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Tuesday, October 13, 2020

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U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Via email only to: Petition.Resource@nrc.gov

RE: Demands For Information (DFI) from Southern California Edison (SCE) as licensee using the Hi-Storm UMAX System at San Onofre

Executive Director Doane:

Public Watchdogs (Petitioner) in collaboration with Subject Matter Expert Paul Blanch, submits this Petition pursuant to 10 C.F.R. § 2.206, requesting that the U.S. Nuclear Regulatory Commission (NRC), issue Demands For Information to Southern California Edison (SCE) and its subcontractors committed to *ML18192B094- Non-Proprietary Revision 5, June 27, 2018.*

Specific Actions Requested

The Petitioners respectfully request NRC take enforcement action in the form of Demands for Information (DFIs) and issue those DFIs to Southern California Edison, Holtec, and all other licensees using the Holtec UMAX storage system; and, all other Holtec systems whose licensing documents (Final Safety Analysis Reports and/or Safety Evaluation Reports) claim:

> "There are no credible events that could result in release of radioactive materials from the system." [1]

The NRC must require SCE and its subcontractors to respond with information and objective analyses that validate the claim that certain risks are "non-credible" or "not credible."[2] Specifically, that any radiological releases from the UMAX system are not possible[3]. This analysis must include the effects of:

- Loss of cooling

[1] Page 2-144 of (ML18192B094)
[2] The NRC uses the term "not credible" in the SER without defining the term within 10 CFR or any other regulatory documents. Without a formal definition of this term, the logical engineering interpretation that Confinement Boundary Leakage is not possible or impossible and that the probability of boundary failure is less than 10^{-12} failures per year.
[3] The term "not credible" is not defined in either 10 CFR 50 or 10 CFR 72 and is assumed to be synonymous with "impossible."

- Flooding
- Corrosion
- Fuel cladding failures
- Excessive pressure
- Criticality
- Thermal transients and
- "…demonstrate that they will reasonably maintain confinement of radioactive material under normal, off-normal, and credible accident conditions."

Discussion:

10 CFR 72.236(l) states:

> *The spent fuel storage cask and its systems important to safety must be evaluated, by appropriate tests or by other means acceptable to the NRC, to demonstrate that they will reasonably maintain confinement of radioactive material under normal, off-normal, and credible accident conditions*.

Regulation 10 CFR 72.236(1) is clear: Storage casks must be evaluated to assure that cask integrity is maintained. However, the NRC's Safety Evaluation Report (SER) from a response to Public Watchdogs' Freedom of Information Act (FOIA) 2020-000309 states: [4]

> *"…. the staff agrees that leakage from the confinement boundary is **not credible***.[Emphasis added]*"*

By accepting the NRC's unsubstantiated claim that leakage is simply "not credible," (i.e. impossible) the NRC has failed to obtain the required analysis from SCE that demonstrates that leakage from the confinement boundary is impossible.

The Holtec FSAR attempts to address the "incredibility" issue by stating:

> ***12.2.7 Confinement Boundary Leakage***
> *None of the postulated environmental phenomenon or accident conditions identified in Chapter 2 has been determined to precipitate failure of the confinement boundary. The MPC uses redundant confinement closures to assure that there is no release of radioactive materials. The analyses presented in the HI-STORM FW FSAR and in Chapter 3 herein demonstrate that the MPC remains intact during all postulated accident conditions. The information contained in Chapter 7 of the HI-STORM FW FSAR demonstrates that the MPC is designed, fabricated, tested, and inspected to meet the guidance of **ISG-18 such that unacceptable leakage from the Confinement Boundary is non-credible.*** [Emphasis added]

The Final Safety Analysis Report also claims:

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[4] See the NRC's response to this Freedom Of Information Act request 2020-000309 at https://bit.ly/33XdXqR

"The HI-STORM UMAX does not require a radiological alarm system. There are no credible events that could result in release of radioactive materials from the system."

