowed by the plant's TSs. This procedure change requires earlier initiation of operator actions in response to a potential SG tube leak." Does this mean that a reactor shutdown would be commenced upon <u>any</u> valid indication of primary to secondary leakage? Provide a description of the action levels in the procedure. Discuss any additional actions, planned or taken, such as simulator testing, operator training, and/or any evaluations to assess potential impacts of the revised procedure.

11. Please submit an operational impact assessment for operation at 70% power. The assessment should focus on the cycle safety analysis and establish whether operation at 70% power is within the scope of SCE's safety analysis methodology, and that analyses and evaluations have been performed to conclude operation at 70% power for an extended period of time is safe. The evaluation should also demonstrate that the existing Technical Specifications, including limiting conditions for operation and surveillance requirements, are applicable for extended operation at 70% power.

12. Operation at a lower power level could introduce additional uncertainty in measuring reactor coolant flow. Please provide a detailed evaluation of RCS flow uncertainty, identify how RCS flow uncertainty is affected by operation at 70% power, and discuss the overall treatment of the RCS flow uncertainty, actual and indicated, in the context of the remaining safety analyses. Provide similar information for secondary flow uncertainty, as well.

13. The installation of new steam generators involved changes to the steam generator heat transfer characteristics, which could affect the performance of the plant under postulated loss of coolant accident conditions. Please explain how the existing ECCS analysis accounts for these changes, and how considerable steam generator tube plugging has been addressed in the ECCS evaluation. Provide the ECCS evaluation that will apply to the planned operating cycle.

14. Provide a summary disposition of the U2C17 calculations relative to the planned reduced-power operation.

15. In Reference 1, Section 8.3.2, page 48 – How will the continued integrity of the non-stabilized, preventively-plugged tubes adjacent to the retainer bars be ensured? "Integrity" in this context refers to the tubes remaining intact and unable to cause damage to adjacent tubes.

16. Reference 1, Section 9.3, page 50 – Provide additional information concerning the "Operational Decision Making" process and describe how it would be applied if the proposed criterion is exceeded. Provide the procedural action statement.

17. Reference 1, Section 9.4.1, page 50 – Provide the procedural action levels/statements.

18. Reference 1, Section 11.1, page 52 – SCE proposes to upgrade the vibration and loose parts monitoring system (VLPMS) as a defense-in-depth measure to enhance plant monitoring capability to facilitate early detection of a steam generator tube leak and ensure immediate and appropriate plant operator and management response.

    Fluid Elastic Instability (FEI) was identified as a main cause of the tube wear for both the Unit 2 and 3 steam generators. The FEI experienced is due to a combination of the conditions of steam quality, secondary side fluid velocity in the vicinity of the tube bundle, and steam void fraction, and the degree of such fluid elastic instability is related to the damping provided by internal support structures. According to your report, "steam quality directly affects the fluid density outside the tube, affecting the level of hydrodynamic pressure that provides the motive force for tube vibration. When the energy imparted to the tube from hydrodynamic pressure (density times velocity squared, or ρv^2) is greater than the energy dissipated through damping, FEI will occur." However, the proposed plant VLPMS enhancement does not appear to directly monitor steam quality, secondary side fluid velocity, or steam void fraction.

    Please provide the following information to address the effectiveness of the enhanced VLPMS:

    a. Describe the specific purpose of using the enhanced VLPMS equipment for monitoring steam generator performance. For example, is it to be used for monitoring acoustic noise indicative of flow velocity, steam quality, and void fraction, or for the measurement of metallic noise indicative of vibration of tubes against each other or against tube support structures? Exactly how will this be done? What is the theory of operation? If it will be used to monitor an increase in ρv^2 leading to the onset of FEI, provide a description of the correlation of the velocity of steam voids through the secondary side of the steam generator and the relative changes in characteristics of the signal output from the various VLPMS accelerometers. If it is to be used for detecting actual tube vibration,

provide a description of the process that will be used for discerning actual tube vibration noise from background noise, and the required threshold identification criteria that will be applied to reach the conclusion that tube vibration is occurring.

b. Identify the ranges of amplitudes and frequencies of the acoustic noise signals from each accelerometer that are indicative of an approach to the conditions leading to FEI or actual tube vibration, and the reasons for selection of the more sensitive accelerometers. Also, discuss the required response time of the signal processing equipment needed to detect and continuously monitor either fluid velocities within the steam generator or tube impact noise, depending on the intended use of the enhanced VLPMS, and the actual response time capabilities of the equipment, from sensor through processed signal output, that is being proposed for use.

