UNITED STATES
NUCLEAR REGULATORY COMMISSION
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OFFICE OF THE
GENERAL COUNSEL

March 2, 1998

Ann Wright, Esq.
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Dear Ms Wright:

We are replying to Dr. Davies' letter of February 13, 1998, which requested that our reply be addressed to you. Dr. Davies requested responses to two questions regarding the Nuclear Regulatory Commission's position on the relevance of its licensing program or its rules and regulations to the disposal of certain wastes generated in the Corps' administration of the Formerly Utilized Sites Remedial Action Program (FUSRAP). Dr. Davies specifically asked about waste from eight sites listed in her letter (we have assumed that the St Louis Airport vicinity properties includes the Latty Avenue site). These sites are: Ashland 1&2, Seaway landfill, Linde(now Praxair), St Louis Downtown site, St. Louis Downtown vicinity properties, St. Louis Airport site, and St. Louis Airport vicinity properties. According to our information all of the listed sites are contaminated with residuals from the processing of Congo pitchblende for the Manhattan Engineering District project or shortly afterwards for the Atomic Energy Commission (AEC).

The first question asks: "Is an NRC license required for handling activities related to disposal of the FUSRAP wastes from the sites listed above?"

Answer: No NRC license is required for the handling activities for the radioactive residuals at those sites. Prior to the enactment of the Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA) neither the AEC nor the NRC claimed statutory jurisdiction over the tailings from ore processed for source material. NRC exercised some safety and environmental control over such tailings only in conjunction with the licensed processing of ore for source material, drawing primarily on National Environmental Policy Act requirements for environmental mitigation. UMTRCA gave NRC statutory authority over such tailings, but only over tailings resulting from activities licensed by NRC as of the effective date of the Act (November 8, 1978), or thereafter. See, Section 83 of the Atomic Energy Act of 1954 as amended. Such activities are understood to be the processing of ore or other material primarily for source material. Section 208 of UMTRCA also ordered NRC to consolidate regulation of tailings with the licensing of source material extraction. Regulations for the handling and disposal of such tailings are to be found, accordingly, in 10 CFR Part 40, Domestic Licensing of Source Material, as an adjunct to source material licensing.

Because the residuals at the listed sites were generated long before NRC had any jurisdiction over tailings, and were never produced from source material extraction under NRC license, NRC today has no basis to assert any regulatory authority over the handling of those residuals at the listed sites. Cf. Bowen v. Georgetown University Hospital, 488 U. S. 204 (1988) (on the issue of retroactive application of rules).

The second question asks: "Are there any NRC rules or regulations which would preclude disposal of the FUSRAP wastes described above at a RCRA disposal facility?"

Answer: There are no NRC rules or regulations that would preclude disposal of the described FUSRAP wastes at a Resources Conservation and Recovery Act (RCRA) disposal facility. NRC rules on waste disposal in 10 CFR Part 20, Subpart K, Waste Disposal, apply only to licensees disposing of licensed material. As discussed above in answer to the first question, the waste in question is not licensed material. Licensed material is source, byproduct or special nuclear material within the licensing competence of NRC. Further, in this context neither the Corps of Engineers nor RCRA permitted sites are licensees of the agency. Accordingly, the restrictions on disposal in Subpart K are not applicable. 10 CFR Part 61 is also not applicable since it applies only to the procedures and requirements for obtaining a license for commercial disposal of licensed source, byproduct and special nuclear material. Restrictions as to waste form and content, and manifesting are applicable only to licensed materials shipped by a licensee for disposal at a licensed site. See, 10 CFR 20.2006(a)(1)(i)(effective March 1, 1998). Therefore, we conclude that there are no rules or regulations of the NRC that would preclude disposal of the described FUSRAP wastes at a RCRA site.

For your information, I am enclosing copies of recent correspondence between NRC, the State of New York, and a citizen of that State. This correspondence is related to the Tonawanda sites which are included in the list of sites in Dr. Davies' letter, albeit under other names. If you have any further questions, please call me, at (301) 415 1643.

Sincerely,

Robert L. Fonner

Robert L. Fonner
Special Counsel for Fuel Cycle and
Safeguards Regulations

Enclosures: As stated

7 July 1998

FUSRAP WASTE DISPOSAL ALTERNATIVES

EXECUTIVE SUMMARY

The United States Army Corps of Engineers' (USACE) newly transferred environmental cleanup program, Formerly Used Sites Remedial Action Program (FUSRAP), will require that large volumes of relatively low activity radioactive materials be removed from many of the sites for off site disposal. A significant portion of the total program budget will be consumed by the cost of transportation, treatment as necessary, and final disposal of these materials. In an effort to achieve program efficiencies, save costs, and ensure disposal capacity, while always maintaining public health and safety standards, USACE has determined to explore disposal options for the FUSRAP materials. This paper discusses in detail the factors which affect the availability of the different disposal options.

There are a variety of different types of materials destined for off site disposal from the FUSRAP sites. USACE will not be reclassifying these materials, but will determine the precise definitions that apply to the materials at each site for the purpose of establishing regulatory requirements and disposal options. In general, the materials fall into categories of radioactive materials, some of which are regulated under the Atomic Energy Act (AEA), such as special nuclear material, source material and byproduct material, and some of which are not regulated under the AEA, such as naturally occurring radioactive material (NORM). There may also be hazardous waste regulated under the Resource Conservation and Recovery Act (RCRA), either separate from the radioactive materials, or commingled with them as mixed waste or NORM plus hazardous waste. Finally, there may be solid waste which is neither regulated radioactive waste nor hazardous waste. In order to determine what types of materials are present at the sites, USACE will assemble and review historical information on operations at the site, both related to the past processing work in support of the government, and related to other site processes which may have involved releases of any contaminants. USACE will also assemble and review analytical data from site investigations. Together, the historical process information and the investigative data will allow proper characterization of the types of materials present at each site.

Once the site materials are characterized, and decisions have been made on which materials will be taken off site, then the regulatory requirements for the potential disposal sites can be evaluated. After consultation with the Nuclear Regulatory Commission (NRC), it has been determined that the materials at FUSRAP sites which are former uranium or thorium milling or processing facilities that operated prior to 1978 and meeting the definition of AEA 11(e)(2) byproduct materials, are not subject to regulation by the NRC. These materials should be treated as 11(e)(2) type byproduct materials, as opposed to source materials or NORM or LLRW. They do not require an NRC or Agreement State licensed facility for disposal, however they may be sent to a facility licensed to receive 11(e)(2) waste, subject to the concurrence of the licensing authority. If the levels of radioactivity present are low enough, these materials may also

be sent to facilities permitted under RCRA, if the facility permit allows the receipt of waste with low levels of radioactivity, and the facility and the regulator agree to disposal at the designated facility. Another option, if the levels of the radioactive isotopes present are of a potentially useful type and quantity, is to arrange with an NRC or Agreement State licensed processing mill to take the materials as alternate feed materials for processing, with placement of the byproduct materials from that processing into the tailings pile or impoundment of the mill. The approval of the regulator will be required to allow such reprocessing.

If the materials are source or special nuclear materials, they must be sent for disposal at an NRC or Agreement State licensed facility with authority to accept the types of materials to be disposed.

If the materials are LLRW, then they must be sent to either a LLRW compact facility, or to another licensed facility, with the approval of either the regional compact commission or the licensing regulator for the facility. If the materials are NORM, then they are governed for disposal only by the law of the receiving state, and some states have licensed facilities for disposal of NORM waste with specified limits of radioactivity.

If the materials contain hazardous waste, then it must be ascertained if it is mixed waste. If the materials are byproduct type materials, and there is a hazardous characteristic present either as a result of the natural conditions of the ore or as a result of chemicals used in the radioactive materials processing, then they are byproduct materials only and not RCRA regulated. If hazardous waste is present as a result of additions of other materials to the FUSRAP materials by other parties, such as the release of listed or characteristic hazardous waste from other operations, and if the materials are AEA regulated byproduct, source or special nuclear materials, then the combination is a mixed waste. Disposal of mixed waste requires both an NRC or Agreement State license, and a RCRA hazardous waste management facility permit which specifically authorizes receipt of mixed waste.

Finally, there is some higher activity radioactive material at one FUSRAP site, for which a commercial disposal facility may not be available. If the material is suitable for alternate feed material for reprocessing, then USACE may consider an arrangement with a licensed mill. If the material is not suitable for reprocessing, then it may be necessary to arrange with the Department of Energy for disposal of these materials at one of the DOE sites which can accept materials with such high activity. Since the materials appear to be pre-1978 11(e)(2) byproduct materials which were the result of processing in support of the nation's early atomic weapons program, one or more of the DOE disposal sites may be appropriate for disposal of such waste. Such an arrangement would require negotiations with and approval of the DOE in order to be accomplished.

Some questions have been raised as to whether liability varies among the disposal options such that this factor must also be considered in deciding where to disposal of site specific

materials. The potential for liability in the United States is always present, since the radioactive component of the materials is a hazardous substance under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and liability arises for arrangers for disposal regardless of fault or share. The United States government is the single largest generator of hazardous waste and it would be difficult, if not impossible, to find a RCRA disposal facility that has not received waste from the federal government. Consequently, the United States may already have liability at most of the licensed or permitted disposal facilities.

Other factors should be considered in deciding upon the best disposal option, including the specific waste acceptance criteria and regulatory approval for the facility, the design criteria and worker protectiveness standards followed at the facility, the transportation receipt and unloading available at the facility, and, of course, the cost for transportation and disposal at each facility under consideration. A related consideration is the procurement vehicles available to arrange for the transportation and disposal. USACE uses many different types of contracts, and all available alternatives should be considered to find the most effective and appropriate contract mechanism, considering cost, maintaining contractor responsibility for completion of the project, administrative convenience for the government, and the fundamental procurement requirements of fair and open competition and selection of a responsive and responsible contractor. Any contract, which is used for disposal of FUSRAP materials, should include all necessary information and require appropriate documentation and government approvals to ensure that all health and safety and regulatory requirements have been satisfied.

