July 17, 2013 (effective July 18, 2013)

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Re:

Notice of Dispute Regarding Conformed Specification for Design and Fabrication of the Replacement Steam Generators for Unit 2 and Unit 3 (Specification SO23-617-01, Revision 4) (the "Contract"), Purchase Order No. 6C294014 (as replaced by Purchase Order No. 4500024051)

#### Dear Gentlemen:

As counsel to Southern California Edison Company ("SCE") and Edison Material Supply LLC (collectively, "Edison"), we write to notify Mitsubishi Nuclear Energy Systems, Inc. (as successor-in-interest to Mitsubishi Heavy Industries of America, Inc.) and Mitsubishi Heavy Industries, Ltd. (collectively, "Mitsubishi") of a dispute pursuant to Section 1.22.1 of the abovereferenced Contract. SCE provides this notice individually and in its capacity as Operating Agent of the San Onofre Nuclear Generating Station ("SONGS"). 1

SONGS has been out of service since January 2012, when one of the Replacement Steam Generators ("RSGs") that Mitsubishi designed and fabricated experienced a radioactive coolant leak after only 11 months of operation. Edison rapidly shut down Unit 3 to prevent any threat to public health or safety and inspected all of the Mitsubishi RSGs, revealing unexpected, excessive tube wear. Investigations by the Nuclear Regulatory Commission ("NRC"), Edison, and

<sup>&</sup>lt;sup>1</sup> As you know, SONGS is owned by SCE as well as San Diego Gas & Electric Co. and the City of Riverside (together, the "Co-Owners").

Mitsubishi itself indicate that the wear was caused by flow-induced vibration ("FIV"). This extreme wear, and the resulting radioactive coolant leak, resulted directly from Mitsubishi's breach of dozens of provisions of the Contract. In short, Mitsubishi totally and fundamentally failed to deliver what it promised.

Edison was clear with Mitsubishi from the start of the Steam Generator Replacement Project that preventing tube wear was one of its top priorities. To obtain the Contract and throughout the design and fabrication process, Mitsubishi specifically assured Edison that it had the tools and expertise to analyze factors that could lead to tube wear, including thermal hydraulic conditions and vibration. Back then, Mitsubishi's assurances were unequivocal: Mitsubishi told Edison that it could and would design RSGs that would not experience any form of FIV, a category of vibration that includes fluid elastic instability ("FEI"), random vibration, and other vibration mechanisms known to cause tube wear in other nuclear steam generators. Mitsubishi promised to preclude tube damage caused by FIV, regardless of the cause and without any limitation, exclusion, caveat, or carve-out. Mitsubishi agreed to design and fabricate four RSGs for Edison that would operate safely and reliably for 40 years in accordance with the technical specifications that Mitsubishi itself helped develop. Mitsubishi warranted that the RSGs would be free from defects for at least 20 years. In addition, Mitsubishi promised that it would repair or replace any defective aspect of the RSGs with due diligence and dispatch.

After the leak and the discovery of excessive wear in all of the Mitsubishi RSGs, Edison demanded that Mitsubishi fulfill its warranty obligations to repair or replace the RSGs so that SONGS could safely resume operation at full power. Edison gave Mitsubishi every chance to fulfill its obligations. In fact, Edison spent hundreds of millions of dollars to investigate, repair, and keep SONGS in a state of readiness for potential restart. With SONGS out of service, Edison and the Co-Owners were forced to spend hundreds of millions of dollars to purchase power to serve their customers. In the meantime, Edison also applied to the NRC for permission to restart one of the two SONGS Units at partial power. But more than 16 months after the leak, Mitsubishi had not even presented a viable proposal to solve the serious problems it created and safely restore both SONGS Units to service at full power, and the NRC had not approved Edison's request for restart at partial power. With the possibility and timing of any power generation at SONGS uncertain, Edison decided in June 2013 that the prudent course of action was to retire SONGS permanently.

Edison's investigation regarding Mitsubishi's misconduct is ongoing, but it has been hampered by Mitsubishi's refusal to honor its contractual obligation to allow Edison to review documents related to the work Mitsubishi performed on the RSGs. Nevertheless, it already is clear that Mitsubishi misrepresented its ability to design and fabricate the SONGS RSGs in order to obtain the Contract, breached numerous provisions of the Contract, and grossly failed to use due care. The consequences of Mitsubishi's misconduct are extremely serious. Edison seeks to resolve this dispute with Mitsubishi in accordance with the dispute resolution provisions set forth in Section 1.22 of the Contract.

## I. FACTUAL BACKGROUND

## A. Mitsubishi's Proposal

SCE is a utility company that provides electricity to more than 14 million people across more than 50,000 square miles of central, coastal and southern California. SONGS is a nuclear power plant that formerly powered more than 1.4 million homes in California.

As Mitsubishi was aware from the outset, Edison is not a steam generator designer or manufacturer, and it does not have the expertise to design and manufacture nuclear steam generators. In the early 2000s, Edison determined that the original SONGS steam generators would need to be replaced as a result of tube wear and corrosion following decades of service. Edison undertook a years-long "benchmarking" investigation, meeting with operators of other nuclear power facilities that had recently replaced their own steam generators to learn from their experiences. Edison then began meeting with companies from around the world to select a vendor to design and fabricate the SONGS RSGs.

In December 2003, Edison issued a "request for proposal" for the design and fabrication of four RSGs for SONGS. Because it does not have the expertise to design and manufacture steam generators, Edison believed it prudent to seek a firm that was qualified to both design and manufacture the RSGs in one facility. This would allow the selected firm's design experts to conduct direct oversight of the fabrication process. Mitsubishi is one of a very limited number of American Society of Mechanical Engineers ("ASME") "N-stamp holders" whose Quality Assurance Program are certified for the design and manufacture of steam generators for nuclear power facilities. At the time of its SONGS bid, Mitsubishi had over 30 years of experience designing and fabricating many dozens of steam generators for nuclear power plants. Indeed, with more than a century of experience and approximately 60,000 employees, Mitsubishi was among the most established engineering firms in the world.

Throughout the bidding process, Mitsubishi touted its technical expertise and assured Edison that Mitsubishi had the experience and tools to prevent the very types of problems that ultimately occurred in the RSGs.<sup>2</sup> Edison reasonably believed that Mitsubishi would be able to analyze the potential for FIV and that Mitsubishi had the experience and tools to preclude tube damage resulting from FIV in the RSGs. In particular, Edison believed that the proprietary computer codes that Mitsubishi had used for many dozens of other steam generator design projects were sufficient to address any vibration concerns in the SONGS RSGs.<sup>3</sup>



Although Edison's request for proposal included a draft technical specification based on an industry sample specification and Edison's bench-marking efforts, it discussed the specification extensively with Mitsubishi and revised the technical specifications in accordance with Mitsubishi's input. Mitsubishi negotiated, approved, and agreed to every single technical and commercial term of the Contract. Edison reasonably believed that it could rely on Mitsubishi to design and fabricate RSGs that would safely operate for 40 years in accordance with the terms of the Contract – including Mitsubishi's promise to prevent tube wear caused by FIV and to preclude the type of leak that occurred here.

