## CHAIRMAN Resource

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| **From:** | Donna Gilmore <donnagilmore@gmail.com> |
| **Sent:** | Monday, March 25, 2019 6:52 PM |
| **To:** | Mike Levin; Hutt, Heather (Harris); Joseph Street; CMRCaputo Resource; CMRBARAN Resource; CMRWright Resource; CHAIRMAN Resource |
| **Cc:** | Decommission; NFC; Ace Hoffman; Toni Iseman; Rita Conn; Debra Lewis; Shari Horne; Teri Sforza; Bruce Martin; Jeff McDonald; Robert "Bob" Halstead; Marvin Resnikoff; Marvin Lewis; Jordan Ingram; Eric Heinz; Andrew Griffith; Justin Cochran Ph. D; JW August 10news San Diego |
| **Subject:** | [External_Sender] March 25, 2019 San Onofre Notice of Violation Webinar on Holtec problems and recommendations |

All parties admit the design of the Holtec downloading system causes some damage to the walls of all the canisters. Edison is claiming the damage is minor scratches and that this has no significant impact. However, the NRC is not convinced of the amount of damage nor the impact and will be doing their own analysis. Therefore, loading of more canisters is still on hold.

The NRC admitted in a previous webinar that the damage is a problem, but said it's not an "immediate" problem. However, we cannot kick these cans down the road and hope they have a solution in the future.

This is another Edison billion dollar boondoggle for California.

As NRC engineering staff knows, even minor scratches can shorten the life of these canisters. The NRC admitted in a previous webinar that the canister walls are gouged. The question is, how bad are the gouges. And since there is no method to find or repair the gouges, this is an unacceptable situation. Also, once cracks start in canisters, the cracks continue to grow through the wall. The fuse is lit, yet no one knows how long before they have major radioactive leaks or hydrogen gas explosions -- and no plan to prevent or stop leaks. In an August 5, 2014 meeting the NRC admitted once cracks start they can grow through the wall in 16 years. In hotter canisters, cracks grow much faster (double the crack growth rate for every 10 degree increase in temperature). This Holtec system must be recalled. It's clearly a lemon. These are pressure vessels, which means even partial gouges and cracks can cause these canisters to fail.

Subrata Chakraborty, Tom English and Len Hering co-wrote a paper on this issue stating gouging of canister walls is likely. Canisters should be inspected for damage, yet that has not been done and the NRC admits they have no method to do this at this time.

> *San Onofre Nuclear Waste Problems,* Tom English, Ph.D., Samuel Lawrence Foundation, Subrata Chakraborty, Ph.D., UCSD, Dept. of Chemistry and Biochemistry, Rear Admiral Len Hering Sr. USN (ret), January 2019
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> *...Most serious of the issues facing the interim storage of nuclear waste at S.O.N.G.S. include the gouging damage to fully-loaded steel canisters upon downloading into the storage vault. These 54-ton thin-walled steel canisters are loaded with nuclear waste in wet storage – spent fuel pools – and are transported to the on-site concrete storage vault, adjacent to the reactor domes. With the Brinell hardness scale calculations our team demonstrates the depth and width of canister gouges upon downloading into the storage system. The current downloading procedure and on-site storage configuration provides the factors necessary to create gouges in the external steel walls of the canisters: operators have no visibility of the canister during downloading and precise adjustments to canister orientation cannot be made. These gouges remain undetected and unrepaired due to the lack of thorough inspection and monitoring at the San Onofre*

*Independent Spent Fuel Storage Installations (ISFSIs). The preliminary findings are found in this report...*

https://docs.wixstatic.com/ugd/af0436_29d0ec897e1f44178d12e2dbc63161dd.pdf

The Holtec system the NRC approved states in the Holtec Final Safety Analysis Report (FSAR) there is no risk of scratching or gouging of the canister walls from the downloading system. See below statement from the Holtec HI-STORM UMAX Final Safety Analysis Report. However, Holtec submitted a 10 CFR 72.48 change to the FSAR to allow scratches. The 72.48 process allows Holtec and Edison to make certain technical changes without approval from the NRC. In the March 25, 2019 webinar today the NRC stated Edison should not have implemented this change under the 10 CFR 72.48 process, so restart of loading is on hold.

