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OGC

SUBJECT: SUPPL RESPONSE TO PETITION UNDER 10 CFR 2.206-SNAKE RIVER ALLIANCE/ENVIROCRE OF UTAH, INC.

Subbarathnam  
NRK  
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May 19, 2000

Dr. William D. Travers  
Executive Director for Operations  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Re: Supplemental Response to Petition Under 10 §CFR 2.206 -  
Snake River Alliance / Envirocare of Utah, Inc.

Dear Dr. Travers:

On April 10, 2000 Envirocare Services of Idaho, Inc. (ESII) provided to the Nuclear Regulatory Commission (NRC) a preliminary response to petitions filed under 10 CFR 2.206 by the Snake River Alliance (SRA) and Envirocare of Utah, Inc. Over the last few weeks, ESII and the Environmental Technology Council have completed a detailed analysis of the applicable statutes and legislative history relating to issues raised in the petitions and are providing that analysis as a supplemental response for consideration by NRC.

It is clear from our analysis that NRC's current legal and policy positions on FUSRAP wastes are supported by the relevant statutory language and consistent with Congressional intent. For that reason, we urge NRC to deny the relief requested in the petitions and make a determination in support of your current policy.

If additional information is needed for your review, please don't hesitate to call me at (419) 698-3500.

Sincerely,  
  
Douglas E. Roberts  
Vice President, Regulatory and External Affairs

Enclosure

cc: Richard Meserve, Chairman, Nuclear Regulatory Commission

Envirocare Services of Idaho, Inc. Is An  
Envirosource Technologies Company

Template: EDO-001

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**SUPPLEMENTAL RESPONSE OF ENVIROSAFE SERVICES OF IDAHO, INC.  
AND ENVIRONMENTAL TECHNOLOGY COUNCIL TO  
PETITIONS UNDER 10 CFR § 2.206 – SNAKE RIVER ALLIANCE**

Introduction

The Snake River Alliance and Envirocare of Utah, Inc. have petitioned the Nuclear Regulatory Commission (NRC) to require that low activity byproduct material from the Formerly Utilized Sites Remedial Action Program (FUSRAP) be disposed only at an NRC-licensed facility. See 65 Fed. Reg. 25,760 (May 3, 2000). Petitioner Envirocare of Utah, Inc. currently operates the only such landfill facility. As the basis for their request, petitioners allege that the NRC, under sections 81 and 84 of the Atomic Energy Act of 1954 (AEA), was given authority by Congress to regulate all section 11e.(2) byproduct material regardless of when it was generated, including tailings and wastes at FUSRAP sites resulting from the Manhattan Project and the nation's early atomic energy program (1940-1960) that were not subject to any AEA license requirement.

Thus, the petitions seek reversal of the NRC's position that –

- 1) the AEA, as amended by the Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA), gives the NRC statutory authority only over byproduct material from activities licensed on or after the effective date of section 83; and
- 2) Congress has expressly authorized the U.S. Army Corps of Engineers (USACE) to dispose of byproduct material from FUSRAP sites pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), which authorizes disposal at RCRA-permitted landfills.

See Directors Decision Under 10 CFR 2.206 (DD-99-07), 64 Fed. Reg. 16,504 (April 5, 1999); letter from NRC Commissioner Greta Joy Dicus to Congressman John D. Dingell

dated July 29, 1999; letter from NRC Chairman Shirley Ann Jackson dated May 3, 1999; letter from NRC Special Counsel to USACE dated March 2, 1998.

Respondent Envirosafe Services of Idaho, Inc. (ESII) submitted a preliminary response to the petitions on April 10, 2000, indicating that a more detailed response would be forthcoming. Petitioner Envirocare then submitted a supplement to its petition on May 5, 2000. After a more comprehensive review of the petitions and supplement, ESII and the Environmental Technology Council, a national trade association that represents the hazardous waste management industry, hereby submit this joint response.

#### Summary of Response

The petitions are based on a flawed interpretation of the AEA and a selective misreading of the legislative history of UMTRCA and related appropriations acts of Congress. Sections 83 and 84 were added to the AEA by UMTRCA in 1978. At that time, contrary to petitioners' claims, Congress was *fully aware* that FUSRAP sites were being addressed by the Department of Energy (DOE) under general AEA authority and the National Environmental Policy Act. Therefore, Congress *expressly decided* to exclude FUSRAP sites from the UMTRCA remedial program and the NRC's licensing authority over 11e.(2) byproduct material. Instead, Congress has exercised oversight and direction of FUSRAP primarily through the appropriations process.

At no time has Congress ever indicated that the NRC has licensing authority over byproduct material from FUSRAP sites, despite ample opportunity to do so. In fact, Congress has specifically directed that the FUSRAP program be implemented now by the Corps of Engineers, and that the remediation activities be subject to the administrative, procedural, and regulatory provisions of CERCLA and the National Contingency Plan.

As a result, byproduct material from FUSRAP sites may properly be disposed, pursuant to the CERCLA off-site policy, at certain landfills that have received permits under Subtitle C of the Resource Conservation and Recovery Act (RCRA). These Subtitle C landfills have permits that contain terms and conditions related to disposal of low activity radioactive wastes imposed by states under the “omnibus” authority of RCRA as necessary to fully protect human health and the environment.

### Discussion of Legal Authority

#### **I. Petitioners Misconstrue the NRC’s Licensing Authority by Ignoring the Clear Intent of Congress in UMTRCA and Related Appropriations Acts**

Petitioners ask the NRC to read sections 81 and 84 of the AEA in isolation, rather than properly construing the statute as a whole.<sup>1</sup> As the NRC is aware, sections 81 and 84 are part of a statutory scheme that includes section 83, and most importantly that reflects the intent of Congress in UMTRCA to exclude the cleanup of tailings and wastes at FUSRAP sites from the NRC’s licensing authority.

Specifically, Congress enacted AEA sections 83, 84 and amendments to section 81 in the UMTRCA of 1978. The twin purposes of UMTRCA are clearly stated in section 2(b). First, with respect to “*inactive* mill tailings sites,” the Act provided for “a program of assessment and remedial action at such sites . . . in order to stabilize and control such tailings in a safe and environmentally sound manner . . .” 42 U.S.C. § 7901(b)(1) (emphasis added). Title I of the Act is this remediation program for certain inactive sites. Second, Congress enacted “a program to regulate mill tailings during uranium or thorium ore processing at *active mill operations* and after termination of such

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<sup>1</sup> As the court warned in *Kerr-McGee Chemical Corp. v. NRC*, 903 F.2d 1 (1990), a construction of the AEA may be “plausible enough on its face, [but] a statute must be read with an eye on its structure and purpose as well as a dictionary.” *Id.* at 2.

operations . . . .” 42 U.S.C. § 7901(b)(2) (emphasis added). Title II of the Act (sections 81-84) primarily regulates tailings from active mill operations.