#### B. The Contract

Under the Contract, Edison agreed to pay Mitsubishi for the four RSGs and "assume[d] no other expressed or implied responsibilities" beyond the discrete duties expressly assigned to it. Mitsubishi, on the other hand, agreed to provide, among other things, all necessary management, supervision, engineering, design, fabrication, inspection and testing of the RSGs. Additionally, Mitsubishi committed to a number of specific duties and express warranties, including:

- "The Supplier warrants that the Apparatus shall meet all the requirements of the Specification, including the Applicable Standards."
- "The Supplier warrants that the Apparatus shall be free from Defects."
- "The service life of the RSGs shall be 40 calendar years from the date of startup following their installation" and "[n]o RSG parts or components are allowed to require replacement during the stipulated RSG service life, unless specifically identified for routine replacement[.]"
- "The warranty period for discovery of Defects in an RSG Unit . . . [shall] commence upon Acceptance of the RSG Unit and continue for twenty (20) years unless this period is extended for an additional ten (10) year period" at Edison's option. 9
- Mitsubishi agreed that it will be "responsible for all costs and expenses associated with such repair or replacement [of any Defect discovered during the Warranty

<sup>&</sup>lt;sup>4</sup> Contract § 3.2.1.

<sup>&</sup>lt;sup>5</sup> *Id*.

<sup>&</sup>lt;sup>6</sup> *Id.* at § 1.17.

<sup>&</sup>lt;sup>7</sup> *Id.* at § 1.17.1.1.

<sup>&</sup>lt;sup>8</sup> *Id.* at § 3.7.1.

<sup>&</sup>lt;sup>9</sup> *Id.* at § 1.17.1.2.

Period], including but not limited to (i) any necessary adjustments, modifications, change of design, removal, repair, replacement or installation of the Apparatus, and (ii) all parts, materials, tools, equipment, transportation charges and labor as may be necessary for such repair or replacement[.]"<sup>10</sup>

- "The Supplier warrants that the Apparatus shall meet the additional performance standards set forth in the following subsections of this Section 1.17.2." Among these standards are the following:
  - o "[T]he tubes of each RSG shall be designed and fabricated such that they remain in service throughout the Warranty Period[.]"<sup>12</sup>
  - o "There will be no primary-to-secondary leakage due to Defects in any of the RSG Units for the duration of the Warranty Period." 13
- Mitsubishi guaranteed that its RSG design would be licensable. 14
- Mitsubishi promised that its RSGs would meet all applicable codes and regulations, including the American Society of Mechanical Engineers' Boiler Pressure and Vessel Code Section III. 15
- Mitsubishi confirmed that "[t]he RSG shall be equipped with tube supports that adequately support the tube bundle and facilitate internal circulation," "[p]reclude tube damage due to wear caused by flow induced vibration (FIV)," and "[p]rovide the tube-to-tube support contact length such as to minimize tube wear." 16
- "The Supplier shall address flow-induced and turbulence-induced vibration of the tube supports to demonstrate that ... wear of the tubes will not occur.... The analysis shall account for reduced damping associated with fouling of the gaps between the tubes and tube supports. Specifically, the Supplier shall demonstrate that its design will minimize vibration-induced tube wear or fatigue in the tube bend area of the tube bundle."

<sup>&</sup>lt;sup>10</sup> *Id.* at § 1.17.1.3.

<sup>&</sup>lt;sup>11</sup> Id. at § 1.17.2.1.

<sup>&</sup>lt;sup>12</sup> *Id.* at § 1.17.2.2.

<sup>&</sup>lt;sup>13</sup> *Id.* at § 1.17.2.3; *see also* § 3.8.1.7 ("The RSGs shall be designed and fabricated such that there will be no leakage from the primary to secondary side under any normal operating condition.").

<sup>&</sup>lt;sup>14</sup> *Id.* at § 3.6.1.2.

<sup>&</sup>lt;sup>15</sup> See id. at §§ 1.1.1, 1.2.6, 1.13.1, 1.13.3, 3.5.1, 3.5.2.3.

<sup>&</sup>lt;sup>16</sup> *Id.* at § 3.9.3.7.

<sup>&</sup>lt;sup>17</sup> *Id*.

• "Any Defect discovered during the Warranty Period, and damage to any other part of the Apparatus or other property resulting directly from such Defect, shall be repaired or replaced, in a mutually agreeable manner, by the Supplier at its sole expense with due diligence and dispatch." 18

## A "Defect" is broadly defined in the Contract as:

Work that (i) does not conform to the requirements of the Purchase Order, (ii) is not new as of the date of delivery or of uniform good quality as required pursuant to the Purchase Order, (iii) is not free from defects or deficiencies in design, application, materials, manufacture or workmanship, or that contain improper or inferior workmanship contrary to the requirements of the Purchase Order. or (iv) would adversely affect, contrary to the requirements of the Purchase Order, (a) the performance of the Apparatus under operating conditions consistent with those contemplated in the Purchase Order, (b) the continuous safe operation of the Apparatus during the Apparatus's design life, or (c) the structural integrity of the Apparatus and/or (v) are not suitable for the use as set forth in the Purchase Order; provided that (i) if Supplier fails to satisfy a Guaranteed Performance Level, such failure shall not be considered a Defect provided Supplier has paid the liquidated damages applicable to such Guaranteed Performance Level for such failure, and/or (ii) cosmetic changes in appearance over time shall not be considered a Defect. Anything to the contrary notwithstanding, the Parties agree that Work shall be considered to be defective if it does not conform to the Applicable Standards or Applicable Laws. 19

"Work" likewise is broadly defined to include:

The Apparatus, together with all engineering, analysis (including without limitation analysis of the impact of installation and use of the Apparatus on then-existing SONGS facilities), design, manufacturing, fabrication, assembly, inspection, testing, Documentation, Technical Services and all other obligations of the Supplier to be performed or furnished as required by the Purchase Order.<sup>20</sup>

<sup>&</sup>lt;sup>18</sup> *Id.* at § 1.17.1.3.

<sup>&</sup>lt;sup>19</sup> *Id.* at § 1.2.13.

<sup>&</sup>lt;sup>20</sup> *Id.* at § 1.2.59.

