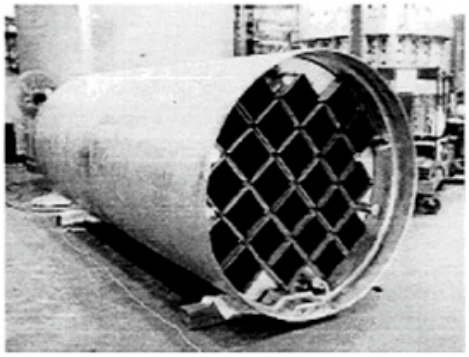
Short Term Cracking and Major Leaking Risks at San Onofre

Reasons we cannot trust Southern California Edison and the Nuclear Regulatory Commission



Southern California Edison (SCE) provided this misleading information to the public.* Here are the facts and what SCE said instead. In spite of knowing these facts, the Nuclear Regulatory Commission (NRC) continues to approve these inferior thin-wall storage canisters.

FACT: Loaded canisters are never cleaned, increasing risks for cracking from corrosive particles.

SCE: *Cracks can develop in stainless steel, but is rare.*

FACT: No loaded canisters have ever been inspected for cracks because they have no method to inspect for cracks once loaded with spent nuclear fuel, and no plan to prevent leaks. We will only know after they leak. A few canisters in the country were checked for corrosive dust particles and to see if they had a low enough temperature for moisture to stay on the canister long enough to dissolve salts. A Diablo Canyon canister was found to have all the conditions for cracking in a 2-year old canister, but cannot be inspected for cracks. It is in a similar environment to San Onofre. No San Onofre canisters have been inspected.

SCE: *No instances of cracks have been identified in inspections conducted to date.*

FACT: Thin-wall canisters are susceptible to cracks from moist salts and other causes.
The NRC claims there is not enough humidity at San Onofre for cracks, ignoring frequent fog, on-shore winds and surf. Electric Power Research Institute (EPRI) report claimed over 80 years before leaks by excluding similar conditions and other data.

SCE: *CISCC (chloride induced stress corrosion cracking) requires many conditions to start: salt and water deposition, initiation site (such as a pit), stresses in steel to enable crack to expand.*

FACT: Thin-wall canister designs are vulnerable to short-term cracks. The NRC states thin-wall canister designs and materials are vulnerable to stress corrosion cracking, including those at San Onofre.

SCE: *Several design attributes serve to minimize potential for development of canister flaws.*

FACT: Cracks can grow through the wall in 16 years after a crack starts (NRC). Some San Onofre canisters are almost 15 years old (loaded in 2003). The Koeberg nuclear plant, located in a comparable environment as San Onofre had a container the NRC considers comparable. It leaked in only 17 years.

SCE: *If initiated, cracks are slow developing, occurring over years.*

FACT: Even microscopic through wall cracks will release millions of curies of radionuclides into the environment and there are risks of explosions and criticalities. If air enters canisters due to hydrides created from high burnup fuel, an explosion can occur. If unborated water enters through cracks, a criticality will occur (an uncontrolled nuclear fission reaction).

SCE: *Canister have no high-pressure force to expand a crack*.

**SCE slide on CISCC, Development & Implementation of Aging Management Programs for San Onofre*, September 14, 2017, Tom Palmisano http://www.songscommunity.com/Website%20-%20AMP.pdf

NRC and other technical references at SanOnofreSafety.org