In enacting UMTRCA, Congress was *fully aware* that DOE was addressing other inactive sites contaminated with tailings under the FUSRAP program. Congress *expressly decided not to include FUSRAP sites* under UMTRCA for good reasons. The House Committee on Interstate and Foreign Commerce explained:

The committee understands that there are a number of federally owned or controlled sites with [residual radioactive] materials or tailings, such as the **TVA site . . . and a DOE site in Lewiston, N.Y., and some in New Jersey**. The committee wants to have these sites identified by the DOE and have data concerning the health or environmental problems associated with the sites and on what, if anything is being done to eliminate such problems and when.

H.R. Rep. No. 1480–Part 2, 95<sup>th</sup> Cong., 2<sup>nd</sup> Sess. 41 (Sept. 30, 1978), reprinted in 1978 U.S. Code Cong. & Admin. News 7450, 7468 (emphasis added). The “TVA site” refers to the Elza Gate Site, Oak Ridge, Tennessee; the “DOE site” was the Niagara Falls Storage Site, Lewiston, New York; and the “New Jersey” sites were the Kellex/Pierport site, the Middlesex Municipal Landfill, and the New Brunswick Site in New Jersey – *all of which were FUSRAP sites at the time Congress enacted UMTRCA*.

In hearings before the House Subcommittee on Energy and the Environment, Mr. James L. Liverman, Acting Assistant Secretary, *who was responsible for the FUSRAP program at DOE*, explained why the FUSRAP sites were not included in the UMTRCA legislation. He said:

About 4 years ago, as a result of questions on the **Middlesex dump** and on **Palos Park in the Chicago area**, Dr. Ray, then the Chairman of the Atomic Energy Commission, and I determined that we should take a **relook at some 150 sites** that had been turned back over to the private sector to utilize . . . . We felt it was

important because we did not know and could not find the records that revealed exactly the status of those sites. So we started the detailed survey of them, and we are, perhaps, **down the road a long way now**, but it is clear that there must be something of the order of **30 out of the 150 or so that are going to demand some kind of cleanup action.**

**We are not proposing that as a part of this bill** because we have not yet accurately determined what the cost may be, but I do want to mention it because it is another thing that is coming across the table, but **it is not covered in this legislation.**

Hearings on H.R. 13382 Before the Subcomm. on Energy and the Environment of the House Comm. on Interior and Insular Affairs, 95<sup>th</sup> Cong., 2<sup>nd</sup> Sess. 42 (June 26, 27 and July 10, 17, 1978) (emphasis added). Like the “Middlesex dump” (Middlesex Municipal, NJ), the Palos Park site in Illinois was also part of the FUSRAP program in 1978.<sup>2</sup>

In his testimony, Mr. Liverman further explained that FUSRAP sites –

were deliberately eliminated by the Office of Management and Budget [from the Administration bill] because we needed to do a more detailed study of those sites and get a clear estimate so we could bring to the Congress a bill that made some sense. We will probably be back in the next 9 months to a year, **if we need additional authorization to cleanup**, and that will depend upon the legal determination of who is responsible. In any case, **we will be back for the appropriations to deal with those.**

Id. at 49 (emphasis added).

In view of this testimony, Congress decided not to include the FUSRAP sites within the scope of the UMTRCA legislation in 1978, and instead to oversee DOE’s cleanup efforts mainly through the appropriations process. Congress focused the Title I remedial program on “certain” sites that required a new Federal cleanup effort. H.R. Rep. No. 1480 at 23. Congress limited Title I to the 22 locations specifically listed in

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<sup>2</sup> According to DOE, the Palos Park site was transferred out of FUSRAP in 1990. See FUSRAP Management Requirements and Policies Manual, U.S. DOE Oak Ridge Operations (May 6, 1997), page 1-5, attached as Exhibit A hereto.

UMTRCA section 102. The Secretary's authority to include other inactive sites that required cleanup was restricted to sites added within one year (reduced from five years in the original bills). Compare UMTRCA § 102 with H.R. 95-1480, H.R. Rep. No. 1480 at 2. This was important in order to control the overall costs of the program, because Congress had reached a difficult compromise on cost sharing between the Federal government and the states.<sup>3</sup> Thus, Title I of UMTRCA was limited to inactive mill tailings sites where "there was once Federal licensing of the operations, but, *due to a loophole* in the law, *the sites escaped control* after operations ceased." H.R. Rep. No. 1480 (II) at 30; 1978 USCCAN 7457 (emphasis added).

Of course, Congress recognized that FUSRAP inactive sites were not "escap[ing] control" due to a "loophole" in the AEA, but instead were being addressed by DOE under both the AEA and additional authority from Congress. DOE relied on its general authorities in the AEA to protect public health and safety.<sup>4</sup> DOE also sought to fulfill its responsibilities under the National Environmental Policy Act to use all practicable means

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<sup>3</sup> Congress was "particularly concerned about the cost of this program." H.R. Rep. 1480 (II) at 34; 1978 USCCAN 7461. The costs for remedial actions, including both at the processing sites and any locations and structures contaminated with tailings from the sites, was to be borne 90% by the Federal government and 10% by the states. UMTRCA § 107. Costs of long-term maintenance and monitoring of final disposal sites were to be borne by DOE. States were required to assume the costs of purchasing the inactive processing sites and any necessary new disposal sites. H.R. Rep. No. 95-1480 (I) at 14; 1978 USCCAN 7436.

<sup>4</sup> AEA § 31a.(5), referenced in *FUSRAP: Building Stakeholder Partnerships to Achieve Effective Cleanup*, DOE/EM-0233 (April 1995), attached as Exhibit B hereto, and AEA §§ 66 and 91(a)(3) ("The Commission is authorized to – provide for safe storage, processing, transportation, and disposal of hazardous waste (including radioactive waste) resulting from nuclear materials production, weapons production, and surveillance programs," referenced in "Legal Opinion – Authority to Decontaminate Middlesex Sampling Plant Site and Adjacent Private Properties" (June 19, 1978), attachment to *FUSRAP: Management Requirements and Policies Manual*, Exhibit A hereto.

to implement a cleanup program at FUSRAP sites to assure environmental protection. 42 U.S.C. § 4331(b).

