Holtec-CISFEISCEm Resource

From:	Torgen Johnson <torgenjohnson@hotmail.com>
Sent:	Monday, July 30, 2018 11:26 PM
To:	Holtec-CISFEIS Resource
Subject:	[External_Sender] Docket NRC-2018-0052, Holtec HI-STORE Consolidated Interim Storage Facility Project Torgen Johnson Comments
Attachments:	Docket NRC-2018-0052, Holtec HI-STORE Consolidated Interim Storage Facility Project Torgen Johnson Comments.pdf

Please enter my comments: Docket NRC-2018-0052, Holtec HI-STORE Consolidated Interim Storage Facility Project Torgen Johnson Comments.

Thank you,

Torgen Johnson
Solana Beach, CA 92075

Federal Register Notice: 83FR13802
Comment Number: 3481

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

RE: Docket ID NRC–2018–0052; Holtec International's HI–STORE CIS Facility for Spent Nuclear Fuel, Lea County, New Mexico

Dear NRC Staff and Commissioners:

I submit these scoping comments with deep concern that the current Holtec Environmental Report does not include an honest public disclosure of the serious technical and legal deficiencies of the HI-STORE CIS system and without such a disclosure by Holtec it is impossible for the New Mexican public to understand and comment on the public safety and regional economic risks to which they are going to be subjected.

As a technically trained, well-informed, and politically active member of the public I want to state clearly that I do not support endangering New Mexicans or any other community with the seriously deficient HI-STORE CIS waste storage system promoted by Holtec. It is vitally important that an enterprise as dangerous as the proposed New Mexico C.I.S. facility be vetted in its entirety from the loading of the canister waste around the country, transport of the waste by rail or highway, to the probability that the facility will become the permanent storage solution for over 150,000 metric tons of our nation's dangerous high level radioactive waste.

As a Harvard trained urban planner living 30 miles downwind from the San Onofre Nuclear Generating Station (SONGS) I was alarmed to learn about the many safety violations, catastrophic near misses, and worst safety record in the nation of SONGS. I also learned that both Southern California Edison and the NRC retaliate against whistleblowers at the power plant who come forward with serious concerns about plant safety. I have seen firsthand how the NRC relies to a great extent on the utilities and its consultants for the technical basis of operating procedures, design of components of the nuclear power plant, and associated risk assessments. At NRC meetings over the past seven years I have seen the NRC representatives and the utility representative seem so "chummy" with each other that it was hard to tell them apart. This shows a shameless absence of a strong and independent regulatory agency to protect the public's safety and interest above that of the nuclear industry. That is the case once again at San Onofre with the current Holtec waste storage system being implemented at sea level in a seismically active tsunami inundation zone.

The following are a list of deficiencies in the Environmental Report. Without these issues being objectively detailed in the ER it is impossible for the public or the NRC to accurately assess the environmental impacts of the proposed Holtec project:

The Impact of Cracked And Leaking Dry Canisters Must Be Addressed

- The ER does not analyze exactly how radioactive waste from a cracked and leaking canister would be handled, since there is no spent fuel pool or hot cell at the site.
- The 124 thin-walled dry canisters exposed to salt air for many years at San Onofre and subject to chloride induced stress corrosion cracking will become part of the waste stream shipped to New Mexico's CIS facility. The public does not know of this serious corrosion issue and Holtec intentionally downplays this safety issue despite it being widely known to the industry.

Hydrogen Explosion Risk of High Burnup Spent Fuel Must Be Included And Analyzed

- Per the Nuclear Waste Technical Review Board (NWTRB) December 2017 Report on Management and Disposal of Spent Nuclear Fuel, hydride formation on spent fuel assemblies and hydrogen pressure buildup inside the canisters present canister explosion risks.
- Fuel assembly basket deterioration, and fuel cladding failure present canister explosion risk
- As stated by ACRS Chairman Dana A. Powers, in ACRS *Recommendations for Improvements to the NRC Staff's "Technical Study of Spent Fuel Pool Accident Risk at Decommissioning Nuclear Power Plants*," April 13, 2000, (*ML003704532*), p. 3, risk of an explosion exists with spent fuel assemblies exposed to air at any temperature: *Many metal hydrides are spontaneously combustible in air. Spontaneous combustion of zirconium-hydrides would render moot the issue of "ignition" temperature that is the focus of the [NRC] staff analysis of air interactions with exposed cladding. The staff has neglected the issue of hydrides and suggested that uncertainties in the critical decay heat times and the critical temperatures can be found by sensitivity analyses. Sensitivity analyses with models lacking essential physics and chemistry would be of little use in determining the real uncertainties...spent fuel exposed to air at any temperature, particularly high burn-up fuel may result in an explosion. The majority of nuclear power plants use higher burn-up fuel.* The ACRS letter referenced spent fuel pools. This issue has not been adequately addressed by the NRC.