## C. Design And Manufacture Of The RSGs

To protect its ratepayers' and shareholders' investment in this critical equipment, Edison exercised diligent oversight of Mitsubishi's work throughout the design and fabrication of the RSGs. Edison closely monitored the progress of the work and engaged Mitsubishi in a healthy and vigorous discussion about significant aspects of the RSGs' design and fabrication. While Edison is not a designer or fabricator of steam generators, it employs a highly experienced engineering staff, and Edison had decades of experience operating and maintaining the original steam generators. Edison called on this knowledge and experience to challenge Mitsubishi's assumptions and ask Mitsubishi to justify its design choices.

Mitsubishi did not inform Edison at any time that the steam generators would be susceptible to FEI or other vibration that could cause tube-to-tube contact and excessive wear. On the contrary, Mitsubishi repeatedly assured Edison that Mitsubishi's design of these RSGs would meet each and every contractual promise and warranty. But despite these promises, Mitsubishi failed to discover or address serious defects embedded in the RSGs.<sup>21</sup>

## 1. Mitsubishi Grossly Under-Predicted Thermal-Hydraulic Conditions In The RSGs

Mitsubishi's gross failure to accurately predict T/H conditions in the RSGs is one example of its flawed design and quality assurance procedures. Mitsubishi scaled up and changed the design it had used in other steam generators for use with the SONGS RSGs without properly verifying the effects of those changes, conducting appropriate testing, modeling and analyses, or adequately relying on commercial operating experience.

As one step in modeling and analyzing its RSG design, Mitsubishi elected to use its proprietary T/H code, FIT-III, to predict actual T/H operating conditions.<sup>22</sup> Mitsubishi provided Edison with documentation that purported to show that FIT-III was benchmarked against other accepted T/H codes and had been used in many successful steam generator design projects in the



<sup>&</sup>lt;sup>22</sup> Understanding the T/H conditions within a steam generator is one critical component in developing a safe and reliable design. Relevant T/H conditions include "fluid velocities," which are the speeds at which the water and steam move within the steam generator, and "void fraction," which represents the proportion of water as compared to steam within the steam generator. As part of the process of confirming that the steam generator design will preclude FEI, the designer must accurately predict fluid velocities throughout the tube bundle and ensure those velocities are less than the "critical velocities" at which FEI initiates.

past.<sup>23</sup> While not disclosed to Edison at the time, it now appears that Mitsubishi never performed benchmark testing of FIT-III using the type of tube array configuration that it used in the RSG design for SONGS. FIT-III was verified using pitch values based on a square tube pitch in the U-bend region, but the RSGs feature a triangular tube pitch.<sup>24</sup> In other words, FIT-III was configured by Mitsubishi to model tubes that were arranged differently than those in the SONGS RSGs.<sup>25</sup> Furthermore, even Mitsubishi's grossly under-predicted void fractions were outside of the FIT-III code's experimentally validated range, but Mitsubishi never investigated or took action to determine the accuracy of FIT-III in the predicted range. In short, Mitsubishi breached its contractual obligation to verify that the FIT-III code was accurate and used appropriately.<sup>26</sup>

After the SONGS Units were taken offline in 2012, Mitsubishi conducted modeling using ATHOS, a modeling code commonly employed in the nuclear power industry. This modeling determined that Mitsubishi's RSGs generated fluid flow velocities were up to four times greater than Mitsubishi had predicted during the RSG design phase. The ATHOS model concluded that the true maximum void fraction in the RSGs was on the order of 0.996, compared to Mitsubishi's estimate of a maximum void fraction of 0.95 during the design process. The practical effect of this difference is enormous, as the actual volume of water in liquid form — which provides critically important damping against vibration — was 10 times lower than Mitsubishi's design value.



<sup>&</sup>lt;sup>26</sup> Contract § 1.11.8 ("Any review or approval required from EMA or the Edison Representative (such as review or approval of any drawings, reports or other submittals) shall not relieve the Supplier from its obligations under the Purchase Order, including its obligations to independently verify and assure that the Work complies with all of the requirements of the Purchase Order.").

<sup>&</sup>lt;sup>27</sup> See Mitsubishi's "Root Cause Analysis Report for tube wear identified in the Unit 2 and Unit 3 Steam Generators of San Onofre Nuclear Generating Station" (hereafter "Mitsubishi's RCA") at 21-22.

<sup>&</sup>lt;sup>28</sup> *Id*.

The extreme actual operating T/H conditions in the RSGs – as opposed to the more benign conditions predicted by Mitsubishi's computer model – put Mitsubishi's design far outside both its prior experience and prior industry operating experience. These T/H conditions, coupled with a lack of adequate structural tube support, resulted in damaging FIV, including FEI and other vibration mechanisms. These vibration mechanisms in turn caused four types of excessive tube wear: tube-to-tube wear, tube-to-AVB wear, tube-to-TSP wear, and tube-to-retainer bar wear. While all four types of wear violated Mitsubishi's contractual obligations, the occurrence of tube-to-tube wear was truly exceptional: Edison is not aware of tube-to-tube wear ever occurring in another operating U-bend design steam generator.

By failing to identify and correct the errors embedded in its computer models, perform necessary and appropriate testing, design effective tube supports, and base its design on prior operating experience, Mitsubishi failed to consider properly the cumulative effects of the design changes in its scaled up RSG design. As a result of Mitsubishi's gross under-prediction of the actual T/H conditions in the RSGs, both Units suffered FEI and other vibration mechanisms that resulted in extensive and excessive tube wear. This is despite Mitsubishi's repeated assurance that there would be no FIV (including FEI and other vibration mechanisms) tube damage – of any kind.

## 2. The RSGs Have An Inadequate Tube Support Structure

Mitsubishi also designed and manufactured the RSGs with inadequate tube support structures. Mitsubishi failed to design and fabricate the AVBs to ensure there would be adequate contact points and contact force between the tubes and the AVBs, and failed to ensure that FIV, including FEI and other vibration mechanisms, and the resulting wear did not occur. Mitsubishi's design also did not have sufficient damping between the AVBs and tubes – as a result of Mitsubishi's failure to predict the RSG design's extreme actual T/H conditions – to prevent FEI. The conditions is a support of the result of Mitsubishi's failure to predict the RSG design's extreme actual T/H conditions – to prevent FEI.

Apparently this is not the first time Mitsubishi's tube support structures have proven inadequate. After the tube leak, Mitsubishi revealed that several Mitsubishi steam generators have experienced tube wear caused by FIV at AVBs. 33 Again, after the leak, Mitsubishi disclosed that it has had to replace the AVBs on at least 36 steam generators it designed and fabricated in at least 13 different Japanese nuclear power plants as a result of excessive wear, including tube wear and tube failure caused by FEI. 34 Mitsubishi recently told the NRC that its steam generators at the Mihama Nuclear Power Plant in Japan experienced tube rupture caused

 $<sup>^{29}</sup>$  Id. at 6; NRC Augmented Inspection Team Report at 10.

<sup>&</sup>lt;sup>30</sup> Mitsubishi's RCA at 13.