Thus, at the time of the 1978 UMTRCA, Congress knew that FUSRAP sites were not escaping control, and Congress could better oversee DOE's implementation of FUSRAP through the appropriations process. As Congress realized, the formerly-utilized sites that DOE was already investigating and remediating did not need to be included in the comprehensive regulatory regime for the safe disposal and stabilization of tailings under Title I. Nor did Congress need to include byproduct material from FUSRAP sites under the NRC's licensing authority for tailings resulting from active processing operations, since FUSRAP materials were already subject to AEA, NEPA, and statutory direction through appropriations acts.<sup>5</sup>

Subsequent to the UMTRCA, Congress has continued to oversee the FUSRAP in a manner that strongly confirms its prior legislative intent. In appropriations acts since 1978, Congress has always considered the FUSRAP as a *separate and distinct program* from the UMTRCA Title I remedial program, often providing direction to DOE on its cleanup responsibilities at FUSRAP sites. In the 1984 Energy and Water Development Appropriations Act (EWDAA), Congress specifically authorized DOE to conduct

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<sup>5</sup> For the same reasons, the *Kerr-McGee* case is not relevant to the Commission's statutory interpretation here. As the petitioners acknowledge, the Kerr-McGee facility was licensed by the NRC, and thus the court's decision on the definition of section 11e.(2) byproduct material from NRC-licensed facilities is not applicable to FUSRAP sites. More importantly, the court's reasoning does not apply. The court invalidated an NRC interpretation that "recreate[d] the regulatory gap that the UMTRCA was designed to eliminate and exclude[d] from regulation for the protection of the public health some of the radioactive tailings that Congress intended to bring within the agency's authority." *Kerr-McGee*, 903 F.2d at 19. In this matter, as discussed above, Congress did not consider FUSRAP sites to fall within the "regulatory gap" that UMTRCA was intended to close, nor did Congress intend to bring wastes from FUSRAP sites within the agency's licensing authority. Thus, *Kerr-McGee* is not of concern.

decontamination at four FUSRAP sites (Colonie, NY; Latty Avenue Properties, MO; and the Wayne and Maywood sites, NJ). Pub. L. 98-50. The 1985 EWDAAs directed DOE to perform necessary response action at the St. Louis Airport site, and to develop the property as a disposal site for the waste from the response action activities conducted at vicinity properties and the Latty Avenue Properties. Pub. L. 98-360.

More recently, in the 1998 EWDAAs, Congress included statutory language transferring the funding and responsibility for administering the FUSRAP from DOE to the Corps of Engineers. Pub. L. No. 105-62, 111 Stat. 1326 (1997). Congress further directed the Corps of Engineers to review the baseline cost, scope and schedule for each of the FUSRAP sites, “and determine what actions can be taken to reduce costs and accelerate cleanup activities.” H.R. Rep. No. 190, 105<sup>th</sup> Cong., 1<sup>st</sup> Sess. 66 (July 21, 1997). In the 1999 and 2000 EWDAAs, Congress directed that “response actions by the [USACOE] under this [FUSRAP] program shall be subject to the administrative, procedural, and regulatory provisions of the Comprehensive Environmental Response, Compensation and Liability Act (42 U.S.C. 9601 et seq.), and the National Oil and Hazardous Substances Pollution Contingency Plan.” Pub. L. No. 105-245, 112 Stat. 1838, 1843 (1998).

Through all of these appropriations acts, Congress had an ample opportunity to indicate that FUSRAP sites were covered under UMTRCA, or that the NRC should exercise license authority over tailings and wastes from FUSRAP sites. Congress has not done so, because there was no need to do so.

Thus, petitioner Envirocare’s claim that Congress never “specifically focused on FUSRAP” in the legislative history of UMTRCA, Pet. at 6-9, is simply wrong.

Petitioners' central argument that Congress intended for NRC to regulate all byproduct material from all inactive sites is also clearly wrong. The truth is that Congress did focus on the inactive tailings sites in the FUSRAP and specifically decided not to regulate them under UMTRCA. Petitioners' entire case is based on the faulty premise that Congress was unaware of the DOE remedial program for FUSRAP sites, contrary to the extensive legislative history set forth above.

**II. Because Envirocare Has Misrepresented the Legislative History, the Petitions are Based on an Erroneous Interpretation of Sections 81 and 84**

The provisions of AEA sections 81, 83 and 84, as amended by UMTRCA, must be construed in view of the clear Congressional intent in the legislative history. *Kerr-McGee*, 903 F.2d at 2. As the Commission may know, should its statutory interpretation be subject to judicial review, the court will first determine whether Congress directly addressed the matter. "If the intent of Congress is clear, that is the end of the matter; for the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress." *Chevron U.S.A., Inc. v. NRDC*, 467 U.S. 837, 842-43 (1984) (referred to as the Chevron Step I analysis). To discern Congressional intent, the court must "stud[y] the statutory text, structure, and history" of the statute as a whole, and not each section in isolation. *Ohio v. DOI*, 880 F.2d 432, 441 (D.C. Cir. 1989). However, even if the court concludes that Congress's intent is not plain, the court must still defer to the agency's construction of the statute *so long as it is reasonable*. 467 U.S. at 844 (Chevron Step II). As set forth above, we believe Congress's intent that NRC's license authority does not extend to FUSRAP materials is clear. Even if a court should find the statute ambiguous, however, the NRC has adopted a reasonable construction of its license authority that should be upheld. In contrast, petitioners ask the Commission to adopt an interpretation

of sections 81 and 84 in isolation that ignores the basic structure of UMTRCA and Congress's purposeful design.

At the outset, petitioners agree that section 83 gives the NRC licensing authority only over section 11e.(2) byproduct material that results from activities at sites licensed on or after the effective date. Why is the NRC's authority limited in this way? Congress intended the AEA amendments in Title II of UMTRCA to primarily focus on preventing future problems at active mill operations, and to supplement the DOE's cleanup authority at the 22 inactive sites under Title I. H.R. Rep. No. 1480 (I) at 13; Part II at 29.

Consistent with this Congressional intent, section 84 is not a broad grant of unlimited authority over "any" byproduct material from any site, as petitioners claim, but is limited by the purposes of UMTRCA. Specifically, section 84a. provides:

The Commission shall insure that the management of any byproduct material, as defined in section 11e.(2), is carried out in such manner as—

(1) the Commission deems appropriate to protect the public health and safety and the environment from radiological and nonradiological hazards associated with the processing and with the possession and transfer of such material . . . .