In order to achieve the Congressional mandate of completing cleanup work under FUSRAP in a more cost effective, timely manner, while assuring protection of public health and safety, USACE will determine all disposal options that are available for the types of waste at each of the FUSRAP sites. This paper discusses in detail the factors, which affect the ultimate decisions that will be made on a site-specific basis.

I. INTRODUCTION

With the passage of the Energy and Water Resources Appropriation Act of 1998, Public Law 105-62, beginning on 13 October 1997, the United States Army Corps of Engineers (USACE) was designated by Congress with responsibility to manage and execute the Formerly Utilized Sites Remedial Action Program (FUSRAP) previously managed by the United States Department of Energy (DOE). Many of the sites currently in FUSRAP are on the verge of undergoing the final remedial action stage and will likely require, as part of the final remedy, the off site disposal of hazardous substances, including primarily radioactive materials with varying levels of radioactivity, as well as other hazardous substances in some cases. Perhaps as much as two million cubic yards, or more, of radioactive materials, and potentially some materials also contaminated with hazardous wastes, will eventually require off site disposal from FUSRAP sites.

In the course of managing the FUSRAP, DOE had recently established the policy that much of the radioactive waste from these sites be sent off site for disposal at a facility licensed by the United States Nuclear Regulatory Commission (NRC) to receive certain byproduct material as defined in the Atomic Energy Act (AEA), 42 U.S.C. 2011 et seq., specifically in section 2014(e)(2). See, 63 Fed. Reg. 13396, 19 March 1998, "DOE Notice of intent to conduct policy analysis; request for public comment", discussing the basic DOE policy regarding the use of disposal facilities licensed by either the NRC, or a State with licensing authority under the Atomic Energy Act, 42 U.S.C. 2021, an "Agreement State." This byproduct material is commonly referred to as "11(e)(2)" material for the statutory section, which contains the definition. It is somewhat of a misnomer, since the original section 11 of the Atomic Energy Act of 1954, 68 Stat. 922, did not contain this second part of the byproduct definition. It was added in an amendment in 1978 in Public Law 95-604, the Uranium Mill Tailings Radiation Control Act. The AEA originally regulated only 11(e)(1) byproduct material, which is material made radioactive in the processing of special nuclear material. In 1978, Congress expanded jurisdiction of the AEA to include all the wastes generated in the course of processing ores for uranium or thorium, if they were processed for their source content. This definition excludes the wastes of processing ores for other mineral content even if the wastes contain radioactive, but did greatly expand the quantity of materials subject to regulation under the AEA.

The DOE policy, which is not under review in this paper, resulted in a situation in which the low specific activity waste (i.e., the bulk of the FUSRAP waste) was disposed at only one AEA licensed facility. This facility is in the western United States, remotely located from all of the current FUSRAP sites, with resulting higher transportation costs. Utilizing only one licensed disposal site results in no competition for establishing unit disposal rates, overall capacity limitations, and transportation congestion which may yield delays in completing the removal of the radioactive waste materials from the sites.

USACE came into FUSRAP with no established agency policy specifically regarding

disposal of such low specific activity waste, other than to comply with all applicable laws and regulations, and to ensure the protection of public health and the environment, the same as the agency policy regarding disposal of all hazardous, toxic and radioactive waste. USACE has, however, had experience disposing of low specific activity waste from Department of Defense facilities, the United States Environmental Protection Agency (EPA) National Priority List sites, and for other federal agency customers. Recognizing the negative impact of confining disposal options to a single, remotely located facility, USACE has determined to evaluate the types of waste materials at FUSRAP sites, the legal authorities which govern these materials, and the range of potential disposal sites which are approved to accept these types of materials. This approach is intended to ascertain if competition can be secured for the disposal of FUSRAP waste, while remaining fully in compliance with all laws and protecting the public interest, both from the health and fiscal perspectives.

After coordinating with the NRC, the EPA, a number of state environmental and/or nuclear regulatory agencies, and private facilities, and after conducting independent research of the technical, legal and practical aspects of this issue, USACE has determined that there may be a number of facilities available to accept most of the different types of waste from FUSRAP sites. With the expansion of competition, it is envisioned that the remedial actions necessary at these sites which involve off site waste disposal can be accomplished at less cost to the taxpayer, and in a more timely fashion, while still achieving compliance with applicable laws and regulations and protection of human health and the environment. The following is a discussion of the basis for and results of this evaluation.

II. DEFINITIONS

Alternate Disposal. Disposal of waste containing residual radioactive material at landfills that are not licensed by the NRC or an Agreement State to accept AEA regulated radioactive material.

Byproduct Material. There are basically two types of byproduct material. The first is produced by a nuclear reactor and the second is produced by the uranium and/or thorium mining process. A more precise definition of "byproduct material", identified in Section 11(e) of the Atomic Energy Act, is (1) any radioactive material (except special nuclear material (SNM)) yielded in or made radioactive by exposure to the radiation incident to the process of producing or utilizing SNM, and (2) the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content (i.e., "11(e)(2) material"). (See discussion in Section V, below, concerning the distinction between 11(e)(2) material subject to NRC jurisdiction and similar materials processed at an earlier time, which are not subject to NRC jurisdiction.) The entire process waste is byproduct material, not just the radioactive component. Other materials added to or mixed with byproduct materials at a later time are not considered part of the byproduct material.

Hazardous Waste (HW). A subset of solid waste regulated pursuant to the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq. (RCRA) that may (A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed. The United States Environmental Protection Agency (EPA) has established the following criteria identified in 40 CFR 260 and 261: specifically listed as a hazardous waste by EPA; or exhibits one or more of the characteristics of hazardous waste (ignitability, corrosivity, reactivity, and/or toxicity).

High-Level Radioactive Waste (HLRW). NRC defines HLRW in 10 CFR 72 as the highly radioactive material resulting from the reprocessing of spent nuclear fuel, including liquid waste produced directly in reprocessing and any solid material derived from such liquid waste that contains fission products in concentrations that require isolation.

Low-Level Radioactive Mixed Waste (LLMW). LLMW is waste that contains low-level radioactive waste (LLRW) and hazardous waste (HW) that either (1) is listed as a HW in Subpart D of 40 CFR 261 or (2) causes the LLRW to exhibit any of the HW characteristics identified in Subpart C of 40 CFR 261. Since 11(e)(2) material is not LLRW, when 11(e)(2) material (either pre-1978 or post-1978) is combined with HW, it is not LLMW. Likewise, naturally occurring radioactive material (NORM) combined with HW is not LLMW. (See discussion in Section V, below, concerning the distinction between 11(e)(2) material subject to NRC jurisdiction and similar materials processed at an earlier time, which are not subject to NRC jurisdiction.)

Low-Level Radioactive Waste (LLRW). Both the Nuclear Waste Policy Act of 1982 and the

Low-Level Radioactive Waste Policy Amendments Act of 1985 define LLRW as radioactive material that (a) is not high-level radioactive waste, spent nuclear fuel, transuranic waste, or byproduct material as defined in Section 11(e)(2) of the Atomic Energy Act of 1954 and (b) consistent with existing law, is classified by NRC as LLRW. The NRC has a LLRW classification system codified at 10 CFR Section 61.55. NRC classifies waste to set criteria for the construction of new LLRW disposal facilities. The classification system is not intended to be used for reasons beyond the scope of that objective by the NRC.

Mixed Waste (MW). MW is defined by RCRA as waste that contains both hazardous waste and source, special nuclear, or byproduct material subject to the AEA. It is jointly regulated by NRC or Agreement States and EPA or EPA's RCRA Authorized States. MW may be byproduct material only if the hazardous waste component is not a naturally occurring part of the byproduct material, i.e. either a natural component of the ore or normally resulting from the processing of the ore, but is due to other disposal or release practices which contributed the hazardous constituent or if mixed with listed hazardous waste.

Naturally Occurring or Accelerator Produced Radioactive Materials (NARM). Radioactive materials not governed by the Atomic Energy Act that are naturally occurring or produced by an accelerator. NARM waste is not a form of LLRW and is not regulated by NRC.

Naturally Occurring Radioactive Material (NORM). NORM is a subset of NARM and refers to naturally occurring materials not covered under the Atomic Energy Act whose radioactivity has been enhanced usually by mineral extraction or processing activities. This term includes unimportant quantities of source material, as defined in 10 CFR 40.13. It is not used to describe the natural radioactivity of rocks and soils or background radiation.

Ore. A natural or native matter that may be mined and treated for the extraction of any of its constituents or any other matter from which source material is extracted.

Solid Waste. As defined under RCRA, any solid, semi-solid, liquid, or contained gaseous materials discarded from industrial, commercial, mining, or agricultural operations, and from community activities. Solid waste does not include source, special nuclear, or byproduct material as defined by the AEA.

Source Material. NRC defines source material in 10 CFR 40 as (1) uranium or thorium, or any combination thereof, in any physical or chemical form or (2) ores which contain by weight one-twentieth of one percent (0.05%) or more of (i) uranium, (ii) thorium or (iii) any combination thereof. Source material does not include special nuclear material. Source material is one type of LLRW. NRC exempts from their regulation, any materials which are not ores and which contain uranium or thorium in concentrations below the 0.05% limit provided for ores. 10 CFR 40.13(a). Except for ores under (2), herein, source material is not considered to include the non-radioactive component of a mixture. Note also, source material and 11(e)(2) byproduct material

are mutually exclusive definitions. If material is 11(e)(2) type byproduct material, it is not source material regardless of the amount of radioactive constituents present.

