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R-370

## IN-PILE LOOP STUDIES OF CLOSE REDUCTION TECHNOLOGIES FOR PWRs AND BWRs; INVESTIGATIONS OF MATERIAL SUSCEPTIBILITY TO CRACKING

**Keywords:** CONTAMINATION PREVENTION; COMPONENT RELIABILITY; WATER CHEMISTRY; PH; N-16 CARRYOVER; STRESS CORROSION CRACKING

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- Objectives:**
1. For BWRs, reduce N-16 carryover by optimizing chemistry.
  2. For PWRs, reduce radioactive corrosion product build up on the primary cooling surface by pH optimization of the water chemistry.
  3. Reduce irradiation assisted stress corrosion cracking on core structural materials.

**Comments:**

**Remarks/Potential for dose limitation:** All of the research have the potential for major reductions in operational dose commitments in LWRs.

**References:**

- 1) "In-Pile Facilities for LWR materials and Chemistry Studies at the MIT Research Reactor," O.K. Harling, G.E. Kohse, M.J. Driscoll, R.G. Ballinger, JAIF Conference, Fukui City (1991)
- 2) "In-Pile PWR Loop Coolant Chemistry Studies in Support of Dose Reduction," G.E. Kohse, R.G. Sanchez, M.J. Driscoll, M. Ames, and O.K. Harling, JAIF Conference, Fukui City (1991)
- 3) "Development and Use of an In-pile Loop for BWR Chemistry Studies", EPRI TR-102248, July 1993.

**Duration:** from: 1985 to: 1993

**Funding:** \$ 0.5 to 1.5 M / yr

**Status:** In progress

**Last Update:** August 26, 1993