(2) conforms with applicable general standards promulgated by [EPA] under section 275, and

(3) conforms to general requirements . . . comparable to requirements applicable to the possession, transfer, and disposal of similar hazardous material regulated by [EPA] under the Solid Waste Disposal Act . . . .

In their petitions to the Commission, petitioners argue that the phrase "any byproduct material" applies literally to any tailings or wastes from any processing sites, including pre-1978 material from FUSRAP sites. However, Congress used limiting statutory language that refutes petitioners' interpretation. In section 84, Congress

authorized the NRC to insure protective management of “any byproduct material, *as defined in section 11e.(2).*” Why did Congress include this limiting language, rather than referring to “byproduct material” as generally defined in section 11.e? The statutory provision on its face does not refer to literally “any byproduct material,” but only to tailings and wastes that Congress added in subsection (2) of section 11e. by amendment in UMTRCA. Congress added subsection (2) for the express purpose of supplementing the NRC’s authority with respect to tailings from NRC-licensed active sites and Title I inactive sites, while at the same time clearly intending not to include FUSRAP sites, as discussed above. Thus, section 84 does not extend to byproduct materials from FUSRAP sites that Congress expressly decided to exclude from UMTRCA, and that are not subject to either section 83 or Title I.

Consistent with this interpretation, section 84a.(2) requires conformance with “applicable” general standards promulgated by EPA under section 275. In turn, section 275 applies only to “residual radioactive materials . . . located at *inactive* uranium mill tailings sites and depository sites for such materials selected by [DOE] pursuant to title I of the [UMTRCA]” and “sites at which ores *are processed* primarily for their source material content or which *are used* for the disposal of *such* byproduct material.” 42 U.S.C. § 2022(a) and (b) (emphasis added). Thus, the statutory text taken as a whole reinforces the interpretation that section 84 applies only to byproduct material from Title I and NRC-licensed sites.

The House committee also confirmed this interpretation in its section-by-section analysis of UMTRCA. The committee explained that section 84 “authorizes the Commission to promulgate, implement and enforce regulations governing **permanent**

**Federal custody of uranium mill tailings disposal sites and governing the activities of the [DOE] under title I of the act.”** H.R. Rep. No. 1480 (I) at 21.<sup>6</sup> Section 83(a)(2) requires permanent Federal custody of tailings disposal sites only for byproduct material from NRC-licensed active sites. Likewise, Title I of the Act is limited to the 22 listed sites, and does not include FUSRAP sites. See also H.R. Rep. No. 1480(I) at 16, which summarizes the provisions of section 84 as follows: “In establishing requirements or promulgating regulations for *licensing* or for oversight of the *Department’s remedial activities*, the Commission must set all standards and requirements.” Congress’s reference to “licensing” is clearly to new section 83 related to tailings at active processing sites, and the reference to DOE’s “remedial activities” is obviously to the Title I program. Thus, Congress intended section 84 to be limited to these two purposes.

As a result, petitioners’ argument that section 84 is “phrased in comprehensive, or catch-all, terms” is simply wrong. Section 84 applies to section 11e.(2) byproduct material that is subject to the NRC’s licensing authority on or after the effective date of section 83 and to inactive sites covered under Title I, but clearly not to FUSRAP sites.

For the same reasons, section 81 also does not prohibit the management and disposal of byproduct material from FUSRAP sites. Section 81, as originally enacted in the AEA of 1954, was intended to restrict the domestic distribution of byproduct material, as that term is now defined in section 11e.(1), for research, commercial, and

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<sup>6</sup> Envirocare misrepresents this legislative history in its petition. Citing the specific committee explanation quoted in the text above, Envirocare asserts that section 84 “extend[s] to all section 11e.(2) tailings, *including*, as the applicable legislative history makes clear, tailings governed by the provisions of Title I of the Act.” Pet. at 5 (bold emphasis added). As this response makes clear, however, Congress did no such thing. Congress did not extend section 84 to all tailings, “including” those from Title I sites, but rather limited section 84 to tailings from Title I sites and NRC-licensed active operations.

agricultural purposes, except as otherwise authorized. In the UMTRCA of 1978,

Congress amended section 81 to include the highlighted language:

No person may transfer or receive in interstate commerce, manufacture, produce, transfer, acquire, own, possess, import, or export any byproduct material, except to the extent authorized by this section, section 82 *or section 84*.

The language “except to the extent authorized by . . . section 84” implicates the Congressional intent to exclude FUSRAP materials. As discussed above, section 84 applies to 11e.(2) byproduct material from Title I sites and NRC-licensed operations, and not to FUSRAP sites. Thus, section 81 must be construed consistent with Congress’s overall intent in UMTRCA to allow DOE, and now the Corps, to address cleanup of byproduct material from FUSRAP sites. By excluding such byproduct material from the scope of sections 83 and 84, Congress by necessary implication authorized under section 81 the possession and transfer of such FUSRAP materials for cleanup and disposal. This construction of sections 81, 83 and 84 is consistent with the structure of UMTRCA and with clear Congressional intent.

For all of the foregoing reasons, petitioners’ flawed interpretation of sections 81 and 84 should be rejected as contrary to the clear intent of Congress and to a reasonable construction of the statute. The Commission should reaffirm its position that the AEA, as amended by UMTRCA, gives it licensing authority only over byproduct material from activities licensed on or after the effective date of section 83.

### **III. The Disposal of FUSRAP Materials At Certain Subtitle C Landfills Is In Accordance With Stringent Standards Under Environmental Laws**

Envirocare is wrong, and irresponsible, in its claims that byproduct materials from FUSRAP sites are being disposed at Subtitle C landfills “without health and safety

protections.” Envirocare Pet. at 2. As described above, Congress directed the Corps of Engineers to clean up FUSRAP sites in accordance with CERCLA and the National Contingency Plan. Under CERCLA, EPA has defined radionuclides as a hazardous substance. 40 CFR 302.4 and Appendix B. As a result, the Corps of Engineers has very extensive authority under CERCLA to ensure cleanup of radioactive-contaminated wastes, such as byproduct material, to standards that protect public health and safety. In this regard, the Commission’s standards in 10 CFR Part 40, Appendix A, may be considered “applicable or relevant and appropriate requirements” (ARARs) under CERCLA for FUSRAP sites, further ensuring protective standards.