Special Nuclear Material (SNM). NRC defines SNM in 10 CFR 70 as (1) plutonium, uranium-233, uranium enriched in the isotope 233 or in the isotope 235, and any other material which the Commission, pursuant to the provisions of section 51 of the act, determines to be SNM, but does not include source material; or (2) any material artificially enriched by any of the foregoing but does not include source material.

Spent Nuclear Fuel (SNF). NRC defines SNF in 10 CFR 72 as fuel that has been withdrawn from a nuclear reactor following irradiation, has undergone at least one year's decay, and has not been chemically separated into its constituent elements by reprocessing.

Transuranic Waste (TRUW). TRUW refers to radioactive waste that, without regard to its source or form, contains more than 100 nanocuries per gram (nCi/g) of alpha emitting isotopes of atomic number greater than 92 and half lives greater than 20 years.

III. CHARACTERIZATION IS THE GOAL

As discussed above, the waste, which is known to be present or likely to be found at FUSRAP, sites falls within a variety of definitions established in federal statutes and regulations. As part of the responsibility for execution of cleanup of hazardous substances under the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. 9601 et seq. (CERCLA), whenever any materials are to be disposed off site, USACE must comply with all laws and regulations which apply to transportation, processing, treatment, storage or disposal of the materials. Those laws and regulations establish the requirements, which apply, to the various types of materials to be disposed off site. USACE must characterize these materials, to determine which laws and regulations apply to the types of materials present, and to ensure that they are managed and disposed in compliance with those laws and regulations. See, for example, the Resource Conservation and Recovery Act, 42 U.S.C. 6901 et seq. (RCRA), section 42 U.S.C. 6922, "Standards applicable to generators of hazardous waste." There is no unique or extraordinary requirement for an agency to be "qualified" to characterize waste for off site disposal from FUSRAP sites. Neither is there any exception from the standard duties of generators to properly characterize their waste materials. USACE is not "reclassifying" waste. USACE will identify through appropriate analytical methods and historic process research the types of waste at each of the FUSRAP sites, and will use that characterization to determine which facilities may accept that type of waste (or types in some instances).

A review of the definitions in Section II, above, reveals that an essential part of the characterization process is to gather, read and evaluate historic process information. The definitions of AEA regulated materials depend not only on a laboratory analysis of the materials, but also on whether the materials were processed, when that processing occurred, and what was the primary purpose of that processing. Determining if a waste is listed hazardous waste depends on how the waste was generated, as well as the process, which generated the waste. For both RCRA listed waste and 11(e)(2) byproduct materials subject to NRC licensing, the date of the processing and disposal activities can be a major factor in determining regulatory jurisdiction. Since many FUSRAP sites have been the location of both processing activities in support of the Manhattan Engineer District (MED) or Atomic Energy Commission (AEC) atomic weapons programs, and later commercial process activities, both government historic records and available industry records must be collected and reviewed to obtain the necessary process information.

In Section IV, below, the currently presumed waste types at the FUSRAP sites are listed, however, this is not a definite determination of wastes present for purposes of decision making on remedial actions or off site disposal. At a number of the FUSRAP sites, the materials present have not been adequately characterized to reliably establish the type(s) of waste present, which includes historical research to determine the processes or activities which resulted in the waste materials. For many of the sites, the non-radioactive hazardous substances have also not been adequately characterized, including research of post 1980 waste generating processes by other

parties operating on the sites to determine if any RCRA listed waste is present. USACE will conduct the necessary sampling and analyses, as well as historical research, to correctly characterize all waste for off site disposal and to support valid CERCLA response action decisions.

IV. PRELIMINARY DETERMINATION OF RADIOACTIVE MATERIALS TYPES AT CURRENT FUSRAP SITES

Site Name	Preliminary Waste Type	Site Name	Preliminary Waste Type
Ashland 1 & 2	11(e)(2)Material	Bliss & Laughlin	NORM
Colonie	LLRW	CE	LLRW, SNM, 11(e)(2)Material
Dupont	LLRW or MW	Larry Avenue	11(e)(2)Material
Linde	11(e)(2)Material	Luckey	11(e)(2)Material or NORM
Madison	NORM	Maywood	11(e)(2)Material
Middlesex MML Pile	NORM with HW	Middlesex VP Pile	NORM
Niagara Falls Storage Site	11(e)(2)Material	New Brunswick	LLRW
Painesville	11(e)(2)Material or NORM	Seaway	11(e)(2)Material
Shpack	11(e)(2)Material	St. Louis Airport Site	11(e)(2)Material
St. Louis Airport Site VPs	11(e)(2)Material	St. Louis Downtown Site and VPs	11(e)(2)Material
Ventron	NORM	Wayne**	NORM or 11(e)(2)Material
W.R. Grace, MD**	11(e)(2)Material		

*The contamination may be LLRW (source material), as opposed to NORM, if the concentration of uranium and/or thorium in the waste exceeds 0.05% by weight.

**Natural ores that are processed for rare-earth or other metals have significant concentrations of radioactive elements. The tailings produced (which consist of the crushed depleted ore and the depleted solution after recovery of metals and rare earths) are not 11(e)(2) material. This is because the ore was not processed primarily for its source material content but for the rare earth or other metal. These types of tailings as well as thorium processing tailings, were disposed at the Wayne, NJ and W.R. Grace, MD site.

V. LEGAL STATUS OF WASTE TYPES AND REGULATORY AUTHORITIES

USACE is conducting response action work at the FUSRAP sites in accordance with CERCLA and its implementing regulation, the National Oil and Hazardous Substance Response Contingency Plan, 40 CFR Part 300 (NCP). USACE assumes the role of lead federal agency with responsibility for necessary response actions for releases of hazardous substances authorized to be addressed under FUSRAP, i.e. those hazardous substances resulting from past MED or AEC site activities in support of the nation's early atomic weapons and energy program, and those hazardous substances present at the FUSRAP sites directed to be included in the program by Congress. CERCLA provides, in Section 121(e)(1), 42 U.S.C. 9621(e)(1), that no federal, state or local permits are required for the conduct of response actions onsite. The NCP clarifies that this applies to all federal agency lead responses, 40 CFR 300.400(e), but not to private party lead responses, 40 CFR 300.700(c)(5)(iii). Therefore, no permits which might otherwise be required for any part of the work involved in responding to FUSRAP hazardous substances will be required for onsite work, including areas immediately contiguous to the sites. Any portions of the response actions which are entirely off site are subject to legally applicable permit requirements. Facilities which receive the waste materials for treatment, storage or disposal off site are required to have all applicable permits. Thus, the critical question becomes what permits or licenses are legally applicable to persons who receive the types of FUSRAP waste, which will be sent off site for disposal.

The Atomic Energy Act (AEA), 42 U.S.C. 2011 to 2297g-4, as amended, establishes regulatory authority over certain activities involving a number of the types of radioactive materials, but not all. The definitions of the different types of radioactive materials are provided in Section II, above. The regulatory authority created in the AEA is exercised by the NRC. The AEA governs the ownership, production, and distribution of special nuclear material. 42 U.S.C. Sections 2061 - 2078. The NRC has promulgated regulations for issuing domestic licenses for special nuclear material at 10 CFR Part 70. The AEA governs the mining, processing and distribution of source material. 42 U.S.C. 2091 - 2099. The NRC regulations for issuing licenses for source material are located at 10 CFR Part 40, and these include licensing for and standards relating to onsite disposal in piles of mine tailings or wastes resulting from source material production, at Appendix A. The AEA governs the management and distribution of byproduct material, including the management of disposal sites. 42 U.S.C. 2111 - 2114. The NRC regulations for licensing of the management of byproduct material are at 10 CFR Parts 30, 31, 32 and 33. This includes both 11(e)(1) material, which is material yielded in or made radioactive by exposure to the radiation incident to the process of producing or utilizing special nuclear material, and 11(e)(2) material, which is the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content. 42 U.S.C. 2014(e). Low-level radioactive waste disposal is governed by the AEA, which provides that it is radioactive material which is not high-level radioactive waste, spent nuclear fuel, or 11(e)(2) byproduct material, and is classified as such by the NRC. 42 U.S.C. 2021b(9). The NRC has developed criteria for low-level radioactive waste, designated as Class

A, B or C, for purposes of disposal facility acceptance criteria at 10 CFR Section 61.55. This is part of a set of regulations governing disposal for others on land of radioactive materials other than high level radioactive waste (10 CFR Part 61).

The NRC is authorized to enter into agreements with States to allow states to license the handling of special nuclear materials in quantities not sufficient to form a critical mass, source materials and byproduct materials, both 11(e)(1) and 11(e)(2). 42 U.S.C. 2021(b). States may also be authorized by the NRC to regulate the disposal of low-level radioactive waste under an agreement with the NRC. 42 U.S.C. 2021b(1)(B). The NRC retains its regulatory jurisdiction for radioactive materials not transferred to the state pursuant to the agreement. Thus, materials or entities not regulated by the States are still subject to NRC regulation. Finally, States are authorized by the AEA to regulate radiologic hazards for low-level radioactive waste, which has been exempted by regulation by the NRC. 42 U.S.C. 2023. Some states regulate such materials, as NORM or as NARM.

