



Review of Low Level Radioactive Waste Liability Estimates

2006-5061

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.



Background (cont'd)

- ◆ 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.

