

### **3450. EFFECT OF HYDROGEN WATER CHEMISTRY ON CHEMICAL DECONTAMINATION**

Alternate water chemistry control programs have been implemented by an increasing number of BWR's over the last several years. The most significant program is Hydrogen Water Chemistry (HWC), with several plants currently adding or planning to add hydrogen to the feedwater, in order to mitigate stress corrosion cracking of the reactor piping and the reactor vessel components. Many BWRs are also adding zinc to reduce the uptake of cobalt in the primary system oxide.

Until a few years ago, it appeared that HWC and/or zinc injection had no adverse effect on the results of chemical decontamination, as average decontamination factors (DFs) in the range of 5-10 were routinely obtained.

However, more recent experience at Brunswick, Monticello, Hatch, Duane Arnold and Pilgrim has shown that the oxide films in BWRs operating with HWC in the protective range often exhibit higher exposure rates and are more resistant to the conventional decontamination processes. For this type of corrosion film, plant specific testing is recommended to ensure maximum effectiveness. The types of oxide films encountered in these plants and the decontamination process adjustments necessary to assure success are discussed.

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