Steve

To Bonilla

U.S. DEPARTMENT OF ENERGY
CARLSBAD AREA OFFICE
WASTE ISOLATION PILOT PLANT
P.O. BOX 3090
CARLSBAD, NEW MEXICO 88221

DOENEWS

Media Contacts
Dennis Hurtt
U.S. Department of Energy
Carlsbad Area Office
(505) 234-7327

Dan Balduini
Westinghouse Waste Isolation Division
(505) 234-7515
1-800-493-9768
http://www.wipp.carlsbad.nm.us

For Immediate Release

Independent Group of Experts Determines WIPP Conceptual Models Adequate

CARLSBAD, N.M., May 9, 1997 -- An independent group of experts has expressed confidence in the output from two computer-generated models that assess the viability of the Waste Isolation Pilot Plant (WIPP) as a safe underground repository for the permanent disposal of defense-generated transuranic nuclear waste.

"With this report, the panel has now approved the output from all 24 conceptual models contained in the WIPP's Compliance Certification Application," said George Dials, manager of the U.S. Department of Energy's (DOE) Carlsbad Area Office, which oversees the WIPP project. "The DOE's highest goal is to protect human health and the environment. The peer review process is designed to ensure the safety and long-term performance of the WIPP. I believe that has been accomplished."

In its January 1997 second supplementary report, the Conceptual Models Peer Review Team expressed reservations about the WIPP conceptual models associated with "spallings" and "chemical conditions" (engineered backfill). The panel said it would require additional information before determining that the output from these models is "adequate." The panel is made up of experts in hydrology, geology and geomechanics.

The spallings model provides one component of the assessment of a hypothetical radioactive release should someone inadvertently drill into the WIPP repository. "Spallings" are the materials that may be forced into the circulating drilling fluid and to the surface if there is sufficient pressure in the waste disposal panels.

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"Chemical engineered backfill" refers to material that may be placed in the WIPP underground disposal rooms with the waste to control the chemistry of the disposal rooms. Engineered barriers (such as shaft seals, panel closures, borehole plugs, backfill) complement and strengthen the natural waste isolating features of the bedded salt in which the WIPP is located. As an added assurance to protect human health and the environment, the DOE also used a model to show how chemical engineered barriers further limit the movement of radionuclides.

In its third supplementary report, issued April 30, the review team states that *"...the additional information presented by the DOE is sufficiently complete at this time to support a conclusion that the spallings volumes used in the CCA* [Compliance Certification Application] *are reasonable, and may actually overestimate the actual waste volumes that would be expected to be released by the spallings process at the WIPP."*

The review team did state, however, that *"further refinement in understanding and predictive capability for spallings events would be desirable as part of a new conceptual model."*

As for the DOE's conceptual model demonstrating the use of magnesium oxide (MgO) as a chemical engineered barrier, the review team concluded that *"the MgO backfill will function as assumed in the CCA and that this model is adequate to represent the future states of the repository."*

The DOE is continuing several laboratory experiments using magnesium oxide as possible backfill material, which chemically stabilizes radionuclides and minimizes their solubility. Dials added that the use of chemical barriers is not a requirement under federal nuclear waste disposal criteria, but "barriers may be used as an additional safeguard." The performance assessment evaluations have shown that the WIPP meets the compliance requirements even without the magnesium oxide backfill.

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Peer reviews involve a documented, critical evaluation by outside technical experts who are not involved with the WIPP project and who are sufficiently free from funding considerations to assure that work is impartially reviewed. Each review involves an in-depth critique of the assumptions, calculations, conclusions and methodology used to determine long-term performance of the WIPP.

The WIPP is designed to permanently dispose of transuranic radioactive waste generated by defense-related activities. Located in southeastern New Mexico, 26 miles east of Carlsbad, project facilities include disposal rooms excavated in an ancient, stable salt formation 2,150 feet (almost half a mile) underground. Transuranic waste consists primarily of clothing, tools, rags, and other disposable items contaminated with trace amounts of radioactive elements, mostly plutonium.

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