U. S. DEPARTMENT OF ENERGY

FINDING OF NO SIGNIFICANT IMPACT

RADIOACTIVE WASTE STORAGE AT ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

SUMMARY: The Department of Energy (DOE) has prepared an environmental assessment (EA) (DOE/EA-1146) to increase the radioactive waste storage capacity at the Rocky Flats Environmental Technology Site (the Site) north of Golden, Colorado by converting certain buildings at the Site from their former uses to radioactive waste storage. The EA describes and analyzes the environmental effects of the proposed action, and considers the alternatives of taking no action, converting certain other Site buildings to radioactive waste storage, and building a new waste storage facility. The EA was the subject of a public comment period from February 19 to March 5, 1996. Comments were received from the Colorado Department of Public Health and Environment, the City of Thornton, and Stone Engineering. Responses to those comments have been incorporated in the Final Environmental Assessment.

PROPOSED ACTION: The Proposed Action consists of converting some or all of the following buildings at the Site from their former uses to interim radioactive waste storage facilities: 374, 440, 444, 551, 865, 881, 883, 906 (also known as the Centralized Waste Storage Facility) and the IDM Drum Storage Facility. Each of these is an existing building except the IDM facility which DOE has not yet constructed but which was analyzed in DOE/EA-995. Buildings 374, 444, 881, 883, 865, and 906 are already partially or totally used to store waste; they are included in the Proposed Action because DOE expects to increase the quantity of waste, or change the type of waste, they store. Buildings 440, 551, 906 and the IDM facility would be used exclusively for radioactive waste storage activities, while the other five buildings would contain non-storage uses as well. The buildings would be converted as needed based on the following considerations: their appropriateness for the type of waste for which additional storage capacity is needed, availability, ease and cost effectiveness of conversion, capacity, and availability of funding. It is expected that Buildings 440 and 906 would be converted first. The second priority buildings in numerical order are 444, 881, and the IDM facility. Buildings 374, 551, 865 and 883 are the third priority group for conversion. It may not be necessary to convert all nine buildings. Conversion of all nine buildings would increase the Site's radioactive waste storage capacity by approximately 60%.

Conversion of buildings would typically involve removal of unneeded materials and equipment; removal of interior walls; removing or increasing the size of doors; removing, relocating or replacing utilities; removing and relocating, modifying or replacing fire detection and suppression systems and warning devices; modifying

heating, ventilation and air conditioning systems; modifying building weather and atmospheric protection (*e.g.*, insulation); structural modifications necessary for compliance with civil engineering codes for floor loading, snow and wind loading and for DOE and Site standards for seismic forces; and new architectural construction such as berms for secondary containment, new interior finishes, doors, and improved egress. New equipment, such as downdraft tables or hoods and contamination control cells, would be installed. In addition, safety controls would be installed as necessary. They could include criticality detection systems, selective alpha air monitoring systems, lead shielding, and air emissions monitoring equipment.

Routine operation of the buildings would typically involve off-loading waste containers from the delivery truck by forklift and moving the waste containers to a storage area; movement of waste containers within or between buildings for characterization and/or repackaging; and movement of waste containers to a staging area, preparation for shipment and shipment offsite.

The quantity of waste that would be stored in a building would be dependent on the number of grams of radionuclides in each waste container. The number of grams that could be stored in a building without air emissions monitoring would be the lesser of: 1) that quantity calculated to yield a dose of less than 5 rem to the maximally-exposed offsite individual in case of the bounding accident, or 2) that quantity calculated to result in a dose, taking no credit for emissions controls, of less than 0.1 mrem per year to the maximally-exposed offsite individual from normal operations, unless continuous air emissions monitoring equipment were in use. On average, each of the nine buildings could contain as much as 1,575 to 2,250 kg of radionuclides. Specific building limits would be identified in the safety analysis document for each building.

ALTERNATIVES CONSIDERED: DOE considered the No Action alternative which involves leaving existing radioactive waste where it currently resides and ceasing generation of new waste as Site capacities for the various types of radioactive waste are reached. DOE rejected this alternative because it does not respond to the need to properly store waste that will be generated by activities mandated by environmental statutes and regulations as well as by agreements between DOE and regulatory agencies, and the Defense Nuclear Facilities Safety Board.

DOE also considered alternative buildings (980 and 777) at the Site for conversion to radioactive waste storage. The nine buildings in the proposed action, however, are the only buildings that would be available at the time they were needed and which lend themselves to cost effective conversion to waste storage.

A third alternative considered by DOE was construction of one or more new radioactive waste storage facilities. DOE rejected this alternative because a new

facility(ies) could not be ready until after it will be needed, and because there is not sufficient vacant space in the Site's Industrial Area for such buildings.

ENVIRONMENTAL EFFECTS: Virtually all the activities associated with the Proposed Action would take place inside buildings and so would not be expected to have any adverse effects to flora, fauna, or water or air quality under routine conditions. Seven of the nine buildings have been determined to be eligible for listing on the National Register of Historic Places. Adverse effects to the historic characteristics of these buildings would be avoided by consultations with the State Historic Preservation Officer prior to undertaking any construction.

Accident analyses were performed for the Proposed Action. The bounding accident for the public was identified as a plane crashing into one of the buildings and spilling fuel which ignited. The probability of such an accident is estimated at three times in a million years. The buildings would be operated so that such an accident would not be expected to result in a dose of more than 5 rem to the maximally-exposed offsite individual in accordance with DOE guidelines for a moderate hazard facility. This dose would not be expected to result in any adverse health effects. Effects of the accident to the metropolitan Denver area population of 2.2 million are estimated at one excess cancer.

The bounding accident for workers would be spillage from drums due to an earthquake with an estimated probability of once in 840 years. Fatalities would be expected among workers in the immediate vicinity of the accident due to chiefly to falling debris. Collocated workers would be expected to receive a radiation dose of less than 25 rem, consistent with DOE guidelines for a moderate hazard facility resulting in 0.0078 excess cancers.

FOR FURTHER INFORMATION ABOUT THIS ACTION, CONTACT:

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DETERMINATION: Based on the information and analyses in the EA, DOE has determined that the proposed increase in, and operation of, radioactive waste storage capacity 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 9th day of April 1996.

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U. S. Department of Energy