



Department of Energy

Carlsbad Field Office
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MAY 28 2009

Mr. Jonathan Edwards
U.S. Environmental Protection Agency
Office of Air and Radiation
401 M Street S.W.
Washington, DC 20460

Subject: Notification of Intent to Begin the Dark Matter Time Projection Chamber Experiment

Dear Mr. Edwards:

The purpose of this correspondence is to provide the Environmental Protection Agency (EPA) notice that the Department of Energy (DOE) has begun preparatory activities to support additional basic research in the unique underground environment of the WIPP facility for the Dark Matter Time Projection Chamber (DM-TPC) Experiment. The DM-TPC will start no sooner than August 15, 2009. A project description is included in Attachment 1.

The DM-TPC research will be conducted by several collaborators, led by Boston University, Brandeis University, and Massachusetts Institute of Technology (MIT). The DM-TPC research will be performed in the north experimental area in the E300 drift between N1100 and N1400.

Researchers will assemble and calibrate a 10-liter proto-type detector named Cygnus to study the effect of residual background due to radioactive isotopes in the material of the detector and associated apparatus, radiation coming from the excavation walls, and high energy cosmic neutrons. Researchers will provide the assembly and set-up of the experiment and will generate a step-by-step procedure to be reviewed and approved by the WIPP facility Industrial Safety organization.

In accordance with the conditions set forth in a March 11, 2003 letter from F. Marcinowski (EPA) to I. Triay (DOE), attached is the Unreviewed Safety Question (USQ)/ Project Description for the DM-TPC. The USQ determination (Attachment 2) shows that there will be:

- no changes in underground ventilation,
- no additional hazardous substances or new hazards introduced into the underground,
- no change in the facility footprint,
- no modification to the waste disposal processes or any impact to the waste disposal operations,

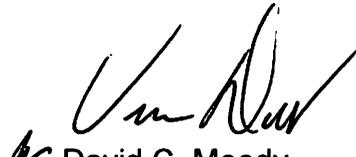
- provisions to remove DM-TPC equipment from the underground upon completion of the activity.

The USQ process also reviewed the hazards associated with this experiment and concluded that there is no significant risk associated with the DM-TPC. WIPP safety reviews have been conducted and it has been determined by the DOE that the project will not interfere with waste handling or disposal operations.

The DOE has determined that the WIPP facilities and infrastructure can provide support for this project without interfering with the primary mission of the WIPP Project. The DM-TPC experiment status will be included in the Annual Change Report.

Please contact Roger Nelson, Chief Scientist at (575) 234-7213 if you have any questions.

Sincerely,



David C. Moody
Manager