

Consolidated Interim Storage: **What does "interim" really mean?**

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For more information on spent fuel canister issues, also see:
SanOnofreSafety.org

Nuclear waste is a terrible burden on society. But for how long?

The half-life of Plutonium-239, an entirely manmade substance, is about 24,100 years. A few micrograms is a fatal dose, and **any** dose is an overdose. It takes about a quarter of a million years before the original quantity will decay down to trace levels. Nearly all the Plutonium-239 ever made is still in existence.

The half-life of Uranium-235 is about 700 million years. Both isotopes can be used to make nuclear bombs.

Fission products such as radioactive Cesium, Strontium, and Iodine are also extremely toxic and many have half-lives measured in decades. Thus it will take about 600 years for those fission products to decay to trace levels. Some fission isotopes have half-lives measured in millennia, or even thousands of millennia.

Spent nuclear fuel degrades any container you put it in. Radiation accelerates the normally gradual rearrangement of the atoms in alloys such as stainless steel, causing rivulets of carbon and other elements to form. Over time this process weakens the metal and makes it prone to cracking. It also enhances the possibility of corrosion.

Holtec International recently published a newsletter about the earlier New Mexico meetings. One sentence was particularly disturbing because it contained two lies. Holtec has a bad habit of lying.

The first lie was that there were only a “few local dissenters” at the meetings. Most of the local citizens who spoke were strongly opposed to Consolidated Interim Storage. In Carlsbad so many people spoke against the plan that the meeting ran almost two hours over schedule.

The second lie was that opposition from so-called “activists” from Texas and California -- that would include me -- “lacked clarity and specificity.” So I’d like to clear that lie up next.

First I spoke about what I called “dead zones” around Rocky Flats, Chernobyl, Fukushima and Hanford. These places are polluted with inhalable and ingestible radionuclides which can target specific organs. Nobody in their right mind stays in these polluted places for very long. Scientific studies by Dr. Tim Mousseau have documented a wide variety of mutations among the flora and fauna there.

Next I spoke about the weakness of the egg-shell thin dry cask system Holtec uses.

Holtec’s NRC application calls for stacking the casks two-high. That’s about 155 tons -- about two tracker-trailer’s gross weight -- sitting on top of another 155 tons. But in Holtec’s newsletter the casks are shown single-layer deep. So to the NRC I ask: Would Holtec need a license amendment if they decide to double-stack canisters in each hole?

Holtec changed the basket design for San Onofre and other reactors without a license amendment, which resulted in loose bolts in the

empty canisters that arrived at SanO. Holtec won't say how many canisters across America are loaded with the defective basket shims. We know there are four at San Onofre.

So much for Holtec's claim of good design and good quality control! Frankly NO ONE knows how these canisters will perform in storage, let alone during transport when loaded.

Holtec plans to build this nuclear waste dump in an area that gets torrential rainstorms: It happened in 2014, 2013, 1941 and so on. In the 2014 storm, rivers were more than 5 feet over flood stage. The cement pits for these casks have NO DRAINAGE! Who knows what might get washed in and lodged underneath?

And the casks are never cleaned. Photos show thick layers of dust. Holtec's plan for making sure the casks do not crack involves negotiating a small camera around the cask. This won't see through the dust to detect the cracks while they are still small. It won't be able to look at the most crucial parts of the casks: The stress points that take all the weight. And it won't be able to look inside the casks at all. Cracks can start on the inside or the outside surfaces -- or in the middle.

Holtec says these casks will last 10,000 years, but they only guarantee them for two decades. They will certainly be there far longer than just two decades -- possibly forever! And Holtec's "guarantee" is only for replacing a cask, NOT for consequential damages due to the spread of radionuclides into the environment! There are NO plans for what to do if a cask fails. It's just assumed it won't happen.

There should be remotely-operated domes that can be placed over a single cask, much like the dome at Chernobyl, but smaller, while also

(somehow) leaving room for additional domes to be placed over adjacent casks. Rails would have to already be in place, and slots in the cement where they would fit, and there would have to be a bunch of them on site from DAY ONE in case anything goes wrong. But Holtec isn't even building a wet cell or dry cell to handle leaking canisters. Holtec's CEO Dr. Singh himself stated that even a small leak can release "millions of Curies" of radiation!

If a multitude of canisters fail because an airplane crashes on top of the cement "island" and floods the canister pits with burning aviation fuel, there's nothing Holtec can do. Holtec says they're "designed to withstand crashing aircraft or an on-site fire without any radiological consequences." Let's see the test that proves that! We'll never see that test because it's not true. Holtec expects the government to pay for any damages, but citizens can't even sue the Department of Energy if the system needs additional funding to improve safety!

Home insurance never covers radiation damage. The utilities that made the waste plan to absolve themselves from liability the minute the waste leaves their site -- which will be kind of complicated if they try to ship a damaged cask, because Holtec's plan for dealing with casks that arrive damaged is "return to sender." So damaged casks -- that may have been damaged in transport -- will potentially have to travel thousands of miles back to where they came from, because that's the only plan Holtec has come up with. But Holtec even lies about this, because in reality, the NRC has not approved ANY transport of damaged casks containing "high burnup" spent fuel. (Most spent fuel currently being produced is high-burnup.)

But it gets worse. The area is surrounded by potash mines. Potassium chloride is highly corrosive to stainless steel. And even an insect can

scratch the casks' surface to initiate cracking. Animal liquid and solid waste can add to the corrosive effects. Winds in the area will blow pot-ash dust into the vents and onto the casks.

Despite all this, Holtec will not have to inspect the cask vent holes on a daily basis, they'll be letting their electronic, *hackable* monitoring system tell them if anything is wrong. Video monitoring will only be required on ONE "sample" cask, not all 10,000. NUREG 1927 rev. 1 requires that any canister with a 75% through-wall crack has to be taken out of service, but Holtec has no good way to tell if the canisters have reached that stage. And there are no specifications for earthquake integrity of a damaged cask.

The concrete island is only reinforced with rebar on the top and bottom (which can never be inspected after it's built). That means that in an earthquake -- and nowhere in America is incapable of having an earthquake -- the top and bottom layers could separate and shift in different directions. In that case, ALL 500 CASKS -- or maybe all 10,000 -- would burst open! That would be the end of life of this planet.

The NRC estimated that it would take thirty years before the surface temperature of the casks would drop low enough for chemicals to deliquesce onto the canisters. But after just two to three years some casks at Diablo Canyon have already dropped below that threshold.

New Mexico's elected officials seem to believe Holtec and the NRC, and disregard reality. Would you buy a car that can't be inspected, doesn't give any warning prior to failure, that has never been tested for safety, that you can't properly insure, and that you can't even junk when its useful life is over (for this waste will need to be protected for millions of years)? Of course not! So don't buy the Holtec sales pitch.