

Holtec Storage System Designed to Leak

The Holtec HI-STORM CIS (Consolidated Interim Storage) System has major design flaws.

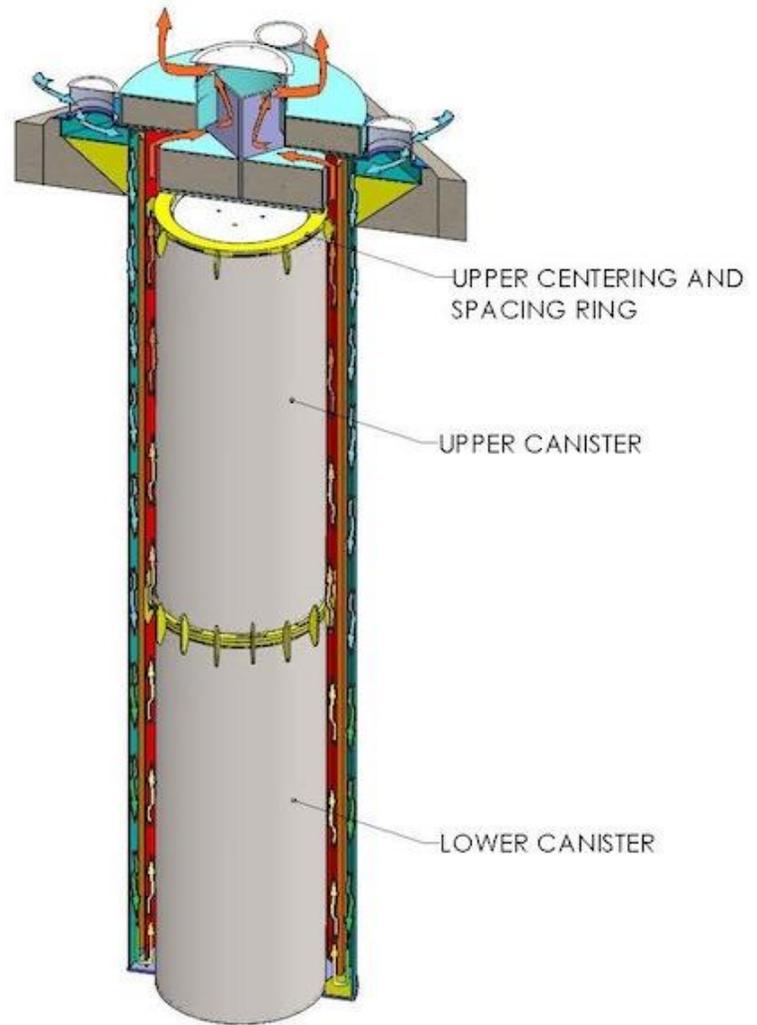
Holtec proposes transporting aging thin-wall stainless steel canisters across the country and double stacking them in concrete steel lined holes. This is an experimental and unproven below ground system that has not been approved by the Nuclear Regulatory Commission (NRC).

Each thin-wall canister contains about as much highly radioactive Cesium-137 as was released from the Chernobyl nuclear disaster. There is no adequate plan to safely transport or store these “Chernobyl” cans.

Holtec President Dr. Kris Singh admits canisters cannot be inspected or repaired and states even a microscopic through-wall crack will release millions of curies of radionuclides into the environment.

The NRC has unsubstantiated hope the nuclear industry can solve these problems. However, no one has provided evidence they can solve these problems and there is evidence to the contrary.

The solution is to use transportable storage casks that do not have these problems, such as the thick-walled metal casks (10” to 19 ¾” thick) used in most of the rest of the world. U.S. utilities migrated to thin-wall canisters for short-term cost savings. However, due to the problems with these canisters, they may likely need replacement in the short-term. No funds are allocated for replacing these canisters. Current utility and CIS dry storage plans assume nothing will go wrong with the canisters.