Moreover, the CERCLA “off-site policy” expressly authorizes the removal of hazardous substances to landfill facilities, provided the facility “is operating in compliance with section 3004 and 3005 of the Solid Waste Disposal Act [i.e., RCRA] . . . and all applicable State requirements.” CERCLA § 121(d)(3), 42 U.S.C. § 9821(d)(3). To ensure protection, the CERCLA off-site policy further provides that hazardous substances “may be transferred to a land disposal facility” only if the disposal unit is not releasing any waste constituent into the groundwater, surface water or soil. Id. Thus, CERCLA not only ensures health and safety protection, but authorizes off-site disposal of hazardous substances in secure RCRA-permitted landfills.

As the NRC has acknowledged, RCRA landfills are designed and operated with redundant protective systems equal to or better than the NRC-licensed facility:

The Environmental Protection Agency (EPA) has an extensive set of regulations in 40 CFR 260 through 272 for the management of hazardous wastes. RCRA disposal facilities rely in part on a system of liners and leachate detection and collection systems to prevent releases of hazardous materials to the environment. RCRA regulations for disposal also address monitoring and inspection,

site selection, and other detailed requirements. **Most, if not all, of these controls would also help to protect public health, safety, and the environment from radioactive byproduct material.**

Commissioner Dicus letter dated July 29, 1999 (emphasis added). Indeed, some RCRA landfills have been authorized to accept naturally occurring radioactive material (NORM) from oil exploration and production that pose no greater risk than the FUSRAP materials. The NRC has stated that: **“Based on our knowledge of RCRA requirements, we believe that both RCRA landfills and NRC-regulated and licensed disposal facilities are protective.”** *Id.* (emphasis added). In fact, the NRC’s protection requirements in 10 CFR Part 40, Appendix A, are based upon the RCRA standards in 40 CFR Part 264. Thus, the NRC itself has already directly refuted Envirocare’s false claims.

Envirocare attempts to argue that the AEA, as amended by UMTRCA, somehow preempts EPA and the states from requiring Subtitle C landfills to comply with conditions in RCRA permits that ensure health and safety protection from disposal of radioactive waste. Envirocare Pet. at 4 n.2, 8-9; Supp. to Pet. This argument is absurd, and would have the improbable effect of nullifying many regulations and permits already issued by EPA and states. RCRA does define the term “solid waste” to exclude “source, special nuclear, or byproduct material,” 42 U.S.C. § 6903(28), and then defines “hazardous waste” to mean “a solid waste, or combination of solid wastes.” 42 U.S.C. § 6903(5). Thus, hazardous wastes are a subset of solid wastes, and byproduct material is thereby excluded from the definition of hazardous waste.

However, RCRA section 3005 includes a provision that is broader than Subtitle C coverage of hazardous wastes. Generally, section 3005 governs permits issued by EPA and authorized states to facilities that treat, store or dispose of hazardous wastes. While

most of section 3005 therefore concerns hazardous waste, there is a provision in section 3005(c) referred to as the “omnibus” provision which is broader. The RCRA omnibus authority provides simply that –

Each permit issued under this section shall contain such terms and conditions as the Administrator (or the State) determines necessary to protect human health and the environment.

42 U.S.C. § 6925(c)(3).

EPA and the states use this omnibus authority to include additional terms and conditions in RCRA permits, based on the facility’s permit application and the administrative record of the permit proceeding, that are necessary to ensure health and safety protection. Pursuant to this omnibus provision, certain hazardous waste landfill facilities have RCRA permits with conditions that authorize the disposal of low activity radioactive wastes in accordance with stringent health and safety standards. These RCRA permit terms apply to waste materials that have less than a specified level of radioactivity, and do not specifically regulate “byproduct material” as defined in the AEA, so the question of Federal preemption is not implicated. Moreover, the states are authorized to impose omnibus conditions in RCRA permits pursuant to delegated Federal authority under the RCRA statute, further refuting Envirocare’s preemption argument. In short, disposal at RCRA-permitted landfills of low activity radioactive wastes from FUSRAP sites is stringently regulated, and Envirocare’s claims are factually untrue and irresponsible.

Petitioners’ arguments that the Commission’s interpretation of its licensing authority allows “wastes involving potential hazards to the public to be exempted from the jurisdiction of both the NRC and the EPA,” Summary of Pet. at 2, is a strawman only.

FUSRAP wastes are fully subject to EPA and state permits and standards under RCRA and other environmental laws.

**IV. The Commission Should Determine That the NRC Licensing Exemption for DOE FUSRAP Activities Also Applies to the Corps of Engineers**

There is also a sound argument that the Atomic Energy Act exempts DOE, and now by extension the Corps of Engineers, from NRC licensing for FUSRAP cleanup activity. The AEA definition of the term “person” includes a “Government agency *other than the Commission.*” 42 U.S.C. § 2014(s) (emphasis added). The “Commission” referred to in this definition of “person” is the former Atomic Energy Commission (AEC). 42 U.S.C. § 2014(f). The AEC was abolished and its functions transferred to the NRC and the Administrator of the Energy Research and Development Administration (ERDA). 42 U.S.C. §§ 5814, 5841. Thereafter, the ERDA was abolished and its functions transferred to the Secretary of Energy. 42 U.S.C. §§ 7151(a), 7293. DOE is self-regulating while conducting FUSRAP pursuant to CERCLA remediation.

When Congress directed the Corps of Engineers to administer the FUSRAP, it did not relieve DOE of its overall responsibility for these sites. The Corps of Engineers has taken over administration of the FUSRAP, but the DOE, as the AEC successor agency responsible for the FUSRAP, has ultimate responsibility. Since the DOE, as the AEC successor agency, is not considered a “person” subject to NRC license authority, the Corps of Engineers which stepped into the shoes of DOE to administer FUSRAP cleanups should be covered by the same exemption. This is the statutory interpretation that best complies with Congress’s intent that transfer of FUSRAP to the Corps of Engineers would “reduce costs and accelerate cleanup activities.” H.R. Rep. No. 190,

105<sup>th</sup> Cong., 1<sup>st</sup> Sess. 66 (July 21, 1997). Imposing licensing requirements to which DOE was not subject would increase costs and delay cleanups.

In directing the Corps of Engineers to administer the FUSRAP, Congress did not express an intent that the cleanup and disposal of FUSRAP wastes be subject to AEA licensing requirements. The Conference Report that accompanied Pub. L. No. 105-62 indicated that Congress expected a seamless transition of FUSRAP from DOE to the Corps. H.R. Conf. Rep. No. 271, 105<sup>th</sup> Cong., 1<sup>st</sup> Sess 7 (1997). Congress expected the agencies “to make every effort to ensure that this transition goes smoothly, that execution of the program is maintained in accordance with current schedules, and that overall performance is improved.” *Id.* A requirement that Subtitle C landfills with permits that authorize disposal of low activity radioactive wastes must now also obtain NRC licenses to receive FUSRAP wastes would disrupt the transition, delay the current schedules, and fail to improve performance. This would be contrary to Congress’s expressed intent.