c. Discuss the acceptance criteria (e.g., magnitude of signal, plant power level, etc.) that will be used to establish the setpoints for the alarms described in Section 11 of your report: "The signals from these sensors are compared with preset alarm setpoints." Provide a description of how the alarm setpoints were established, and at what point during the start-up of Unit 2 will these alarm setpoints be calibrated into the VLPMS. If the setpoints have not yet been determined, provide a description of your plan for determining and implementing these settings.

d. Describe the planned operator actions and any changes to the procedures for responding to alarms or signals potentially indicative of tube-to-tube contact, including time limits for analyzing the signals and taking any necessary action including plant shutdown. Describe the lessons learned that have been drawn from the signals of potential metal-to-metal contact experienced in Unit 3 and how these lessons have been factored into current procedures.

e. A description of how you determined that acoustic noise monitoring and predictive signal processing was the best method for monitoring either the onset of FEI or actual tube vibration, including a list of other methods (e.g., time domain reflectivity probes calibrated for steam void propagation monitoring) that had been considered for enhancing steam generator tube monitoring during start-up of Unit 2, and the reasons for their rejection.

19. Reference 1, Section 11.2, page 52 – Provide additional details on how the GE Smart Signal System will be used in the context of tube-to-tube wear and/or the circumstances associated with tube-to-tube wear. What information/data will the system be evaluating? For what purpose?

20. Reference 3, page 17 of 129, refers to tube-to-support design clearance of 2 mils diametral. Confirm that this is the nominal diametral clearance under ambient conditions, or clarify the statement otherwise.

21. Reference 3, page 44 of 129, states that the plugged tubes have an effect on local thermal/hydraulic conditions upon returning to power and have been included in the

stability ratio calculations. The staff interprets this to mean the effect of the plugged tubes on the calculated thermal/hydraulic conditions were considered in the stability ratio calculations and that the stability ratio calculations included the plugged (and stabilized) tubes. Is this correct? Clarify, if not.

22. Reference 3, page 57 of 129, first full paragraph beginning with the words "Figure 6-1" – The third sentence states, "... it is not practical to use an individual run of the quarter model as a single Monte Carlo trial for contact forces." However, the staff was unable to ascertain from the subsequent discussion exactly what was done as an alternative? Nor was the staff able to discern this from Reference 6, Appendix 9. Provide or cite by reference a more complete description of how the cumulative distributions of contact forces were determined. For example, what is a "run?" What does it mean to "combine runs?" How were zones employed in order to provide a more practical approach? Are all tubes in a given zone assumed to have the same initial clearances, final clearances, and contact forces? Do all AVB #5 in a zone have the same cumulative distribution of contact forces? Is a Monte Carlo performed for each zone?

23. Reference 3 – Provide figures similar to Figures 6-19 and 6-20 for Unit 3, SG E-088, and Unit 2, SG E-088.

24. Reference 3, page 59 of 129, last paragraph – The sentence, "AVBs 2, 3, 11 and 10 near row 27 have sporadic dents in the vicinity of the noses of AVBs 1, 4, 9 and 12" does not appear to make sense. Provide further clarification relative to the discussion of Figure 6-20.

25. Reference 3, page 59 of 129 – There is a statement in the last paragraph that reads, "Patterns of dents and associated high contact forces are in good agreement with the final quarter model calculations." Provide or show this comparison.

26. Reference 3, page 107 of 129, second to last paragraph – Provide additional details of the wear growth model at the tube supports. Were cumulative probability functions of observed wear rates constructed and randomly sampled when developing the contact force probability distributions at each intersection? Was total gap at each intersection (prior to applying temperature and allowing the model to settle, leading to the development of contact forces) assumed to be the sum of the manufacturing gap and the maximum wear depth?

27. Reference 6, Appendix 8, "SG Tube Flowering Analysis", page 8-2 (307 of 474) – MHI concludes, in part, that the tube-to-AVB gaps in the center columns increase due to hydrodynamic pressure by [ ] when the manufacturing tolerance dispersion is not taken into account. MHI also concludes that the gap increase due to hydrodynamic pressure is small when the manufacturing tolerance dispersion is taken into account. Discuss whether this latter finding may simply reflect the hydrodynamic pressures acting to

relieve the tube-to-AVB contact forces caused by the manufacturing tolerance dispersion, such that the gaps are relatively unchanged relative to the case were the hydrodynamic pressure is not considered. Reference 6, Appendix 9, "Simulation of Manufacturing Dispersion for Unit-2/3," does not seem to make specific mention of whether the calculated tube-to-AVB contact forces directly considered the effect of the hydrodynamic effect on tube-to-tube contact forces, but the staff understands that they did not. If the staff's understanding is correct, explain how the resulting contact forces are conservative.

