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Department of Energy 54-470

Oak Ridge Operations
P.O. Box 2001
Oak Ridge, Tennessee 37831— 8723

January 27, 1995

Mr. Daniel Wall
Superfund Branch
U.S. Environmental Protection Agency
Region VII
726 Minnesota Avenue
Kansas City, Kansas 66101

Dear Mr. Wall:

ST. LOUIS SITE - COMPREHENSIVE INTERIM ACTION PLAN

Enclosed for your review please find a comprehensive interim action plan for near-term activities at the St. Louis site. This plan was requested by the September 8, 1994, letter from Mr. Dennis Grams to Tom Grumbly. We have attempted to fashion the plan in a manner that is generally consistent with guidance received from Mr. Tim Fields, also of the U.S. Environmental Protection Agency, in his March 28, 1994, letter to Mr. Grumbly.

The activities proposed by this plan are intended to accomplish final cleanup of select high priority properties while maintaining acceptable conditions at the remaining properties pending selection of a comprehensive management plan. As such, the plan calls for a mix of actual cleanup measures along with additional monitoring, maintenance, and surveillance efforts.

Actual proposed cleanup measures fall into two categories geographically; those planned for the Hazelwood/Berkeley area and those proposed for the St. Louis Downtown Site. Environmental documentation (Engineering Evaluation/Cost Analyses) supportive of both of these has been presented to the public and appropriate regulatory agencies. A key distinction between the activities originally proposed and those now being proposed concerns the disposition of soils and building rubble generated by cleanup activity. The original proposals called for onsite, or local storage of all generated soil and rubble. The current proposal calls for relocation of these materials to an off-site commercial disposal facility. This change is primarily a response to input from local citizenry and property owners. Our current plan is to codify this shift in plans through the issuance of Action Memoranda.

The cleanup measures proposed by this plan are fairly routine in nature, and to my knowledge present no unique technical challenges. As such, I am eager to move quickly into the design and implementation of these efforts. The only significant unresolved issue concerns the acceptability of the uranium cleanup guideline proposed for interim measures at the St. Louis Downtown Site. While guidelines based upon a site-specific risk analysis have been proposed, we have not received concurrence from the U.S. Environmental Protection Agency on

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these guidelines. In order to ensure that this won't need to be revisited, I ask that EPA review the proposed guidelines and provide an assessment of their adequacy.

Please feel free to contact me with any questions you may have concerning this proposal. As always, your efforts in support of this project are appreciated.

Sincerely,



David G. Adler, Site Manager
Former Sites Restoration Division

Enclosure

cc w/enlosure:

Daniel Tschirgi, MDNR

Dr. Alpha Fowler Bryan, St. Louis
Remediation Task Force

The St. Louis Site Comprehensive Interim Action Plan*1.0 Overview*

The following document has been developed by the Formerly Utilized Sites Remedial Action Program (FUSRAP) to define the Department of Energy's (DOE) Comprehensive Interim Action Plan for the St. Louis site (due January 27, 1995). This document is submitted to meet the second interim milestone established in the September 8, 1994 letter from Mr. Dennis Grams of the United States Environmental Protection Agency (EPA) to Mr. Thomas Grumbly of the DOE. This letter identified three interim milestones while postponing the Record of Decision. The first interim milestone was met when the Initial Interim Action Plan was submitted on September 16, 1994. The third and final interim milestone, the schedule for submission of a draft Feasibility Study and Record of Decision for final cleanup, is scheduled for September 30, 1995.

The DOE has determined that soils and numerous structures across the St. Louis site are radioactively contaminated above the DOE guidelines. Although there is existing contamination, no immediate risk to human health or the environment exists with current land use and existing engineering and institutional controls. However, there is the possibility that operational and maintenance activities implemented by site proprietors could lead to the inadvertent spread of these materials. Examples of near-term activities that could result in such disturbance include road improvements, private construction activities, utility line installation and repair, sewer and sump repair, fence installation or repair, and building demolition, renovation, repair, or new construction.

Because all analyses performed to date show the existing site conditions to be safe under current uses, this plan does not call for the elimination of contaminants from all uncontrolled properties while the final remedy selection process proceeds. Additionally, the available funding over the next several years does not allow an undertaking of that scale. Instead, strategic actions will be undertaken that are protective of the public and on-site personnel, reduce exposure levels on isolated areas with higher contamination levels, reduce the chances for the spread of contaminants and the recontamination of remediated areas, are cost effective, and equitably distribute the resources available over the interim period.

2.0 Scope and Objectives

The scope of the interim measures is to safely and cost effectively manage the radioactively contaminated materials as the selection process for the final remedy continues. The implementation of these actions will contribute to the efficient implementation of the final remedial action for the St. Louis site and are consistent with the final remedy selection to be made in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

The specific objectives of the proposed interim actions are:

- 1) to prevent, limit, or mitigate the risk to human health and the environment;
- 2) to reduce the chances for the spread of contaminants and the recontamination of remediated areas; and
- 3) to equitably distribute available resources in a cost effective manner.