- Irradiated spent fuel in dry storage exposed to air from through-wall cracks is of similar concern as the following references show.

  Damaged Spent Nuclear Fuel at U.S. DOE Facilities, *Experience and Lessons Learned*, INL, November 2005, INL/EXT-05-00760, page 4 & 5.
  https://inldigitallibrary.inl.gov/sti/3396549.pdf
  The generation of high surface area uranium metal SNF fragments and uranium hydride necessitates additional measures during SNF drying, dry storage, and transportation because of the pyrophoric nature of these materials when exposed to air.
  The Explosive Characteristics of Titanium, Zirconium, Thorium, Uranium, and their Hydrides, Irving Hartman, et.al., U.S. Bureau of Mines, Report of Investigation 4835, U.S. Dept. of Interior, December 1951
  https://sanonofresafety.files.wordpress.com/2014/12/4410914explosivezirconiumdivofmines.pdf
  Even 5% oxygen in helium, can cause zirconium powder to ignite. Any mechanical or chemical process that reduces the [zirconium] cladding to turnings, chips, granules, or powders can generate a pyrophoric or flammability hazard.

Emergency Response to a Canister Explosion or Canister Failure Must Be Included

- The ER is inadequate and incomplete because it does not include the most obvious environmental risk of a canister explosion or failure that releases radioactive material into the surrounding environment
- The ER must include a discussion off emergency response plans for residences, businesses, and schools downwind of the CIS facility.
- The ER must analyze the impacts to ground water, soil, and air given the limited response options that emergency responders have in the event of a severe accident at the facility.

The Environmental Risks of Permanent Storage Must Be Analyzed

- The Environmental Report (ER) is inadequate and incomplete because it does not analyze the impacts of the unstable spent fuel and hydride buildup in the corroding canisters being left at the Holtec site indefinitely.
- Spent fuel canisters pre-exposed to salt air or exposed on site to potash dust via the convection vents on the CIS silos pose a serious corrosion cracking risk of the canisters that increases over time.
- Given the dismal situation currently across the U.S. regarding spent fuel storage, the ER must include the high probability of lack of funding and political will to move the spent fuel to a permanent location outside of NM once the waste is stored in Lea County with the misnomer of "Interim Storage"

This Holtec Proposal Is Contrary to Current Law

- Current law only allows the U.S. Department of Energy to take title to commercial spent fuel "following commencement of operation of a repository" or at a DOE-owned and operated monitored retrievable storage facility. The Holtec site meets neither requirement, as it is a private facility.
- The 1982 Nuclear Waste Policy Act requires that spent nuclear fuel be monitored and retrievable but the Holtec design provides neither as the canisters are welded shut and there is no means for retrieving the spent fuel in the event of a canister failure or explosion.
- There is also no way to monitor the canisters from the presence of cracks or crack initiation.

ER should include Site Geology and Hydrology Information + Analysis from Independent Experts Not Paid by the Nuclear Industry

- Oil and agricultural industries in the area must be consulted regarding geology and ground water and the impacts to those industries when a spent fuel canister experiences a hydrogen explosion.
- The site has ground water movement both horizontally and vertically through the site creating conditions for land subsidence. This poses a risk to the C.I.S facility and must be analyzed.

The Environmental Report must not allow Holtec to Use Copyrights and Redactions to Conceal Vital Information That the Public and NRC Need to Analyze the Proposed CIS Project

- NRC must require Holtec to produce an ER that has no such copyright restriction and has no redactions.

The Environmental Report Inadequately Discusses the Transportation Risks

- This ER must include all transportation routes and the potential impacts of accidents or terrorism incidents on public health and safety along all the routes.
- The ER is inadequate and incomplete because it does not discuss how rail shipments from reactors without rail access would be accomplished and the risks and impacts of such shipments.
- The ER does not discuss the impact to local traffic during the tens of thousands of slow shipments of wide load trucks carrying Holtec dry canisters into the region.
- The ER does not address the safety issues of the Holtec policy of "return to sender" of leaking canisters that arrive in NM.

The Consequences To An Accident-Exposed Individual Must Be Analyzed

- Terms like "collective dose risk" and "person-rem" are used to mislead the public on the potential impacts to an individual.

Seismic Impacts On Stored Canisters Must Be Stated

- Although the ER gives a statement on recent seismic activity in the area, there is no analysis of what many 3.0 – 4.0 fracking-induced earthquakes will have on the buried canisters and their deteriorating spent fuel assemblies inside.

Sincerely,

Torgen Johnson
Solana Beach, CA 92075