Canisters cannot be inspected, maintained or monitored to prevent leaks.

- Cannot be inspected or repaired (inside or out).
- Cannot be maintained or monitored to **prevent** radioactive leaks.
- Canister walls are only 1/2” to 5/8” thick.
- No plan to deal with leaking canisters.
- No plan to replace canisters.
- Subject to short-term cracking from numerous environmental causes.
- May already have started to crack.
- Cracks can grow through wall of canister in 16 years after a crack starts.
- The Koeberg nuclear plant had a 304L stainless steel tank the NRC considers comparable to thin-wall waste canisters (both 304/304L and 316/316L SS canisters). The tank leaked in 17 years. Cracks were up to 0.61” deep. Most thin-wall canisters are only 0.50” thick.
- The above canister flaws apply to all thin-wall stainless steel canister systems.

Concrete structure warranty is only 10 years and structure has critical design flaws.

- Above ground concrete lid requires air vents to cool canister and fuel. Water, corrosive particles and small critters can enter through air vents and initiate microscopic cracks on the canisters. Canister surfaces are not cleaned, so particles will continue to build up, increasing corrosion cracking risks.
- There are no drains in the bottom of the concrete holes. Water and other materials can build up and block the air vent pipe opening near the bottom of the concrete hole. If this opening is blocked, canister and fuel can overheat. Holtec's solution is to put a hose through the air vents to pump out water and whatever else may be at the bottom of the hole.
- The concrete structure cannot be adequately inspected for structural problems, yet is subject to higher corrosion from moisture, corrosive soils and aging.
- Holtec is building a similar unproven system at San Onofre in Southern California, the HI-STORM UMAX system. This system stores one canister in each hole instead of two canisters. The warranty for the below ground concrete structure is 10 years, and 25 years for the thin-wall canisters (MPC-37). If the concrete system fails after 10 years, the canister warranty is void.

Major transport issues unresolved.

- The NRC has not approved the Holtec HI-STAR 190 transport cask. Some of NRC's major concerns:
 - Holtec cannot verify canisters are free from cracks.
 - Holtec cannot verify fuel assemblies inside the canisters are undamaged.
 - NRC regulations do not allow transport of even partially cracked canisters.
- The large heavy canisters must be shipped by rail. Rail infrastructure is inadequate. Holtec and the Department of Energy claim they have not evaluated transport routes to the proposed CIS sites.
- High burnup fuel (used by most utilities) burns longer in the reactor, resulting in fuel over twice as radioactive and over twice as thermally hot. It causes fuel cladding to become brittle and damaged after dry storage. In a transport accident brittle fuel cladding could shatter like glass. Canisters are welded shut, so they are not designed to be opened to verify condition of canister contents.

Proposed Nuclear Waste Policy Act (NWPA) Amendments would exempt CIS facilities from meeting critical safety storage and transport requirements.

- Current proposed legislation to modify the Nuclear Waste Policy Act of 1982 (as amended) will weaken safety requirements, allowing inferior thin-wall canister systems to be used.
- Some of the bills preempt numerous federal, state and local rights, including water rights.
- There are numerous other critical problems with these bills. Further analysis of these bills will be provided in another document.

References

SanOnofreSafety.org See also SanOnofreSafety.org Holtec webpage

<https://sanonofresafety.org/holtec-hi-storm-umax-nuclear-waste-dry-storage-system/>

Holtec HI-STORM CIS website

<https://holtecinternational.com/productsandservices/wasteandfuelmanagement/dry-cask-and-storage-transport/hi-storm/hi-storm-cis/>

Video of Holtec President Dr. Kris Singh statements about canister problems

<http://youtu.be/euaFZt0YPi4>

Video of NRC Director Mark Lombard stating inspecting canisters "is not a now thing"

<https://youtu.be/QtFs9u5Z2CA>

Holtec UMAX Warranty

<http://bit.ly/HoltecWarranty>