<sup>&</sup>lt;sup>31</sup> Mitsubishi's RCA at 7, 18-19.

<sup>&</sup>lt;sup>32</sup> *Id.* at 14-15, 19.

<sup>&</sup>lt;sup>33</sup> Mitsubishi's February 7, 2013, Commissioner Meeting Slides to the NRC at 2-3.

 $<sup>^{34}</sup>$  *Id.* at 3.

by FEI due to improper insertion of AVBs.<sup>35</sup> Edison is continuing to investigate Mitsubishi's failure to disclose problems with tube wear, tube failure, and FEI during the bidding process for the Contract as well as its failure to incorporate lessons learned from Mitsubishi's prior failures into the SONGS RSG design.

## 3. Mitsubishi Failed To Analyze The Retainer Bar Design

Mitsubishi used a similar retainer bar design for the SONGS RSGs as it did for the steam generators it had previously designed, but it again scaled up the design without adequately taking into consideration the impact of doing so. The SONGS RSGs are much larger than the steam generators in which Mitsubishi previously used its retainer bar design. To accommodate the new, larger size, Mitsubishi increased the length and decreased the diameter of the retainer bars. When making this design change, Mitsubishi failed to evaluate adequately the retainer bar for FIV and the tube wear it would cause. In fact, due to their increased length and decreased diameter, the retainer bars for the RSGs had a natural frequency that was lower than the retainer bars of other steam generators manufactured by Mitsubishi. As a result, the retainer bars for the RSGs were subject to FIV, resulting in excessive wear of adjacent steam generator tubes.

#### D. Installation of RSGs and Removal from Service

The Unit 2 RSGs were delivered to SONGS in February 2009. Edison retained an outside vendor to remove the original steam generators and install the new ones. Installation of the Unit 2 RSGs began in September 2009, and Edison brought Unit 2 back online with the new Mitsubishi RSGs in April 2010. The Unit 3 RSGs arrived at SONGS in October 2010, installation began that same month, and Unit 3 was returned to service in February 2011. Pursuant to the Contract, Edison performed pre-service inspections before accepting the RSGs;<sup>38</sup> however these tests are not designed to detect and are not capable of detecting the latent defects embedded in Mitsubishi's RSGs that led to the excessive vibration and wear.

On January 31, 2012, while operating at 100% power, Unit 3 experienced a breach of the reactor coolant pressure boundary, causing primary-to-secondary radioactive coolant leakage. Edison immediately commenced a rapid shutdown of Unit 3 to limit any potential radioactive release to the environment. The Unit 3 was safely cooled down and removed from service the same day and never restored to service.

At the time Unit 3 was removed from service, Unit 2 was already offline for a scheduled refueling outage. During the refueling outage, Edison had identified several types of wear in Unit 2. Because the Unit 2 and Unit 3 RSGs are designed identically, Edison engineers performed additional inspections of the Unit 2 RSGs for signs of premature or dangerous tube

<sup>&</sup>lt;sup>35</sup> *Id.* at 4.

<sup>&</sup>lt;sup>36</sup> Mitsubishi's RCA at 23-24.

<sup>&</sup>lt;sup>37</sup> *Id.* at 7.

<sup>&</sup>lt;sup>38</sup> Contract § 1.16.

wear that could lead to a leak. Investigation ultimately revealed wear patterns in Unit 2 similar to those in Unit 3. Unit 2 has remained out of service since January 2012.

Consistent with its obligations under the Contract, Edison notified Mitsubishi of the problems at SONGS immediately after Unit 3 was shut down. Edison demanded that Mitsubishi fulfill its warranty obligations to investigate and repair, or replace their faulty RSGs. Edison also notified the NRC, which dispatched an Augmented Inspection Team ("AIT") to investigate the causes of the excessive tube wear. Edison committed considerable time and resources to facilitate its own, Mitsubishi's, and the NRC's investigations of the root cause of the tube wear. The AIT concluded, among other things, that Mitsubishi's FIT-III modeling errors caused it to design the RSGs with inadequate T/H margin to preclude FEI.

#### E. Efforts To Restore SONGS To Service

In the meantime, Edison attempted to mitigate the damages Mitsubishi caused. On March 27, 2012, the NRC issued a Confirmatory Action Letter ("CAL") detailing the steps Edison would need to take, and the standards it would have to meet, to restore either Unit at SONGS to service. Edison worked diligently to comply with the terms of the CAL. It identified and retained numerous experts and consultants to ensure that Unit 2 could be restarted safely and efficiently at reduced power. Following tube plugging and other repairs and extensive analysis, Edison submitted a formal response to the NRC in October 2012 that detailed its progress in complying with the terms of the CAL and explained why it believed that a limited, conditional restart at 70% power for a five-month operating interval was safe. As Edison continued to expend significant resources to effect a short-term solution, Edison repeatedly urged Mitsubishi to meet its contractual obligations to come up with a viable long-term plan to bring SONGS back online at full power.

To be viable, a long-term repair plan had to meet at least the following criteria: (1) the repair must meet the warranty provisions of the Contract; (2) the repair must be validated; (3) the repair must be capable of safe implementation; (4) the repair must restore the RSGs to their 40-year operational life at 100% power; and (5) the repair must be licensable by the NRC (collectively, the "Repair Criteria"). It was not until December 14, 2012, nearly 11 months after the RSGs had been removed from service, that Mitsubishi recommended conceptual repair or replacement options to Edison. All of the options were still in nascent stages, and none met the five Repair Criteria above. For example, Mitsubishi's "Type #1" repair would not restore the RSGs to 100% power for their promised 40-year life, would expose repair personnel to high levels of radiation, posed additional risks that could exacerbate tube wear, did not address the T/H conditions, and still required the invention of new technology to be implementable. Mitsubishi informed Edison that it would take at least one year to implement its fastest repair, and at least five and a half years to replace the tube bundles or replace the steam generators. <sup>39</sup>

<sup>&</sup>lt;sup>39</sup> December 14, 2012 Letter from Hitoshi Kaguchi (MNES) to Edward Avella (Edison) Re: "Repair and Replacement Options," (MKT-NSL-120060) at 2 ("Mitsubishi currently estimates that completion of the detail design, tooling and field implementation of the thick AVB repair will require one year, not taking into account possible additional time that might be required for

These timelines do not take into account the time that would be required for the NRC to review and approve the restart of the RSGs, which could take 12 to 24 months or longer.

In May 2013, the NRC's Atomic Safety and Licensing Board Panel concluded that the proposed restart of Unit 2 at reduced power constituted a *de facto* amendment to the SONGS operating license. If hearing were needed on such an amendment, such hearings could have taken months or even years to complete, and a positive outcome was not guaranteed. As of June 2013, there was considerable uncertainty as to whether SONGS would ever be restored to service, even at a level of power well below that which Mitsubishi promised to provide. There was no formal timetable for a decision on the request for a limited restart of Unit 2, and despite numerous requests, Mitsubishi had not provided anything but "conceptual" proposals for repair that lacked sufficient detail to be considered viable solutions. Accordingly, on June 7, 2013, Edison announced that SONGS would be permanently retired from service, long before the anticipated end of its useful life.

