

June 18, 2013

Mr. Kiyoshi Yamauchi
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Arlington, Virginia 22209

VIA EMAIL & FEDERAL EXPRESS

Subject: Mitsubishi's Proposed "Type 1" Repair to the San Onofre Nuclear Generating Station ("SONGS") replacement steam generators ("RSGs")

Dear Yamauchi-san:

This letter responds to your June 4, 2013 letter, which discusses Mitsubishi's U-Bend Repair Report and recommends a Type 1 repair (thicker anti-vibration bars ("AVBs")) to the defective SONGS RSGs. Your June 4, 2013 letter contains statements that are clearly wrong and disregard our companies' respective contractual roles and responsibilities.

MHI's Type 1 repair plan offered nothing more than an undeveloped engineering theory lacking adequate validation. Southern California Edison ("SCE") takes the safety of the people of California and the reliability of the local power supply very seriously, and we cannot embark on an experimental, first-of-a-kind repair that does not address the root cause of the tube leak and excessive wear in Mitsubishi's defective RSGs, or provide necessary assurances that these serious problems would not recur.

As you know, SONGS has been out of service for nearly 17 months. During this time, SCE has spent hundreds of millions of dollars investigating and repairing the RSGs and keeping the plant in a state of readiness in hopes that Mitsubishi would meet its obligation to repair or replace the RSGs. But with no viable path to restoring SONGS to service, SCE is forced to retire and decommission SONGS as a result of Mitsubishi's total and fundamental failure to meet its contractual obligations, including its obligation to repair or replace the defective RSGs with due diligence and dispatch.

Mitsubishi Promised That Its RSGs Would Be Free From All Defects

Your letter turns the relationship between Mitsubishi and SCE on its head. SCE is Mitsubishi's customer. It is a utility that operates SONGS, not a steam generator designer or manufacturer. SCE hired Mitsubishi for its purported expertise in designing and manufacturing steam generators – expertise Mitsubishi repeatedly promised SCE it had. SCE did not impose a specification on Mitsubishi. While SCE developed proposed specifications for the RSGs based on other steam generator replacement projects in the industry and its experience with the original SONGS steam generators, SCE sought, received and incorporated Mitsubishi's input on the specifications. In fact,

Mitsubishi and SCE went through several revisions of the document that ultimately became the Conformed Specification SO23-617-01 (the "Contract").

If any of the requirements in the Contract presented a risk that the RSGs would wear so rapidly that one of the RSGs would suffer a leak after less than a year of operation (or present any other safety concern), it was Mitsubishi's obligation – as the designer of the RSGs – to tell SCE so that the parties could prevent such problems. But Mitsubishi never suggested to SCE that any purported "requirement" in the Contract would lead to unsafe RSGs.

Indeed, Mitsubishi promised the opposite. Mitsubishi now claims that the four excessive wear phenomena and unprecedented thermal hydraulic conditions were "the result of the requirements in the SCE certified design specification." However, in the Contract, Mitsubishi promised, among other things, that:

- Mitsubishi's RSGs "shall be free from Defects." (Section 1.17.1.1.)
- "There will be no primary-to-secondary leakage due to Defects in any of the RSG Units." (Section 1.17.2.3.)
- "The service life of the RSGs shall be 40 calendar years[.]" (Section 3.7.1.1)
- The [RSGs] shall be designed and fabricated such that there is no primary to secondary tube leakage under any normal operating conditions." (Section 3.8.1.7.)
- The RSGs "shall be equipped with tube supports that adequately support the tube bundle," "facilitate internal circulation," "[p]reclude tube damage due to wear caused by flow induced vibration," and "[p]rovide the tube-to-tube support contact length such as to minimize tube wear." (Section 3.9.3.7.)
- Mitsubishi "shall demonstrate that its design will minimize vibration-induced tube wear or fatigue in the tube bend area of the tube bundle." (Section 3.9.3.7.)
- "The tube support/tube bundle assembly shall be fabricated such as to ensure no damage to the tubes and subsequent operation of the RSG with minimal vibration." (Section 3.10.3.5.)

Despite Mitsubishi's explicit promises, the RSGs experienced four excessive wear phenomena and suffered a primary-to-secondary leak due, among other things, to Mitsubishi's failure to accurately predict thermal-hydraulic conditions and Mitsubishi's failure to design effective supports.

Mitsubishi Has Failed To Meet Its Warranty Obligation To Repair or Replace Defects With Due Diligence And Dispatch

As you are aware, Section 1.17.1.3 of the Contract requires, among other things, that "[a]ny Defect . . . shall be repaired or replaced, in a mutually agreeable manner, by the Supplier at its sole expense with due diligence and dispatch." Almost 17 months after the outages at SONGS, Mitsubishi still has not repaired the RSGs or replaced the RSGs such that they could operate safely at full power for their 40-year operational life. In fact, Mitsubishi has not even offered a viable proposal for safely restoring the RSGs, much less one that could be implemented within anything approaching a reasonable timeframe.