The other general category of waste materials from FUSRAP sites which are subject to regulation are solid and hazardous wastes. Pursuant to RCRA, the EPA regulates the management of hazardous wastes, which may be either listed wastes specified in 40 CFR Part 261, Subpart D, or characteristic hazardous wastes as described in 40 CFR Part 261, Subparts B and C. 42 U.S.C. 6901 et seq., Section 6921. RCRA excepts source, special nuclear, or byproduct material as defined in the AEA from the definition of solid waste, and thus from regulation under either the solid or hazardous waste provisions of RCRA. 42 U.S.C. 6903(27). EPA can authorize a state to regulate hazardous waste management in lieu of the federal RCRA program, if the state program is approved by EPA. 42 U.S.C. 6926. If hazardous wastes are present in waste materials which also contain AEA regulated radioactive materials, these wastes are known as "mixed wastes", 42 U.S.C. 6903(41), and are potentially regulated by both the EPA, or an authorized state, and the NRC. If materials are byproduct materials under the AEA, and are potentially characteristic hazardous waste due to the presence of constituents which are natural to the original ore or were added in the processing for special nuclear materials or uranium or thorium, then this characteristic is part of the AEA regulated byproduct materials and exempt from RCRA due to the definition of solid waste. If other characteristic hazardous waste or listed hazardous waste have been added to byproduct materials, then the resulting materials are mixed wastes. State RCRA authorization must specifically include mixed wastes for this regulatory jurisdiction to be held by a state. There are a few states, which are authorized to regulate hazardous wastes, but not mixed wastes. In some of these RCRA authorized states, the state will regulate hazardous wastes and may also regulate NORM or NARM, and the RCRA hazardous waste management facility permit may include authorized low levels of radioactivity to be present in hazardous wastes accepted at the facility, even if the state is not regulating mixed waste or the facility is not permitted to treat, store or dispose of mixed waste. Solid wastes are authorized by RCRA to be regulated by the states, with certain minimum standards for regulation. Solid waste disposal facilities are known as Subtitle D facilities, for the chapter of the 1976 law which recognized the states' authority to regulate non-hazardous solid waste

management facilities, as distinct from Subtitle C facilities, which are RCRA regulated hazardous waste management facilities. Codified at 42 U.S.C. Section 6941 - 6949a, Subchapter IV. All states exercise this authority, and the state law will establish the standards applicable to solid waste disposal, including in some cases low levels of radioactivity, which may be allowed in solid waste. The law of the specific state in question must be consulted to determine the standards, which apply to any disposal facility under consideration for receipt of waste from any project.

As noted in Section IV, above, some of the materials from FUSRAP sites which will be disposed off site may fit the definition of 11(e)(2) byproduct materials. USACE contacted the NRC in writing to determine their regulatory policy concerning these materials from certain FUSRAP sites. The NRC was specifically asked about eight sites which, based on information compiled by DOE, were operated by contractors for the Manhattan Engineer District (MED) or the Atomic Energy Commission (AEC) during or after World War II (into the 1950's in some cases) to process ores to extract uranium in support of the nation's atomic weapons program. At these sites, there are radioactive materials present resulting from these early operations which require response under CERCLA for the protection of human health and the environment. There may also be other non-radioactive hazardous substances present, which were disposed during those MED, and AEC operations. In response to questions from USACE, the NRC stated in writing that no NRC license is required for USACE or its contractors to handle these historic radioactive materials, and further that no NRC license is required for off site disposal of these materials. This determination is based on the fact that the AEA 11(e)(2) definition of byproduct materials subject to AEA regulation was not enacted until 1978 as part of the Uranium Mill Tailings Radiation Control Act (UMTRCA), Public Law 95-604. The regulatory jurisdiction over 11(e)(2) materials now exercised by the NRC is not deemed to be retroactive to materials processed prior to the November 1978 date of the law creating this jurisdiction. The NRC advises that neither an NRC license nor an Agreement State license (issued pursuant to authority delegated under the AEA) is required for handling the materials from the specified sites, and therefore no NRC or Agreement State license is required for disposal of the materials from the sites (see letter of NRC to USACE, dated 2 March 1998 included as Attachment 1). The NRC also stated that it would not object to the disposal of FUSRAP waste materials which are pre-1978 11(e)(2) byproduct materials at RCRA Subtitle C hazardous waste management facilities, if such disposal is in compliance with applicable state law. In further clarifications with the NRC, this jurisdictional limitation applies to all pre-1978 MED or AEC uranium or thorium milling sites, or sites with materials, which are byproducts of processing from those sites. Thus, gathering all available historical documents regarding activities at the site to determine the origin of the radioactive materials which are present is critical to correct characterization of the materials for disposal purposes. In addition, the NRC has clarified in discussions that the determination of lack of regulatory jurisdiction due to the prospective application of UMTRCA does not change the proper characterization of the materials as 11(e)(2) type byproduct materials.

The AEA also contains provisions in 42 U.S.C. 2021b to 2021j encouraging the states to

develop low-level radioactive waste disposal facilities or to enter into compacts among several states to develop facilities to serve the member states for the compact. These provisions were enacted in 1980 in the Low-Level Radioactive Waste Policy Act, Public Law 96-573, with a major amendment in 1985 in the Low-Level Radioactive Waste Policy Amendments Act, Public Law 99-240. Most states have entered into regional compacts (nine compacts are now active; the Texas, Maine, and Vermont compact has been introduced for Congressional consent). The Northwest Compact is the only sited compact region with an active regional disposal facility. Coordination with the Northwest Compact will be required prior to importation of waste into this compact (i.e., prior to shipment of waste to US Ecology, Inc. in Richland, WA). Exportation of waste from regional compacts within which FUSRAP sites exist will not require compact notification/coordination. (See Attachment 2 for a map depicting the current LLRW disposal compacts, including notations with the current and future states which will be disposal site "hosts".)

Compacts may prohibit the disposal of low-level radioactive waste from outside the member states in certain circumstances, or charge increasing surcharges for states which have neither developed their own disposal facility nor entered into a compact which develops a disposal facility, subject to emergency authority in the NRC to grant access to a licensed compact facility if necessary to eliminate an immediate and serious threat to the public health and safety or the common defense and security. 42 U.S.C. 2021e and 2021f. The statute specifically allows a compact facility to refuse to accept for disposal material identified under the FUSRAP, although a compact facility is not prohibited from accepting FUSRAP waste for disposal. 42 U.S.C. 2021c(a)(2)(B). It goes on to state that the federal government is responsible for disposal of low-level radioactive waste generated by DOE, the United States Navy as a result of decommissioning of Navy vessels, or generated by the federal government as a result of any research, development, testing, or production of any atomic weapon. 42 U.S.C. 2021c(b)(1). It is possible that this last provision regarding low-level radioactive waste generated by the federal government as a result of an atomic weapons production program may encompass some FUSRAP materials. DOE does operate certain disposal facilities which will accept DOE and defense low-level radioactive waste of higher levels of radioactivity, and if some of the FUSRAP materials cannot be disposed at any other facility, it may be possible to arrange for their disposal at one of the DOE facilities.

As noted above, the NRC regulates the disposal of byproduct materials from source material mines or milling facilities in tailings or disposal piles on the property. 10 CFR Part 40, Appendix A. A current license holder may seek an amendment to its license to allow the acceptance of uranium processing byproduct materials or materials similar to uranium processing byproduct materials and to the wastes already in the pile or impoundment, if certain protective conditions are met. 10 CFR Part 40, Appendix A, Criteria 6A, para. (3). This type of amendment may be available for the FUSRAP wastes which are pre-1978 11(e)(2) materials, if an existing licensed facility is interested in taking the materials. Several such facilities exist in the United States and some of them have expressed an interest in FUSRAP.

The NRC has been requested by some source material licensees and other parties to allow the disposal of similar types of materials, which do not meet the AEA definition of 11(e)(2) byproduct materials at these sites. In guidance issued in 1995, the NRC determined that it would consider allowing disposal of these materials subject to site-specific license approval, and also subject to a number of conditions. "Final Revised Guidance on Disposal of Non-Atomic Energy Act of 1954, Section 11(e)(2) Byproduct Material in Tailings Impoundments; Final Position and Guidance on the Use of Uranium Mill Feed Materials Other Than Natural Ores", 60 FR 49296, 22 September 1995. See also, Request for Public Comment on this proposed guidance, 57 FR 20525, 13 May 1992, which includes a more extensive analysis and discussion of the issues. It is noteworthy that no mixed waste or RCRA hazardous waste will be allowed by the NRC to be disposed at these sites, and further that either DOE or the state where the disposal site is located must concur with the proposal, since one of those entities is required to take title to the site after closure. However, the proposed guidance specifically discussed the potential for waste from FUSRAP sites to be disposed at these types of AEA licensed facilities. 57 FR 20527. This amendment process may be useful for some of the FUSRAP materials, which are not pre-1978 11(e)(2) byproduct materials, if suitable licensed facilities are interested.

VI. POTENTIAL DISPOSAL FACILITIES FOR FUSRAP WASTES

The USACE Hazardous, Toxic and Radioactive Waste Center of Expertise (HTRW CX) investigated several types of facilities for the disposal of FUSRAP wastes. The facilities examined were licensed LLRW disposal facilities, licensed mill tailings impoundments, licensed and permitted mixed waste facilities, and RCRA Subtitle C permitted facilities. Table VI.1 is a summary of the information that was gathered through facility literature, discussions with facility personnel and discussions with state regulators. Table VI.1 should not be considered as inclusive (i.e., containing the only possible facilities/companies that may have a capability to accept FUSRAP wastes). The table is a representative sampling of the most likely types of disposal facilities.

