



The Institute for Responsible Management

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October 26, 2006

Mr. Joel T. Case
Idaho National Laboratories
P.O. Box 1625
Idaho Falls, ID 83415

Dear Mr. Case:

This letter report is a follow up to our letter report of September 11, 2006 to present results of our review of the revised report¹ on the pilot studies carried out in support of design of the steam reforming (SR) process for treating sodium bearing liquid wastes (SBW) currently stored in Tanks 187, 188 and 189 at the Idaho National Laboratory. The revised pilot plant report provides much more extensive documentation and analysis than the earlier draft we reviewed, which in-part formed the basis for our evaluation provided in the letter report of September 11, 2006. The review presented in this letter report represents a consensus of all four members of the review team².

The stated primary objectives of the testing program “were to demonstrate that integrated operation of the treatment process confirms key design and operating parameters for the full-scale treatment process, and provides process off-gas data to support environmental permitting of the full-scale process.”¹ Our review of the revised report is in the context of this stated set of objectives and the findings and recommendations provided in our letter report of September 11, 2006.

In summary, we conclude that the project team successfully completed a high quality pilot-testing program and provides excellent documentation and analysis of the results of that program in the revised report. The revised report clearly addresses our Recommendation 1 of September 11, 2006 to provide more thorough documentation and analysis of the pilot studies that have been completed. In addition, we recognize that additional testing could not yet have been carried out in response to our earlier recommendations and the need for additional testing that addresses many of our earlier recommendations is clearly identified in the revised pilot plant report. Thus, we conclude that Recommendations 2 through 17 of our earlier review have not been resolved in the revised report, although many have been acknowledged.

Review of the more extensive documentation and analysis of the pilot-scale testing results provides the basis for the additional findings and recommendations indicated below. The high quality and extensive data gathered during the pilot-scale testing also presents several opportunities for use of the information gained for the benefit of the full-scale design and operations. These opportunities are also described below.

¹ Pilot Plant Report for Treating Sodium-Bearing Waste Surrogates - Carbonate Flowsheet (DRAFT), rev. 1, Thor Treatment Technologies and Washington Group International, project number 28276, document number RT-ESTD-002, Aug. 31, 2006.

² This review was substantially completed under CRESP II prior to Sept. 29, 2006 and is now issued following completion of factual accuracy review by DOE-ID and DOE-EM on Oct. 25, 2006.

ADDITIONAL FINDINGS AND RECOMMENDATIONS

Finding 18. Waste feed nozzle design, control of the distribution system for process feed streams (wastes, gases, supplemental carbon), temperature control, and solids management during processing (e.g., use and maintenance of a strainer to remove oversized particles in the waste feed, removal of solids from the CCR, particle size management in the DMR, recycle of unreacted coal particles) are important components that will impact process availability but have not been fully resolved.

Recommendation 18. Clear performance and reliability criteria should be established for critical process components and systems such as these and others, with additional testing carried out as necessary to demonstrate that the specified performance and reliability criteria can be attained.

OPPORTUNITIES FOR ADDITIONAL BENEFICIAL USE OF PILOT TESTING RESULTS

Opportunity 1. Overall system availability will be important for estimating and achieving anticipated waste processing schedules. Data from the testing completed to date, and from operation of the facility at Irwin, TN, may be developed into a suitable database and analyzed to determine specific process component reliability, and plan for outages and preventative maintenance.

Opportunity 2. Actual pilot system performance can be compared with assumptions used during safety analysis to provide a better understanding of overall system safety management. For example, (i) assumed upset scenarios during system analysis and those observed during testing can be compared to form an integrated understanding that can be used to plan future tests of responses to upset conditions and shut down systems, (ii) mass balances on trace species obtained during pilot testing can be used to update expected radionuclide inventories in different parts of the process during operations, thus improving dose calculations to workers and during accident scenarios, and (iii) testing a few failure combinations may provide important insights on accident initiating conditions to avoid, especially given the need for the process to operate as an integrated system.

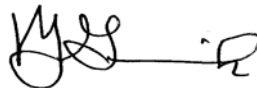
CLOSING

The review team is available to answer any questions about this report or the review processes. In addition, the review team can review future pilot-scale test plans and reports on pilot-scale testing if requested.

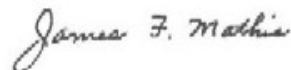
Sincerely,



David S. Kosson, Ph.D.
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