Review of Low Level Radioactive Waste Liability Estimates

2006-506I
February 23, 2006
Objective and Scope

- Objective: Assess the reasonableness of estimates made for disposal of low level radioactive waste (LLRW).
- Scope: Estimates made for the disposal costs of the LLRW covering Fiscal Years (FY) 2005 and 2006.
Methodology

In order to accomplish our objective, we:

- Interviewed the Program Manager, Radwaste and Environmental Protection, TVA Nuclear Operations, to document the process and methodology for establishing LLRW estimates and accruals.
- Obtained and reviewed FY 2005 LLRW disposal estimates, budgets, accruals, and actual disposal expenditures.
- Obtained and reviewed FY 2006 LLRW estimates and budgets.
- Analyzed FY 2005 LLRW data by:
  - Recreating FY 2005 estimates based on the described process.
  - Comparing FY 2005 estimates to actual expenditures.
  - Comparing FY 2005 estimates to budgeted expenses.
  - Comparing FY 2005 budgeted expenses to actual expenditures.
- Analyzed FY 2006 LLRW data by:
  - Recreating FY 2006 estimates based on the described process.
  - Comparing FY 2006 estimates to budgeted expenses.

* This inspection was conducted in accordance with the “Quality Standards for Inspections.”
Background

- LLRW disposal estimates are used for budgeting purposes only.
  - Estimates consider historical data, contract rates, and plant LLRW generation estimates.

- Estimates are developed for both dry active waste (DAW) and wet active waste (WAW) on a site-by-site basis.
  - DAW is composed of radioactive trash, paper, metal, clothing, and plastic.
  - WAW is composed of radioactive resins and filters used to clean water from the plant.

- LLRW disposal estimates for FY 2005 were $2,832,902 and for FY 2006 are $2,959,000.

- LLRW disposal budgets are developed by each nuclear plant, but may not equate to the estimates developed by the Manager, Radwaste and Environmental Protection.

- LLRW liabilities have been accrued for (1) WAW beginning September 2001 and (2) DAW beginning June 2004.
Procedures for the accrual of LLRW expenses are found in CFO-SPP-13.3 “Accrued Liabilities” and BP-263 “Low Level Radioactive Waste Liability Accrual.”

Accruals are posted to the Integrated Business System monthly for all waste generated that month.

- DAW is considered to be generated when it is placed in a sealand storage container.
- WAW is considered to be generated when the high integrity container is capped and ready for disposal.

Special projects such as the Browns Ferry Unit 1 Restart are not considered in the LLRW estimates or accruals. All generation tied to special projects falls under the special project budget.
Summary

- The FY 2005 and 2006 LLRW estimates appeared reasonable when unforeseen incurred LLRW disposal costs were taken into account.
- The LLRW expense and liability accounts are adjusted quarterly. However, the accrual calculation is based on the sites’ accurately reporting LLRW at the site.
Observation 1: Estimates

- We found the estimates for FY 2005 appeared reasonable.
  - The LLRW disposal estimates for 2005 totaled about $2,833,000 while actual expenditures were about $3,459,000.
  - Actual expenditures are not tied to LLRW generation accruals.
  - While the difference is $626,000 (22 percent), explanations provided and/or our review of documentation showed that unexpected LLRW costs were incurred because:
    - Construction debris and gravel found at Watts Bar Nuclear Plant ($21,280) and Sequoyah Nuclear Plant (approximately $283,220) was determined to be LLRW.
    - Nuclear produced more higher cost WAW than originally estimated ($160,000).
    - A spill at Watts Bar Nuclear Plant caused an entire resin bed to be replaced--actual cost was not provided.

- We found the processes, methodology, and assumptions used to develop the FY 2006 LLRW disposal estimates were consistent with those used in developing FY 2005 estimates.

Additional Information: We noted that the process and methodology for developing LLRW estimates is not documented and a lack of cross-training potentially exists.
Observation 2: Policies

BP-263 requires the following:
- Liability account reconciliation on a quarterly basis.
- Adjustment to each Nuclear plant’s site expense account based on quarterly reconciliation.

We found:
- The liability account is reconciled and adjusted on a quarterly basis.
- Outstanding invoices, waste generated, and waste stored on-site are used to calculate the adjustment to the LLRW liability account and site expense accounts.
- The LLRW disposal liability account’s accuracy depends on knowing that all waste is properly identified at the plant.
  - No physical inventory is currently done at the plant to ensure that all waste is accounted for.
Recommendations

- The Senior Vice President, Nuclear Operations, should consider:
  - Documenting the methodology for estimating LLRW disposal costs.
  - Formally evaluating the feasibility of a physical inventory being done on an annual basis at each plant to assess the amount of waste stored on-site.