Table VI.1 : Potential Disposal Facilities for FUSRAP Wastes

Facility	Pre-1978 11(e)(2)	NORM	Source Material	Special Nuclear Material	LLRW	Pre-1978 11(e)(2) and HW	Mixed Waste
Envirocare, UT	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Laidlaw Facilities (SC, OK, CA)	Yes (1)	Maybe	Maybe	No	No	Yes (1)	No (2)
Chem Nuclear Barnwell, SC	Maybe (9)	Yes	Yes	Yes	Yes	Yes (3)	No (3)
Nevada Test Site	No (4)	No (4)	No (4)	No (4)	No (4)	No (4)	No (4)
US Ecology Facilities (WA, NV, TX)	Yes (1)	Yes	Yes	Yes	Yes	Yes (1)	No (2)
DOE Hanford, WA	No (5)	No (5)	No (5)	No (5)	No (5)	No (5)	No (5)
Waste Control Specialists, TX	Yes (1)	Yes	No	No	No	Yes (1)	No (2)
Envirosafe of Idaho	Yes (1)	Yes (6)	No	No	No	Yes (1)	No (2)
Dawn Mining, WA	Yes (7)	No	No	No	No	No	No
Rio Algom Mining, NM	Yes (8)	No	Maybe	Maybe	No	No	No
White Mesa Mill, UT	Yes (8)	No	Maybe	No	No	No	No

NOTES for Table VI.1:

(1) The radioactive waste is not NRC regulated and the material meets the facility permit restrictions and is approved by the state regulators to be disposed in the facility.
(2) Mixed waste by definition is NRC and EPA regulated waste. This facility(ies) may accept commingled RCRA hazardous waste and radioactive material that is not NRC regulated subject to the facility permit requirements.
(3) Radioactive waste must be rendered non-hazardous for all RCRA characteristics of hazardous waste prior to shipment to Barnwell and cannot be a RCRA Listed hazardous waste.
(4) Nevada Test Site does not currently accept FUSRAP waste. The waste must be classified as DOE "Defense Related". See discussion in Section V, above for potential for use of DOE facilities.
(5) Hanford does accept DOE "non-defense related" waste. Hanford is permitted to accept DOE FUSRAP waste (except Mixed Waste and LLRW) only from the Colonie Interim Storage in NY. Shpack Landfill in MA. and Ventron Site in MA. New sites can not be presently added and determination must be made as to whether Hanford can still accept waste from the three sites now that DOE is not executing FUSRAP. See the discussion in Section V. above, for potential for use of DOE facilities.
(6) NORM is not NRC regulated and a letter from the state of origin may be required to accept waste for disposal. The facility currently has a 0.15milliR/hr on package surface limitation on all waste.
(7) Facility has a license to accept 11(e)(2) but is still finalizing their operating procedures for state approval.
(8) DOE is to take ownership of site after decommissioning, since responsibility for mill tailings reverts to DOE under UMTRCA. This future liability may impact whether the facility could accept Pre-1978 UMTRCA 11(e)(2) material for alternate feed processing. A facility may need to amend their license to accept FUSRAP waste, from the individual sites.
(9) The state of South Carolina currently does not license the facility to accept 11(e)(2) material since the state does not have an agreement with the NRC on 11(e)(2). See discussion in Attachment 3.

A few of the facility personnel cautioned that the answers provided to the HTRW CX are preliminary and are based on their waste acceptance criteria from their operating permits. Definitive answers would require waste audits on the actual FUSRAP waste intended for disposal, followed by approval from their facility regulators. It became evident that each facility had unique operating permits and waste acceptance criteria that are too detailed to capture in Table VI.1. A brief summary of the facility information is provided in Attachment 3. The table and the specific facility information should be used as the starting point for discussions with the facility managers to verify that the specific FUSRAP waste meets the acceptance criteria for the facility. Each project will continue to require an evaluation of the specific waste for regulatory drivers that impact the disposal options.

Table VI.1 does not include a category for non-radioactive, non-hazardous waste debris disposal. Solid waste disposal regulations in the state of the individual FUSRAP sites will need to be evaluated to determine the appropriate method of debris disposal (e.g. RCRA Subtitle D facility). The HTRW CX did not survey the individual states to capture the requirements for debris disposal.

The waste acceptance criteria for radioactive debris varies for the individual disposal sites. Some facilities only accept debris, which meets certain dimensional limitations. Likewise there may be different unit costs for disposal of strictly debris versus mixtures of debris and soil. It may be appropriate, as site conditions permit, to mix radioactive soil with contaminated debris to achieve the optimum unit disposal rate.

There were several RCRA Subtitle C facilities that were contacted that indicated that their permits precluded them from accepting FUSRAP waste with any amount of radioactivity. A RCRA Subtitle C facility in NY state was interested but discussions with the state regulator indicated that they would only approve material that had very low levels of residual radioactivity. A RCRA Subtitle C facility in the state of Illinois was not interested in FUSRAP material even if the amount of radioactivity did not exceed a level that the state would approve. A facility in Ohio was not interested because of concern with permit issues but directed us to another company facility in Idaho.

The HTRW CX has confidential cost data for several of the disposal facilities but the rates should be obtained directly from each facility on a case by case basis for the specific type of FUSRAP waste that will be generated. The cost information would be difficult to capture in generic terms since the fee schedules are different for the facilities and it depends on the type of treatment that the facility may need to provide before placement in their disposal facility. Attachment 3 contains the POCs for each of the facilities, which will need to be contacted to obtain specific cost data. The cost data from the facilities does not include the related costs necessary to get the waste from the site to the disposal facility. The Districts will need to obtain total transportation costs (truck and rail), waste treatment as required (render non-hazardous), waste packaging (if facility can not accept bulk shipment) and any fees imposed by the state where the facility is located.

VII. STATE RCRA AND RADIOLOGICAL REGULATORS INFORMATION

The state regulators play a major role in determining whether a facility can accept specific FUSRAP wastes. Typically, District personnel may contact the facility to determine the appropriate state persons with whom to coordinate waste acceptance. Some facilities will need to coordinate the approval through the state radiation regulators and the RCRA regulators. A couple of useful Internet addresses that will assist the Districts in determining points of contact with state regulators are as follows:

State RCRA POCs: *http://www.epa.gov/epaoswer/hazwaste/permit/pubpart/appendb.pdf*
Radiation POCs for States with NRC Agreements:
http://www.hsrd.ornl.gov/nrc/asframe.htm
States with EPA Mixed Waste Agreements:
http://www.epa.gov/radiation/mixed-waste/mw_pg6.htm

VIII. PROTECTIVENESS OF DISPOSAL FACILITIES

This paper identifies several existing available facilities that will provide an equal or increased level of environmental protection for the different types of FUSRAP wastes. USACE is required to comply with environmental regulations pertaining to the proper management and disposal of FUSRAP wastes. The level of radioactivity, characteristics and source (type) of the waste actually determine what radiological and environmental regulations govern the proper disposal of the material. USACE's desire is to expand the list of acceptable disposal facilities based on the specific parameters of the waste material while complying with federal and state environmental regulations.

Existing RCRA facilities offer a potential disposal option for FUSRAP wastes containing low level radioactivity. RCRA and NRC facilities have mandatory design features to protect the public and environment. Site geology and climate (rainfall) play very important roles in whether contaminants might be able to migrate. RCRA facilities require multiple liners (synthetic and clay) and leachate collection above and between the liners (not always present with an NRC licensed facility). The RCRA facilities offer some features that surpass the level of protectiveness provided by the radioactive disposal facilities licensed by the NRC and/or Agreement States. RCRA facilities do not require radiation protection plans for their site personnel since they currently are not receiving this type of waste. The RCRA facility personnel explained that if radioactive material is accepted, their site personnel protection plans will be revised if there is a potential for radiation exposure. Selection of a waste disposal facility should involve not only evaluation of the waste, the proposed disposal site, and facility regulatory requirements, but also potential exposure pathways and the potential dose to workers.

IX. LIABILITY FOR DISPOSED WASTE

Whenever materials are arranged for disposal, it must be considered that some future liability may attach to the generator as a result of this disposal. If the materials contain any hazardous substance, pollutant or contaminant within the definitions provided in CERCLA, and the lists promulgated by EPA at 40 CFR Part 302 pursuant to CERCLA, then the person who arranged for such disposal is potentially responsible for providing for or paying for the costs of response actions required as a result of the disposal, if it creates an unacceptable hazard to public health or welfare or the environment. 42 U.S.C. 9607(a). Federal agencies are subject to this liability the same as private persons. 42 U.S.C. 9620(a). This liability attaches regardless of whether the disposal facility is licensed or permitted by the NRC, the EPA or a state regulator at the time of the disposal. Liability under CERCLA is joint and several liability, and is not dependent on fault or negligence at the time of the arrangement for disposal. Other parties, such as current owners or operators, past owners or operators at the time of disposal, and transporters are also subject to this pervasive liability, 42 U.S.C. 9607(a), and they may seek contribution from one another for response costs under CERCLA. 42 U.S.C. 9613. The best means to avoid having to perform or pay for response actions is to arrange for disposal with a facility which has an appropriate permit or license for the type of waste to be disposed, and has in place all the financial assurance mechanisms required by the regulatory authority, although these are practical means of protection and not legal defenses. See, for example, RCRA Standards applicable to owners and operators of hazardous waste treatment, storage, and disposal facilities, 42 U.S.C. 6924. The NCP requires that whenever a federal agency arranges for off site disposal of hazardous substances, it must ensure that all necessary permits are in place and in good standing at the time of the disposal. 40 CFR 300. 440. These compliance assurances must be obtained by contacting the regulatory authority, and must be documented at the time of shipment.

