

CNWRA A center of excellence in earth sciences and engineering™

Geosciences and Engineering Division
6220 Culebra Road • San Antonio, Texas, U.S.A. 78238-5166
(210) 522-5160 • Fax (210) 522-5155

December 29, 2005
Contract No. NRC-02-02-012
Account No. 20.06002.01.322

U.S. Nuclear Regulatory Commission
ATTN: Dr. J. Rubenstone
Division of High-Level Waste Repository Safety
Two White Flint North
11545 Rockville Pike
Mail Stop MS 7 F3
Washington, DC 20555

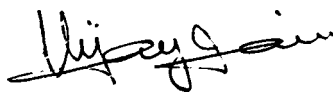
Subject: Transmittal of Intermediate Milestone—Corrosion of Alloy 22 in Concentrated Nitrate and Chloride Salt Environments at Elevated Temperatures—Progress Report, Intermediate Milestone 06002.01.322.610

Dear Dr. Rubenstone:

Enclosed is the subject intermediate milestone on the corrosion of Alloy 22 in concentrated nitrate and chloride salt environments at elevated temperatures. The report includes the preliminary results of recent tests to study the chemistry of the vapor and liquid formed by the equimolar nitrate-chloride salt mixtures at elevated temperatures. In addition, the general and localized corrosion properties of Alloy 22 in both the vapor and liquid phases were investigated. In the vapor phase the pH is low and the nitrate to chloride ratio is high. In the salt mixture nitrate could decompose preferentially to chloride and compromise the ability of inhibiting localized corrosion of Alloy 22. In liquid phase general corrosion was the primary attack mode and no significant localized corrosion was observed.

If you have any questions regarding this report, please feel free to contact Lietai Yang at (210) 522-2483 or me (210) 522-5439.

Sincerely yours,



Vijay Jain
Element Manager
Corrosion Science & Process Engineering

VJ:jg
Attachment

cc:	W. Reamer	L. Kokajko	J. Guttmann	A. Csontos	D. Dunn	<u>Ltr only</u>
	D. DeMarco	E. Collins	F. Brown	D. Galvin	Y.-M. Pan	GED Directors & Managers
	V. Whipple	M. Bailey	T. McCartin	W. Patrick	O. Pensado	L. Gutierrez
	E. Whitt	K. Stablein	D. Brooks	B. Sagar	K. Chiang	P. Maldonado
		A. Campbell	T. Ahn	X. He	L. Yang	Record Copy B, IQS
					P. Shukla	



Washington Office • Twinbrook Metro Plaza #210
12300 Twinbrook Parkway • Rockville, Maryland 20852-1606