

N88. Update On Zinc Injection For BWRs

New data has been received recently from several plants. Radiation fields have been measured on recirculation piping during the latest outages at Hope Creek (3 cycles of zinc injection), Millstone-1 (2 cycles), and Nine Mile Point-2 (first cycle).

Fields decreased during Cycle 3 at Hope Creek and are now under 100 mR/h, but Zinc-65 again caused some problems during the outage. Recontamination at Millstone-1 since the decontamination two cycles ago is only 50% of that observed in a similar period without zinc injection after an earlier decontamination. Although higher than other plants, the fields at Nine Mile Point-2 seem remarkably low when compared to other plants with forward-pumped drains, which typically have dose rates of 250-350 mR/h at this stage of their lives.

The most important finding is that zirconium oxide thickness is well within the database of BWR experience, indicating that zinc injection has not significantly affected zircaloy fuel cladding corrosion.

Deposited crud levels (iron oxides) are higher than at most other BWRs, but consistent with the relatively high iron input in the feedwater at this plant. These deposits are more adherent than usually found, which is tentatively attributed to a higher spinelle fraction in the oxide.

Taken From: "Update on Zinc Injection for BWRs," Christopher Wood, Radiation Control News, No. 11, September 1991. For more information, contact Chris Wood, EPRI, Phone (415) 855-2379.