X. PROCEDURAL REQUIREMENTS TO DISPOSE OF FUSRAP WASTE

All disposal facilities have waste acceptance criteria as a part of their operating permit(s) or license(s). Table VI.1 can assist in the identification of potential disposal facilities that should be contacted to verify their waste acceptance criteria. All potential disposal facilities should be contacted to verify their pre-acceptance process and time requirements necessary to get determinations. The facilities will need to have the waste accurately profiled for radioactivity and chemicals to be sure their facility can accept the waste. In some cases, the disposal facility will need to take the information to their state or federal regulators to seek approval to accept the waste. Ideally, all the disposal options should be known prior to solicitation of bids or issuing task orders to ensure there is no delay in project execution. Some alternate disposal facilities may require a determination from their state regulators before they can accept the material for disposal. Some of the disposal options might require an amendment to their NRC licenses (e.g. accept FUSRAP material as alternate feed for uranium mill processing) which can take several months to accomplish.

If the specific activity in the waste material exceeds 2000 pCi/g, averaged over the entire contents of the package, or there is a reportable quantity of a CERCLA hazardous substance, or the material is mixed with a hazardous waste, transportation of the waste material to a waste disposal facility must be performed in accordance with U.S. Department of Transportation regulations at 49 CFR Subchapter C, "Hazardous Materials Regulations". If FUSRAP waste is also RCRA regulated hazardous waste, EPA manifest requirements will be applicable, as well as DOT shipping requirements. Failure to comply with all requirements, which apply, to the type of waste present may result in civil penalties for the agency, and/or criminal penalties for the responsible individuals.

ER 385-1-80, Ionizing Radiation Protection; EM 385-1-1, Safety and Health Requirements Manual; and policy memorandum of 17 November 1997, USACE Implementation of DOD Charter for LLRW Disposal Program require that the HTRW Center of Expertise (CX) be notified of all radioactive waste disposal including FUSRAP wastes.

XI. PROCUREMENT OPTIONS

This paper is not intended to make decisions on how any particular waste will be disposed from any FUSRAP site. Once USACE is ready to proceed with a removal or remedial action under CERCLA which includes off site disposal, it must characterize the types of waste materials present and then follow the normal procurement processes provided for federal agencies to contract for services which may include transportation, treatment, storage or disposal. USACE utilizes a number of types of contract actions, ranging from site specific procurements to indefinite delivery type contracts already in place for general hazardous, toxic and radioactive waste sites. USACE may contract with a remediation contractor to manage a removal or remedial action, and could include a requirement that the prime contractor arrange for off site transportation and disposal through one or more subcontractors. In the alternative, USACE may contract directly with contractors for the services of transportation, or treatment, storage or disposal. Depending on what is appropriate at a given site, these contracts may be fixed price or cost reimbursement, and there may even be more than one contract created to deal with waste from a site, if that is the most effective. It may also be appropriate to separate the materials at a site for disposal by more than one off site facility, if there are separable types of waste subject to differing regulatory requirements, or if better prices can be obtained by taking this approach. The decisions on what to do at a given site will be made by USACE officials at the appropriate time, in compliance with applicable federal procurement laws and regulations. It is in the best interest of the government to have more options and more competition for these disposal services, as long as it is done in compliance with all applicable environmental and procurement laws and regulations, and with adequate protection of human health and the environment.

Whenever waste is contracted for disposal off site, procedures must be established in the contract to provide assurance to the government that all applicable laws and regulations will be complied with by each contractor and subcontractor that handles the materials, and to document that all actions taken were in compliance with those laws and regulations. In addition, the government owes a duty to the contractor(s) to provide all relevant information in the possession of the government that is necessary to achieve compliance. It is therefore required that all contracts for the disposal of FUSRAP waste under USACE cleanup responsibility include all available data on the characterization of the materials to be taken off site, including radioactive and other hazardous constituents or conditions affecting the ultimate disposition of the materials. If site information indicates the contaminants are not evenly distributed, then distribution data will also be included. For radioactive contaminants the total aggregated amount of radioactive material to be removed will be stated, as well as available estimates of the aggregate amounts expected to be included in any shipment. This should not be summarized data, but an appendix or other attachment to the contract scope, which contains actual final data. The known or estimated volume of the materials will be stated. If relevant and known, the hazardous waste code of the waste will be provided. If the hazardous waste code is unknown, the contract will require that this be determined prior to shipment through proper analytical testing or historical research and documented in a submittal subject to government approval. The contractor

responsible for subcontracting with the disposal facility, or the government office if contracting directly with the disposal facility, will be required to obtain written agreement from the facility to accept the materials, and to obtain written agreement from all regulators for the disposal facility to allow the facility to receive the described materials. This information will all be documented and retained in the agency contract files.

XII. CONCLUSION

USACE decided soon after being designated by Congress with responsibility to execute FUSRAP that a range of alternatives needed to be identified for disposal of FUSRAP waste at off site disposal facilities. Within the next few years, a large volume of FUSRAP waste will need to be disposed at off site facilities, and the public interest is best served if there is competition for these disposal services among facilities which are permitted by the necessary regulatory agencies and properly managing their facilities for the protection of human health and the environment. If a number of different sites can be identified to receive portions of these wastes, more waste can be managed for disposal at one time with resulting quicker completion of the projects, and substantial savings are possible due to competition among providers of these services. As has been discussed above, USACE has determined that there are a number of facilities available to take most of the different types of FUSRAP wastes, which should broaden competitive pricing of disposal costs.

These facilities may be regulated by the NRC for certain source or byproduct materials which are already subject to NRC licenses or which meet the definition of source materials subject to NRC standards. Facilities may be regulated by EPA or a RCRA authorized state with permits to receive hazardous wastes including low levels of radioactivity which will allow acceptance of some of the FUSRAP waste, or with RCRA permits and NRC or agreement state licenses to receive mixed waste with both hazardous and radioactive waste at levels within the limits of the facility permit. The facilities may be regulated by an Agreement State instead of the NRC with a license to dispose source material, regulated byproduct material, or low-level radioactive waste at either a state or compact facility. The facilities may be licensed by a state to accept NORM or NARM waste for disposal. For a carefully characterized portion of the waste from FUSRAP sites, the disposal facilities may be regulated by the state or local authorities as a Subtitle D solid waste facility, if there are no hazardous wastes present and there are no levels of radioactivity present which present a public health risk or regulated requirement. These materials will generally consist of a subset of the excavated materials from a site, which are segregated from the materials, which require disposal at facilities for regulated hazardous or radioactive waste.

At every site, USACE must and will do what is necessary to reliably characterize all potential regulated constituents in the FUSRAP materials at the site. This will include obtaining and reviewing historical records for process information on the historic operations which resulted in the FUSRAP designation, as well as any other, especially later, operations on the site which could have resulted in disposal of regulated waste materials. In addition, all necessary analytical testing will be conducted to identify the radioactive materials and/or hazardous waste present in the areas subject to FUSRAP response. USACE will then use this historic information and analytical data to determine the type of materials which will be disposed off site and the types of regulatory requirements which apply to those materials. Once this has been determined, then the range of possible disposal facilities discussed above will be reviewed to determine the

alternatives available for the types of materials to be disposed from the site. At that point, procurement alternatives will be reviewed to determine the most effective and appropriate contracting mechanism to arrange for the off site disposal of the materials. All applicable requirements for transport and disposal will be ascertained and complied with, as well as ensuring that the necessary licenses or permits are in good standing and there are no known impediments to the use of a particular facility. Only then will waste materials be released from a FUSRAP site for off site transportation, treatment, storage or disposal. By applying these processes, USACE will ensure that materials are disposed off site in a manner which protects public health and the environment, complies with applicable laws and regulations, and is the most cost effective for the type of materials present. USACE will make available the necessary technical and legal staff to ensure that these actions are executed properly by the responsible FUSRAP Districts, with assistance from the HTRW CX, and oversight by the Divisions and HQ USACE.

ATTACHMENT 1
NRC LETTER TO USACE DATED 2 MARCH 1998
HTRW CX LETTER TO NRC DATED 13 FEB 1998

ATTACHMENT 2
LLRW DISPOSAL COMPACTS

ATTACHMENT 3
WASTE DISPOSAL FACILITY ACCEPTANCE CRITERIA
ADDITIONAL INFORMATION

WASTE DISPOSAL FACILITY ACCEPTANCE CRITERIA

1. **Envirocare of Utah, Inc.** Envirocare has a Radioactive Material License and a RCRA Part B permit, which are both issued by the state of Utah. The facility also has a NRC license for disposal of 11(e)(2) material. Envirocare's licenses allow permanent disposal of Low-Level Radioactive Waste (LLRW), Naturally-Occurring Radioactive Material (NORM), 11(e)(2) material and Mixed Waste. LLRW must meet specified radioactive material license concentration limits, and 11(e)(2) must not have an average concentration above 2,000 pCi/g for any radionuclide in the uranium series or above 6,000 pCi/g for any radionuclide in the thorium series in any truck load or railcar. Sealed sources are not accepted at this facility.

CENWK currently has a negotiated nationwide contract with Envirocare for disposal of radioactive waste and mixed waste that may be used by other USACE Districts. The CENWK POC for this contract is Tom Urbaniak (816) 983-3580. The Envirocare facility is able to accept rail shipments (gondolas or intermodals) and truck transports. The facility is located 80 miles west of Salt Lake City near Interstate 80. Additional information on waste acceptance criteria, treatment capabilities, preshipment waste profiling, rail car dimension criteria and cost can be obtained by calling Susan Rice at (801) 532-1330 or accessing their Internet address at *http://www.envirocareutah.com*.

2. **Laidlaw Environmental Services/ECDC Environmental.** Laidlaw has several RCRA facilities that are not NRC licensed but may be suitable for disposal of low activity radioactive material and hazardous waste with residual radioactivity subject to the following conditions:

1) The NRC does not require the generator to dispose of the waste material in a licensed, radioactive landfill.

2) All waste hauling vehicles do not require DOT placarding for Class 7 material.

