

## **D2. SPENT RESIN DISPOSITION - AVAILABLE ALTERNATIVES AND SELECTION ANALYSIS**

In response for need to reduce radwaste program expenditures, EPRI evaluated spent resin disposition techniques and cost factors. Typically, spent ion exchange media has been the most expensive waste to process and dispose of due to the lack of processing options.

As facilities continue to improve their position in a competitive environment, waste disposal options that reduce operating expenditures become more critical. The cost associated with radioactive spent resin disposal can be successfully reduced through careful analysis of treatment options along with their associated volumes and costs.

Investigators used data from more than 25 sites to identify and evaluate spent resin disposition options such as volume reduction, free release, reuse, and disposal. Next, they examined major vendor processors, including those currently available and those projected to be available in the near future. They incorporated considerations impacting a site's selection of the "best" disposal option into a method for analyzing the cost-effectiveness of each disposal technique. Finally, they developed an example evaluation to illustrate the intended use of this cost analysis process.

The document summarizes numerous on- and off-site treatment options, including a description of each option, process-specific consideration, and a recommended sequence for performing a process cost evaluation. On-site options discussed range from decontamination and release, cleaning and regeneration, and volume reduction to disposal. Off-site options include regeneration/recycling, release, incineration, catalytic extraction process, vitrification, and high-force compaction.

*For more, "Spent Resin Disposition - Available Alternatives and Selection Analysis," EPRI TR-105901, Final Report, December 1995.*