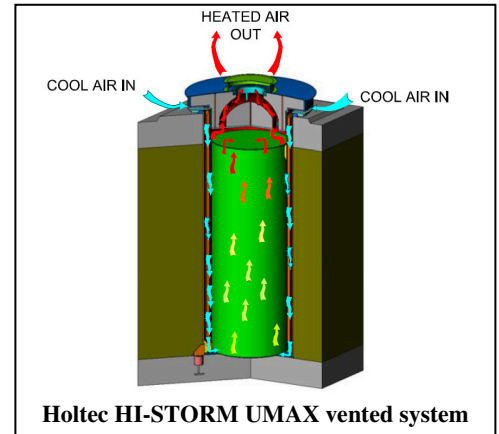


Tell Coastal Commission: **REVOKE Nuclear Waste Storage Permit**

The California Coastal Commission put **Special Conditions on the Coastal permit for San Onofre nuclear waste storage that will likely be impossible to meet.** They required a system that can be inspected, repaired, maintained, monitored, and transported without cracks – **but only AFTER 20 years.** The Coastal Commission acknowledges the Holtec system does not meet these requirements, but believes Edison's promises these problems will all be solved. However, there is insufficient evidence to support this and evidence to the contrary.

Coastal Commission special conditions must be met now not deferred 20 years.



- **Thin (1/2" to 5/8" thick) stainless steel canisters can crack, cannot be inspected, repaired, maintained or adequately monitored.** The Coastal Commission should require a system that does not have these flaws and not accept promises of future solutions.
- **A Sandia Lab report shows once a crack starts it can penetrate hot canister walls in 5 years or less** (see reverse). The NRC states it takes about 16 years for a crack to go through the wall of thin stainless steel canisters and canisters are vulnerable to cracking from marine environments and well as other conditions, such as air pollution (sulphites). A similar component at the Koeberg nuclear plant leaked in 17 years with numerous cracks thicker than most nuclear waste canisters. A Diablo Canyon canister has all the conditions for cracking in a 2-year old canister.
- **Existing 51 thin canisters may already have cracks.** Fuel loading into thin canisters began in 2003, so Coastal Commission "special conditions" for aging management and related issues should be required now.
- **Holtec canister President says canisters cannot be inspected or repaired yet warranty is only 10 years for the concrete structure and 25 years for the thin canisters.** <http://youtu.be/euaFZt0YPi4>
- **Cracked canisters cannot be transported.** NRC Regulation 10 CFR § 71.85.
- **Canisters need up to 45 years cooling (after removed from reactor) before transport** per DOT.
- **Spent fuel must cool in the pools for a few years, so choosing proven thick storage casks will not significantly delay removing fuel from pools.**
- **Edison plans to destroy the spent fuel pools.** Pools are the only method to replace canisters. The Commission should add a special condition to not destroy pools unless another approved plan is in place.
- **No funds available to relocate system.** Once installed, there are no funds to rebuild and move the system to a different site, so it is not reasonable to expect it will be relocated (even on-site). Edison's \$1.3 billion Spent Fuel Management Plan to the California Public Utilities Commission assumes nothing will go wrong and that they will not need to pay to move the fuel on-site or elsewhere. Edison's plan assumes the Dept. of Energy will start picking up the fuel in 2024, which Edison admitted to the CPUC is unlikely.
- **Edison can meet Coastal requirements with thick casks.** For example, Areva sells thick (over 10" thick) metal casks to the U.S. market, and to most of the rest of the world for storage and transport. The Areva TN-32 and TN-40 are licensed by the NRC. The TN-24 used at Fukushima survived the massive earthquake and tsunami. The Coastal Commission cannot select the storage solution, but can set requirements, as they have done with the "Special Conditions".

Action: Email Joseph.Street@coastal.ca.gov, referencing Coastal Development Permit #9-15-0228 and include above reasons. Ask your elected officials to do the same.