28. Reference 5, Section 2.6.1 – What is the estimated growth rate of the tube-to-tube wear in steam generator 3E0-88, tube R106C78? Describe how it was determined.

29. Reference 5, Figures 2-12 and 2-13 – Provide similar figures for Case 78 (all AVBs missing).

30. Reference 1, Figure 8-2 – Provide similar figure for maximum interstitial velocities.

31. In References 7 and 8 (specifically, in Section 7.2 of Reference 7 and in Section 8.0 of Reference 8), AREVA used Revision 3 of the Electric Power Research Institute "Steam Generator Management Program: Steam Generator Integrity Assessment Guidelines," in part, to assess the most limiting structural integrity performance criteria (e.g., the more limiting structural limit determined from (a) the three times the normal operating differential pressure criterion or (b) the safety factor of 1.2 on combined primary loads and 1.0 on axial secondary load criterion). In some cases, it appears that the limits in the Integrity Assessment Guidelines may have been based on specific tests and plant data. Please discuss whether you have confirmed the applicability of the limits in the Integrity Assessment Guidelines (in particular, those related to when non-pressure loads need to be considered) to the SONGS replacement steam generators.

32. SONGS Unit 2 Technical Specification (TS) 3.4.17 requires that steam generator structural integrity be maintained in Modes 1, 2, 3, and 4 (Power Operation, Startup, Hot Standby, and Hot Shutdown, respectively). Limiting Condition for Operation (LCO) 3.4.17, "Steam Generator (SG) Tube Integrity," requires that steam generator tube integrity shall be maintained and all steam generator tubes satisfying the tube repair criteria shall be plugged in accordance with the Steam Generator Program in MODES 1, 2, 3, and 4. The steam generator tube rupture (SGTR) accident is the limiting design basis event for SG tubes and avoiding an SGTR is the basis for LCO 3.4.17. Surveillance Requirement (SR) 3.4.17.1 requires "Verify SG tube integrity in accordance with the Steam Generator Program."

    The structural integrity performance criterion is described in SONGS Unit 2 TS 5.5.2.11.b.1 as follows:

> All in-service steam generator tubes shall retain structural integrity over the full range of normal operating conditions (including startup, operation in the power range, hot standby, cool down and all anticipated transients

> included in the design specification) and design basis accidents. This includes retaining a safety factor of 3.0 against burst under normal steady state full power operation primary-to-secondary pressure differential and a safety factor of 1.4 against burst applied to the design basis accident primary-to-secondary pressure differentials. Apart from the above requirements, additional loading conditions associated with the design basis accidents, or combination of accidents in accordance with the design and licensing basis, shall also be evaluated to determine if the associated loads contribute significantly to burst or collapse. In the assessment of tube integrity, those loads that do significantly affect burst or collapse shall be determined and assessed in combination with the loads due to pressure with a safety factor of 1.2 on the combined primary loads and 1.0 on axial secondary loads. [emphasis added]

As described in the SONGS Unit 2 license, SCE "is authorized to operate the facility at reactor core power levels not in excess of full power (3438 megawatts thermal)," which is also defined as Rated Thermal Power (RTP).

In SCE's operational assessment (OA) that evaluated tube degradation caused by mechanisms other than tube-to-tube wear (Reference 2), on Page 30 of 32, SCE concluded that "there is reasonable assurance that the performance criteria for the non-[tube-to-tube wear] TTW degradation will be met if Unit 2 were to operate for a full fuel cycle of 1.577 EFPY [effective full power years] at 100% reactor power." Thus it appears that in Reference 2, SCE considered the requirements of TS 5.5.2.11.b.1 by addressing the licensed full power condition.

In contrast, SCE performed three other operational assessments that evaluated tube degradation due to tube-to-tube wear (References 3-5), but it appears that in these OAs, SCE addressed structural integrity requirements for TTW only at 70% reactor power, instead of at 100% reactor power. For example, in Reference 3, Section 10.0, "Conclusions," page 117 of 129, SCE states: "A 70% operating power level returns the Unit 2 steam generators to within the operational envelope of demonstrated successful operation...Operation at 70% power assures in-plane stability (SR<1) without dependence on any effective in-plane supports for U-bends."