FSAR PDF page 541:

*9.5 REGULATORY COMPLIANCE*
*vii. Because the MPC [canister] insertion (and withdrawal) occurs in the vertical configuration with ample lateral clearances, there is no risk of scratching or gouging of the MPC's external surface (Confinement Boundary). Thus the ASME Section III Class 1 prohibition against damage to the pressure retaining boundary is maintained.*
https://www.nrc.gov/docs/ML1819/ML18192B094.pdf

The 72.48 process is very similar to the 50.59 process where Edison changed the design of the four replacement steam generators without NRC review and approval. This resulted in the permanent shutdown of both San Onofre reactors and a radioactive release into the environment. Edison hid the fact the radiation was released into the environment for 17 days.

There are already 29 Holtec thin-wall canisters (only 5/8" thick) loaded and no one has a clue their actual condition. This is unacceptable. The last thing we need is to load and gouge more canisters. Instead of "calculating" how bad the damage is to the canisters, the NRC should require Edison replace this system before these canisters have major radioactive leaks or hydrogen gas explosions. Edison admits each canister contains as much radioactive material as released from the 1986 Chernobyl nuclear disaster. The system is a lemon and must be recalled.

More outlandish is Edison plans to destroy the spent fuel pools -- the only NRC approved on-site method to replace defective canisters. The State Lands Commission is ignoring this issue and approved the San Onofre EIR last week. Who's protecting California? Are we going to wait until Southern California has to evacuate millions of people?

The NRC format of this webinar allowed us to ask questions, but we did not receive answers to most of our questions. This NRC webinar format does not allow adequate communication with the public. In most NRC public meetings, we are able to communicate via phone or in person with the NRC staff. The NRC needs to have their own public meeting in San Diego county -- not just be a participant in Edison's Community Engagement Panel meeting. Those meeting are Edison propaganda meetings controlled by Edison CEP appointed Chairman David Victor, who stifles public participation. The local community refers to those meetings as Community "Enragement" Panel meetings.

San Onofre Special Inspection NRC website
https://www.nrc.gov/reactors/operating/ops-experience/songs-spec-insp-activities-cask-loading-misalignment.html

The Holtec system must be recalled and replaced with proven thick-wall cask technology that has existed for decades. Only dry storage systems that can already be inspected (inside and out), repaired, maintained and monitored in a manner to PREVENT radiological releases and hydrogen gas explosions should be approved by the NRC. The Nuclear Waste Technical Review Board December 2017 report recommendations on storage and

transport support this recommendation.

The Nuclear Waste Technical Review Board December 2017 report to Congress states spent nuclear fuel waste must be monitored and maintained in dry storage in a manner to prevent hydrogen gas explosions for both short-term and long-term storage. This is not currently being done and cannot be done with the thin-wall welded canisters. It can only be done with thick-wall bolted lid casks, like those used in most of the world and at some US facilities.

> Nuclear Waste Technical Review Board report to the United States Congress and the Secretary of Energy, Management And Disposal Of US Department Of Energy Spent Nuclear Fuel, NWTRB, December 2017.
> http://www.nwtrb.gov/docs/default-source/reports/nwtrb-mngmntanddisposal-dec2017-508a.pdf?sfvrsn=12

The best available current technology solution is to store spent nuclear fuel waste above ground in hardened buildings for additional environmental and security protection. The best available technology that can meet NWTRB requirements are thick-wall bolted lid casks, currently the standard in most of the world (except the U.S.). Most U.S. nuclear waste generators chose thin-wall canister systems because of lower initial cost. However, they are actually more expensive due to their shorter lifespan.

Also, the Nuclear Waste Policy Act of 1982 (NWPA), requires monitored retrievable spent nuclear fuel storage. The NRC has chosen to ignore these NWPA requirements.

H.R. 3053, The Nuclear Waste Policy Amendment Act of 2018, (passed by the House in 2018, but not in the Senate) proposes to eliminate NWPA essential storage and transport safety requirements and site environmental reviews. It also proposes to remove federal, state, local and public rights for oversight, input and transparency. It also changed funding from mandatory to discretionary with Congress.

**Recommendations**
**Step One:** stop loading and damaging canisters.
**Step Two:** replace all thin-wall welded canisters with thick-wall bolted lid casks that can be maintained and monitored to PREVENT radiological releases and hydrogen gas explosions.
**Step Three:** Store away from coastal and flood risks while minimizing transport distances and risks. Store in reinforced buildings for additional environmental and security protection.

Current focus on transporting these uninspectable cracking canisters to consolidated interim storage sites or Yucca Mountain will no more solve our urgent nuclear waste storage problems than rearranging the deck chairs on the Titanic would have stopped it from sinking.

Donna Gilmore
SanOnofreSafety.org
949-204-7794