More information & references at SanOnofreSafety.org

3/24/2016

Once started cracks can grow through canister wall in less than 5 years

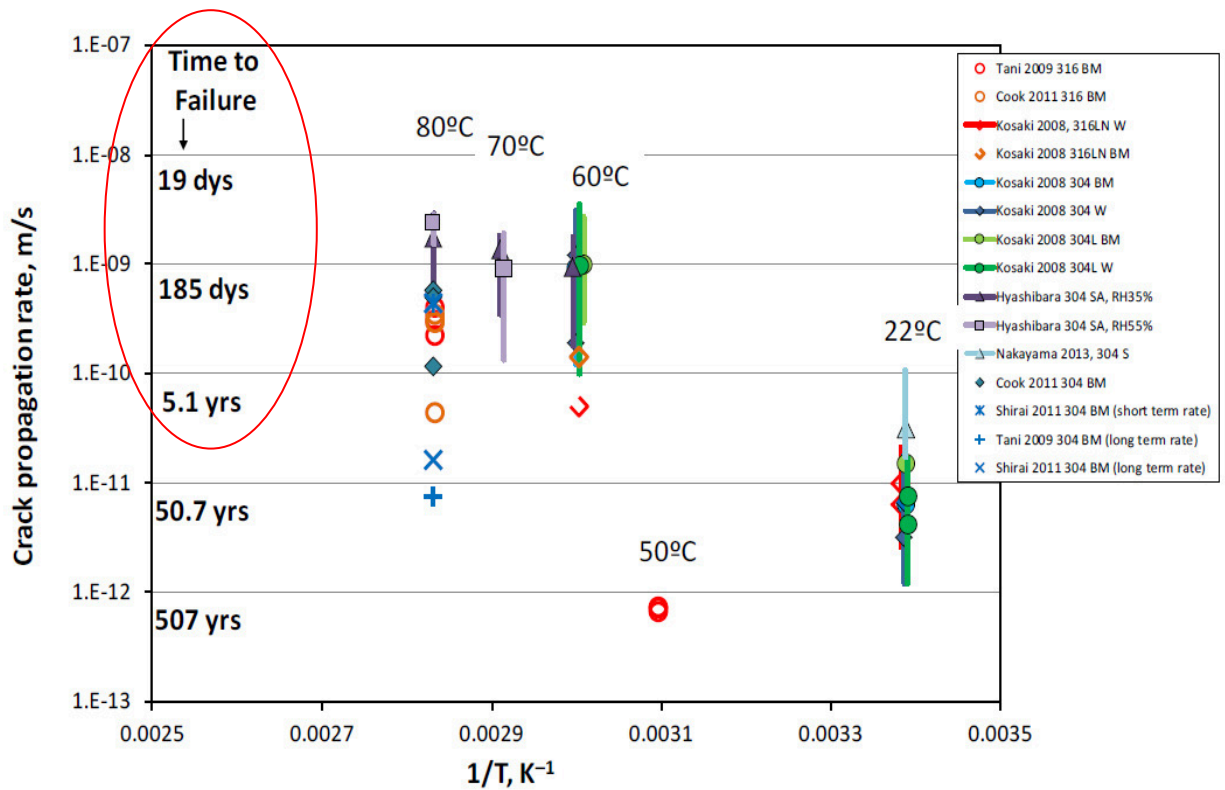


Figure E-5. SCC propagation rates for atmospheric corrosion of 304SS and 316SS. BM –base metal; W–weld sample; SA–solution annealed; S–sensitized. Bars represent reported ranges (if more than one), while symbols represent average values. Time to failure corresponds to the time required to penetrate a 0.625” thick canister wall.



U.S. DEPARTMENT OF ENERGY

Nuclear Energy

Long-Term Performance Challenges

Up to 45 years cooling required before meets DOT safety transport regs (~20kW)

Thermal Load Management

- DPCs are now loaded at about 20 kW
- Canister design storage limits are typically 24 kW, maximum currently available is rated to 40.8 kW for storage
- Hottest waste packages considered for Yucca Mountain emplacement were 18 kW
- Other repository design concepts call for much cooler waste packages (e.g., SKB calls for initial load per package ≤ 1.7 kW)

Other performance considerations

- Engineered barrier performance at elevated temperatures (e.g., clay-based backfill/buffer performance)
- Criticality control

Estimated Cooling Time for PWR fuel to Reach Specified Thermal Power, as a Function of Canister Size and Burnup