I am surprised and disappointed that Mitsubishi management has chosen to repudiate the criteria that Mitsubishi engineers agreed were necessary and appropriate to determine whether a proposed repair would actually remedy the problems in Mitsubishi's defective RSGs. Following the outages at SONGS, our companies spent months developing mutually agreeable screening criteria to assist Mitsubishi in developing a permanent repair that could safely restore the RSGs to full operation in compliance with Mitsubishi's warranty obligations. In November 2012, multiple SONGS employees and contractors met almost daily with Mitsubishi in furtherance of this effort, with the belief that our companies were working toward the same goal. Mitsubishi engineers based both in California and in Japan were fully engaged in this effort, which culminated in jointly crafted criteria for evaluating repair options.

Your letter rejects any such mutual agreement and contends that Mitsubishi "never agreed to SCE's criteria." As an initial matter, Mitsubishi is wrong. But in any event, the screening criteria simply reiterate the requirements already present in the Contract. These criteria fell into four categories: the repair must be (1) effective in meeting warranty conditions, (2) validated, (3) capable of implementation, and (4) operational. In addition, the repair must be licensable by the Nuclear Regulatory Commission ("NRC"). Mitsubishi cannot escape its clear contractual obligations to "repair[] or replac[e]" "with due diligence and dispatch" and to ensure the RSGs are "free from Defects" for their 40-year operational life. Neither Mitsubishi's Type 1 proposal, nor any of its other "efforts" to address the RSGs' Defects, were sufficient to meet its warranty obligations.

a. Mitsubishi's Type 1 Repair Lacks Adequate Validation To Ensure Safety

Your letter asserts that Mitsubishi's Type 1 repair proposal is a "comprehensive description of a repair that Mitsubishi recommends be implemented to stop tube-to-tube wear, prevent the associated in-plane fluid elastic instability conditions, and mitigate tube-to-anti-vibration bar (AVB) wear in the SONGS RSGs." Mitsubishi further claims that the thicker AVB design "amply demonstrates that the proposed repair is viable and appropriate." Again, Mitsubishi is wrong.

Despite the fact that the RSGs had been out of service nearly 17 months, the proposed repair has been described only in general terms. Nevertheless, in hopes that the RSGs could, in fact, have been restored to service through a Type 1 repair, SCE carefully reviewed the proposal in conjunction with its contractors and outside engineering consultants. Based on these reviews, SCE believes the Type 1 proposal is nothing more than a conceptual plan that does not address – much less solve – the problems in Mitsubishi's RSG design. Mitsubishi's proposal represents "first-of-a-kind" engineering which risks introducing new and additional problems into the RSGs. These risks included new modes of tube bundle damage, increased vibration of the existing AVBs, deformation of tubes, ballooning of tubes, and additional tube-to-tube wear. Mitsubishi's repair proposal is unvalidated and lacks sufficient testing, analysis and operational experience necessary to ensure it could safely restore the steam generators to 40 years of full power operation and avoid introducing additional, unacceptable risks.

b. Mitsubishi's Type 1 Repair Proposal Fails To Address The Thermal Hydraulic Conditions

Your letter claims that Mitsubishi's repair proposal "fully addresses the RSG tube wear, and does so without needing to modify the existing RSG thermal hydraulic conditions." This is illogical.

Mitsubishi previously identified the thermal hydraulic conditions, which Mitsubishi grossly underpredicted, as a root cause of each of the four wear phenomena in the RSGs (including the wear phenomena that caused the tube leak). Thus, addressing and correcting the thermal hydraulic conditions in both Units was a fundamental prerequisite for permanent, long-term repair of the RSGs. Rather than address these thermal hydraulic conditions, Mitsubishi's repair proposal risks exacerbating such conditions and accelerating rather than diminishing wear.

Your letter goes on to state that "[s]hould SCE choose to modify the thermal hydraulic conditions, such a modification, while unnecessary, may enhance the margin against tube wear." Again, Mitsubishi's statement attempts to flip the relationship between Mitsubishi (the designer and manufacturer) and SCE (the customer and operator) on its head. Mitsubishi, not SCE, had the responsibility (and, Mitsubishi claimed, the expertise) to predict, calculate and modify thermal hydraulic conditions. For that reason, SCE hired Mitsubishi, and the expertise Mitsubishi repeatedly promised it possessed, to design the RSGs. As the designer, Mitsubishi, not SCE, had the obligation to build sufficient margin into its RSG design. Mitsubishi, not SCE, undertook the obligation to repair or replace all defects in its RSG design at its sole expense and with due diligence and dispatch. Mitsubishi has failed to meet that obligation.