#### II. MITSUBISHI'S BREACHES OF CONTRACT AND WARRANTY

## A. Breach of Warranty

## 1. The RSGs Do Not Satisfy The Contract

Mitsubishi made many important representations and promises regarding the design, manufacture and performance of the RSGs, both in its initial bid and in the Contract. Edison reasonably relied upon these representations and promises in awarding the Contract to Mitsubishi and choosing to accept, install, and operate the RSGs.

It is now clear that many of Mitsubishi's representations and promises were false. 40 Notwithstanding these assurances, the AVBs were not able to provide adequate tube support, the RSGs did experience damaging FIV, and (for Unit 3) this occurred after only 11 months of operation – more than 39 years short of the 40-year operating life set forth in the Contract. 41 To the extent Mitsubishi knew or should have known that these representations were false at the time, Mitsubishi committed fraud or negligent misrepresentation.

NRC review. ...Mitsubishi currently estimates that the schedule for both of these options (i.e., the design, manufacture and delivery of either replacement tube bundles or entire new replacement steam generators) would take five and a half years.").



<sup>&</sup>lt;sup>41</sup> See Contract § 3.7.1.1.

Mitsubishi also has breached a number of the additional warranties it made in the Contract. Mitsubishi did not meet the requirements of the Specification.<sup>42</sup> For instance, the RSGs<sup>43</sup>:

- do not conform to the requirements of the Purchase Order;<sup>44</sup>
- are not free from Defects or deficiencies in design, application, materials, manufacture or workmanship;<sup>45</sup>
- do not perform under operating conditions consistent with those contemplated in the Purchase Order;<sup>46</sup>
- failed to prevent primary-to-secondary leakage;<sup>47</sup>
- had to be taken off-line far short of the 20-year warranty and 40-year operating life;<sup>48</sup>
- have compromised structural integrity;<sup>49</sup>
- are not suitable for use as set forth in the Purchase Order;<sup>50</sup>
- were not designed and fabricated such that the tubes remained in service throughout the Warranty Period;<sup>51</sup>
- were not designed in accordance with the requirements of the ASME Boiler and Pressure Vessel Code Section III;<sup>52</sup> and

<sup>&</sup>lt;sup>42</sup> See id. at § 3.2.1.

<sup>&</sup>lt;sup>43</sup> The Mitsubishi defaults identified in this letter are not meant to be exhaustive, and Edison and the Co-Owners reserve all rights and do not waive the right to assert other breaches or other claims, and to assert additional or different facts of any kind, arising out of or relating to the above-described circumstances in any forum. Omission in this Notice of any potential breaches or other claims or facts is not intended to waive any rights with respect thereto, which rights are expressly preserved.

<sup>&</sup>lt;sup>44</sup> See Contract §§ 1.1.1, 1.2.13.

<sup>&</sup>lt;sup>45</sup> See id. at § 1.17.1.1.

<sup>&</sup>lt;sup>46</sup> See id. at § 1.2.13.

<sup>&</sup>lt;sup>47</sup> See id. at §§ 1.17.2.3, 3.8.1.7.

<sup>&</sup>lt;sup>48</sup> See id. at §§ 1.17.1.2, 3.7.1.1.

<sup>&</sup>lt;sup>49</sup> See id. at § 1.2.13.

 $<sup>^{50}</sup>$  See id. at §§ 1.2.13, 1.2.42.

<sup>&</sup>lt;sup>51</sup> See id. at § 1.17.2.2.

• are not licensable as required by the Purchase Order. 53

Each of these facts represents a violation of an express covenant in the contractual warranty. Furthermore, it is now apparent that Mitsubishi was unable or unwilling to meet its contractual warranty obligation to repair or replace the RSGs with "due diligence and dispatch" to a condition that satisfies the requirements set forth in the Contract.<sup>54</sup>

# 2. Mitsubishi Has Failed To Repair Or Replace With Diligence And Dispatch

Mitsubishi's efforts to date fall far short of the repair or replacement contemplated by the Contract. By the time Edison was forced to decide to permanently retire SONGS – more than 16 months after the leak – Mitsubishi still had not presented information demonstrating that any potential repair would adequately address the RSGs' T/H and support problems. Moreover, as Mitsubishi is aware, a repair or replacement proposal is not viable unless it meets the Repair Criteria listed above. As of June 2013, none of Mitsubishi's suggestions for repairs came close to meeting these standards.

On December 14, 2012, more than 10 months after the RSGs had been removed from service, Mitsubishi recommended conceptual repair or replacement options to Edison. Mitsubishi presented three conceptual options to Edison that Mitsubishi considered "technically viable": (1) insertion of thicker AVBs ("Type #1"), (2) replacement of the steam generator tube bundle (the "lower assembly") ("Type #3"), and (3) total replacement of the steam generators ("Type #4"). The best-case timetables for these proposals ranged from over one year for Type #1 and over five and a half years for Types #3 or #4, without including time required for any license amendments likely to be necessary as a result of the repair or replacement. 55

While Mitsubishi claimed that its Type #1 repair, which involved the insertion of thicker AVB bars, was "technically viable," Mitsubishi was not able to provide sufficient documentation that Type #1 would meet the Repair Criteria, *i.e.* that the repair option would be effective, validated, safe, feasible, and approved by the NRC, before Edison was forced to permanently shut down SONGS. Mitsubishi has provided Edison with limited documentation regarding Type #1: (1) a conceptual PowerPoint presentation on December 14, 2012 and (2)

Neither of these

"packages" contained what could be considered engineering analysis sufficient to allow Edison

<sup>&</sup>lt;sup>52</sup> See id. at §§ 3.5.1, 3.5.2.3.

<sup>&</sup>lt;sup>53</sup> See id. at § 3.6.1.

<sup>&</sup>lt;sup>54</sup> See Contract § 1.17.1.3 ("Any Defect...shall be repaired or replaced, in a mutually agreeable manner, by the Supplier at its sole expense with due diligence and dispatch by repairing or replacing (as appropriate) any defective part...").

<sup>55</sup> Mitsubishi explored a potential Type #2 repair but did not recommend it to Edison.

and third-party experts to determine whether the Type #1 repair could be safely implemented and satisfy the requirements of the Contract.

