

N285. The Road to Full RCS Decontamination

In controlling radiation exposures in the future, reducing out-of-core radiation fields by chemical decontamination offers the best chance of continuing the downward trend in exposures.

Decontamination technology is cost-effective, based on applications of the LOMI decontamination process. Decon outages are shorter, manpower requirements are reduced, and work quality is improved. Utilities estimate savings of 13,000 person-rem from 27 applications.

Full-system decontamination offers several important advantages: lower background fields, more effective decontamination, and reduced recontamination rates. A full-system decontamination demonstration will be carried out at Indian Point 2 station in 1995 with the fuel removed, but significant advantages could be achieved in terms of critical path time and even lower recontamination rates with fuel in place.

Full-system decontamination for BWRs could be economically attractive for removing deposits in the lower parts of the BWR cores to aid inspection/repair or to remove radioactive material that could be redistributed to out-of-core areas on switching to HWC.

The LOMI process has already been tested successfully on BWR fuel, but far more radioactive material was removed than anticipated, thus reducing the probability of future applications. Development of the ELOMIX electrochemical ion exchange process is continuing and this could well change the economics of all decontamination applications in the future. Into the application phase, much of the emphasis in the past has been to show that no corrosion damage will occur from the decontamination solvents. The U.S. industry has successfully completed that phase with AP/CAN-DEREM and AP/LOMI qualified for PWRs and LOMI for BWRs. The emphasis is now on the practical aspects of application and improving cost effectiveness.

Taken from, "The Road to Full RCS Decontamination," by Chris Wood, EPRI Radiation Control News, No. 18, August 1993, p.1, For further information, contact Chris Wood, 415/855-2379, Electric Power Research Institute, 3412 Hillview Avenue, Palo Alto, CA 94303.