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# memorandum

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REPLY TO ATTN OF: IG-34 (A07ID014)

SUBJECT: Audit of the Contact-Handled Transuranic Waste Characterization Capabilities at the Idaho National Laboratory

TO: Manager, Carlsbad Field Office
Manager, Idaho Operation Office

## INTRODUCTION AND OBJECTIVE

Currently, the Department of Energy (Department) is using two different production lines to characterize and package the Idaho National Laboratory Site's (Idaho) contact-handled transuranic waste for final disposal in the Waste Isolation Pilot Plant (WIPP) in New Mexico. The most prominent is the Advanced Mixed Waste Treatment Project (AMWTP), the largest transuranic waste processing facility in the Department with a mission to prepare and ship 65,000 cubic meters of stored waste to WIPP by 2018. The other, the Central Characterization Project (CCP), is a mobile characterization capability managed by Washington TRU Solutions of Carlsbad, New Mexico. The CCP was deployed to Idaho in 2005, at a cost of more than $5 million, in order to characterize and package the estimated 8,000 cubic meters of buried waste from the Accelerated Retrieval Project. The CCP's scope was expanded in 2005 to augment the AMWTP.

Idaho is the only Department site to have a fixed contact-handled transuranic waste characterization facility and a mobile characterization capability to prepare contact-handled waste for disposal. The objective of this review was to determine whether the contact-handled transuranic waste characterization capabilities at Idaho were fully utilized.

## CONCLUSIONS AND OBSERVATIONS

Both of the contact-handled transuranic waste characterization capabilities at Idaho are under utilized. According to a September 2007 report, "Assessment of Central Characterization Project Costs," the Department found that the CCP mobile characterization line was under utilized by 25 percent in 2005; 30 percent in 2006; and about 40 percent in 2007. Under utilization was attributed, in part, to a higher than expected percentage of retrieved drums that contained prohibited items. Management also recognized that the Accelerated Retrieval Project had not been able to exhume buried waste at the rate anticipated. Therefore, to better utilize the CCP assets at Idaho and to assist the Department in its regulatory obligations, the CCP received a majority of its waste from the AMWTP's stored waste inventory during 2005 through September 2007, effectively augmenting the AMWTP.

The AMWTP has also been under utilized for processing contact-handled transuranic waste in Idaho. Based on a Department evaluation of actual contact-handled transuranic waste processed in the past and projections for the remaining stored waste, the AMWTP has a weighted average utilization rate of 76 percent. When the AMWTP was constructed, it was designed with the capability to characterize and treat all general types of contact-handled transuranic waste stored at Idaho, including debris waste, inorganic homogeneous solids, and organic homogeneous solids. Although the facility is currently only scheduled to process and treat approximately 65,000 cubic meters of stored waste at Idaho, the AMWTP was designed with the capacity to characterize and treat as much as 185,000 cubic meters of waste over its lifespan. This unused lifecycle capacity has not yet been assigned to any waste streams. Accordingly, the AMWTP may have the technical capability as well as the capacity to assume responsibility for characterizing the waste stream produced from the Accelerated Retrieval Project – waste now processed by the CCP.

While the initial justification for establishing the CCP contact-handled waste characterization facilities in Idaho had merit, subsequent events indicate that it might be possible to consolidate these assets with those of the AMWTP. When initially considering options for processing waste from the Accelerated Retrieval Project, two primary barriers appeared to exist for having the AMWTP add such waste to its scope of work. First, the AMWTP was owned and operated by a private company, BNFL, under a contractual arrangement that was difficult to modify. Additionally, at the time, the AMWTP was at risk of missing interim regulatory milestones for shipping contact-handled transuranic waste out of the state of Idaho. However, the Department now owns the AMWTP, providing it with some flexibility to modify the scope of work over this project. Additionally, the AMWTP has significantly increased production since 2005 and there is no longer a substantial risk of missing interim shipped waste milestones. Based on these changes, it may now be feasible to add the contact-handled waste work performed by the CCP to the AMWTP's work scope without increasing the risk that regulatory milestones will be missed.

Because of differences in accumulating costs for the AMWTP and CCP, we were unable to calculate the savings available from the transfer of the CCP's contact-handled waste related mission to the AMWTP. The Department may, however, be able to improve asset utilization and thereby save some portion of the $12 million spent annually to operate the CCP's contact-handled characterization line at Idaho. Accordingly, we suggest that management explore the costs and benefits of adding the scope of work currently conducted by the CCP's contact-handled transuranic waste characterization lines to the new AMWTP contract currently scheduled to begin in May 2009. We recognize that consolidating the two operations will involve transportation, scheduling, and personnel changes that impact operations beyond the scope of this audit. These factors should also be considered as part of management's review of the consolidation.

## SCOPE AND METHODOLOGY

The audit was performed between February 2007 and January 2008 at the Carlsbad Field Office and the Idaho National Laboratory. To accomplish the audit objective, we obtained

and reviewed guidance relevant to transuranic waste characterization; reviewed contracting documents, purchase orders, and statements of work for the contractors' participating in transuranic waste characterization; compared costs for the AMWTP and CCP; reviewed work performed to meet the characterization goals; reviewed independent studies of characterization activities; and, held discussions with key officials responsible for overseeing the characterization of transuranic waste.

The audit was limited to the contact-handled transuranic waste characterization and processing capabilities at Idaho. Our audit did not evaluate the CCP's separate remote-handled transuranic waste operation or the analytical lab services provided to the CCP by Battelle Energy Alliance and CH2M Washington Group Idaho.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. 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. Also, we considered the establishment of performance measures in accordance with the Government Performance and Results Act of 1993 as they related to the audit objective. Additionally, we did not rely on computer-processed data during the audit; therefore, we did not conduct reliability assessments on the data.

We discussed the audit results with Department officials at the Carlsbad Field Office and the Idaho Operations Office during the week of January 14, 2008. Because no formal recommendations are being made in this report, a formal response is not required. We appreciate the cooperation of your staff during our review.

Fredrick G. Pieper, Director
Science and Environmental
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cc: Chief of Staff
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