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Comment on the restart of Southern California Edison San Onofre Unit 2

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Add= B. Benney (bjb)

TO: NUCLEAR REGULATORY COMMISION

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May, 12,2013

I am writing to express my concerns about the license amendment the Nuclear Regulatory Commission is intending to issue to Southern California Edison for the operation of San Onofre Nuclear Generating Station (SONGS), unit two. The Nuclear Regulatory Commission plans to issue this license amendment and deny a prior public evidentiary hearing. This is not in accordance to Code of Federal Regulations Title 10 of the Commissions regulations 50.92, which state that a proposed amendment issued under a "no significant hazards consideration" determination should not "(1) involve a significant increase in the probability of or Consequence of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety." I find it very alarming that the agency asserts that there are no significant hazards to be taken into consideration in deciding whether to approve this license amendment request, which is essential for the restart of unit two, when there is essential evidence that the restart could lead to the exposure of a significant fraction of the 8 ½ million people who live within a 50 mile radius of the plant.

San Onofre unit two Nuclear Steam Generators are currently required under the plant's license to be capable of running at a full power level of one hundred percent without risk of tube burst. Under this proposed license amendment that requirement would be abandoned. Instead, it would define full power as 70% power for the next two years, because the unit is unable to meet the requirements of running at a full capacity of one hundred percent. The Nuclear Regulatory Commission staff has preliminarily asserted that the proposed relaxation of the unit's safety requirements cannot have a significant increase in the probability or consequences of an accident previously evaluated. However, on January 31, 2012, San Onofre Nuclear plant Steam generator experienced a generating station burst within a Steam generator tube in Unit three which forced the plant to shut down the reactor. It was then revealed shortly after that inspections of units both two and three combined had nearly 3,400 tubes that were showing indications of wear. This is highly important to evaluate because the national average number of tubes wearing in steam generators after one cycle of operation is four. Unit two of Southern Edison Steam Generators reported a number of 1600 tubes that had indicated wear and tear just within the first cycle of operation. Unit two also reported having a total of 510 Steam Generator tubes that were plugged just after one cycle of operation in which the national average for steam generator tubes being plugged after one cycle of operation is zero. San Onofre steam generator unit two was designed to run at a power level of 100 percent for about 40 years in which only 8 percent of tubes should be plugged during that timeframe, therefor unit two had undergone extensive wear in their tubes in just as little as 2 years that should have taken a course of 40 years. When comparing Unit two to a typical reactor in the country, unit two has thousands of times more indication of wear and hundreds of time more indication of bad tubes. This is a serious issue that should not be overlooked when restarting a generator that has not been repaired and is incapable of running at a full capacity of one hundred percent.

Additionally, it was found in unit 3 that eight tubes could not withstand the required pressure and burst during pressure tests. No tube is supposed to be incapable of withstanding the required pressure. The accident evaluated for steam tube rupture in the Updated Final Safety Analysis Report is a single tube rupturing. Thus, the failed design of the steam generators produce the possibility of an accident more severe than previously analyzed.

Unit 2's steam generators are built to the same design as Unit 3's and suffer from the same vulnerabilities. Thus, allowing Unit 2 to operate without fixing the steam generators, and to eliminate the license requirement that bars that at present (the requirement to be able to operate at 100% power without risk of tube burst) would increase the risk of a type of accident not previously evaluated, would increase the risk of an accident, and would eliminate

an important safety margin. Indeed, the requirement to be able to run at 100% power without a risk of tube burst is preventing the operation of the damaged steam generators until they are fixed; eliminating that safety requirement so as to allow operation with devices with seriously defective designs is a clear reduction in safety margin.

In allowing the restart of unit two one would be clearly creating the possibility of a new accident arising due to the damage and design of the unit that has already been evaluated and shown to be a very important issue. The Nuclear Regulatory Commission should not dismiss these issues by asserting that there is no hazardous safety consideration to be taken into account in the restart of unit two . There is extensive evidence that has been revealed within the evaluation of unit two, that within its current state, the unit is not equipped to handle a level of operation at one hundred percent. Therefore Edison intends to achieve the approval of this license amendment in order to run unit two in its damage state at a level performance of seventy percent. Indeed, Edison's own analysis shows unacceptable risk of tube burst at 16 months at 70% power, and under some of its assumptions, much sooner than that. Clearly if that analysis is wrong, as independent experts say it is, unacceptable risk could occur very quickly if restart is allowed. But even under Edison's own evaluations, it cannot safely operate for the 2 years at 70%, which is the period of such operation the proposed license amendment would authorize. There clearly are significant hazards considerations. The issue is not where NRC staff would end up at the end of a review, but whether there are significant issues at the beginning of a review. If so, the opportunity for a prior hearing is mandatory. What is key is that the issue is not necessarily that Edison is trying to operate a nuclear steam generator at a level of seventy percent but rather that they are intending to do so with a heavily damaged unit, without repairing it, which is what the license amendment would help allow. NRC staff has made clear that without the license amendment, such operation isn't allowed (absent a showing on 100% power that NRC hasn't evaluated and which Edison asks be deferred and replaced instead with this license amendment.)

