U.S. ARMY CORPS OF ENGINEERS DISPOSAL OF FUSRAP MATERIALS

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ABSTRACT

The U.S. Army Corps of Engineers (Corps) estimates there is a large volume of material contaminated with residual levels of radioactivity from cleanup of sites in the Formerly Utilized Sites Remedial Action Program (FUSRAP). Much of this material requires safe, cost-effective, off-site disposal. The Corps' primary contracting mechanism for disposal of this material is a $400 million multiple-award contract awarded by the Corps' Kansas City District in June 1999. This paper discusses the Corps' need for this contract and gives highlights of the contract, including identification of the three successful awardees and the categories of materials that can be disposed of through these contracts. Other mechanisms available for disposal of radioactive materials are mentioned.

The Corps has developed a policy for disposal of materials contaminated with radioactivity to help assure that off-site disposal actions are:

- accomplished in a manner that assures health and safety of the public, site workers, and the environment,
- are thoroughly coordinated with appropriate regulators,
- are in compliance with appropriate regulations, including EPA's off-site rule, and
- are cost-effective.

The background and requirements of this policy are discussed.

INTRODUCTION

The largest single component of remediation at FUSRAP sites is disposal of the contaminated materials that pose a risk to the communities where these sites are located. These materials are primarily the results of uranium mining, milling, and refining activities supporting the early atomic energy program through Manhattan Engineer District/Atomic Energy Commission (AEC) contracts. The FUSRAP sites are largely located in areas of industrial land use or in some cases mixed industrial and residential land use. There are currently twenty-two sites in the program, with eight of these under active remediation, and eight additional sites being studied for potential inclusion in the program.

Large quantities of low-specific activity radioactive materials are generated from the cleanup of these sites. Nearly 400,000 cubic meters of materials were disposed under the program during fiscal years 1998 through 2000. Though all sites have not yet been completely characterized, the Corps at this time estimates approximately 800,000 cubic meters of additional materials will require disposal. The majority of these materials are the residuals of ore processing activities for uranium or thorium that were never under license to the AEC or the Nuclear Regulatory Commission (NRC). Historically these materials were disposed of at a single facility licensed to

receive materials classified as 11e.(2) byproduct material under the Atomic Energy Act (AEA). The Corps evaluated the technical, legal, and practical aspects of using alternative facilities for the disposal and recycling of FUSRAP materials and concluded that given the NRC practice of not regulating pre-Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA) tailings resulting from the processing of ores for the extraction of uranium or thorium not covered by the AEA, a number of facilities are available to accept a significant amount of FUSRAP materials.

CENTRAL DISPOSAL CONTRACT FOR RADIOACTIVE MATERIALS

Upon evaluating contract capacity for the expected volumes of radioactive and other materials to be disposed of under the FUSRAP and various other programs, the Corps determined that additional contracts were necessary. The Competition in Contracting Act (CICA) requires federal agencies to allow for full and open competition for government contracts and previous large volume contracts had resulted in line item savings for disposal of radioactive materials. This led the Corps to evaluate the alternatives for disposal of the various categories of wastes that were anticipated and determined that a central multiple-award firm-fixed-unit-price based indefinite quantity contract was the appropriate mechanism to use for future requirements and to maximize competition in order to obtain the best value to the government. This centralized contract could be used for disposal of the primary types of materials anticipated from FUSRAP and other programs and would provide an assured and economical disposal source for various remedial actions planned or anticipated by the Corps.

In December 1998, the Corps requested proposals for a multiple-award contract for the permanent and safe disposal of radioactive contaminated soil and in accordance with all applicable, relevant and appropriate Federal, State and local regulations. The five schedules are defined in Table 1. These schedules were not defined on a purely regulatory basis, but with the intent of maximizing competition.

Up to 10 contracts could be awarded under this solicitation with each awarded contract containing from one to five schedules. With this solicitation, the government had the discretion of awarding each schedule to a maximum of two awardees if acceptable offers were received. The joint total acquisition value (JTAV) of all contracts awarded under this solicitation was not to exceed $400 million. The estimated percentage of the JTAV for each schedule is as shown in Table II. After meeting a guaranteed minimum for each schedule, the contractors will share in all remaining future awards of task orders up to the JTAV for each schedule. The contract was awarded for one five-year base period with one five-year option period (to be exercised at the discretion of the government).

Proposals under this contract were evaluated on past performance, technical expertise and price. Firms were required to have the appropriate licenses or permits or to obtain them within 12 months of award of the contract.

Table I. Definitions of Contract Schedules

Schedule	**Contract Definition**
Hazardous Mixed Waste Materials	Includes hazardous waste identified in 40 CFR 261 (F-, K-, P- and U-listings) and/or characteristic waste with residual radioactive material that is NRC regulated.
Low-Activity Radioactive Material (LARM)	Materials with a specific activity of less than 30 picoCuries per gram (pCi/g) Radium 226 and less than 150 pCi/g of each other NORM radionuclides.
RCRA Hazardous waste with residual radioactivity, not NRC regulated	RCRA waste that contains residual radioactivity that is not NRC regulated (<30pCi/g RA-226, and <150 pCi/g of each other NORM radionuclide). Historically, the RCRA material has been metals above minimum concentrations and very small quantities of F and D codes are encountered.
Naturally Occurring Radioactive Materials (NORM)	Naturally occurring materials not regulated by the Atomic Energy Act, whose radioactivity has been technologically enhanced usually by mineral extraction or processing activities. This term is not used to describe the natural radioactivity of rocks and soils or background radiation.
11e.(2) materials generated prior to Nov 8, 1978	The tailings or waste produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content. This material is not subject to regulation under the Atomic Energy Act authority.

