UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

FEB 1 1 2008

OFFICE OF
AIR AND RADIATION

Dr David C. Moody, Manager
U.S. Department of Energy
Carlsbad Field Office
P.O. Box 3090
Carlsbad, NM 88221

Dear Dr. Moody:

The Environmental Protection Agency (EPA) has completed its review of the Department of Energy's (DOE) planned change request to decrease the amount of magnesium oxide (MgO) backfill emplaced with radioactive waste at the Waste Isolation Pilot Plant (WIPP). This request proposed a reduction in the MgO safety factor from 1.67 to 1.2 times the amount of emplaced carbon materials.

We conclude that, based on our evaluation of the supporting documentation provided with DOE's planned change request, the uncertainty analysis associated with MgO backfill performance is reasonable and supports a 1.2 safety factor. Therefore, EPA approves this planned change, but with two conditions. First, DOE must continue to calculate and track both the carbon disposed and the required MgO needed on a room-by-room basis. Second, DOE must annually verify the reactivity of MgO and ensure that it is maintained at 96% as assumed in DOE's supporting documentation. These conditions ensure that the WIPP will continue to meet the assurance requirements in our radioactive waste disposal regulations.

As a result of this evaluation, it is our opinion that further reductions in the MgO safety factor are not warranted given the current state of knowledge. We believe that reducing the safety factor below 1.2, based on our current understanding of the disposal system, would not be sufficient to comply with the assurance requirement that MgO is intended to address.

EPA's review is documented in the enclosures to this letter. They include:

1) Attachment A: Overview and Summary of Planned Change Request Decision;
2) Attachment B: Review of MgO-Related Uncertainties in the Waste Isolation Pilot Plant;
3) Attachment C: Independent reviewer report: "Letter report review of the SC&A Draft Report "Review of MgO-Related Uncertainties in the Waste Isolation Pilot Plant";

4) Attachment D: Response to the independent reviewer comments on MgO segregation; and,
5) Attachment E: Stakeholder comments (PECOS Management Services, Inc.) in Review of the DOE Request for Magnesium Oxide Requirement Reduction.

If you have any question regarding this request, please call Tom Peake at (202) 343-9765.

Sincerely,

Juan Reyes, Director
Radiation Protection Division

Enclosures

Cc (electronic distribution):
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