Mitsubishi's Type #1 proposal represented "first-of-a-kind" engineering, which risked introducing new and additional problems into the RSGs. These risks include, among other things, new modes of tube bundle damage, increased vibration of the existing AVBs, deformation of tubes, ballooning of tubes, and additional tube-to-tube wear. More importantly, the Type #1 repair did not address or correct the extreme T/H parameters which significantly contributed to the creation of the conditions that allowed FEI to occur in the RSGs in the first place. The Contract required that Mitsubishi correct the "root cause" of any defect and demonstrate to Edison "that there is no risk of the reoccurrence of such problem" - something Mitsubishi clearly could not do with respect to a Type #1 repair since it did not address the T/H conditions that allowed the FEI to occur. 56 Mitsubishi's repair proposal had not been validated and lacked the sufficient testing, analysis and operational experience necessary to ensure it will safely restore the steam generators to 40 years of full power operation and avoid introducing additional, unacceptable risks. Furthermore, the technology and tools necessary to effect such a repair are not yet in existence, and it is unclear how the repair could be safely implemented given the physical limitations of access to the tube bundle and the short period of time an individual could be exposed to radiation while working in the RSGs. Given Mitsubishi's failures in designing and fabricating the RSGs in the first place, it was incumbent on Mitsubishi to provide a robust and detailed engineering basis that clearly demonstrated its "conceptual" proposals could be safely implemented and would actually work (i.e. would meet the Repair Criteria) before Edison could reasonably commit to pursue any of these options.

The proposed Type #3 repair – replacement of the tube bundle – theoretically could address the T/H conditions, but the information Mitsubishi provided remained conceptual and untested more than 16 months after the outages. Given the extraordinary failures of the RSGs and Mitsubishi's inability to offer a concrete plan for restoration, Mitsubishi's competence to accomplish this repair is questionable. Moreover, even the best-case timeline would place completion at least five years in the future – too late for Edison to apply for license renewal and ensure continuous operation of SONGS. Mitsubishi did not offer to bear Edison's cost for these repairs, and given Mitsubishi's refusal to honor its obligation to pay Edison's invoices to date, Edison had no reason to believe that it would pay for the Type #3 repair either. An experimental repair that would require Edison to spend several hundred million dollars and wait more than five years for results with no assurance of success is not reasonable. Under these circumstances, the limited remedy has failed its essential purpose, and Edison and the Co-Owners are entitled to all of their damages resulting from Mitsubishi's breaches of warranty and contract.

Quite simply, Mitsubishi has not presented any repair or replacement solution that would meet the Repair Criteria and that could be timely implemented, much less done so with due diligence and dispatch. Meanwhile, SONGS has been permanently shut down, hundreds of Edison employees have lost their jobs, and the SONGS Owners already have incurred hundreds of millions of dollars in replacement power costs, payments to experts around the world to assist

<sup>&</sup>lt;sup>56</sup> Contract § 1.17.1.3(c).

in determining the cause of the damage to the RSGs, and other costs associated with attempts to repair the RSGs. Furthermore, to date, Mitsubishi has not acknowledged its responsibility to reimburse Edison for any of expenses incurred to repair the RSGs – another breach of the warranty provisions in the Contract.<sup>57</sup>

#### B. Breach of Contract

#### 1. Mitsubishi Breached Numerous Contractual Provisions

Edison and Mitsubishi have a valid written contract, and Edison has performed its duties under it. Mitsubishi, on the other hand, has failed to meet the terms of the Contract in numerous ways. In addition to the breaches of warranty detailed above, Mitsubishi has breached numerous provisions of the Contract. By way of example, Mitsubishi<sup>58</sup>:

- failed to deliver four RSGs with a service life of 40 calendar years from the date of startup following their installation.<sup>59</sup>
- failed to provide RSGs that did not require part or component replacement for their full service life. <sup>60</sup>
- failed to deliver RSGs equipped with tube supports that adequately support the tube bundle, preclude tube damage due to wear caused by FIV, and minimize tube wear.<sup>61</sup>
- failed to adequately address flow-induced and turbulence-induced vibration of the tube supports. 62
- failed to demonstrate accurately that excessive ... wear of the tubes would not occur. 63
- failed to demonstrate accurately that its design would minimize vibration-induced tube wear in the tube bend area of the tube bundle. 64

<sup>&</sup>lt;sup>57</sup> *Id.* at § 1.17.1.3.

The Mitsubishi defaults identified in this letter are not meant to be exhaustive, and Edison and the Co-Owners reserve all rights and do not waive the right to assert other breaches or other claims, and to assert additional or different facts of any kind, arising out of or relating to the above-described circumstances in any forum. Omission in this Notice of any potential breaches or other claims or facts is not intended to waive any rights with respect thereto, which rights are expressly preserved.

<sup>&</sup>lt;sup>59</sup> See Contract § 3.7.1.1.

<sup>&</sup>lt;sup>60</sup> See id. at § 3.7.1.2.

<sup>&</sup>lt;sup>61</sup> See id. at § 3.9.3.7.

<sup>&</sup>lt;sup>62</sup> See id.

<sup>&</sup>lt;sup>63</sup> See id.

• failed to design and fabricate the RSGs such that there would be no primary-to-secondary leakage under any normal operating condition. 65

# 2. Mitsubishi Refuses To Pay The Costs That Edison Incurred To Investigate And Repair the RSGs

Following the leak, Edison was required to take action to investigate and attempt to repair the problems with the RSGs, and Edison spent over \$140 million on these efforts. As the Contract provides that Mitsubishi solely is responsible for expenses associated with warranty work, Edison invoiced Mitsubishi for expenses expressly covered by the warranty (a fraction of the expenses Edison has been forced to incur as a result of Mitsubishi's contractual breaches). Section 1.9.4 of the Contract requires Mitsubishi to pay these expenses within 30 days of invoice.

Edison sent its first invoice to Mitsubishi in September 2012, and it has regularly invoiced Mitsubishi since then. In addition, Edison has provided Mitsubishi with several thousand pages of detailed back-up documents supporting the charges, far in excess of any requirement in the Contract. Edison employees have spent hundreds of hours responding to Mitsubishi's requests for more information about Edison's efforts to assist Mitsubishi in investigating and repairing the RSGs, including by creating specialized reports for Mitsubishi that otherwise do not exist. Yet Mitsubishi still refuses to acknowledge that it is obligated to pay any of the expenses reflected in the invoices. <sup>66</sup>

## 3. Mitsubishi Refuses To Honor Edison's Contractual Audit Rights

Finally, Mitsubishi refuses to comply with the audit rights afforded to Edison under the Contract. Section 1.9.6 of the Contract provides that Edison may "examine and copy" Mitsubishi's "books, accounts, relevant correspondence, specifications, time cards, drawings, designs, and other documentation, to the extent that these are related and relevant to the Work under the Purchase Order[.]" In January 2013, in an effort to better understand the causes of the damage as well as repair possibilities for the SONGS RSGs, Edison requested that Mitsubishi provide relevant materials regarding the design, manufacture, and attempted repair of the RSGs. To this day, Mitsubishi refuses to allow Edison access to the documentation regarding the RSGs it seeks, which constitutes another breach of the Contract.