3) RCRA hazardous waste mixed with NORM, residual radioactive, or possibly source material (depending on contamination levels and the industry the material originated from) is preferred. If radioactivity is the only concern, USACE must request, in writing to Laidlaw that Subtitle C landfilling is a stipulation of disposal.

4) Approval of the origin state agency is not required.

5) Approval by the state agency(ies) which regulate the facility for each waste type for each project site before the facility will consider accepting the waste for disposal.

POC for all Laidlaw Disposal Facilities: David A. Ardito (732) 389-6554.

Preliminary Waste Acceptance Criteria:

A. Pinewood Landfill, Pinewood SC.

RCRA Subtitle C landfill capable of performing stabilization/solidification and microencapsulation of waste.

1. < 30pCi/g Radium, < 150 pCi/g all other isotopes.
2. Waste can be delivered directly to the facility via dump trailer, gondola

rail car or intermodal containers.
3. Material can be classified as NORM, residual radioactive, or in some cases, source material depending on contamination levels and its performance when the RESRAD model is applied. The state of SC informed the CX that they expect the waste to have very low levels of residual radioactivity that will require a determination on each waste type.
Facility POC Thomas Davis, (800) 445-2290

B. Lone Mountain Facility, Waynoka, OK.
RCRA Subtitle C landfill capable of neutralization, chemical reduction, chemical oxidation, alkaline chlorination, stabilization/solidification, micro and macro encapsulation.
1. < 30pCi/g total radioactive contamination
2. Waste can be delivered directly to the facility via dump truck, gondola rail car or intermodal containers.
3. Material can be classified as NORM or residual radioactive however the acceptance criteria may be lowered from < 30pCi/g depending on state of origin regulations pertaining to NORM.
Facility POC Ken Oshel (405) 697-3525 Area Code changing to (580) after April 1998.

C. Loken Facility, Buttonwillow CA
RCRA Subtitle C landfill.
1. <2000pCi/g total radioactive contamination and not defined as "NRC regulated source material".
2. Waste can be delivered directly to the facility via dump trailer, gondola rail car or intermodal container.
3. Material can be classified as NORM, residual radioactive or , in some cases, source material depending on contamination levels and the industry the material originated from.
Facility POC: David B. Nielsen, (805) 762-6200.

3. Chem-Nuclear Systems, Inc. Barnwell Waste Management Facility. This facility can accept any FUSRAP radioactive material except 11(e)(2). Barnwell can not accept NRC regulated 11(e)(2) material since the state of SC did not include 11(e)(2) as a part of their agreement with the NRC. However, Barnwell may be able to accept Pre-1978 UMTRCA 11(e)(2) material from FUSRAP sites, but the state of SC [POC Virgil Autry (803) 896-4244] will need to make a determination on each site. The state of SC would require notification on a case by case basis to evaluate whether Barnwell could accept a given waste and it will not violate any of their permit conditions. Barnwell has a restriction in their permit on the acceptance of radium that may require a state of SC waiver on an individual case basis.

A radioactive waste transport permit issued by the SC Dept of Health and Environmental Control is required prior to shipment to Barnwell. Transportation permits expire December 31 in the calendar year in which they are obtained. A permit application package can be obtained by calling SCDHEC at (803) 896-4240/4247. It takes approximately 10 days to obtain a permit. There are three classes of permits (X, Y, Z) with annual fees based on quantities and total activity. Barnwell can not accept any type waste from the state of North Carolina. The facility will not accept any Mixed Waste (Characteristic or Listed hazardous waste), PCBs or hazardous organic solutions even if they have been solidified. Characteristic hazardous waste must be rendered non-hazardous prior to shipment and will be approved for disposal on a case by case basis by the facility and the state of SC. Sealed sources and special form radioactive material require prior approval. Transuranic waste (TRUW) may be accepted. The facility accepts radioactive waste in designated containers by public highway only. Bulk waste shipments by truck and rail (gondolas or intermodals) must go to an adjacent facility (CNS Consolidation Facility) for proper packaging prior to transfer to Barnwell. A number of issues, including cost, would have to be addressed before the Barnwell facility would be a viable option for disposal of FUSRAP waste. The CNS consolidation facility did not appear ready to accept bulk shipments of FUSRAP waste by gondolas or intermodals. The POC at Barnwell is Jimmy Still (803) 541-5011 and the CNS POC is Angus Hinson (803) 541-5011.

4. Nevada Test Site (NTS) - This facility does not accept FUSRAP waste. NTS can accept DOE "defense related" waste for disposal not related to FUSRAP. According to Wendy Griffin of NTS, the following steps must be taken to send "defense related" waste to NTS:

a. Send a letter to DOE HQ requesting a "defense related" designation. The POC at DOE for this is Robert Campbell (301) 903-7127.
b. Contact Wendy Griffin (NTS) (702) 295-5751 for current waste acceptance criteria (#NV0325). The process takes 3 months to 1 year. However, they may stage the waste onsite.

According to Mr. Campbell, DOE radioactive disposal facilities are not permitted to accept non-DOE radioactive waste. He indicated that the issue of whether FUSRAP waste belongs to DOE or USACE requires HQ USACE and DOE resolution prior to any consideration as to whether DOE disposal facilities would be accessible to USACE for disposal of FUSRAP wastes. Furthermore DOE's Nationwide Environmental Impact Statement (NEIS), which includes waste acceptance criteria, is scheduled to have a Record of Decision issued at the end of calendar year 1998. This decision could potentially revise the DOE restriction of not accepting other radioactive waste from other non-DOE federal agencies. See Section V, above, for further information on the potential for use of these facilities.

5. U.S. Ecology - The Richland radioactive waste disposal facility accepts waste from the Northwest Compact and from the Rocky Mountain Compact. The POC at US Ecology is Arvil Crase (360) 754-3733.

According to Diane Hallisey of WA. the Low-Level Radioactive Waste Policy Amendments Act of 1985 (Public Law 99-240) prohibits U.S. Ecology from receiving DOE generated waste or weapons related waste at their Richland facility. Therefore, if the DOE generated waste is LLRW (i.e., NOT NORM/NARM), it cannot go to U.S. Ecology. If the waste is NORM/NARM, the waste may be able to go to U.S. Ecology. The following steps must be taken:

1. Send a letter to U.S. Ecology (Arvil Crase) stating that you need a NORM determination (examples available at the CX). Radioisotopes in average concentrations ≥1% by wt. of the total must be reported. The others can be noted as being present in concentrations < 1% and < 1 pCi/g.
2. U.S. Ecology will submit a request for determination to the state of Washington (POC is Dianne Hallisey (360) 407-7109).
3. It takes from 2 days to 2 months to get the determination. There is no charge for this.
4. Once it is obtained, the generator may apply for a permit from the state. The state will determine what types of characterization/lab analysis may be required. Permits expire March 31st of the following year.

The U.S. Ecology POC for all facilities is Kevin Wittmer (800) 955-3266.

A. Richland, WA LLRW Disposal Facility. The Richland Facility is not permitted to accept 11(e)(2) material for disposal however a determination by the state of WA is required for the pre-1978 UMTRCA 11(e)(2) material in light of the NRC determination that this material is not NRC regulated. The facility is not permitted to accept Mixed Waste but is allowed to accept the other types of FUSRAP wastes subject to the material meeting the facility's permit and state concurrence. The facility does not have direct rail access but has a rail yard for handling gondolas or intermodals approximately 5 miles from the facility. Facility POC is Arvil Crase (360) 754-3733.

B. Beatty, Nevada RCRA Subtitle C Landfill. The state of Nevada exempts the waste from radioactivity regulation when the amount of source material (uranium and thorium) present is less than 0.05% by weight. This equates to less than 340 pCi/g of natural uranium or 54.5 pCi/g of natural thorium or the sum of the fractions rule < 1. The state of NV has a specific list of exempt concentrations and quantities of radioactive material other than source material that would permit disposal in the Subtitle C landfill. This facility can not accept NRC regulated waste, LLRW or Mixed Waste. A request to accept hazardous waste that contains residual radioactivity below the exempt concentrations and quantities may be submitted for evaluation and approval to the facility and the state of NV. The facility does not have direct rail access and the unloading facilities are located in Las Vegas about 100 miles from the facility. The Facility POC is Doug Greffin (800) 239-3943.

C. Robstown, TX RCRA Subtitle C Landfill. This facility has a limited capability to accept FUSRAP wastes. The facility may be able to accept hazardous waste with a limited amount of residual radioactivity subject to state of TX regulations and the facility's permit. The facility located near Corpus Christie, TX and does not have direct rail access. The rail yard is approximately 20 miles away. The Facility POC is Doug Duncan (800) 242-3209.

6. DOE Hanford Facility, Richland WA. Hanford accepts only DOE wastes, which includes "non-defense related" waste. Hanford has accepted FUSRAP waste (excluding Mixed Waste and LLRW) from the Colonie Interim Storage in NY, Shpack Landfill in MA, and Ventron Site in MA, however, since DOE is no longer executing FUSRAP this would need to be verified according to Robert Campbell, DOE HQ (301) 903-7127. The discussion on ownership of the FUSRAP waste previously mentioned for the Nevada Test Site would be applicable to waste acceptance criteria at Hanford. Wastes from other than the three designated FUSRAP sites may not be accepted, even if the ownership of the waste can be resolved. Hanford will not accept FUSRAP waste from other sites until after the ROD for the National Environmental Impact Statement (NEIS) has been issued and a decision has been made on the final waste acceptance criteria from non-DOE federal agencies. See Section V, above for discussion on the potential for use of DOE facilities for disposal.

