From:	Date of Document	Date Received	Ticket No
B. Sagar	06/19/2002	06/24/2002	CNWRA 2002 0117
To:	**Type of Document**		**Date Answer Due**
D. DeMarco	☑ Letter ☐ Report ☐ Memo ☐ Other (specify)		07/09/2002
Description	**Referred To**	**Referral Date**	**Remarks**
Programmatic Review of Abstract for the TMS 2003 Annual Meeting - The Mike Meshii Symposium on Electron Microscopy: Its Role in Materials Research in San Diego, CA on March 2-6, 2003	T. Bloomer	06/24/2002	Ltr'd ticket, 7/15/02 waiting on B Reamer's signature.

Closed ticket on 7/15/02, per e-mail from J. Bloomer to V. Jain, reviewed abstract and found to be programmatically acceptable and ok for public presentation.

U.S. Nuclear Regulatory Commission

From: Tamara Bloomer
To: Deani Riffle; Vijay Jain
Date: 7/15/02 9:17AM
Subject: Re: CNWRA Ticket # 2002 0117

This E-Mail closes CNWRA Ticket # 2002 0117.

I have reviewed the CNWRA abstract titled "Phase Instability Affecting the Corrosion Performance of Alloy 22 for High-Level Nuclear Waste Containers," by Y.-M. Pan, D. S. Dunn and G. A. Cragnolino. I have also processed and received management signatures on NRC form 390A for release to publish unclassified NRC contractor abstracts.

This abstract is programmatically acceptable for publication and public presentation. The work presented on phase instability on corrosion is directly applicable to agreement resolution between NRC and DOE.

CC: Darrell Dunn; Deborah DeMarco; Gustavo Cragnolino; N King Stablein; SherVerne Cloyd; Yi-ming Pan

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(210) 522-5160 • Fax (210) 522-5155

June 19, 2002
Contract No. NRC–02–97–009
Account No. 20.01402.571

U.S. Nuclear Regulatory Commission
ATTN: Mrs. Deborah A. DeMarco
Two White Flint North
11545 Rockville Pike
Mail Stop T8 A23
Washington, DC 20555

Subject: Programmatic Review of Abstract for the TMS 2003 Annual Meeting—The Mike Meshii Symposium on Electron Microscopy: Its Role in Materials Research in San Diego, CA on March 2–6, 2003

Dear Mrs. DeMarco:

Enclosed is the following abstract that we plan to submit to the organizers of the TMS 2003 Annual Meeting on receiving your acceptance.

> Phase Instability Affecting the Corrosion Performance of Alloy 22 for High-Level Nuclear Waste Containers authored by Y.-M. Pan, D.S. Dunn, and G.A. Cragnolino

Please advise me of the results of your programmatic review. Your cooperation is this matter is appreciated. Please contact Vijay Jain at (210) 522-5439 if you have any questions regarding this abstract.

Sincerely,

Budhi Sagar
Technical Director

Attachment

BS:jg

cc:					
	J. Linehan	B. Leslie	J. Andersen	L. Yang	P. Maldonado
	B. Meehan	S. Wastler	J. Thomas	W. Patrick	D. Dunn
	E. Whitt	D. Brooks	T. Essig	B. Sagar	O. Pensado
	W. Reamer	T. McCartin	A. Henry	G. Cragnolino	Y.-M. Pan
	J. Greeves	T. Ahn	J. Schlueter	S. Brossia	T. Nagy (contracts)
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TMS 2003 Annual Meeting
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PHASE INSTABILITY AFFECTING THE CORROSION PERFORMANCE OF ALLOY 22 FOR HIGH-LEVEL NUCLEAR WASTE CONTAINERS

Y.-M. Pan, D. S. Dunn and G. A. Cragnolino, Center for Nuclear Waste Regulatory Analyses, Southwest Research Institute, Texas

ABSTRACT

Phase instability resulting from fabrication processes (i.e., welding and post-weld treatments) could limit the lifetime of Alloy 22 waste containers for high-level waste disposal. The effect of metallurgical stability on localized corrosion susceptibility was evaluated using corrosion tests and analytical electron microscopy measurements. Specimens in the mill-annealed condition were studied after thermal exposure at 870 °C [1,598 °F] for periods of up to 30 minutes. Results obtained from this study indicate that only 5 minutes of thermal exposure at 870 °C [1,598 °F] resulted in the formation of topologically close-packed (TCP) phases at grain boundaries; however, no measurable depletion of chromium and molybdenum was detected in the matrix adjacent to the precipitates nor in the grain boundary regions between precipitates. The preferential precipitation of TCP phases promotes localized corrosion along grain boundaries and decreases the values of the repassivation potential in chloride-containing solutions.

Disclaimer: This abstract was prepared to document work performed for the Nuclear Regulatory Commission under Contract No. NRC–02–97–009. This work is an independent product of the Center for Nuclear Waste Regulatory Analyses and does not necessarily reflect the views or regulatory position of the Nuclear Regulatory Commission.

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Phase Instability Affecting the Corrosion Performance of Alloy 22 for High-Level Nuclear Waste Containers

2. AUTHOR(s)

Y.-M. Pan, D.S. Dunn, and G.A. Cragnolino, Center for Nuclear Waste Regulatory Analyses

3. NAME OF CONFERENCE, LOCATION, AND DATE(s)

TMS 2003 Annual Meeting—The Mike Meshii Symposium on Electron Microscopy: Its Role in Materials Research in San Diego, California on March 2–6, 2003

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TMS 2003 Annual Meeting Abstracts

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