Proposals were evaluated and three contracts were awarded in June 1999 as shown in Table II. Two contracts were awarded for each of the schedules except for the hazardous mixed waste materials schedule, which was awarded to only one contractor.

Table II. Contract Awardees and Percentage of Total Contract Value

Schedule	**Estimated % of JTAV**	**Envirosafe Services of Idaho, Inc. (RCRA C permit)**	**Waste Control Specialists LLC(Texas) (RCRA C permit)**	**Envirocare of Utah, Inc. (NRC license)**
Hazardous Mixed Waste Materials	1			√
LARM	3	√	√	
RCRA Hazardous waste with residual radioactivity, not NRC regulated	6	√	√	
NORM waste	15	√	√	
11e.(2) materials generated prior to Nov 8, 1978	75	√		√

While these three contracts were envisioned to provide assured disposal sources for possibly as long as ten years on a variety of project types, the Corps is not limited to these contracts alone for disposal services. Corps remediation contractors can conduct subcontracting activities for disposal services at the project level. This situation could arise when there are materials for disposal that do not conform to the schedules of materials in the multiple-award contract, or when a better value may be available on a particular project. These decisions are made on a project specific basis.

CORPS OFF-SITE DISPOSAL POLICY

The position of the Nuclear Regulatory Commission that they do not have regulatory jurisdiction over the ore residuals from the processing of materials for their source material content without a license from the Atomic Energy Commission on or before the enactment of UMTRCA has caused some concern that materials would be disposed of inappropriately. To assure that the off-site disposal of radioactively contaminated FUSRAP materials was fully coordinated with the appropriate parties and in compliance with applicable laws and regulations, the Corps finalized an off-site disposal policy in January 2000. This policy, Engineer Circular (EC) 200-1-3, *Off-Site Disposal of Materials from the Formerly Utilized Sites Remedial Action Program* establishes the process the Corps follows to determine appropriate disposal facilities and helps to assure that off-site disposal is protective of human health and the environment and protects the public interest from both the health and fiscal perspectives.

EC 200-1-3 limits off-site disposal to those facilities with a license from the NRC or an Agreement State, or with a permit from a Federal or State regulator to accept radioactive materials. The Corps will not dispose of radioactive materials in a facility that does not address radioactive material in its permit. In order to help assure that appropriate laws and regulations are followed with the disposal action, it is important to accurately characterize the materials through physical/chemical testing and an examination of the historical processes carried out at the site. This is done on each FUSRAP site. It is possible that materials of more than one type are present on a single site. In such a case each type of material is disposed of according to its characterization.

To aid good communication between all parties, the Corps' policy requires that a written description of material be provided to the potential disposal facility for a determination of whether the material falls within their acceptance criteria. The Corps also asks the facility to obtain, if possible, a written authorization from the regulator(s) that the planned disposal is consistent with applicable regulations and the facility's license or permit. The Corps reviews the regulator authorization and communicates with the regulator to assure that all parties fully understand the disposal action. The Corps does not intend to insert itself inappropriately between the disposal facility and the regulator(s), but to increase communication and understanding of the proposed disposal action prior to waste actually leaving a FUSRAP site.

EC 200-1-3 also emphasizes the requirement for the facility to meet the National Oil and Hazardous Substances Pollution Contingency Plan's Off-site Rule's acceptability criteria. Compliance with this rule helps to prevent the disposal of wastes in facilities with serious violations of their permits or licenses. To this end, FUSRAP waste will not be sent off-site until

the U.S. Environmental Protection Agency's (EPA) Regional Off-site Coordinator, in the EPA region where the disposal facility is located, determines if the receiving facility meets the compliance and release criteria of the Rule and is therefore acceptable for the planned disposal action.

EC 200-1-3 also contains some specific requirements pertaining to the transportation of FUSRAP materials. In addition to complying with applicable NRC and Department of Transportation requirements and EPA and state manifesting and transportation requirements, secondary, non-DOT bulk stickers, chain of custody forms and certificates of placement are required for all materials.

CONCLUSION

While the Corps' use of alternative disposal options has faced some controversy, the Corps believes that by keeping health and safety considerations our top priority we can move forward with smart decisions that allow us to continue to make progress in the cleanup of FUSRAP sites. Meaningful communication with and involvement of the stakeholders having an interest in our remediation and disposal decisions will continue to be important to our ability to make that progress.

Coordination with the NRC on the regulation of pre-UMTRCA mill tailings resulting from the processing of ores for the extraction of uranium or thorium not covered by the AEA has been key to the Corps' ability to generate competition for the disposal of these low-activity materials. The Director, Office of Nuclear Material Safety and Safeguards, recently upheld the NRC practice of not regulating these materials through the Director's Decision, DD-00-06, to deny petitions pursuant to 10 CFR 2.206 filed by the Snake River Alliance and Envirocare of Utah, Inc. As part of this decision, the NRC stated that they believe that the RCRA and state permitted facilities that the Corps is using for disposal of this material provide sufficient health and safety protection for both workers and the public. This decision enables the Corps to continue to use Resource Conservation and Recovery Act (RCRA) Subtitle C permitted hazardous waste facilities as an alternative disposal option for a subset of FUSRAP materials. The Corps will also continue to use licensed disposal facilities, tailings impoundments and recycling as other options for disposal of materials as appropriate.

All disposal options used by the Corps will continue to comply with all applicable laws and regulations, be protective of human health and the environment, and protect the public interest from both the safety and fiscal perspectives.