7. Waste Control Specialists, LLC Windmill Hill Facility, Andrews County TX. The WCS facility is licensed by the state of TX to treat, process and store, but not dispose of LLRW. WCS may treat and onsite dispose of NORM waste (and potentially LLRW) if the concentrations are low enough to meet their permit conditions. The facility is RCRA part B permitted for treatment, storage and land disposal of RCRA hazardous waste. The WCS facility is TSCA permitted for treatment, storage and disposal of specific concentrations of PCBs. The facility permits allow onsite disposal of NORM waste with concentrations of radium < 30pCi/g or any other NORM radionuclide < 150 pCi/g, averaged over 100 meters squared, provided the radon emanation rate is less than 20pCi/m2/sec. The facility does not have an NRC license for 11(e)(2) disposal but may be able to accept pre-1978 UMTRCA 11(e)(2) material for disposal. The facility may dispose of material with U and Th (< 0.05% by weight) and a variety of other very low activity radioactive waste. WCS is permitted to treat Mixed Waste by stabilization, with onsite disposal if the radioactive material is below specific radionuclide concentrations.

The WCS facility is located northwest of Odessa, TX and has direct rail access to handle gondolas or intermodals. The POC is William Dornsife at (888) 492-7552 or (717) 540-5220. Additional information about the WCS disposal facility may be found on their Internet home page *http://www.wcstexas.com*.

8. Envirosafe of Idaho, Grandview ID. The facility is a RCRA part B permitted treatment, storage and disposal facility. The facility does not have an NRC or LLRW license so it can not accept any radioactive wastes that require either license. NORM is not NRC regulated and a letter from the state of origin may be required before the facility could accept the waste for

disposal. The facility could accept pre-1978 UMTRCA 11(e)(2) material provided it is not NRC regulated. The facility is not NRC licensed so it can not treat or dispose of Mixed Waste. However if the material is classified as a hazardous waste with residual radioactivity and it met the radioactivity limitation, the facility could treat and dispose of the material. Likewise if the material is 11(e)(2) commingled with hazardous waste the facility could accept it for treatment and disposal.

The Envirosafe facility is located southeast of Boise and has direct rail access capable of unloading gondolas or intermodals. The POC for the facility is Mark Snead (800) 274-1516.

9. Dawn Mining Company, Ford WA. This facility is licensed by the State of Washington to accept 11(e)(2) byproduct material that meets specific radionuclide concentration limitations. The facility is currently finalizing their operating procedures for state approval and this requires verification. The average concentration of a single radionuclide can not exceed 2000pCi/g for U-238 or U-234, 650pCi/g for Th-230, 570pCi/g for Ra-226, 400 pCi/g for Pb-210, and 93 pCi/g for Th-232 and daughters. If more than one radionuclide is present, the "sum of fractions" rule will be used with the concentrations revised as follows: 4250 pCi/g for U-238, 3540pCi/g for U-234, 650pCi/g for Th-230, 1570pCi/g for Ra-226, 400 pCi/g for Pb-210, and 93 pCi/g for Th-232 and daughters.

The facility does not have direct rail access so all loads must be brought in by truck. The rail access in Spokane WA is 45 miles away and the license requires that the method of transporting is by intermodal. Each truckload can not exceed the radioactivity limits previously specified. The facility POC is Bob Nelson (509) 258-4511.

10. Rio Algom Mining Company, Oklahoma City, OK. The Ambrosia Lake Facility is located approximately 90 miles west of Albuquerque, NM. Under the current NRC license, the site is presently authorized to receive and dispose of up to 5.3 million tons of 11(e)(2) byproduct materials. There are restrictions that state up to 10,000 cubic yards per generator per year with an annual limit of 100,000 cubic yards. A waiver from these limitations would be required from the NRC if the criteria could not be met. Average annual Ra-226 concentrations are limited to 1,100pCi/g per generator with a single shipment limitation of 2,000 pCi/g for any radionuclide in the uranium series or 6,000 pCi/g for any radionuclide in the thorium series. DOE will take title to the site under UMTRCA after decommissioning. The facility can not accept NORM since it is not an Atomic Energy Act regulated material and DOE has indicated they will not take title if this material is placed in the tailings impoundment. A determination may be required that DOE would accept title to the facility if FUSRAP 11(e)(2) material is placed in the tailings impoundment.

The facility theoretically may be able to accept FUSRAP Source Material, Special Nuclear Material and LLRW if criteria established by the NRC on 22 September 1995 "Uranium Facilities, Notice of Two Guidance Documents; Final Revised Guidance on Disposal of Non-

Atomic Energy Act of 1954, Section 11(e)(2) Byproduct Materials in Tailings Impoundments; and Final Position on Guidance on the use of Uranium Mill Feed Materials Other Than Natural Ores", 60 FR 49296, are satisfied. This would be an NRC determination on a case by case basis. The facility can not accept mixed waste for treatment.

The facility does not have rail access but does own the property all the way to a main rail line. All material would have to be brought in by truck from a rail yard. The facility POC is Ron Adkisson (405) 842-1773.

11. International Uranium Corporation, Denver, CO. The White Mesa Mill, located in San Juan County, Utah is an NRC licensed uranium milling facility. The facility has contacted the CX to express an interest in being considered as a possible facility to accept specific types of FUSRAP wastes. The facility can not accept all FUSRAP wastes but would be interested in material that can meet NRC criteria for (Uranium Mill and Feed Material Other Than Natural Ores) alternate feed for the mill. The facility is seeking beneficial recovery of source material. The facility spokesperson (Michelle Rehmann) was confident that the facility would be able to accept 11(e)(2) material for processing since they have successfully amended their NRC license for other alternate feed materials in the past. A determination would need to be made to ensure DOE would approve of some types of FUSRAP wastes (e.g. Pre-1978 UMTRCA 11(e)(2) material) going to the mill tailings impoundment since upon completion of the decommissioning of the mill DOE will take title to the facility. Ms. Rehmann has indicated the facility would be investigating on a case by case basis with the NRC if the facility could accept Source Material, NORM and some types of radioactive material that exhibit a RCRA Characteristic for hazardous waste. IUC has submitted a request to the NRC for a general license amendment to process alternate feed materials, and has now received a license amendment to receive pre-1978 11(e)(2) type material from one FUSRAP site. Until the general amendment request is acted upon by the NRC, site specific amendments would be required.

The facility does not have direct rail access and the distance to the rail yard is approximately 90 miles away. The POC for the IUC facility is Michelle Rehmann (303) 389-4131.

Other. Several RCRA Subtitle C facilities were contacted that were restricted by their Part B permit from accepting radioactive material. It did not matter if the radioactive material was "Released from NRC regulation". The CWM Chemical Services facility in Model City, NY has a stipulation that "Any waste containing trace levels of radioactive material that reads slightly above background may not be land disposed without NYSDEC approval. Wastes with higher levels of radioactivity are prohibited from land disposal." Contact with the state of NYSDEC indicated that slightly above background would be in the single digit concentrations (pCi/g). Background at the CWM facility is .02milliR/hr.

The Peoria Disposal Company (Ms. Ginny Hinton) indicated that their RCRA Subtitle C facility could not accept radioactive material in accordance with their permit. Even if regulators would permit the disposal, the wastes would have to go through a general screening and evaluation and be taken before their waste acceptance committee. The waste acceptance committee is very conservative and they may reject the waste stream even if the state determines that permit would allow disposal at their facility. Likewise, Envirosafe was only interested in disposing of FUSRAP wastes with radioactivity in their Idaho facility and not their Ohio facility.

Miscellaneous Notes:

Processing/handling/packaging soils adds volume. It is typical to increase the anticipated volume to be shipped by 10-20% to account for "fluff."

Congress of the United States
House of Representatives
Washington, DC 20515

June 23, 1999

Mr. Joseph W. Westphal
Assistant Secretary of the Army - Civil Works
Pentagon 2E570
Washington, D.C. 20310-0108

Dear Assistant Secretary Westphal:

We are concerned that the U.S. Army Corps of Engineers is not adequately protecting public health and safety by regulating the disposal of certain uranium and thorium processed wastes under the Formerly Utilized Sites Remedial Action Program (FUSRAP).

In a recent request for proposal, the Corps stated that it will not require that sites selected to dispose of these radioactive wastes - referred to as 11e.(2) byproduct material - be licensed. Indeed, the Corps recently awarded a contract to an unlicensed site in Idaho and has shipped FUSRAP waste from New York to an unlicensed site in California. The Corps appears to be relying on correspondence from the general counsel's staff of the Nuclear Regulatory Commission that NRC lacks jurisdiction over byproduct materials located at sites that were not licensed prior to 1978. We urge you to look beyond legal hair-splitting and exercise your authority to manage this waste to insure that it is disposed permanently in a facility designed for the disposal of this type of material.

The year in which the nuclear waste was created should be irrelevant to its regulation. Radioactive material is still radioactive and requires safe handling and disposal no matter whether it was created at licensed sites before or after 1978. The Conference of Radiation Control Program Directors (CRCPD) agrees and passed a resolution last year urging NRC to reconsider its position abdicating its responsibility to regulate byproduct materials. In April, CRCPD sent another letter, supported by the state of Utah, which reaffirms concerns that "without regulatory oversight of this radioactive material, there are no assurances that adequate measures are being taken to protect human health and the environment." If the Corps follows the ill-advised position of NRC's staff and fails to exercise regulatory control, these radioactive materials could be disposed at landfills which are not designed or operated to handle the unique characteristics of radioactive byproduct material.

In the interest of public health and safety, we encourage you to require that sites for the disposal of 11e.(2) radioactive material be licensed by the NRC or the affected states for the disposal of this material.

Sincerely,

Senator Orrin Hatch

Senator Robert Bennett

Rep. James Hansen

Rep. Merrill Cook

Rep. Chris Cannon

cc: Greta Dicus, In-coming Chair, Nuclear Regulatory Commission