WIPP as Preferred Alternative for Disposal of GTCC Waste

Disposal of Greater Than Class C (GTCC) waste and "GTCC-like" waste is currently being evaluated by the U.S. Department of Energy (DOE) under the National Environmental Policy Act (NEPA) process. As directed by the 2005 Energy Policy Act, DOE has developed a draft Environmental Impact Statement and received comments from around the country on how this radioactive waste should be permanently disposed of. One alternative considered is emplacement at DOE's existing Waste Isolation Pilot Plant (WIPP).

GTCC waste is regulated under rules promulgated by the Nuclear Regulatory Commission (NRC) at 10 CFR Part 61. GTCC-like waste is owned and managed by DOE and has similar chemical, physical and radiological characteristics. While the two categories are regulated differently, both pose similar risks to human health and the environment. Class A, B and C wastes must be disposed of in engineered facilities licensed by the NRC. NRC rules stipulate that GTCC waste be disposed of with greater confinement than is typically possible in near-surface engineered disposal facilities. GTCC-like waste managed by the DOE is generally not related to radioactive waste generated in defense of the nation. Waste from the development and management of nuclear weapons and related defense activities is called "defense-related." WIPP was specifically created and legislatively authorized for the disposal of defense-related "transuranic" (TRU) waste in the 1980's and 1990's. Its mission is the permanent isolation of these long-lived radioactive wastes. Because GTCC-like waste is not defense-related, it is currently not eligible for disposal at WIPP.

WIPP began operations in 1999, but only after a broad and thorough licensing and permitting effort. EPA certified that WIPP would meet the long-term disposal standards for 10,000 years. NRC licensed the shipping packages to ensure safety during transport across the nation's highways. Finally, and most importantly to the citizens of New Mexico, the New Mexico Environment Department permitted WIPP under its hazardous waste regulations and installed oversight into the entire characterization and disposal process. Under these regulatory umbrellas, DOE has successfully retrieved, packaged and shipped over 75,000 cubic meters of defense-related TRU waste from former nuclear weapons sites across the DOE complex. WIPP operations include characterization, transportation and disposal. Over 10,000 shipments have

been safely received and emplaced in the deep geologic salt beds of southeastern New Mexico. A ceremony recognizing WIPP's 10,000th shipment is scheduled here for next Saturday, October 22, 2011.

For the transuranic elements (e.g., plutonium), GTCC-like waste contains similar radioactive constituents as defense related TRU waste. Indeed, the lower bound of radioactivity content of TRU waste, 100 nanocuries per gram (nCi/g), of alpha-emitting isotopes with half lives greater than 20 years) is exactly the upper limit on NRC's definition of Class C waste. In other words, for transuranic elements, the radioactivity in TRU waste is the same as in GTCC and GTCC-like waste. The same robust permanent isolation afforded by WIPP for defense-related TRU waste should be applied to the non-defense GTCC and GTCC-like waste. It makes little difference to the plutonium where it originated, and its final disposition should be the same. With one exception, similar comparisons can be made for the other radioactive elements in GTCC waste. That exception is a small fraction of the total GTCC inventory which contains the vast majority of the radioactivity (>95%). This yet-to-be-generated waste will consist of activated metals in some components of existing licensed nuclear power plants, and will not be generated until they are decommissioned. If this small-volume part of the GTCC inventory were excluded from disposal at WIPP, the remaining bulk of the wastes would be essentially the same as the waste WIPP already receives, and no change would be needed to the current WIPP administrative limits on radioactivity and volumes.

GTCC wastes are currently stored and managed at many sites across the nation. The greater confinement offered by permanent isolation in a deep geologic salt repository should be society's clear choice in the disposal of GTCC and GTCC-like waste. WIPP has proven its safety and value in carrying out a national retrieval, packing, transportation and emplacement program.

In summary;

- WIPP has a proven safety record for carrying out a national program:
    - Retrieval of radioactive wastes from sites across the nation
    - Packaging in compliance with NMED hazardous waste permit
    - Shipping and transportation under NRC licensed requirements

    - Emplacement operations with oversight from NMED and EPA

- EPA licenses WIPP for safe geologic isolation
- NRC licenses WIPP transportation packages
- New Mexico permits WIPP for ensuring compliant waste forms and safe disposal operations
- Permanent isolation of long-lived radioactive wastes should be required of GTCC and GTCC-like wastes, regardless of origin

DOE should be encouraged to use the same effective program that it developed for defense-related TRU waste to manage and dispose of GTCC and GTCC-like wastes. Based on the alternatives presented in DOE EIS, the State of New Mexico recently suggested that the WIPP site should be considered for disposal of GTCC and GTCC-like waste. This recommendation is made with the understanding that there is strong local support for this option, and that the waste streams can be packaged, transported, and handled in a safe manner.