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December 16, 2005
Contract No. NRC-02-02-012
Account No. 20.06002.01.342

U.S. Nuclear Regulatory Commission
ATTN: Mrs. Deborah DeMarco
Division of High-Level Waste Repository Safety
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SUBJECT: Programmatic Review of Conference Abstract, Degradation of Waste Emplacement Drifts in a Potential High-Level Waste Repository at the Yucca Mountain Site and its Impacts on the Engineered Barrier System
Administrative Item 20.06002.01.342.602

Dear Mrs. DeMarco:

The enclosed abstract and Form 390A are being submitted for programmatic review. The abstract will be submitted for presentation at GeoProc 2006: 2nd International Conference on Coupled T-H-M-C Processes in Geosystems: Fundamentals, Modeling, Experiments, and Applications, on May 22-24, 2006, in Nanjing, China. The title of the abstract is

Degradation of Waste Emplacement Drifts in a Potential High-Level Waste Repository at the Yucca Mountain Site and its Impacts on the Engineered Barrier System, authored by Luis Ibarra, Goodluck Ofoegbu, and Mysore Nataraja

The abstract proposes a paper that will discuss the step-by-step approach that the U.S. Nuclear Regulatory Commission and the Center for Nuclear Waste Regulatory Analyses staff have adopted for evaluating the mechanical performance of the engineered barrier system for a potential Yucca Mountain repository. The approach consists of an assessment of rock-stress conditions to determine the potential for drift degradation, followed in order, if necessary, by analyses to estimate the resulting amounts of rubble accumulation, response of a drip shield to the resulting mechanical loading, and response of the waste package to load transferred from a collapsed drip shield. The necessity for each analysis step is determined by the results of the previous step in the sequence. The complex system of coupled processes controlling the engineered barrier system performance are thus decoupled into a series of tractable analyses by using the results of one analysis to determine the necessity and then formulate, if needed, the input for a subsequent analysis in the series.



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Mrs. Deborah DeMarco
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If you have any questions regarding this abstract, please contact me at (210) 522-5185 or Dr. Luis Ibarra at (210) 522-5152. Your cooperation in this matter is appreciated.

Sincerely,



Sitakanta Mohanty, Assistant Director
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Degradation of Waste Emplacement Drifts in a Potential High-Level Waste Repository at the Yucca Mountain Site and its Impacts on the Engineered Barrier System

2. AUTHOR(s)

Luis Ibarra, Goodluck Ofoegbu, and Mysore Nataraja

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

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4. NAME OF PUBLICATION

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6. CONTRACTOR NAME AND COMPLETE MAILING ADDRESS (Include ZIP code)

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