

February 2, 2004

Dr. Vijay Jain, Manager
Container Life and Source Term
Center for Nuclear Waste Regulatory Analyses
6220 Culebra Road, Building 189
San Antonio, TX 78238-5166

SUBJECT: COMPLETION OF REVISED INTERMEDIATE MILESTONE (IM) -
IM 06002.01.081.340 (NATURAL ANALOGS OF HIGH-LEVEL WASTE
CONTAINER MATERIALS - EXPERIMENTAL EVALUATIONS OF JOSEPHINITE)

Dear Dr. Jain:

The U.S. Nuclear Regulatory Commission staff has completed its review of the subject report, which was sent to us on January 15, 2004, and found this report to be programmatically and technically acceptable for public release. It was sent on time and provides input into our ongoing issue resolution work. The Center for Nuclear Waste Regulatory Analyses (CNWRA) analyses of samples of josephinite (a rock containing a Ni - Fe alloy) as a relevant analog for Alloy 22 (the alloy proposed by use as the outer shell of any potential waste package the U.S. Department of Energy (DOE)) are important components of the Container Life Source Term. This work compared the passive oxide layer of josephinite to that of the synthetic Ni_3Fe , by examining the anodic behavior and chemistry of oxide layers. While several difficulties were identified in using josephinite as an analog for Alloy 22, the characterization of the passive film is relevant. However, the lack of knowledge about the environmental history of the josephinite is the largest obstacle to defining josephinite as an adequate analog to Alloy 22.

If you have questions, please contact me at (301) 415-6626.

Sincerely,

/RA/

Tamara E. Bloomer, Program Element Manager
High-Level Waste Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

cc: J. Linehan
B. Meehan
B. Sagar, CNWRA

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