The Corps of Engineers previously raised a similar argument before the Commission in response to a petition filed by the Natural Resources Defense Council to require NRC licensing of cleanup activities conducted at FUSRAP sites. *See* Director’s Decision Under 10 CFR § 2.206, 64 Fed. Reg. 16,504 (April 5, 1999). While the DOE did not agree with the Corps’ position, DOE did acknowledge its continuing responsibilities for FUSRAP, and it deferred on the question to the Commission. 65 Fed. Reg. at 16,506. The NRC staff decided not to reach a conclusion in the previous proceeding. *Id.*

DOE and the Corps of Engineers have now entered into a Memorandum of Understanding (MOU) regarding the FUSRAP dated March 17, 1999. *See* Exhibit C

hereto. While the MOU states that “DOE does not have *regulatory responsibility or control* over the FUSRAP activities” conducted by the Corps, it does make clear that DOE has continuing responsibilities for FUSRAP, such as “long-term surveillance, operation and maintenance, including monitoring and enforcement of any institutional controls which have been imposed on a site or vicinity properties.” MOU Art. III, ¶ C.1.e. As a result, NRC staff can now find that DOE and the Corps have addressed their respective responsibilities, and that it is appropriate to conclude that the AEA also exempts the disposal of FUSRAP wastes from NRC licensing because Congress intended the Corps to fill the shoes of DOE, an agency exempt from NRC regulatory requirements for the FUSRAP. This additional basis on which the Commission should deny the petitions will further support a final decision that may be subject to judicial review.

#### Conclusion

For all the foregoing reasons, Envirosafe Services of Idaho, Inc. and the Environmental Technology Council respectfully urge that the relief requested in the petitions be denied. The Commission should reaffirm its position that its AEA license authority applies to section 11(e)(2) byproduct material from active processing operations, and does not extend to tailings and wastes from FUSRAP sites. As the Commission is aware, Congress has directed the Corp of Engineers to “reduce costs and accelerate cleanup activities” at FUSRAP sites, 1998 EWDA, and the Corps is doing so, and protecting the public health and safety, by utilizing certain RCRA-permitted landfills for disposal of FUSRAP materials. The NRC has not been authorized or funded by Congress to exercise license authority for disposal of tailings from FUSRAP sites.



**Formerly Utilized Sites  
Remedial Action Program**

# **MANAGEMENT REQUIREMENTS AND POLICIES MANUAL**

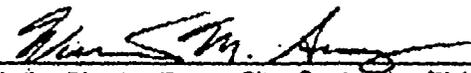
(This document also serves as the FSRD QA Program Plan)

**Volume 1**



**U.S. Department of Energy  
Oak Ridge Operations**

Revision 2 Approval:

  
Acting Director, Former Sites Restoration Division

5/6/97  
Date

## 1.0 INTRODUCTION

### 1.1 PURPOSE AND SCOPE OF THE MANUAL

This Management Requirements and Policies Manual (MRPM) has been prepared for use by the Department of Energy Oak Ridge Operations Office (DOE-ORO) Former Sites Restoration Division (FSRD) and its contractors for the conduct of FSRD's responsibilities for the Formerly Utilized Sites Remedial Action Program (FUSRAP). The MRPM supplements the project plan (Appendix A) in identifying the FUSRAP management control systems consistent with the requirements of the FUSRAP Standards/Requirements Identification Document (S/RID). The MRPM also serves as the FUSRAP Quality Assurance Program Plan (QAPmP) for FSRD responsibilities under ISO 9001.

The MRPM describes FUSRAP management systems, protocols, policies, and requirements that implement and control FUSRAP actions and documents. The MRPM also defines FSRD's roles and responsibilities and the roles, specific responsibilities, and scope of activities that FSRD has delegated to its contractors. FSRD's contractors include the project management contractor (PMC), the environmental studies contractor (ESC), and technical support contractors. The MRPM defines the interfaces among organizations for major program activities and documents. Figures 1-1 and 1-2 identify FSRD's contractors and illustrate FUSRAP organizational elements and the lines of communication among them.

For distribution control and ease of reference, the project plan and other pertinent documents defining FUSRAP policies and requirements are collected as appendixes in Volume 2 of this MRPM.

### 1.2 HISTORICAL BACKGROUND

Activities leading to the establishment of FUSRAP began in 1974 under the direction of the Atomic Energy Commission (AEC). The Manhattan Engineer District (MED) and its immediate successor, AEC, conducted several programs during the 1940s and 1950s involving research, development, processing, and production of uranium and thorium and storage of processing residues. Nearly all of this work involved participation by private contractors, universities, and other institutions. As a result of these activities, materials, equipment, buildings, and land became contaminated, primarily with naturally occurring radionuclides. When these sites were no longer required for nuclear programs, they were decontaminated or stabilized in accordance with survey methods and guidelines then in existence and released for use without radiological restrictions. The radiological criteria governing the release of sites for unrestricted use were usually site-specific. The criteria changed between the 1950s and the 1970s and are still undergoing development. In 1974, AEC determined that radiological conditions at these sites needed to be reevaluated to assess whether additional decontamination was required.

Initially, site survey responsibility under AEC was assigned to the Division of Operational Safety. On January 19, 1975, AEC was abolished, and its programmatic responsibilities were transferred to the Energy Research and Development Administration (ERDA), which continued the activities of the survey program. The DOE Organization Act of 1977 transferred the functions and authorities of ERDA to DOE. The Assistant Secretary for Environment (ASEV) was assigned responsibility for the site survey program. Program results clearly indicated that some response action would be needed not only at the former MED/AEC sites but also at adjacent properties where contamination had spread from the original processing sites. Based on these findings, FUSRAP was initiated to identify formerly utilized MED/AEC sites; reevaluate their radiological status; perform appropriate response actions and/or institute controls consistent with the legislative authority in the Atomic Energy Act of 1954, as amended; and certify the sites for appropriate future use. In 1979, responsibility for FUSRAP activities was divided between the ASEV and the Assistant Secretary for Nuclear Energy (ASNE). The ASEV was responsible for identifying sites, characterizing radiological conditions, determining the need for response action, and certifying the post-response condition of the sites. The ASNE was responsible for implementing the required response action, including suitable disposal or stabilization of residual materials. In 1982, the ASEV's responsibilities were transferred to the ASNE. In 1989, these responsibilities were transferred to the Office of Environmental Restoration and Waste Management. In 1991, the director of that office became Assistant Secretary for Environmental Restoration and Waste Management.