3.0 Statutory Limits

Authority for responding to releases or threats of releases from a hazardous waste site is addressed in Section 104 of the CERCLA. Under the CERCLA Section 104(b), the DOE is authorized to investigate, survey, test, or gather other data required to identify the existence, extent, and nature of contaminants, including the extent of danger to human health and the environment. In addition, the DOE is authorized to undertake planning, engineering, and other studies or investigations appropriate to directing response actions that prevent, limit, or mitigate potential risks associated with the site. As a successor of the Atomic Energy Commission (AEC), the DOE derives its authority from the Atomic Energy Act (AEA) of 1954 for response actions at sites that are not federally owned, such as the St. Louis site.

Responsibility for the cleanup of radioactive and commingled chemical contamination at the St. Louis site has been partitioned between the DOE and the U.S. Environmental Protection Agency (EPA). A Federal Facilities Agreement (FFA) (DOE, 1990) negotiated by the EPA Region VII and the DOE describes the respective responsibilities.

4.0 Environmental and Human Health Compliance and Standards

The proposed interim actions at the St. Louis site properties will be carried out in accordance with all applicable regulatory standards as agreed to by the DOE and the EPA. The DOE will comply with all pertinent environmental requirements to ensure the protection of human health and the environment during implementation of the proposed action. Appropriate Occupational Safety and Health Administration (OSHA) standards and other employee protection laws and guidelines will be followed to ensure worker protection during implementation. The proposed actions will comply with the DOE guidelines which include limits for residual concentrations of radium and thorium in soil. These guidelines have been adopted from standards promulgated by EPA. The DOE guidelines for residual radioactivity in soils which allow unrestricted use of the property following cleanup are specified as less than 5 pCi/g above background for radium and thorium in surface soils (top 6 in.), 15 Pci/g above background for radium and thorium in subsurface soils (DOE Orders 5400.5 and 5400.1).

The uranium guidelines that the DOE intends to implement at the St. Louis site were determined conservatively based on various exposure scenarios. Under these scenarios, the dose to a hypothetical individual who lives or works in the immediate vicinity of the St. Louis site would not exceed 24 mrem/year for a resident or 6 mrem/year for an industrial worker following the remedial action. The rationale for the guidelines is described in a letter from Mr. David G. Adler (DOE) to Mr. Greg McCabe (EPA, Region VII) dated July 5, 1991. The guidelines call for cleanup to 50 pCi/g above background for uranium-238 in soils, and 100 pCi/g above background for total uranium in soils.

The uranium guidelines were also employed as the cleanup standards specified in the "Engineering Evaluation/Cost Analysis (EE/CA) for Decontamination at the St. Louis Downtown Site, St. Louis, Missouri" issued in May, 1991. Since first proposed in 1991, no regulatory or public objections have been raised concerning these guidelines.

5.0 Identification of Potential Interim Actions

The EPA in a letter dated March 28, 1994 from Mr. Timothy Fields to Mr. Thomas Grumbly outlined recommendations for "near-term actions" at the St. Louis site that can be organized into three categories: (1) maintenance and monitoring, (2) remedial actions at the uncontrolled vicinity properties, and (3) long term concerns. The following proposed actions address categories (1) and (2), and will be pursued while the final remedy selection process continues. The long term concerns will be addressed as part of the remedy selection process. The following actions have been developed based on the EPA recommendations along with actions that have been identified by the DOE.

5.1 Stabilize the St. Louis Airport Site (SLAPS)

The procedures that will be implemented to stabilize the SLAPS include:

- (a) erosion mitigation and control through maintenance of the vegetative cover, use of a geotextile material, or other techniques such as riprap,
- (b) maintaining institutional controls; (such as posting restricted areas and maintenance of fencing),
- (c) maintaining the gabion wall along Coldwater Creek, and
- (d) capping and/or covering areas of contamination to reduce exposure rates at the site boundaries that may present a long-term exposure hazard.

5.2 Cleanup of Plant #10 at St. Louis Downtown Site (SLDS)

The following activities will be undertaken during the removal action for clean-up of Plant # 10 at the SLDS:

- (a) radiological and chemical sampling as well as radiological surveying to refine the boundaries of contamination and characterize the waste stream for disposal,
- (b) excavation of accessible soil and debris which are above DOE guidelines for residual radioactivity,
- (c) removal or decontamination of below-grade installations in contaminated areas as required,
- (d) staging of waste in engineered areas (to prevent migration of contamination) pending shipment for disposal,
- (e) loading and shipment of waste for disposal,
- (f) verification and sampling to ascertain that Plant # 10 (City block 1201) can be released for use without radiological restrictions or to set appropriate supplemental standards, and
- (g) restoration of work areas to an acceptable condition.