We have reviewed *Interim Staff Guidance 18*, (ISG-18),[5] which appears to be confirmation that there are no "credible" events that will result in release of radioactive materials. The scope of this ISG was limited. The ISG was only intended "to address the design and testing of the various closure welds ("lid welds") associated with the redundant closure of all welded austenitic stainless-steel canisters." It is a section about welds, not the likelihood of risk for alleged non-credible events such as a military or terrorist attack. Nor is it an analysis of putative non-credible "Black Swan" events, such as beyond design basis earthquakes and tsunamis.

ISG-18 verifies the integrity of the "lid welds," and nothing more. It cannot possibly be interpreted to verify that a cask boundary failure is "not credible."

On September 10, 2020, Public Watchdogs filed FOIA 2020-000309 with the NRC that requested the following:

"Documentation or analysis, if any, that supports the statement that there are "no credible events that could result in release of radioactive materials" at the IFSFI at the San Onofre Nuclear Generating Station (SONGS), in reference to ML18192B094; specifically, documents that analyzed potential risks and determined that they are not credible."

The NRC FOIA branch responded with this email on September 16, 2020:

"Records that are responsive to your request are already publicly available in ADAMS. The ML accession numbers are as follows: ML15093A510 - Safety Evaluation Report, Hi-Storm UMAX Canister Storage System, Amendment 0 ML15252A423 - Safety Evaluation Report, Hi-Storm UMAX Canister Storage System, Amendment 1 ML16341B129 - Safety Evaluation Report, Hi-Storm UMAX Canister Storage System, Amendment 2 Records with a ML Accession Number are publicly available in the NRC's Public Electronic Reading Room at https://www.nrc.gov/reading-rm.html."

The response included this NRC Safety Evaluation Report stating:

5.2 Staff Evaluation 25

The staff reviewed the description of HI-STORM UMAX Canister Storage System confinement system and concludes that confinement of all radioactive materials in the HI-STORM UMAX system is provided by the MPC which remains unchanged from those used in the HI-STORM FW which was approved and licensed. The staff also concludes that; as in HI-STORM FW confinement components, the material of construction (austenitic stainless steel) for the HISTORM UMAX confinement vessel is known from extensive industrial experience to have high integrity, high ductility and high

[5] See *Interim Staff Guidance 18* at https://www.nrc.gov/reading-rm/doc-collections/isg/isg-18r1.pdf

fracture strength welds, and the MPC enclosure vessel welds provide a secure barrier against leakage. Finally, the staff concludes that all the confinement components (including the confinement welds and the base metals) of the HI-STORM UMAX are required to be helium leak tested to assure they are leaktight (except the lid-to-shell weld since the weld meets the criteria of ISG-18). After reviewing the descriptions of the confinement system in FSAR and referencing to HISTORM FW, **the staff agrees that leakage from the confinement boundary is not credible."** [Emphasis added]

The NRC's Freedom of Information Act response 2020-000309 to Public Watchdogs confirmed the following facts:

· A staff review of a Holtec description is not a formal Safety Analysis, therefore, no Safety Analysis is available to the public

. The only discussion is in an unsupported statement found in ML15093A510 - *Safety Evaluation Report*, April 2, 2015

. The FOIA response affirmed that a non-public analysis does not exist

. The FOIA response's public statements are in direct conflict with 10 CFR 72.236(l)

Additional statements appear within the Final Safety Analysis Report that clearly state that the failure of a Holtec storage cask is *not credible*. The NRC assumed there is no need for any further analysis because they claim compliance with *ISG 18* is sufficient.