The organizational strategy developed by DOE in the early 1980s assigned the responsibilities to DOE Headquarters (HQ) and DOE-ORO and their respective contractors. DOE-HQ's contractors have included Aerospace Corporation (replaced in 1988 by Roy F. Weston and in 1992 by Booz Allen and Hamilton, Inc.) as the contractor responsible for identifying potential sites, and Oak Ridge National Laboratory (ORNL) and Oak Ridge Associated Universities (ORAU) as contractors responsible for site characterization leading to designation and as independent verification contractors (IVCs). In 1992, ORAU formed the Oak Ridge Institute for Science and Education (ORISE) to perform DOE designation and verification surveys. DOE-ORO contractors have included Bechtel National, Inc. (BNI) as PMC, responsible for implementing required response actions, and Argonne National Laboratory (ANL) as the separate and independent environmental analysis contractor (for a time referred to as environmental compliance contractor) under the National Environmental Policy Act (NEPA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). In 1991, contractor responsibilities were realigned, and Science Applications International Corporation (SAIC) was chosen as the environmental studies contractor (ESC) for FUSRAP. ANL is currently a technical support contractor.

Most FUSRAP sites were MED/AEC sites used for processing, handling, and storing radioactive materials. The program also includes sites used in the Los Alamos plutonium development program and the Trinity atomic bomb site. The 1984 Energy and Water Development Appropriations Act (EWDAA) (Public Law 98-50) authorized DOE to conduct a decontamination research and development project at four sites that had been used essentially for commercial ventures. These sites include Colonie in New York; the Latty Avenue Properties in Hazelwood, Missouri; and Maywood and Wayne in New Jersey. The 1985 Energy and Water Development Appropriations Act (Public Law 98-360) authorized DOE to perform necessary response action at the St. Louis Airport Site and develop the property as a disposal site for wastes on vicinity properties and the

Hazelwood site. In 1990, the Niagara Falls Storage Site in Lewiston, New York, and the New Brunswick Site in New Brunswick, New Jersey, were transferred to FUSRAP from DOE's Surplus Facilities Management Program (SFMP), and the Palos Park site in Illinois was transferred out of FUSRAP.

### 1.3 MRPM POLICY, GOALS, AND OBJECTIVES

All FUSRAP activities shall be conducted in accordance with approved plans and procedures, DOE policy, and other requirements. Defined management systems implement and control FUSRAP actions and documents.

The goal of the MRPM is to define the policies and requirements for activities and controls necessary to meet (1) the objectives of FUSRAP; (2) DOE's technical, quality, and management standards and requirements; and (3) appropriate federal and state requirements for FUSRAP sites. Each policy or requirement described in the MRPM is applied to the degree appropriate to achieve DOE's technical, quality, and program objectives. This graded approach is designed to accomplish the following objectives:

- provide confidence in the validity and integrity of reported data through the use of proper methods and procedures for data collection and for protection, retrieval, and potential replication of the data;
- provide confidence that reported conclusions, recommendations, and associated studies are accurate, reliable, appropriate, and sound;
- provide confidence that structures, systems, and components will perform satisfactorily in service;
- ensure that operation of disposal sites will comply with applicable state and federal requirements; and
- ensure that field work will be performed safely and responsibly so that the exposure levels of project personnel and the public and contamination of the environment will be as low as reasonably achievable (ALARA).

The MRPM defines the management approach, organization, interfaces, and controls directed at achieving these objectives and specifies the applicable detailed procedures. The MRPM identifies the organizations responsible for implementing each policy and requirement. All project activities must comply with the MRPM.

The MRPM complies with the primary requirements and standards documents indicated in the FUSRAP S/RID (Figure 1-3). ISO 9001 is the predominant quality and management requirements document for the MRPM and FUSRAP.

### 1.4 RELATIONSHIPS OF FUSRAP MANAGEMENT DOCUMENTS

The project plan (Appendix A) is the top tier in a hierarchy of documents and manuals that state in increasing detail the policies, requirements, and procedures governing FUSRAP activities (see Figure 1-4). The MRPM is

## 2.0 EXPECTED RESULTS OF EFFORT

### 2.1 MISSION NEED

As part of the federal government's overall mission to restore the environment at various facilities, DOE is authorized by Congress to conduct programs to remedy radiological conditions at a number of privately owned, institutionally owned, and DOE-owned or -leased sites to minimize and abate potential risks to the public, to workers, and to the environment. Most of these sites were used in the past to support nuclear activities conducted for DOE and its predecessor agencies, and some remain contaminated at levels in excess of applicable radiological guidelines. FUSRAP is one of DOE's environmental restoration programs and is directed to a specific category of sites.

### 2.2 OBJECTIVES AND AUTHORITY

The objectives of FUSRAP are to (1) identify sites formerly used by MED or AEC that need response action and for which DOE has authority to perform such action; (2) decontaminate or control these sites to ensure the protection of public health and safety and the environment; and (3) perform response actions on sites as directed by Congress. Sites are assigned for response action under FUSRAP based on the need to protect public health and safety in accordance with current guidelines and with the authority to proceed.

#### 2.2.1 Need for Action

FUSRAP sites are listed in Table 2-1; the general locations of the sites are shown in Figure 2-1. DOE has authority to remediate sites that require response action. Sites may be added to the program based on the results of ongoing radiological surveys and health and safety evaluations, the review of DOE authority to conduct response actions, transfers of sites by DOE from other programs, and legislative actions.

