

However, the recent submittal of the MCC-1 procedure for final approval seems to be counter to this general trend. I am mystified at what appears to be a major inconsistency between MRB-0363 and PNL-5157, "Final Report of the Defense High-Level Waste Leaching Mechanisms Program." PNL-5157 states: "The effect of Eh on the leaching behavior of technetium and uranium was found to be significant...A properly-cleaned platinum electrode was found satisfactory for measuring Eh." The report also describes (Section 4.2.3) measures that were used to control Eh. Yet this information apparently was not considered in preparing the draft final MCC-1. In this document the MCC states that "the state of technology for the measurement and control of redox potential is not adequate to handle the chemical complexity of typical leachates at low temperatures (less than 200°C);" and "The MCC has not identified acceptable techniques to measure or control the Eh, or level of dissolved oxygen, for the MCC-1 static leach test method." Contradictions such as these in MCC documents supporting the license applications need to be resolved in order to avoid lengthy controversy and delay in the licensing proceeding. This issue should be resolved before MCC-1 is resubmitted to the MRB.

I hope these comments prove helpful to the Materials Review Board in its overview of the DOE Materials Characterization Organization program.

Sincerely,

Original Signed by
MICHAEL J. BELL

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ATTACHMENT: PNL-MCC D2 data Test Review accomplished by F. R. Cook (NRC BWIP Site Licensing Representative) on August 10, 1984

1. The MCC-D2 notebook does not provide information in way of confirming that day-to-day activities were appropriate. PNL stated there were no such records. The notebook consists primarily of data sheets. It was signed and dated August 9, 1984.
2. There was no record of overchecking of key data and operations.
3. Required qualifications for personnel involved in testing are not identified nor were records of qualifications of test personnel or other participating personnel available for ready review.
4. A records index identifying all pertinent records and their location was not available.
5. Records pertinent to the subject test are dispersed and may not be adequately controlled. A central "original" records management system was discussed.
6. A detailed day-to-day work plan (procedure) implementing the MCC-1P procedure was not prepared. PNL said they are working on such procedures.
7. There is no record of instruments used. MCC-D2 test furnace calibration was not documented. Specifically, instruments used to measure leach specimens were not recorded.
8. Timing between key events, for example, the completion of leaching and chemical analysis of leachates, is uncontrolled. It ranged from 1 day to about 3 weeks in the few samples of data I reviewed.
9. Some data pages from the chemical analyses were not labeled and these data pages were not referenced in the notebook. I did not see any signatures on the chemical analyses data sheets.
10. A determination as to whether the data is important to waste isolation or important to safety was not made. Hence the level of QA to have been applied is unclear. The intent for use of the MCC-1P (D2) data is not clearly stated in any of the records that I reviewed.
11. I was not permitted to review the MCC-D1 data package on PNL 7668 glass leaching for comparison purposes. PNL indicated this was not permitted by DOE.

The observations noted above and the comments concerning the lack of various records are based on discussions with Mendel, Lokken, Turcotte, Daniel and other PNL personnel with whom I conferred during the review.