Here are some prime examples of references to unanalyzed, and therefore unsubstantiated, "non-credible" risks taken directly from the NRC's FOIA response:

- *The above evaluation shows that this accident event will not adversely affect the continued safety of the storage system redundant confinement closures to assure that there is no release of radioactive materials. The analyses presented in the HI-STORM FW FSAR and in Chapter 3 herein demonstrate that the MPC remains intact during all postulated accident conditions. The information contained in Chapter 7 of the HI-STORM FW FSAR demonstrates that the MPC is designed, fabricated, tested, and inspected to meet the guidance of ISG-18 such that unacceptable leakage from the Confinement Boundary is non-credible.*

- *The MPC provides for confinement of all radioactive materials for all design basis normal, off-normal, and postulated accident conditions. As discussed in Chapter 7 of the HI-STORM FW, MPC design meets the guidance in the Interim Staff Guidance (ISG)- 18 so that leakage of radiological matter from the confinement boundary is non-credible.* ***Therefore, no confinement dose analysis is required or performed****.[Emphases added] The confinement function of the MPC is verified through pressure testing, helium leak testing, and a rigorous weld examination regimen executed in accordance with the acceptance test program in Chapter 10 of the HI-STORM FW FSAR.*

- ***2.3.4.2 Confinement Boundary Leakage***
  None of the postulated environmental phenomenon or accident conditions identified will cause failure of the confinement boundary. Section 7.1 of the HI-STORM FW FSAR provides the rationale to treat leakage of the radiological contents from the MPC as a non-credible event.

- *The HI-STORM UMAX does not require a radiological alarm system. There are no credible events that could result in release of radioactive materials from the system.*

- *As described in Chapters 7 and 12 of this FSAR, there are no credible normal, off-normal, or accident events which can cause the structural failure of the MPC. Therefore, periodic structural or pressure tests on the MPCs following the initial acceptance tests are not required as part of the storage maintenance program.*

- ***10.4.2 Leakage Tests***
  There are no seals or gaskets used on the fully-welded MPC confinement system. As described in Chapters 7 and 12, there are no credible normal, off-normal, or accident events which can cause the failure of the MPC Confinement Boundary welds. Therefore, leakage tests are not required as part of the storage maintenance program.

Simply stating that something is a fact, does not make it a fact. In science, facts must be supported by evidence. Claiming that leakage is "not credible" is not an analysis. Nor is it evidence.

In most cases, Holtec relies on the logical fallacy of petitio principii and "circular reasoning." Instead of documenting its claim that risks are not "credible" with convincing evidence, Holtec states that because the FSAR says that there is no credible risk, *there is no credible risk*.

For example, Holtec argues that leak tests are not necessary because there are no "credible" events that could cause a leak. This statement is absurd because it is not supported by any evidence showing that there are *no credible events* that could cause a leak. Let's see the proof with a scientific analysis.

Equally absurd is Holtec's argument that a radiation alarm system is not needed because it is impossible (i.e. "not-credible") for a release of radiation to occur.

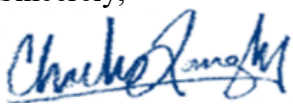
The facts are that unexpected, "not-credible" events, such as a military or terrorist attack, can occur. Natural disasters can also occur again. For example, the "Black Swan" events that resulted in nuclear mishaps at Three-Mile Island, Chernobyl, Davis Besse, and Fukushima, were all considered "non-credible" prior to occurrence.

Finally, it is NRC policy to require important to safety analyses of potential events and to provide adequate assurance that the public is protected from excessive radiological exposure. This document identifies multiple risks that have been written off as "not-credible." We invite the NRC to consider that until these risks are analyzed and properly assessed, they cannot be

defined as *'not-credible'* because they do not provide a reasonable assurance of protecting the public's safety.

If the NRC should determine this request does not meet the requirements for a 10 CFR 2.206 petition, please inform us where we can locate the analysis and evidence that supports the NRC's and Holtec's statements that leakage from the 3000+ canisters presently in use is "not credible" and that the licensees have demonstrated "that they will reasonably maintain confinement of radioactive material under normal, off-normal, and credible accident conditions" in accordance with 10 CFR § 72.236(l).

Sincerely,



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