c. Mitsubishi Failed To Prove That Its Type 1 Repair Could Be Implemented

In addition, Mitsubishi's report fails to provide sufficient detail that its repair proposal could be safely implemented. Mitsubishi's Type 1 repair would require workers to access a space in the U-Bend region less than 18 inches wide where they could remain for only a matter of minutes given the radioactive environment. The specialty tooling Mitsubishi's proposal contemplated using in order to perform the repair in such extreme conditions is still in the developmental stage and does not yet exist. Mitsubishi did not provide details of how workers could effectively operate within the confined space in the U-bend region. On the contrary, Mitsubishi's report states that details will be "confirmed by training." Mitsubishi's proposal also lacks details for adequately controlling radiation exposure to the persons installing the new AVBs or preventing the introduction of foreign material that could further damage the RSGs. Given these uncertainties, SCE could not and would not permit Mitsubishi to engage in a science experiment which would have risked the safety of the workers engaged to undertake Mitsubishi's "repair" and the access to reliable power for the people of Southern California.

d. Mitsubishi Failed To Establish That Its Repair Proposal Was Licensable

Your letter also states that Mitsubishi "will also confirm the licensability of our repair plan." Mitsubishi has had almost 17 months to conduct the necessary evaluation. Your reference to the continuing need for future evaluation proves that Mitsubishi's repair proposal lacks sufficient detail and is not currently licensable. Given the low likelihood of being able to implement the repair plan under 10 C.F.R. 50.59, SCE would be required to seek a license amendment for SONGS, but Mitsubishi has failed to provide testing and analysis sufficient to assure the NRC that the repair is feasible and will address all wear phenomena seen at SONGS.

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After careful review of Mitsubishi's proposed Type 1 repair, SCE was forced to conclude that the U-Bend Repair Report failed to meet Mitsubishi's contractual warranty obligation to "repair[] or replac[e]" all defects "at its sole expense with due diligence and dispatch." Mitsubishi's Type 1 repair proposal presents an unacceptable level of uncertainty with respect to the design, operation, and licensability of the SONGS RSGs. The proposed repair is without precedent in the U.S. nuclear industry, represents "first-of-a-kind" engineering, and threatens unanalyzed and unacceptable risks. In short, Mitsubishi's U-Bend Repair Report presents engineering concepts that have not been sufficiently validated and do not offer any guarantee (or high reliability) of success.

Mitsubishi Has A Contractual Obligation To Bear All Warranty Costs And Expenses

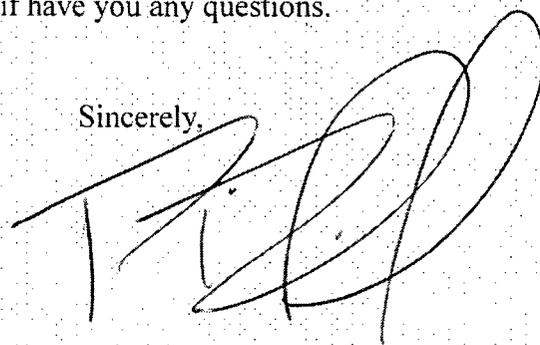
Finally, I am very disappointed in Mitsubishi's refusal to acknowledge its obligations to pay SCE's invoices for the expenses that SCE was forced to incur as part of the efforts to investigate and repair the RSGs. Section 1.9.4 of the Contract requires Mitsubishi to pay these expenses within 30 days of invoice. Mitsubishi's "payment" of one of SCE's six invoices last December is meaningless since Mitsubishi refuses to acknowledge that SCE is entitled to the transferred funds and expressly reserved its right to seek "offsets" from SCE for those amounts in the future.

As you know, SCE has provided Mitsubishi with several thousand pages of detailed back-up documents supporting the charges. SCE employees have spent hundreds of hours responding to Mitsubishi's ongoing demands for more information about SCE's efforts to assist Mitsubishi in investigating and repairing the RSGs, including by creating specialized reports for Mitsubishi that otherwise do not exist. The documentation SCE has provided far exceeds the level of detail that is customary in the industry (and goes well beyond the detail that Mitsubishi has ever provided SCE in support of its charges).

Regarding the AREVA invoices your references in your letter, I must remind you that SCE was required to redact certain proprietary information from the invoices it received from third-party vendors (such as AREVA). The redacted invoices still reflected the amounts that SCE paid and included a detailed description of the services the vendors provided. Nevertheless, to accommodate Mitsubishi, SCE negotiated with the vendors to permit Mitsubishi's consultants to review unredacted invoices (including proprietary information that is not relevant to the validation of the invoices), and Mitsubishi's consultants have had unredacted AREVA invoices for months. But Mitsubishi still has not acknowledged its obligation to pay a penny of the costs reflected in the complete invoices. This is not the conduct of a company that supports its customer in good faith.

Please do not hesitate to contact me at if have you any questions.

Sincerely,

A large, stylized handwritten signature in black ink, appearing to be the initials 'TRP' followed by a large flourish.