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**From:** Barry Mendelsohn NMSS NMSS NRR NMSS NMSS NMSS
**To:** Emeigh, Charles, Johnson, Michael, Telford, John, Warren, Michael, Young, Francis
**Date:** 12/21/00 4:37PM
**Subject:** Fwd: Effect of Cladding Not Being Fresh

Joe Staudenmeier shares Skip's opinion that a zirc fire in a shipping or dry storage canister would not propagate. He gave me several other persons to talk to, one of whom is Charles Tinkler, RES/DSARE/SMSAB. Charley has been involved with severe accident studies since the 1980s. He explained that the question of whether a zirc fire would propagate depends upon whether or not the air cooling exceeds the sum of the decay heat plus the energy generated by the zirc oxidation. The energy generated by the zirc oxidation increases with temperature, but is approximately a factor of 10 less for zirc with an initial oxidation coating of 200 microns than for one with an oxidation coating of 20 microns. Charley said that there are codes that can be used to give a reasonably good estimate of whether the fire will propagate. He said that it is known to be difficult to propagate a zirc fire if the fuel is relatively cold to begin with. Although he would prefer to run it through a simulation, his opinion of our scenario is that it would not propagate.

ßarry

**CC:** Fragoyannis, Atanasia (Nancy), Hubbard, George, Johannemann, Edward, Rayland, Andrew, Staudenmeier, Joseph, Tinkler, Charles(...)

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