



memorandum

DATE: June 15, 2006
Audit Report Number: OAS-L-06-15
REPLY TO:
ATTN OF: IG-32 (A05SR029)
SUBJECT: Audit of "Storage Capacity of the High Level Waste Tanks at the Savannah River Site"
TO: Manager, Savannah River Operations Office

INTRODUCTION AND OBJECTIVE

The Savannah River Site in South Carolina currently stores about 36 million gallons of waste in 49 active underground storage tanks. Twenty-two of these tanks do not meet Environmental Protection Agency (EPA) requirements for full secondary containment and must be emptied and closed by 2022 in accordance with a closure schedule approved by the EPA and the South Carolina Department of Health and Environmental Control. To date, leaks have been detected in 12 of these tanks. However, sufficient waste has been removed from these tanks such that current volumes are maintained below any known leak sites. The remaining 27 tanks are compliant with the EPA requirements for full secondary containment and leak detection and are used to support ongoing operations and maintain contingency space. It is anticipated that the Savannah River Site's continuing operations will generate an average of about 2.2 million gallons of waste annually through at least Fiscal Year (FY) 2013, which must be volume reduced through evaporation and stored in the underground waste storage tanks. To date, no leaks have been detected in the 27 compliant tanks.

For off-normal or emergency situations involving high level waste storage or treatment, DOE Manual 435.1-1 requires the Department of Energy (Department) to maintain spare capacity with adequate capabilities to receive the largest volume of waste contained in any one storage vessel, pretreatment facility, or treatment facility. Our objective was to determine whether the Department is maintaining adequate available storage space in its high level waste tanks to respond to catastrophic failures.

CONCLUSIONS AND OBSERVATIONS

We determined that the Department is taking the steps necessary to maintain available storage space in its high level waste tanks to respond to catastrophic failures. As of January 2006, the Department had approximately 2 million gallons of space available in 24 of its 27 compliant tanks to accommodate newly

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generated high level liquid waste resulting from ongoing operations. Further, the Department has maintained an additional 1.3 million gallons of space. This additional storage space is used as a contingency to respond to off-normal or emergency situations which could result in a need to transfer waste and is capable of holding the waste from the largest storage vessel. The Department is closely monitoring the available space in the tanks and taking steps to optimize tank operations and achieve maximum space gain.

While the Department is taking appropriate steps to maintain adequate contingency space, there are no written contingency transfer procedures in place to respond to unanticipated leaks from the primary tank to the annulus¹. The high level waste tanks at the Savannah River Site are operated under a 1993 permit issued by the South Carolina Department of Health and Environmental Control which requires the permittee (currently Washington Savannah River Company) to maintain contingency plans or emergency procedures to respond to any known emergency situation with the potential to negatively impact human health or the environment. In 1999, the Department identified a deficiency concerning Washington Savannah River Company's readiness to initiate an emergency transfer from a leaking tank. In response to the deficiency, Washington Savannah River Company committed to prepare a leaking tank transfer plan. However, the plan had not been completed when the Department conducted another review in 2003, resulting in a re-issuance of the deficiency.

To address this deficiency, in October 2003, Washington Savannah River Company initiated an effort to develop written contingency transfer procedures for annulus to tank transfers and procure necessary equipment for a backup pumping system for completing such transfers in case the main pumping system is inoperable. This effort is due to be completed by September 2006. Because of previous delays in correcting this concern, we suggest that the Department closely monitor Washington Savannah River Company's progress to ensure that the effort is on track for its September 2006 completion date.

SCOPE AND METHODOLOGY

The audit was performed from September 2005 through June 2006, at the Department's Savannah River Site in Aiken, South Carolina. The scope of the audit included a review of the Department's ability to maintain adequate available storage space in its high level waste tanks to respond to catastrophic failures. To accomplish the audit objective, we:

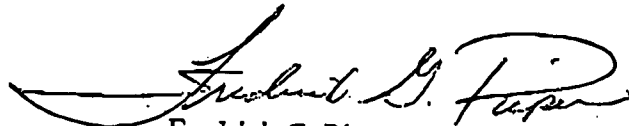
- Obtained and reviewed documents relating to actual and expected available storage space in the high level waste tanks;

¹ Annulus as used in this report is defined as the space between the primary tank wall and the metal lined portion of the vault wall designed to collect any waste that may leak from the primary tank.

- Reviewed the Department's current contract with Washington Savannah River Company to evaluate performance measures relating to high level waste tanks; and
- Interviewed key Savannah River Operations Office and Washington Savannah River Company personnel regarding procedures for annulus to primary tank transfers.

The audit was performed in accordance with generally accepted Government auditing standards for performance audits and included tests of internal controls and compliance with laws and regulations to the extent necessary to satisfy the audit objective. Accordingly, we assessed performance measures established under the *Government Performance and Results Act of 1993* and found that the Department established performance measures related to maintaining minimum available space in and reducing the amount of influents into the high level waste tanks. Because our review was limited, it would not necessarily have disclosed all internal control deficiencies that may have existed at the time of our audit. In performing this audit, we did not significantly rely on computer-processed data to accomplish the audit objective. Therefore, it was not necessary to conduct an assessment of the reliability of this data. The Savannah River Operations Office waived the exit conference on June 12, 2006.

We appreciate the cooperation of your staff during our review. Because no formal recommendations are being made in this report, a formal response is not required.



Fredrick G. Pieper, Director
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cc: Chief of Staff
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