5.3 Continuation of Existing Monitoring and Surveillance at SLAPS and HISS

Environmental monitoring programs have been developed and implemented on a site-specific basis to reflect facility characteristics, applicable regulations, hazard potential, quantities and concentrations of materials released, extent and use of affected land and water, and local public interest or concern. Stable conditions currently exist at both SLAPS and HISS; i.e., there is no persistent migration of contaminants off-site in either the surface stormwater runoff or groundwater, nor are there any significant airborne contaminants moving offsite.

The environmental surveillance program at the SLAPS includes sampling networks for radon concentrations in air; gamma radiation exposure; and total uranium, radium-226, thorium-230, and thorium-232 concentrations in groundwater. Additionally, several non-radiological parameters are measured in the groundwater; i.e., selenium, specific conductance, pH, oxidation-reduction potential, dissolved oxygen, temperature, alkalinity, and turbidity. There is no National Pollutant Discharge Elimination System (NPDES) permit for the SLAPS, however, stormwater is monitored for gross alpha, gross beta, total uranium, thorium-230, thorium-232, radium-226, radium-228, and lead-210. Tissue-equivalent thermoluminescent dosimeters (TETLDs) are maintained at four stations around the SLAPS to measure human exposure to gamma radiation.

At the HISS, the DOE holds and complies with a current NPDES permit and liquid effluent monitoring is regularly conducted to comply with DOE Orders 5400.1 and 5400.5. The environmental surveillance program at the HISS includes sampling networks for airborne radon concentrations and flux to meet National Emission Standards for Hazardous Air Pollutants (NESHAPs); gamma radiation exposure; and total uranium, radium-226, thorium-230, and thorium-232 concentrations in the groundwater, surface water, storm water, and sediments. Several non-radiological parameters are also measured in the groundwater; i.e., calcium, magnesium,

potassium, sodium, sulfate, nitrate, total nitrogen, chloride, phosphates, total phosphorus, alkalinity, carbonate, bicarbonate, and total dissolved solids (TDS). In addition, total organic carbon (TOC), total organic halides (TOX) concentrations, radium-228, lead-210, gross alpha, gross beta, and settleable solids (SS) are monitored in the stormwater. TETLDs are maintained at ten stations around the HISS.

5.4 Maintenance Activities and Response to Significant Changes in Site Conditions

The probability of an unexpected release during routine site operations and management, is highly unlikely. Trained site operations personnel and/or the site safety officer will notify appropriate DOE personnel of any non-routine condition and will immediately take steps to minimize the potential for exposures as specified in FUSRAP project instructions. Should conditions warrant, a health physics technician will evaluate site conditions with appropriate instrumentation.

On-going activities include:

- (a) maintaining a capability to respond to unplanned events,
- (b) working with the City of St. Louis to keep the SLAPS available for temporary storage and staging of containerized materials,
- (c) keeping subcontracts active for maintenance, response actions, surveillance and monitoring, etc., and
- (d) conducting regular (approximately weekly) drive-throughs of vicinity properties to visually check for any disturbance to soil surfaces or structures.

5.5 Community Relations Activities

To assure public awareness, an interactive community contacts program will be maintained, especially with property owners of vicinity properties and officials of the surrounding municipalities.

5.6 Identification of Potential Interim Actions Associated with Continued Cleanup of Vicinity Properties

Over the next five-year period, specific cleanup of vicinity properties will continue as funding, priorities, and risks dictate. Out-year activities cannot be determined without knowing levels of funding.

5.7 Technology Assessment

During the interim phase of the St. Louis site remedial action process, emphasis will be placed on identifying, evaluating, and implementing technologies that may enhance the efficiency and effectiveness of both interim and long-term cleanups. Technologies that will be investigated for their applicability to the St. Louis site include:

(a) Long range alpha detectors (LRADs) for use in the field to screen remediated areas for residual contaminants that primarily emit alpha radiation. Current techniques do not allow cost effective detection of alpha radiation in the field at levels sufficient to verify compliance with the standards. This causes delays in remedial activities because backfilling cannot be performed until laboratory analyses determine the site to be clean. LRADs show potential for greatly reducing the time lag between excavation and backfill. LRADs allow large areas of the remediation to be quickly scanned for contamination instead of the time consuming collection of discrete samples followed by off-site laboratory analyses prior to backfilling. LRADs also provide better real-time identification of isolated areas of higher residual contamination which facilitates the attainment of as low as reasonable achievable (ALARA) remediation goals.

b) On-site mobile laboratories are being implemented to provide rapid turn-around on the analyses of samples taken to verify clean-up to the established standards for all contaminants of concern.

(c) A research and development program for soil treatment has been initiated and is continuing. The objective of soil treatment is to reduce the volume of contaminated material requiring disposal by concentrating the radioactivity into a small fraction of the total soil volume. A laboratory investigation to assess the viability of soil treatment for the St. Louis site soils is in progress using soil samples taken from the North County area.

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