Therefore, it appears that SCE has not provided an operational assessment that addresses compliance with TS 5.5.2.11.b. for tube-to-tube wear, without reliance on compensatory measures (e.g., limiting reactor power to 70% RTP).

Please clarify how the information submitted by SCE demonstrates that the structural integrity performance criterion in TS 5.5.2.11.b.1 is met for operation within current licensed limits up to the licensed RTP, or provide an operational assessment that includes an evaluation of steam generator TTW for operation up to the RTP.

REFERENCES

1. Letter from Peter T. Dietrich, SCE, to Elmo E. Collins, USNRC, "Docket No. 50-361, Confirmatory Action Letter – Actions to Address Steam Generator Tube Degradation,

San Onofre Nuclear Generating Station, Unit 2," October 3, 2012; **Enclosure 2**, "San Onofre Nuclear Generating Station Unit 2 Return to Service Report, Revision 0." (ADAMS Accession No. ML12285A263; ADAMS Package No. ML122850320)

2. Attachment 6 to Reference 1, "SONGS U2C17 Steam Generator Operational Assessment," **Appendix A**, Revision 2, "SONGS U2C17 Outage - Steam Generator Operational Assessment," prepared by Areva NP Inc. Document No. 51-9182833-002 (NP), Revision 2), October 2012. (ADAMS Accession No. ML12285A267)

3. Attachment 6 to Reference 1, "SONGS U2C17 Steam Generator Operational Assessment," **Appendix B**, Revision 0, "SONGS U2C17 Steam Generator Operational Assessment for Tube-to-Tube Wear," prepared by Areva NP Inc. Document No. 51-9187230-000 (NP), Revision 0), October 2012. (ADAMS Accession Nos. ML12285A267, ML12285A268, and ML12285A269)

4. Attachment 6 to Reference 1, "SONGS U2C17 Steam Generator Operational Assessment," **Appendix C**, "Operational Assessment for SONGS Unit 2 SG for Upper Bundle Tube-to-Tube Wear Degradation at End of Cycle 16," prepared by Intertek APTECH for Areva, Report No. AES 12068150-2Q-1, Revision 0, September 2012. (ADAMS Accession No. ML12285A269)

5. Attachment 6 to Reference 1, "SONGS U2C17 Steam Generator Operational Assessment," **Appendix D**, "Operational Assessment of Wear Indications In the U-Bend Region of San Onofre Unit 2 Replacement Steam Generators," prepared by Westinghouse Electric Company LLC, Report No. SG-SGMP-12-10, Revision 3, October 2012. (ADAMS Accession No. ML12285A269)

6. Attachment 4 to Reference 1, "MHI Document L5-04GA564, Tube Wear of Unit-3 RSG - Technical Evaluation Report," Revision 9, October 2012, prepared by Mitsubishi Heavy Industries, LTD. (ADAMS Accession Nos. ML12285A265, ML12285A266, and ML12285A267)

7. Attachment 2 to Reference 1, AREVA NP Inc., Engineering Information Record, Document No. 51-9182368 – 003 (NP), "SONGS 2C17 Steam Generator Condition Monitoring Report." (ADAMS Accession No. ML12285A263)

8. Attachment 3 to Reference 1, AREVA NP Inc., Engineering Information Record, Document No. 51-9180143 – 001 (NP), "SONGS Unit 3 February 2012 Leaker Outage - Steam Generator Condition Monitoring Report." (ADAMS Accession No. ML12285A264)

If you have any further questions regarding this letter, please contact me at (301) 415-4032 or via e-mail at randy.hall@nrc.gov.

Sincerely,

/RA by BBenney for/

James R. Hall, Senior Project Manager
San Onofre Special Projects Branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-361

Enclosures:
Request for Additional Information

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	Docket Nos. 50-361-CAL
	)	& 50-362-CAL
SOUTHERN CALIFORNIA EDISON CO.	)	
	)	ASLBP NO. 13-924-01-CAL-BD01
(San Onofre Nuclear Generating Station,	)	
Units 2 and 3)	)	February 13, 2013
	)	

CERTIFICATE OF SERVICE

I hereby certify that, on this date, the "Reply Brief of Petitioner Friends of the Earth" and accompanying attachments were filed through the E-Filing system.

Signed (electronically) by Richard Ayres
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