<sup>&</sup>lt;sup>64</sup> See id.

<sup>&</sup>lt;sup>65</sup> See id. at § 3.8.1.7.

<sup>&</sup>lt;sup>66</sup> Although Mitsubishi made a payment on the first invoice, it reserved its rights to challenge or seek credit for any portion of the payment it later deemed "not properly chargeable" to Mitsubishi. Since then, Mitsubishi has refused to acknowledge that any of the invoiced expenses are its responsibility under the Contract.

<sup>&</sup>lt;sup>67</sup> "Work" is defined broadly as including the RSGs, along with "all engineering, analysis …, design, manufacturing, fabrication, assembly, inspection, testing, Documentation, Technical Services and all other obligations of the Supplier to be performed or furnished as required by the Purchase Order." *See* Contract § 1.2.59.

#### III. DAMAGES

### A. Contractual Limitations Of Liability Are Not Enforceable

At the time Edison and Mitsubishi negotiated the Contract, the parties agreed to limited remedies that are subject to express contractual exceptions as well as exceptions under applicable law. One of those exceptions is for any loss or damage arising out of or connected with Mitsubishi's gross negligence, fraud, willful misconduct, or illegal or unlawful acts. Accordingly, Edison and the Co-Owners are entitled to recover *all* direct damages resulting from Mitsubishi's multiple breaches of warranty and contract, regardless of any purported cap on Mitsubishi's liability. Furthermore, Mitsubishi's breach is so total and fundamental that under California law, Edison and the Co-Owners should also recover their consequential damages resulting from Mitsubishi's breaches.

Mitsubishi grossly under-predicted the T/H conditions in the RSGs and failed to verify its T/H predictions. Mitsubishi failed to fully consider the aggregate effect of upscaling and changes to its RSG design. Mitsubishi also failed to accurately calculate critical velocities for all modes of vibration or to limit fluid velocities through its RSG design to ensure they remained less than the critical velocity at which FEI occurs. At a minimum, Mitsubishi's failures amount to gross negligence, and thus the damages cap does not apply. Edison is continuing to investigate whether Mitsubishi engaged in fraud, willful misconduct, or illegal or unlawful acts. In addition, Mitsubishi's total and fundamental failures to meet its obligations, and the ensuing damage, are such that the limited repair and/or replace remedy has failed its essential purpose. Edison and the Co-Owners therefore are entitled to recover the full measure of their damages. <sup>70</sup>

## 1. Exceptions To The Damages Cap Apply Here

The damages cap contains express exceptions for any loss or damage arising out of or connected with Mitsubishi's gross negligence, fraud, willful misconduct or illegal or unlawful acts. Edison is entitled to recover all of its direct damages caused by Mitsubishi's gross negligence. Under California law, Mitsubishi's conduct will be deemed to have risen to the level

<sup>&</sup>lt;sup>68</sup> Contract § 1.17.1.3 ("Any Defect discovered during the Warranty Period, and damage to any other part of the Apparatus or other property resulting directly from such Defect, shall be repaired or replaced, in a mutually agreeable manner, by the Supplier at its sole expense with due diligence and dispatch by repairing or replacing (as appropriate) any defective part and other portion of the Work affected by such Defect."); *id.* at §§ 1.17.14, 1.21.

<sup>&</sup>lt;sup>69</sup> *Id.* at § 1.21.2.

<sup>&</sup>lt;sup>70</sup> See Official Comments to Cal. Com. Code § 2719 ("[W]here an apparently fair and reasonable clause because of circumstances fails in its purpose or operates to deprive either party of the substantial value of the bargain, it must give way to the general remedy provisions of this Article.").

<sup>&</sup>lt;sup>71</sup> Contract at § 1.21.2.

of gross negligence if it suffered from "want of even scant care or an extreme departure from the ordinary standard of conduct." Among other things, Mitsubishi:

- Used design basis two-phase flow velocities that were up to 4 times less than actual operating velocities;
- Used design basis void fractions that estimated the volume of water in liquid form to be 10 times greater than under actual operating conditions;
- Employed FIT-III outside its validated range;
- Did not use tests to benchmark FIT-III for the tube array configuration in the RSGs;
- Used a design review process that failed to catch or correct its T/H and computer modeling errors;
- Failed to consider the cumulative effects of the changes to its RSG design;
- Designed supports that were inadequate for the actual operating T/H conditions;
- Did not calculate all critical velocities;
- Did not control all modes of vibration; and
- Failed to perform appropriate testing and validation.

Mitsubishi's gross under-prediction of the actual T/H conditions by multiple factors in a nuclear steam generator constitute an extreme departure from the ordinary standard of conduct in the nuclear industry. This failure is inexcusable, particularly since RSGs are safety-related nuclear equipment that is relied upon to contain radiation and remove heat from the reactor core. At minimum, Mitsubishi's conduct amounts to gross negligence. Edison is continuing to investigate whether these or other failures constitute unlawful or illegal acts.

Moreover, as discussed in Sections I.A and I.B, Mitsubishi made many representations to Edison that have turned out to be false. To the extent that evidence shows that Mitsubishi knew these representations were false or lacked a reasonable basis for making them, its representations constitute fraud, which vitiates the damages cap.

## 2. The Limited Remedy Has Failed Its Essential Purpose

The California Commercial Code (the "Commercial Code") allows parties to limit or alter recoverable damages in case of breach of contract.<sup>73</sup> Where circumstances, however, cause

<sup>&</sup>lt;sup>72</sup> Eastburn v. Reg'l Fire Prot. Auth., 31 Cal. 4th 1175, 1185-86 (2003).

<sup>&</sup>lt;sup>73</sup> Cal. Com. Code § 2719(1)(a).

a limited remedy to "fail of its essential purpose," the buyer may recover the damages allowed under the Commercial Code without further restriction. The Ninth Circuit has observed that "[a] limited repair remedy serves two main purposes. First, it serves to shield the seller from liability during her attempt to make the goods conform. Second, it ensures that the buyer will receive goods conforming to the contract specifications within a reasonable period of time." Whether or not a limited remedy has failed its essential purpose depends on whether enforcement of the limited remedy "operates to deprive either party of the substantial value of the bargain." One such instance is where the seller is "either unwilling or unable to provide a system that work[s] as represented." Here there is no question that the limited repair and/or replace remedy has failed its essential purpose.

