

NRC QUESTION "A"

Question:

How was the degraded battery condition (i.e. C&D Part 21) factored into the analysis for extending RCIC operation to 8 hours?

Answer and Basis:

The Part 21 (Event No. 36073) identified a condition of non-conforming, high levels of calcium within the positive plate grids of some of their type LCR-25 batteries. The nonconforming condition was found to be isolated to a batch of battery cells supplied to NPPD in 1995, which are currently installed in the 250 VDC batteries at CNS. The 125 VDC batteries were replaced with cells manufactured in 2000 and 2001 and are not susceptible to the nonconforming calcium levels in the positive plate grids.

Elevated levels of calcium within the positive plate grid alloy can result in the acceleration of the normal aging phenomenon of positive plate growth associated with battery cells. The positive plate growth eventually leads to internal shorts and, thus, reduced battery capacity (i.e. need for replacement). Even with the aging phenomenon being accelerated, the rate of plate growth is slow, allowing sufficient predictive measures to detect degradation before the batteries are unable to perform their function.

In response to the Part 21, the frequency for visual inspection of the 250 VDC batteries has been increased from once per 12 months to every 6 months. The inspection activity is completed under Surveillance Procedure 6.EE.611. The 250 VDC batteries were inspected during December 2003 and again during June 2004, with no discrepancies associated with plate swelling. Therefore, there were no signs of positive plate swelling at the time of the condition.

Both Div. I and Div. II 250 VDC batteries are scheduled for replacement during RFO22 (WO's 4296299 and 4296400, respectively).

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