Removal Action Decision Document for the Management of 15 Nonprocess Buildings (15 Series) at the Weldon Spring Site Chemical Plant

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Statement and Basis of Purpose

The purpose of a decision document is to describe a specific removal action proposed for a contaminated site under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended. This decision document presents the removal action selected for managing 15 nonprocess buildings (15 Series) and several underground tanks at the chemical plant area of the Weldon Spring site located in St. Charles, Missouri. The document is based on the administrative record file for this proposed action.

Response actions at the Weldon Spring site are being conducted by the U.S. Department of Energy (DOE) in accordance with the requirements of CERCLA, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), and the National Environmental Policy Act (NEPA). This decision document is prepared in accordance with the NCP, and it completes the CERCLA compliance process for the proposed action. Issuance of this decision document also closes the administrative record for the action.

Site Background

The Weldon Spring site is located in St. Charles County, Missouri, about 48 km (30 mi) west of St. Louis. It is surrounded by large tracts of land owned by the federal government and the state of Missouri. The site consists of two noncontiguous areas: an 88-ha (220-acre) chemical plant area and a 3.6-ha (9-acre) limestone quarry. The chemical plant area is about 3.2 km (2 mi) southwest of the community of Weldon Spring and the junction of Missouri (State) Route 94 and U.S. Route 40/61. The quarry is about 6.4 km (4 mi) south-southwest of the chemical plant area. Both locations are accessible from State 94 but are fenced and closed to the public.

In 1941, the U.S. Department of the Army acquired about 7,000 ha (17,000 acres) of land in St. Charles County to construct an ordnance works. The Army produced dinitrotoluene and trinitrotoluene explosives at the ordnance works from 1941 to 1944 and again from 1945 to 1946. In 1955, 83 ha (205 acres) of the former ordnance works property was transferred to the U.S. Atomic Energy Commission (AEC, a predecessor of DOE) to construct a uranium feed materials plant, also referred to as the chemical plant; an additional 6 ha (15 acres) were later transferred to expand waste storage capacity. Uranium and some thorium ore concentrates were processed at the plant from 1957 to 1966. Most of the contaminated solid waste generated by both ordnance works and feed materials plant operations and subsequent decontamination efforts was disposed of in the quarry between 1942 and 1969.

The Army reacquired the chemical plant in 1967 following closure by the AEC and began converting the facilities to produce herbicides. Some buildings were partially decontaminated and some equipment was dismantled. In 1969, prior to becoming operational, the herbicide project was canceled. Since that time, the plant has remained essentially unused and in caretaker status. The Army returned a portion of the chemical plant property to the AEC in 1971 but retained control of the buildings. In 1984, the Army repaired several of these buildings; decontaminated some of the floors, walls, and ceilings; and removed some contaminated

equipment to other areas (e.g., onto the ground outside of the process buildings as well as into certain nonprocess buildings). In 1985, custody of the chemical plant property was transferred to DOE.

The chemical plant consists of 44 buildings and miscellaneous structures, including underground tanks. Some of these facilities were part of the Weldon Spring Ordnance Works, but most were built for AEC operations between 1955 and 1958. The majority were support buildings for the chemical plant; a few were initially constructed to support plant construction activities and were used as warehouses and supply buildings after the plant was completed. Radioactive materials were processed in only a limited number of chemical plant buildings. Of the 44 buildings, 39 were nonprocess buildings (8 of which were general support buildings) and 5 were major process buildings. Several underground storage and septic tanks were also used to support plant operations.

Fifteen nonprocess buildings comprise the 15 Series buildings that are addressed in this proposed action: Buildings 104, 302, 412, 413, 415, 417, 428, 433, 435, 436, 437, 438, 439, 441, and 443. Although none of the buildings was used for the direct processing of radioactive materials, some became radioactively contaminated during the operational period of the chemical plant or subsequent to plant closure. During the operational period, building contamination may have resulted from (1) routine plant operations (e.g., tracking of contaminants from process areas and temporary relocation of contaminated equipment for repair), (2) processing support activities (e.g., waste handling), and (3) surficial deposition of airborne particulates. Contamination of underground tanks may also have resulted from past operations. Following plant closure, building contamination may have resulted from (1) relocation of some contaminated equipment from process buildings into nonprocess buildings during prior cleanup activities and (2) transport of contaminated material by environmental factors (e.g., wind) and local biota (e.g., wasps that built nests with contaminated mud).

Assessment of the 15 Series Buildings and Tanks

Since plant closure more than 20 years ago, the buildings have deteriorated considerably. Many of the windows are broken, some walls have separated from the floors, floors have begun to break apart, and roofs have deteriorated to the extent that they leak badly during rainstorms. Polychlorinated biphenyl (PCB) contamination of floors and radioactive contamination of various surfaces (e.g., associated with relocated equipment, interior dust, and roofing material) currently represent potential exposure hazards to on-site personnel, as does the deteriorating condition of protective coverings for the asbestos-containing insulation material within the buildings. As building deterioration continues, this contamination could threaten the off-site environment and the general public, e.g., via tracking, surface water runoff, and/or wind dispersion. The underground storage and septic tanks may also be deteriorating over time, with an associated potential for contaminant release.

