



**ACTION DESCRIPTION
MEMORANDUM (ADM)
FOR THE
BUILDING 21
DECONTAMINATION AND DECOMMISSIONING**

APRIL 1991



EG&G MOUND APPLIED TECHNOLOGIES

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operated for the **UNITED STATES DEPARTMENT OF ENERGY**

Contract No. DE AC04-88-DP43495



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BUILDING 21 DECONTAMINATION AND DECOMMISSIONING

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1. DESCRIPTION OF THE PROPOSED ACTION

A. Purpose

This Action Description Memorandum (ADM) describes the potential environmental impacts which could occur as a result of the activities associated with the Decontamination and Decommissioning (D&D) of Building 21 at Mound plant and recommends the appropriate level of NEPA documentation. The project is a \$27,796,000 (constant 1993 dollars), operations-expense-funded project scheduled for completion in FY 2003.

The Building 21 D&D project is an integral part of a continuing D&D program at the Mound plant and is necessary to bring Mound more in line with the spirit and intent of DOE Orders 5400.5, "Radiation Protection of the Public and the Environment," and 5480.11, "Radiation Protection for Occupational Workers," and into compliance with DOE Order 5820.2A, "Radioactive Waste Management."

B. Proposed Action

The Building 21 D&D project consists of the demolition of a reinforced-concrete building and the removal of adjacent radioactively contaminated soil. The proposed action will remove a potential source of minor chronic radioactive emissions, thus having a positive effect on the environment. The goal of the project is to reduce radioactive contamination to a level suitable for conditional release. The remaining soil will pose no threat to the environment, public, or workers, but access will be controlled by Mound and no excavation will be allowed without the approval of Mound Health Physics.

Building 21 has approximately 5,000 ft² of floor space. The surrounding area of contaminated soil covers approximately 4 acres. Building 21 was constructed in 1966 to contain approximately 5,000 tons of bulk thorium-232 sludge. The Atomic Energy Commission sold the material in 1975 and an initial cleanup of the building interior was performed in 1976. After the cleanup, the building was used to store Cotter concentrate in drums. This material was removed in 1987. The soil contamination resulted from leakage of the thorium-232 and staging of plutonium-238 waste containers near the building during the 1970s. The D&D operations will generate radioactive and solid wastes. The contamination is considered entirely radioactive because no traceable paths for nonradioactive hazardous materials are known and sampling has not shown any nonradioactive hazardous materials.

While the D&D operation may result in negligible and temporary increases in radioactive exposure of workers and in radioactive emissions, the overall amount of risk to the public or the environment is negligible.

C. Recommended Level of NEPA Documentation

The proposed action is (1) neither a "major project" as defined in DOE Order 4240.1H, "Designation of Major System Acquisitions and Major Projects," nor a "Major Federal Action" under NEPA (40 CFR 1502.3; 1508.18). The soil excavation component of the proposed action is listed in Section D of the existing [45 FR 20694 as amended by 52 FR 47662; 54 FR 12474; 55 FR 37174] and proposed [10 CFR 1021; 44 FR 45918; and extensive proposed amendments in 55 FR 46444] DOE NEPA Guidelines as one of the actions that "Normally Do Not Require EAs or EISs." These actions are categorically excluded from the need for further NEPA documentation. The applicable portions of the existing NEPA

Guidelines are amendments promulgated on September 7, 1990 (55 FR 37174). Section III 1. of the amendments applies because the proposed action: (1) does not threaten a violation of applicable statutory, regulatory, or permit requirements, including requirements of DOE Orders; (2) does not require siting and construction or major expansion of waste disposal, recovery, or treatment facilities; and does not adversely affect environmentally sensitive areas. The majority of the proposed action is covered under Section III 1.(c) which categorically excludes removal actions under CERCLA, specifically singling out under III 1.(c)(1) the "Excavation or consolidation of contaminated soils ..." In addition, Section III 3.(h) exempts "Sampling and characterization of water, soil, rock and contaminants;" from further NEPA review. The demolition of Building 21 itself is not clearly listed in any category of Section D. The provisions of the proposed NEPA Guidelines are almost identical to the existing guidelines, as amended, but exhibit different numbering.

The expected environmental consequences are positive but not significant as defined under NEPA (40 CFR 1508.27). There are many precedents to the proposed action because it is part of a continuing D&D program currently being carried out at the Mound plant under DOE sponsorship. This action is not controversial or unique.

The recommended level of NEPA documentation is a non-Section D Environmental Assessment (EA) because the demolition and removal of Building 21 does not lie within the categories listed in Section D of the present or proposed DOE NEPA Guidelines.

2. LOCATION OF ACTION

This project will be conducted within the boundaries of the Mound plant, which occupies a 306-acre site in southern Montgomery County in southwestern Ohio within the southern boundary of the City of Miamisburg. The site is 10 miles south-southwest of Dayton, Ohio, and 31 miles north-northwest of Cincinnati, Ohio. The surrounding environment is well described in the Final Environmental Impact Statement (FEIS), Mound Facility, Miamisburg, Ohio (U.S. D.O.E., June 1979, DOE/EIS-0014).

