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## LESSONS LEARNED FROM FULL REACTOR COOLANT SYSTEM CHEMICAL DECONTAMINATION OF A PWR

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RATE

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**Objectives:** To analyze and summarize the lessons learned from the full system decontamination (FSD) experience of Indian Point 2.

**Comments:** The lessons learned fall in three categories:

\* Planning and Organization

- Allow adequate time for planning.
- Consider alternatives.
- Undertake a comprehensive qualification program to determine the most effective solvent with acceptable corrosion impact.
- Integrate plant operations personnel into FSD planning team.
- Ensure equipment is well laid out, accessible and shielded.
- Ensure decon procedures are flexible while maintaining adequate process control.
- Ensure there are adequate technical support personnel.
- A utility decision maker should be available on each shift.
- Carry out artifact tests to determine effectiveness of the decon solvent.

\* Decontamination Equipment

- The decon process equipment (DPS) should be built to FSAR seismic requirements.
- Test equipment prior to shipping, modify any weaknesses.
- Locate control center in an area where there is minimum interference with operators during FSD.
- There should be redundant isolation valves between plant systems.

**Remarks:** (Lessons learned- continued)

\* Field Implementation

- Backwashable filters should be of good operational design.
- Capacity should be adequate for AP step, need large surface area.
- Filters should be bypassed for second AP step.
- Need a filter backwash holdup tank to reduce plant liquid radwaste.
- Avoid threaded fittings in high pressure systems, if subject to vibrations or shock loads.

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- Excellent coordination should be maintained between operations staff and decontamination personnel.
- Ensure all radiation monitors on the decon process system work.
- Proper calibration of monitors has been carried out.
- Preoperational functional testing should be required.
- Radwaste volume and disposal methods need to be addressed for improved cost efficiency.

Future full system decontaminations should be cost effective if all lessons learned are properly utilized.

**References:** Vandergriff, D., "Lessons Learned - Full System Decontamination," Proceedings, EPRI Radiation Field Control and Chemical Decontamination Seminar, Tampa, Florida, November 1995, EPRI Distribution Center, P.O. Box 23205, Pleasant Hill, CA 94523.

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