Background
Chemical decontamination, defined as the use of chemical reagents to remove radioactivity containing corrosion products from the internal surfaces of piping and equipment, was developed for commercial use in the late 1970s and early 1980s, and has been used by Westinghouse for more than 20 years. In the 1990s, the Electric Power Research Institute (EPRI) licensed a decontamination for decommissioning (DFD) process to remove facilities, including operating nuclear power stations, from service. The EPRI DFDX process is a further development of the EPRI DFD process for chemical decontamination of nuclear systems and components (the X refers to electrochemical ion eXchange).

Westinghouse is a full-service chemical decontamination company with experience with the DFD process, and specializes in a variety of chemical decontamination applications ranging from individual component to full-system applications.

Description
The chemical solvents Westinghouse uses for chemical decontamination are safe and can be applied on plant safety systems without detrimental effects from corrosion. Westinghouse provides chemical decontamination solvents for both operating and decommissioned nuclear stations. Our services also include artifact testing at our Richland, Washington, USA, laboratories. Artifact testing has been a useful tool in improving the decontamination factors at nuclear power stations around the world. This testing compares the effectiveness of the different decontamination solvents on actual plant material, providing plant personnel with the data needed to choose the right solvent for their application. Additionally, Westinghouse provides optional equipment, such as water shields and specialized systems, to decontaminate specific components.

Benefits
Based on our experience, Westinghouse chemical decontamination applications offer:
- Significant reduction in personnel and site radiation exposure
- Free release of materials
- Improved productivity
- Improved conditions and schedules for facility decommissioning
- Reduction in radwaste volumes and costs using the EPRI DFDX process

Experience
Westinghouse has extensive experience in decommissioning nuclear power plants and facilities including pressurized water reactors, boiling water reactors, gas-cooled reactors, sodium-cooled reactors, research reactors and fuel fabrication plants. To date, Westinghouse has successfully applied the EPRI DFD process at a number of nuclear plants around the world.