3. POTENTIAL ISSUES

A. Air Emissions

Dust emissions will be controlled using standard techniques. Water misting is an example.

Radioactive air emissions will be controlled to within allowable limits by the use of water mist and proper excavation procedures. These air emissions will be measured by using high-volume air samplers and will be monitored by Mound's Environmental, Safety, and Health (ES&H) Section.

Internal combustion emissions will be controlled by keeping the heavy-duty equipment properly maintained to the manufacturers' specifications.

B. Liquid Effluents

Water runoff from the demolition and excavation may carry some radioactively contaminated soil. The spread of this contaminated material will be controlled by building a retention pond, a filtering system, and

settling tanks. No water will be released that contains more than the allowable limits of radioactive contaminants. Water released from the excavation site will also be retained and monitored in one of the two plant retention basins. Water containing greater than the allowable limits of radioactive material will be processed to reduce the contamination level or solidified and packaged as radioactive waste if processing is not feasible. This system is also used to control the quantity of silt reaching the main Mound plant settling basin(s).

C. Solid Waste

Uncontaminated solid waste, after proper monitoring, will be disposed of according to Mound plant Guidelines.

D. Radioactive Waste

Approximately 200,000 ft³ of low specific activity (LSA) radioactive waste will be generated. This waste will be packaged in strong, tight steel boxes consistent with U. S. Department of Transportation (DOT) requirements and shipped to the Nevada Test Site (NTS) for disposal. NVO-325 criteria and Mound Manual 70204, Low-Level Radioactive Waste Management, will be followed.

E. Petroleum Storage/Use

The only petroleum involved will be a small quantity of diesel fuel for soil excavation equipment and gasoline used as fuel for forklifts and trucks in the movement of waste boxes.

F. Clearing and Excavation

Underbrush and trees will be cleared prior to characterization and excavation. The vegetation will be monitored for radioactive contamination. Usually, the vegetation is shredded and used for plant mulch. If any vegetation is radioactively contaminated, it will be packaged and disposed of according to NVO-325 criteria and shipped to the NTS for disposal (See Item D.).

The radioactively contaminated soil will be removed by excavation. Erosion will be controlled during excavation by using standard techniques. Off-site soil is used to backfill the excavation, if necessary. Otherwise, the surface is left in its modified condition. In all cases, the site is either re-vegetated or otherwise stabilized following excavation.

G. Radiation/Toxic Chemical Exposures

There are no known toxic chemicals, other than pesticides or herbicides described below, involved in this operation. The radioactive emissions are low that external radiation exposure is negligible. External and internal radiation doses are closely monitored and controlled by Mound's ES&H Section. Proper respiratory-protection equipment and protective clothing will be used as required.

Environmental radiation monitoring is also conducted on a routine basis both on and off site as part of the overall environmental monitoring program at Mound.

H. Pesticide/Herbicide Use

Pesticides and herbicides will be used as required to control weeds and insects during decontamination activities. All of the pesticides and herbicides used are not regulated by the USEPA. During application, only the person performing the application is allowed to be in the vicinity.

I. Historical and National Landmarks

The only known historic landmark in the vicinity of Mound is the Miamisburg Mound, an ancient Native American mound located 120 m (380 ft) east-southeast of the Mound site in Mound State Memorial Park. No activity associated with this project will impact this landmark.

J. Floodplain/Wetlands

Building 21 and the contaminated soil are not located on a floodplain or in wetland (10 CFR 1022). Detailed hydrologic information can be found in the previously referenced FEIS.

K. Endangered and Threatened Species

No known Mound records show that any species present on Federal or State of Ohio lists of endangered and threatened species occur on the site. The habitats present on the largely disturbed site are not generally supportive of the species on these lists. Furthermore, the proposed action will take place entirely within or around existing buildings and will not disturb any of the few remaining wild areas on the site.

L. Construction

No new construction forms a part of the proposed action. All activity is either demolition or excavation. Waste generated will be disposed of off site.

M. D&D Operations

D&D operations conducted as part of the proposed action will take place entirely within the Mound site. The measures described above and the low concentration of radioactive contamination present assure protection of the environment and personnel. Furthermore, normal operational procedures provide excellent protection for operational personnel. D&D operations will only change the configuration of the radioactive materials.

N. Risk from Accidents and Natural Hazards

The risk of radiological exposures to the environment or public from accidents or natural hazards is limited to exposure to the radioactive materials already present in and around Building 21. No greater quantity of radioactive materials will be generated as part of the operation. Only a negligible amount of additional risk to the environment, public, or personnel is presented because of the low concentration of radioactive contaminants. The proposed action will only change the form, and not the quantity, of radioactive materials present. The risk is negligible and is less than the risk addressed in the *Final Environmental Impact Statement for Mound Facility* (USDOE, 1979).

0. Transportation

D&D operations will generate and require handling, packaging, and shipping of radioactive waste. Mound has handled such wastes for 30 years without incident. D&D operations will follow standard procedures that have been applied effectively in numerous similar operations. Both U.S. Environmental Protection Agency and DOT shipping regulations will be followed.