U. S. DEPARTMENT OF ENERGY

FINDING OF NO SIGNIFICANT IMPACT

SOLID RESIDUES TREATMENT, REPACKAGING AND STORAGE AT THE ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

SUMMARY: The Department of Energy (DOE) has prepared an environmental assessment (EA)(DOE/EA-1120) for treatment, repackaging and interim storage of solid residues at the Rocky Flats Environmental Technology Site (the Site) north of Golden, Colorado. The EA describes and analyzes the environmental effects of the proposed action, and considers the alternatives of taking no action, shipping the residues offsite for treatment, and shipping the residues offsite for storage. The EA was the subject of a public comment period from March 6 to April 5, 1996.

PROPOSED ACTION: The Proposed Action consists of treating and/or repackaging possibly unstable residues, and storing them at the Site until their disposition is decided. Until that time, residues need to be placed in a condition, and in containers, that are safe for interim storage

Residues are wastes contaminated with radioactive materials, chiefly plutonium and americium, in sufficient quantity that they were held pending processing to recover the plutonium. Approximately 106,600 kilograms (kg) of residues are at the Site. Of those, approximately 39,200 kg require only repackaging, leaving up to 67,400 kg that could require treatment as well as repackaging. Residues have been classified according to common characteristics and treatment requirements. The classifications requiring treatment are ash, salt, wet, and classified shape residues. All but wet residues would be treated in Building 707; wet residues would be treated in Building 371. Residues not requiring treatment would only be repackaged.

Ash residues needing treatment would be calcined, cemented if necessary, and repackaged. Salt residues needing treatment would be subject to a pyrochemical oxidation process to convert reactive metals to non-reactive oxides that are safer to store. Wet residues needing treatment would be put through one of five processes, depending on their nature. Those residues containing water-based liquids would be treated to remove free liquids and repackaged. Organic-contaminated combustibles and certain filter residues would be processed to remove free liquids, stabilize plutonium fines if necessary, remove oil if needed, and repackaged. Fluorides would be chemically converted to oxides and repackaged. Grease oxides and fluorides would be dried as necessary and repackaged. Sludges would be treated to remove free liquids, dried and repackaged. Classified shape residues would have their shape and size altered by crushing, machining or grinding, and then be repackaged.

ALTERNATIVES CONSIDERED: DOE considered the No Action alternative which would have continued the present practice of storing residues in their current containers in the buildings where they are now stored. Surveillance, inspection and maintenance activities would continue and all immediate safety concerns would be addressed. The No Action alternative was rejected by DOE because it would place the Site in non-conformance with Settlement Agreement and Compliance Order on Consent No. 93-04-23-01 issued by the Colorado Department of Public Health and Environment and with the Defense Nuclear Facility Safety Board's Recommendation 94-1. In addition, it would limit future uses of portions of the Site, and substantially impede progress toward achieving the Site's mission of cleanup.

DOE also considered shipping some residues offsite for treatment and continues to review this possibility. However, several issues must be resolved before this alternative could be implemented. They include determining if offsite treatment can be accomplished at a reasonable cost and within the schedule required by the Defense Nuclear Facilities Safety Board's Recommendation 94-1, identifying adequate storage space at offsite facilities for the residues that could be treated there, certifying shipping containers, and repackaging residues for shipment. If these issues can be satisfactorily resolved, DOE may later proposed to treat some Site residues at other locations. If such a proposal is made, separate National Environmental Policy Act analyses would be performed on that Proposed Action.

A third alternative considered by DOE was shipment of residues to an offsite location for storage pending later decisions about treatment and disposal. This alternative also has issues that must be satisfactorily resolved before it could be implemented. As with the Shipment Offsite for Treatment alternative, the unresolved issues include identifying adequate storage space at offsite facilities for the residues, certifying shipping containers, and repackaging residues for shipment. Other issues include the fact that costs and risks would be incurred without moving toward ultimate disposal of the residues, since the residues would still have to be stored, treated, and repackaged after treatment. DOE rejected this alternative for these reasons.

ENVIRONMENTAL EFFECTS: All of the activities associated with the proposed action, except some of the transfer of residues between buildings, would take place inside existing buildings. As a result, no effects would be expected to flora, fauna, air or water quality. All buildings associated with the Proposed Action have been determined to be eligible for listing on the National Register of Historic Places. The Proposed Action has the potential to adversely affect the historic characteristics of the interior of the buildings through changes planned to equipment. Consequently, prior to any alterations to the buildings, possible adverse impacts would be avoided through negotiations with the State Historic Preservation Officer. The program would be expected to generate approximately 13,400 drums of low level or transuranic waste which would be stored on the Site pending disposal.

Under routine operating conditions, exposures of workers and the public to radiological and chemical hazards from both direct exposure and air emissions would be kept within applicable standards of regulatory agencies, DOE, and the Site. The Proposed Action would increase worker exposures in the short term but reduce them in the long term compared to both current exposure levels and the No Action alternative.

The bounding accident (earthquakes of sufficient magnitude to collapse Building 707 [expected once in 550 years] and Building 371 [expected once in 13,000 years, since Building 371 is stronger]) have equal probability of occurrence under the Proposed Action and the No Action alternative. Such an accident would be expected to result in worker fatalities (from falling debris as much as release of contamination) but no adverse health effects to the maximally-exposed offsite individual. Additional annual latent cancer fatalities among the Denver metropolitan area population of 2.2 million from collapse of both buildings are estimated at 2.3 under the No Action alternative and an additional 1.9 (for a total of 4.2) under the Proposed Action.

FOR FURTHER INFORMATION ABOUT THIS ACTION, CONTACT:

Carl R. Sykes
Mission Advocacy Division
U. S. Department of Energy
Rocky Flats Field Office
P. O. Box 928 - Bldg. 460
Golden, CO 80402-0928
Telephone: (303) 966-3684

FOR COPIES OF THE EA, CONTACT:

Reginald W. Tyler
NEPA Compliance Officer
U. S. Department of Energy
Rocky Flats Field Office
P. O. Box 928 - Bldg. 460
Golden, CO 80402-0928
Telephone: (303) 966-5927

DETERMINATION: Based on the information and analyses in the EA, DOE has determined that the proposed treatment, repackaging and storage of solid residues at the Rocky Flats Environmental Technology Site does not constitute a major Federal action significantly affecting the quality of the human environment within the meaning of the National Environmental Policy Act of 1969, as amended. Therefore, an environmental impact statement is not required and DOE is issuing this Finding Of No Significant Impact for the Proposed Action.

Signed at Golden Colorado, this 15th day of April, 1996.

Mark N. Silverman, Manager
Rocky Flats Field Office
U. S. Department of Energy