

# PUBLIC SUBMISSION

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**Docket:** NRC-2014-0233

List of Approved Spent Fuel Storage Casks - Holtec International HI-STORM 100 Cask System, Amendment No. 8, Revision 1

**Comment On:** NRC-2014-0233-0002

List of Approved Spent Fuel Storage Casks: Holtec International HI-STORM 100 Cask System, Certificate of Compliance No. 1014, Amendment No. 8, Revision No. 1

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## General Comment

Holtec implies that they should not have to check the status of the fuel, because of cost to the "user" and speaks of "known" or "suspected" "gross" fuel "breaches". If they don't look they can say they don't know or suspect. This is a huge loophole which the NRC is letting pass through. There is no definition given of grossly breached fuel either. This is all subjective in nature.

These documents violate the clear writing act. What is intended is unclear. Furthermore, it looks like people are being intentionally misled, when discussion is made of it being only BWR fuel of 3.3% or less enrichment, whereas this describes the typical US commercial reactor.

I object to the constant whittling away of safety by the NRC - that is, what little safety exists.

How can you approve Holtec not properly testing the manufacture of the materials? How can you approve this cheap welding process which is known to cause unevenly welded joints, known as kissing joints, which can't be checked by non-destructive means? Obviously if you destroy the weld it doesn't work out, does it? How can you approve the storage of breached, corroded fuel rods, full knowing that with radiolysis the water there will form flammable, explosive gases and that the uranium, plutonium, cesium, itself can be corroded-oxidized. How can you allow Holtec not to be required to do material testing, because they claim that it is ok if made according to instructions? The point of testing is that it checks to see if the manufacturing process was properly done; that the instructions were followed.

I object to the storage of damaged fuel rods, period. This is not allowed in Germany, for instance. Why should

we accept weak, dangerous standards? So that we can be Germany's dumping ground for nuclear waste?

Even if the damaged fuel can be safely stored on site, which is an unknown, leaving them damaged-broken in casks, from which they must eventually be moved, is the real safety danger for workers. Leaking, corroding casks of broken, damaged, fuel is a danger to everyone.

I am also alarmed at the use of aluminum for the fuel baskets, which could create a galvanic cell with the nuclear waste - not only fuel rods, but very reactive cesium, as well as the plutonium and uranium, which is exposed in breached fuel.

I am concerned that the helium backfill, under conditions of corrosion and/or radiolysis can become hydrogen gas, since the only difference between the two is that helium has one extra electron, which can be easily lost through galvanic corrosion or radiolysis. Damaged fuel could make this problem worse.

One year ago, the US CSB announced that the model of high temperature hydrogen embrittlement used by the petroleum industry was invalid and could not accurately predict high temperature hydrogen embrittlement and failures. More recently, Dr. Digby MacDonald, and other corrosion experts, have been shocked at the hydrogen damage at two Belgium nuclear reactors and warned that hydrogen damage was the Ebola of the nuclear industry. But, it's not just hydrogen damage, but also neutron damage, which causes embrittlement and could lead to sudden failures. Add to this the possible build-up of flammable gases in the nuclear waste casks. The radiological damage and changes in the nuclear waste are still unknowns. Only recently have researchers become alarmed at the dangers of corroded plutonium and uranium in spent fuel. Furthermore, cesium is more reactive than sodium. Cesium is the most reactive metal, besides francium.

I will remind you, as well, of the thin, flimsy nature of the Holtec casks (5/8ths in). Concrete, which itself can be a victim of radiolysis, as well as routine degradation, does not help and may actually hinder safety.

Are you all foreigners with plans to return home, like the owner of Holtec probably has? Are you so sure that you will be safely back on your home continents, where ever they are? Are you so ungrateful and hate America so much? Over a decade ago, it was an Iranian-American who tried to warn everyone about how poorly made the Holtec casks are and lost his job for it. Obviously, he loved America and didn't want to return to Iran.