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U.S. Nuclear Regulatory Commission
ATTN: Tamara Bloomer
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11545 Rockville Pike
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Subject: Submittal of Revised Intermediate Milestone—Effect of Fabrication Processes on Material Stability—Characterization and Corrosion, Intermediate Milestone 06002.01.081.320

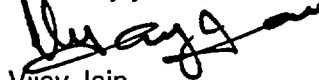
Dear Ms. Bloomer:

Enclosed is the subject intermediate milestone. The report has been revised to include comments from the NRC Staff received via phone discussions and e-mail.

Reports by the DOE have suggested that microstructural alteration resulting from fabrication processes will not significantly affect long-term waste package corrosion performance. Studies conducted at the Center for Nuclear Waste Regulatory Analyses (CNWRA) however, have concluded fabrication processes such as welding and solution annealing may have a significant effect on the material stability and localized corrosion resistance of Alloy 22. Solution annealing of the Alloy 22 disposal container has been proposed by the DOE as a method to mitigate residual stresses that develop during fabrication operations. Microstructural examinations of solution annealed weld metal conducted by the CNWRA showed the formation and growth of detrimental secondary phases as a result of molybdenum and tungsten segregation in the fusion zone. These observations were supported by phase stability calculations as well as localized corrosion tests of the solution annealed weld metal. The results of this study will directly support prelicensing interactions with the DOE.

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

Sincerely yours,



Vijay Jain
Element Manager
Corrosion Science & Process Engineering

VJ:jg

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