Unit two was built by Mitsubishi, who, when directed by Edison, created numerous changes in unit two that were not in the original steam generators. Edison requested that Mitsubishi install hundreds of more tubes into unit two while using Inconel 690 alloy tubes, which are different than the tubes used in the original steam generator that unit two was replacing. Such changes in the design of unit two constituted for a license amendment which would have required a stricter evaluation by the Nuclear Regulatory Commission rather than the one conducted by Edison and Mitsubishi. If Edison would have done things properly and filled for a petition to obtain a license amendment to conduct such changes in the design of unit two, the public would have had the opportunity to request an evidentiary hearing which could have possibly shed light to the issues unit two and three beforehand. If a license amendment had been requested and a public evidentiary hearing had been held, there exists the possibility that the generators' failed design could have been prevented or anticipated. Both Edison and the Nuclear Regulatory Commission concluded that the damage to tubes, vibration and fluid elastic instability were estimated to be caused as a result of computer modeling errors made by Mitsubishi which led to steam flows within the generator to be four times higher than was initially anticipated. These and numerous other design problems were found to exist in both units two and three. Edison has claimed that these are common amounts of wear that have taken place in other similar steam generators. Yet, the only other generator designed by Mitsubishi in the country is Fort Calhoun which had reported a total of zero tubes that were damaged, plugged and shown indication of wear with in its first cycle. In comparison, again, to the one 1,595 damaged tubes, with 510 tubes plugged and 4,721 wear indication unit two currently still has. In not granting the public an evidentiary hearing to discuss the matter of restarting unit two within Southern California Edison, on grounds that there is no issue that constitutes a safety consideration, the Nuclear Regulatory Commission is denying that there is extensive evidence that unit two is a threat to the safety 8 1/2million people who live within a radius of 50 miles away from Southern California Edison Steam Generators.

In denying that there are significant hazardous considerations that should be discussed before the approval of unit two's restart, the Nuclear Regulatory Commission is contradicting themselves. As Explained by the Nuclear Regulator Commission,

"Pressurized water reactors (PWRs) use steam generators, large components that convert water into steam using heat produced in the reactor core. These devices can measure up to 70 feet in height and weigh as much as 800 tons. Inside the steam generators, hot radioactive water is pumped through thousands of feet of tubing – each steam generator can contain anywhere from 3,000 to 16,000 tubes, each about three-quarters of an inch in diameter – under high pressure to prevent it from boiling. That water flowing through the inside of the tubes then heats non-radioactive water on the outside of the tubes. This produces steam that turns the blades of turbines to make electricity. The steam is subsequently condensed into water and returned to the steam generator to be heated once again.

These tubes have an important safety role because they constitute one of the primary barriers between the radioactive and non-radioactive sides of the plant. For this reason, the integrity of the tubing is essential in minimizing the leakage of water between the two "sides" of the plant. There is the potential that if a tube bursts while a plant is operating, radioactivity from the primary coolant system – the system that pumps water through the reactor core – could escape directly to the atmosphere in the form of steam."[1]

Furthermore, if there is a main steam line break, or some other significant challenge to the plant (such as a major earthquake), the defective and worn steam generator tubes could have multiple, cascading failures, not evaluated previously, that could result in loss of coolant for the core and release of radioactivity directly to the environment.

If the agency stresses the importance these tubes have to the margin of safety, then why is it that they are ignoring their own analysis and ignoring the extensive tube degradation that exists within unit two? It is clear that in allowing Southern California Edison a license amendment to the restart of unit two they are completely increasing a significant reduction in a margin of safety, which is in violation to the Code of Federal Regulations Title 10 of the Commissions regulations 50.92. Running Unit two at 100 percent with steam generators that are designed properly and are not experiencing unusual wear has far higher degree of safety margin than allowing 70% operation with damaged steam generators that are not repaired or replaced. That is the matter at hand, what the license amendments are designed to assist in allowing, and it is clear there are significant hazards considerations that therefore require the opportunity for a prior adjudicatory hearing. Now allowing Edison to restart this damaged unit at a lower level of operation without the unit first being properly repaired, one could only imagine the dangers that could come about this restart. For this reason is it important to reverse the Nuclear Regulatory Commission preliminary assertion that there is not significant hazard to be considered because there clearly is. In denying the public an evidentiary hearing prior to making a decision whether to approve the requested license amendment, which would make any post-decision hearing meaningless, would be denying the reality of the situation and ignoring the threat one is posing to the safety of 8 ½ million people and the environment.

Sincerely,

Concerned Citizen

[1] http://www.nrc.gov/reading-rm/doc-collections/fact-sheets/steam-gen.html