Both Units were out of operation for more than 16 months before Edison had to permanently shut down SONGS and no repair or replacement option had been proposed during that time that would meet the specifications required by the Contract. The inadequacy of Mitsubishi's proposed repairs are discussed above.<sup>78</sup>

Under California law, where the failure of a limited remedy is "total and fundamental," or where a consequential damages limitation has become "oppressive by change of circumstances," the injured party is entitled to consequential damages regardless of any waiver of consequential damages. Courts have voided waivers of consequential damages for breaches far less severe than Mitsubishi's. For example, in *Milgard*, the Ninth Circuit set aside the consequential damages exclusion on a finding that the seller's breach was fundamental but not total because, while the product did perform, it never performed to the standards set forth in the contract. In *RRX Indus., Inc. v. Lab-Con, Inc.*, the Ninth Circuit held that because the seller had been unable to repair its system for fifteen months, the district court "properly found the default of the seller so total and fundamental that its consequential damages limitation was expunged from the contract."

<sup>&</sup>lt;sup>74</sup> *Id.* at § 2719(2).

 $<sup>^{75}</sup>$  Milgard Tempering v. Selas Corp. of Am., 902 F.2d 703, 707 (9th Cir. 1990) (emphasis added).

<sup>&</sup>lt;sup>76</sup> Cal. Com. Code § 2719 Official Comments; see also S.M. Wilson & Co. v. Smith Int'l Inc., 587 F.2d 1363, 1375 (9th Cir. 1978).

<sup>&</sup>lt;sup>77</sup> RRX Indus., Inc. v. Lab-Con, Inc., 772 F.2d 543, 547 (9th Cir. 1985).

<sup>&</sup>lt;sup>78</sup> See infra. Section II.A.2.

<sup>&</sup>lt;sup>79</sup> RRX Indus., 772 F.2d at 547.

<sup>&</sup>lt;sup>80</sup> Milgard, 902 F.2d at 709 (applying identical Washington statute to set aside consequential damages exclusion, even though seller's breach was not "total" because enforcement of the provision would be oppressive under the circumstances).

<sup>81</sup> S.M. Wilson & Co., 587 F.2d at 1375.

<sup>82</sup> Milgard, 902 F.2d at 706, 709.

<sup>83</sup> RRX Indus., 772 F.2d at 547.

Mitsubishi's failures here are "total and fundamental," and any limitation on liability is "oppressive" as a result of Mitsubishi's serious failures. The damages Mitsubishi has caused are enormous, over 1,000 employees have lost or will lose their jobs in the coming months, and SONGS was forced into early retirement long before the anticipated end of its useful life. If Edison had believed that there was the slightest risk of this type of catastrophic failure, it never would have entered into the Contract with Mitsubishi. Until SONGS, no nuclear plant had ever been forced to be shut down permanently (or even for a lengthy period of time) after one cycle of operation due to steam generator tube wear. These changed circumstances now make the waiver of consequential damages "oppressive." Accordingly, Mitsubishi should be obligated to compensate Edison and the Co-Owners for the full measure of direct, indirect, incidental, special, and consequential damages caused by Mitsubishi's breaches and failures.

## 3. Mitsubishi Agreed to Indemnify Edison Against All Damages Resulting From Mitsubishi's Negligence

Edison is entitled under the Contract to be reimbursed for all the losses it incurs as a result of Mitsubishi's failures in the design and manufacture of the RSGs. The Contract provides that Mitsubishi "shall, at its own cost, defend, indemnify and hold harmless [Edison] from and against any and all liability, damages, losses, claims, demands, actions, causes of action, costs including attorney's fees and expenses, or any of them, resulting from . . . damage to any property, caused by the negligent acts or omissions or willful misconduct of [Mitsubishi]." Mitsubishi further explicitly agreed to "reimburse [Edison] for any and all costs and expenses (including property replacement costs) arising from damage to or loss of [Edison's] property caused by the negligent acts or omissions or willful misconduct of [Mitsubishi]." Edison's right to indemnification is not limited by the contractual provisions that might otherwise limit the amount of damages for which Mitsubishi is liable. The Contract expressly provides that the "limitation of liability shall not apply to. . . [Mitsubishi]'s indemnification obligations" under the Contract. 87

# B. Edison And The Co-Owners Have Suffered And Continue To Suffer Significant Damages

Edison and the Co-Owners have incurred and continue to incur significant financial harm as a result of Mitsubishi's total and fundamental failure to meet its obligations. While it is not yet possible to determine the full measure of damages caused by Mitsubishi's failures, Mitsubishi has directly and proximately caused the following categories of losses:

• costs of the purchase and installation of the faulty RSGs;

<sup>84</sup> See Milgard, 902 F.2d at 709.

<sup>85</sup> Contract § 1.19.1.

<sup>&</sup>lt;sup>86</sup> *Id.* at § 1.19.2.

<sup>&</sup>lt;sup>87</sup> Id. at § 1.21.2.

- costs incurred in reliance on the RSGs operating in accordance with the Contract, including capital additions to SONGS and unused nuclear fuel;
- costs associated with the investigation of the damage to the RSGs and the causes of that damage, the efforts to restore Unit 2 to service at reduced power, and interim and permanent repair work;
- ongoing and increased operation, maintenance, and security costs and portfolio effects attributable to the SONGS outages;
- costs of purchasing power to serve Edison's and the Co-Owners' customers who otherwise would have been served by SONGS;
- costs of capacity and transmission upgrades, including efforts to support grid reliability, made necessary by the SONGS outage;
- the lost value of SONGS;
- costs related to NRC and CPUC proceedings triggered by the SONGS outage;
- lost revenue and/or profits;
- pre-judgment interest and interest on unpaid invoices for repair costs already billed to Mitsubishi at the California statutory rate of 10 percent per annum;
- all costs of legal representation and assistance related to the enforcement of the Contract; and
- any other direct, indirect, incidental, special, and consequential damages that may be demonstrated following further investigation.

The total amount of damages will depend on various factors including the ongoing regulatory inquiries into the outages. As Edison already has informed Mitsubishi, any and all contractual limitations on liability are rendered inapplicable and unenforceable by virtue of Mitsubishi's conduct before and during the outages as well as by the total and fundamental failure of the essential purpose of the Contract and any limited remedies set forth therein.

#### IV. CONCLUSION

Edison presents to Mitsubishi this Notice of Dispute in order to initiate the dispute resolution provisions set forth under the Contract. As detailed above, Mitsubishi has not provided RSGs that meet the requirements of the Contract and its failure to do so has caused

<sup>&</sup>lt;sup>88</sup> Edison and the Co-Owners reserve the right to supplement this list should any other categories of damages be ascertained, whether in contract or tort.

enormous damage. Edison looks forward to Mitsubishi's response and to discussing these issues further in order to reach a mutually agreeable resolution as soon as possible.

While Edison hopes that it will be possible to resolve these issues without arbitration, Edison must reserve its right to bring all potential claims that may be supported by evidence following investigation and discovery, whether or not such claims are specifically identified in this Notice. Further, nothing in this Notice shall be deemed an election or waiver of any rights, remedies, claims or defenses by Edison.

rt .

Sincerely,

Thomas J. Heiden

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