The potential for health and safety threats on-site and contaminant releases off-site would increase over time if deterioration of the 15 Series buildings and underground tanks remained unchecked. Expedited dismantlement of these buildings and tanks would reduce associated occupational hazards on-site as well as potential threats to human health and the environment from off-site releases of chemical and radioactive contaminants.

Scope and Objectives

The scope of the proposed removal action can be broadly defined as management of 15 nonprocess buildings and several underground tanks at the chemical plant area of the Weldon Spring site. The primary purpose of the removal action is to limit the potential for contaminant releases into the environment from these structures. The specific objectives of this action are to:

- Reduce the potential health and environmental hazards of radiation exposure associated with uranium and thorium contamination of roofing material, building surfaces, and equipment;
- Reduce the potential health and environmental hazards of PCB exposure associated with contaminated floors and asbestos exposure associated with siding material, pipe insulation, and equipment;
- Minimize the potential health hazards to on-site personnel due to deterioration of the 15 Series buildings; and
- Minimize potential health and environmental hazards associated with releases from underground storage and septic tanks; and
- Support subsequent response activities at the Weldon Spring site.

Removal Action

The removal action selected for the 15 Series buildings and underground tanks is dismantlement of the structures and temporary on-site storage of all contaminated and nonsalvageable or contaminated materials. Most of the materials will be stored in the material staging area (MSA), where they will be sorted into potentially releasable and nonreleasable materials. (Releasable materials are those that can be managed or utilized without restrictions due to radioactive or chemical contamination.) This sorting will allow for efficient characterization of the materials at the chemical plant area, prior to a decision on their ultimate disposition. The only materials that will be transported off-site as part of this action are uncontaminated, salvageable materials. The removal action includes the following sequence of activities.

- Manual decontamination of all radioactively contaminated surfaces (e.g., by aggressively vacuuming/wiping equipment exteriors and building interiors/exteriors), with containment and storage of all radioactively contaminated materials on-site at the MSA;

- Removal of all PCB-contaminated materials (e.g., using a solvent wipe procedure), with temporary storage in Building 434 along with the site's containerized chemicals -- pending subsequent transport off-site of all nonradioactively contaminated materials to an approved treatment/disposal facility -- and containment and continued storage of any radioactively contaminated materials;

- Isolation of all asbestos-containing materials (e.g., in plastic bags), with containment and storage on-site;

- Follow-on decontamination of structural surfaces, as appropriate, to remove radioactive contamination;

- Dismantlement of all structures, with further decontamination of previously surfaces inaccessible during dismantlement;

- Removal of underground storage and septic tanks;

- Placement of all nonsalvageable or contaminated materials in the MSA; and

- Transport off-site of all uncontaminated salvageable materials.

The ultimate disposition of materials in the MSA will be included in the remedial investigation/feasibility study-environmental impact statement (RI/FS-EIS) currently being prepared for cleanup of the chemical plant area of the Weldon Spring site.

Highlights of Community Participation

An engineering evaluation/cost analysis (EE/CA) report was prepared in May 1989 to analyze alternatives for managing of the 15 Series buildings at the chemical plant. This EE/CA was not issued for public comment and review at that time because sufficient funds were not available to implement the action in 1989. An addendum to the EE/CA report was prepared in August 1990 to (1) update information provided in the original EE/CA report, (2) provide additional information on the MSA, and (3) respond to comments on the EE/CA document from Region VII of the U.S. Environmental Protection Agency and the state of Missouri.

The EE/CA report and addendum were issued for public review and comment on October 17, 1990. These documents, along with other documents in the administrative record file, have been made available to the public in the reading room at the Weldon Spring site.

Copies of these documents have also been made available at five other nearby information repositories: Memorial Arts Building at Lindenwood College (St. Charles, Missouri), Kathryn M. Linneman Branch of the St. Charles City/County Library (St. Charles, Missouri), Spencer Creek Branch of the St. Charles City/County Library (St. Peters, Missouri), Kisker Road Branch of the St. Charles City/County Library (St. Peters, Missouri), and Francis Howell High School (St. Charles, Missouri).

A notice of availability of the EE/CA report and addendum was published in the St. Charles Post on October 24 and in the St. Charles Journal on October 26. The public comment period extended from October 17 through November 23. No significant comments were received on the proposed removal action.

Declaration of Statutory Determinations

The removal action selected for managing the 15 Series buildings and tanks -- i.e., dismantlement and controlled storage on-site pending the upcoming disposal decisions for the project -- is protective of human health and the environment. In addition, the action can be implemented with standard technologies, it is cost-effective, and it is consistent with and will contribute to the efficient performance of the overall remedial action for the Weldon Spring site. In accordance with CERCLA and the NCP, it complies with federal and state requirements that are legally applicable or relevant and appropriate to the removal action, to the extent practicable This selected action also utilizes permanent solutions and resource recovery technologies to the maximum extent practicable, given its limited scope. Because the final disposition of wastes resulting from the building and tank dismantlement is not a part of this action, the statutory preference for treatment as a principal element of the remedy is outside its scope. Potential treatment technologies and disposal decisions will be addressed in the RI/FS-EIS that is currently being prepared for cleanup of the chemical plant area of the Weldon Spring site. The need for a 5-year review of the site will be assessed in the record of decision for the RI/FS-EIS.