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Holtec International HI-STORE Consolidated Interim Storage Facility Project

Comment On: NRC-2018-0052-0058
Holtec International HI-STORE Consolidated Interim Storage Facility Project

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Comment on FR Doc # 2018-10418

Submitter Information

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General Comment

See attached file(s)

Attachments

JWB comments, supplement 1

Supplement to Jack Borninski's 5-19-18 Comments on the Holtec Hi-Store CISF

NRC docket # NRC-2018-0052

7-4-18

Technical issues

Holtec's CISF documents do not address the specific operating conditions resulting from the harsh and hot desert environment, and they do not include an option to at least shield their air-cooled HI-STORM UMAX canisters from direct sunlight, all to ensure sufficient transfer of heat away from the SNF process and prevent thermal runaway.

Per Holtec HI-STORM UMAX technical specifications these canisters are air-cooled via convection and ventilation. The air temperatures in the New Mexico desert at the CISF site may reach as high as 130 deg F, and this limits the ability to transfer the heat away from the SNF process due to reduced temperature gradient. Also, the worst-case wind may be zero, which further minimizes heat transfer. Radiation shields and impact limiters additionally minimize heat transfer. However, the heat energy must be transferred sufficiently fast from the SNF process, or else this Holtec closed system becomes an open system not far from Carlsbad and Hobbs.

Most of Holtec's prior SNF installations have been in cooler climates, on the coasts, and/or are water-cooled with higher efficiency. In relation to this air-cooled desert CISF project Holtec has not shown that it has previously installed and/or tested its canisters in such harsh and hot open desert environments, and that its air cooling system is sufficient to prevent runaway thermodynamics and keep the SNF processes at equilibrium with safety margins to spare (recall the Samsung Li-Ion thermal runaways due to insufficient cooling).

NRC must ensure that Holtec publishes to the community the actual HI-STORM UMAX tests and their results, or at least competent simulation and its results, showing that its air cooling system is fully functional in the extreme desert heat, including possessing sufficient safety margins. Any/all NRC, etc "certificates of compliance" and/or "licenses" for these canisters must address hot desert-like operation scenarios, which they currently do not address.