#### 2.2.2 Legislative Authority

DOE has authority under the Atomic Energy Act of 1954 (AEA), as amended, to perform radiological surveys and other research. This work includes radiological monitoring at sites used to support the nuclear activities of DOE's predecessor agencies. DOE also has authority under the AEA to remediate sites identified as requiring some form of response action (see Table 2-1). Public Law 98-50, the EWDA, authorized DOE to conduct a decontamination research and development project at four sites (Colonie, New York; Latty Avenue Properties in Hazelwood, Missouri; and Wayne and Maywood in New Jersey). Public Law 98-360, the 1985 EWDA, authorized DOE to acquire title to the St. Louis Airport Site (SLAPS), perform necessary response action, and develop the property as a disposal site for the waste currently onsite and for waste from response action activities conducted at vicinity properties and the Latty Avenue Properties. Continued authorization has been provided each year in the passage of subsequent EWDAAs. Response actions at FUSRAP sites are conducted primarily under CERCLA, and DOE has responsibility under CERCLA to implement these actions. DOE and

Table 2-1 List of FUSRAP Sites

WBS No.	Site Name	Location	Legislative Authority	Month/Year Completed§
<b>NEW YORK SITES</b>				
158 †	Niagara Falls Storage Site	Lewiston	AEA	N/A
139 †	Colonie	Colonie	1984 EWDAAs	N/A
103	Ashland 1	Tonawanda	AEA	N/A
132	Ashland 2	Tonawanda	AEA	N/A
129	Linde Air Products	Tonawanda	AEA	N/A
123	Seaway Industrial Park	Tonawanda	AEA	N/A
128	Bliss and Laughlin Steel	Buffalo	AEA	N/A
<b>NEW JERSEY SITES</b>				
138 *†	Maywood	Maywood/Rochelle Park	1984 EWDAAs	N/A
137 *†	Wayne	Wayne	1984 EWDAAs	N/A
118 †	Middlesex Sampling Plant	Middlesex	AEA	N/A
144 †	New Brunswick Site	New Brunswick	AEA	N/A
108	DuPont & Company	Deepwater	AEA	N/A
<b>MISSOURI SITES</b>				
140 *†	Latty Avenue Properties	Hazelwood	1984 EWDAAs	N/A
153 *	St. Louis Airport Site	St. Louis	1985 EWDAAs	N/A
134 *	St. Louis Airport Site			
	Vicinity Properties	St. Louis	AEA	N/A
116	St. Louis Downtown Site	St. Louis	AEA	N/A
<b>OTHER SITES</b>				
107	Madison	Madison, IL	AEA	N/A
111	Luckey	Luckey, OH	AEA	N/A
112	Painesville	Painesville, OH	AEA	N/A
125 *	Shpack Landfill	Norton, MA	AEA	N/A
127	Ventron	Beverly, MA	AEA	N/A
110	W.R. Grace & Company	Baltimore, MD (Curtis Bay)	AEA	N/A
136	CE	Windsor, CT	AEA	N/A

Table 2-1 (continued)

WBS No.	Site Name	Location	Legislative Authority	Month/Year Completed§
<b>COMPLETED SITES</b>				
114	Kellex/Pierpont	Jersey City, NJ	AEA	12/80
101	Acid/Pueblo Canyons	Los Alamos, NM	AEA	9/82
104	Bayo Canyon	Los Alamos, NM	AEA	9/82
130	University of California (Gilman Hall)	Berkeley, CA	AEA	9/82
105	Chupadera Mesa	White Sands Missile Range, NM	AEA	NR (1984)
117	Middlesex Municipal Landfill	Middlesex, NJ	AEA	7/86
115	Niagara Falls Storage Site Vicinity Properties	Lewiston, NY	AEA	3/87
131	University of Chicago	Chicago, IL	AEA	9/88
119	National Guard Armory	Chicago, IL	AEA	4/89
102	Albany Research Center	Albany, OR	AEA	4/91
143	Elza Gate	Oak Ridge, TN	AEA	2/92
142	Seymour Specialty Wire	Seymour, CT	AEA	3/93
145	Baker and Williams Warehouses	New York, NY	AEA	7/93
106	Granite City Steel	Granite City, IL	AEA	12/93
122	C.H. Schnoor	Springdale, PA	AEA	9/94
126	Aliquippa Forge	Aliquippa, PA	AEA	9/94
135	Alba Craft	Oxford, OH	AEA	2/95
109	HHM Safe Company	Hamilton, OH	AEA	3/95
124	Associate Aircraft	Fairfield, OH	AEA	5/95
145	General Motors	Adrian, MI	AEA	7/95
133	Chapman Valve	Indian Orchard, MA	AEA	8/95
120	Baker Brothers	Toledo, OH	AEA	3/96
113	B&T Metals	Columbus, OH	AEA	6/96

† DOE-owned or -leased site

\* NPL site

§Site completion data are current as of September 1996.

AEA — Authorized under Atomic Energy Act of 1954, as amended.

1984 EWDA — Authorized under 1984 Energy and Water Development Appropriations Act, as amended.

1985 EWDA — Authorized under 1985 Energy and Water Development Appropriations Act, as amended.

NR — No radiological remedial action required.

N/A — Not applicable; response action ongoing or planned.

the EPA have signed federal facilities agreements (FFAs) for sites on the National Priorities List (NPL), except for the Shpack Landfill site. Table 2-1 lists FUSRAP sites, their locations, and the legislative authority for response action at each site.

### 2.3 FUSRAP SCOPE

The scope of FUSRAP includes

- reviewing records and performing site surveys to determine the need for response actions and to determine whether the authority to perform such actions is provided by the AEA;
- performing site investigations at DOE-owned or -leased properties or privately owned sites to determine the nature and extent of contamination for which DOE is responsible;
- bringing sites that are authorized for response action into compliance with currently applicable guidelines by performing response actions to decontaminate or stabilize the sites and by applying the necessary controls;
- removing hazardous chemical wastes from FUSRAP sites when the wastes are commingled with radioactive contamination or if the wastes are from MED/AEC operations; and
- transporting, storing, or disposing of all wastes removed from the sites in accordance with applicable laws, regulations, and guidelines.

### 2.4 COMPLIANCE WITH LAWS AND REGULATIONS

Environmental restoration is governed by (1) federal and state statutes; (2) regulations promulgated by federal, state, and applicable local regulatory agencies as required; and (3) court decisions interpreting these laws and regulations. Further, DOE-owned or -leased sites added to FUSRAP are automatically subject to the natural resource trustee notification requirements of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP).

The primary law that provides the process structure for FUSRAP work is CERCLA, as amended by the Superfund Amendments and Reauthorization Act (SARA). Work performed under FUSRAP is also governed by numerous other laws and regulations. The FUSRAP S/RID summarizes the principal laws and regulations with which FUSRAP must comply.

The field of environmental law is extremely dynamic; new laws and regulations are promulgated frequently. In addition, the courts regularly reinterpret the application of environmental laws, regulations, and legal principles. Applicable laws and regulations are listed in the S/RID. As requirements change, the S/RID is modified to incorporate necessary changes.

Department of Energy  
Washington, D.C. 20585

JUN 19 1978

MEMORANDUM

TO:

DALE D. MYERS

FROM:

LYNN R. COLEMAN

SUBJECT: LEGAL OPINION AUTHORITY  
TO DECONTAMINATE MIDDLESEX  
SAMPLING PLANT SITE AND  
ADJACENT PRIVATE PROPERTIES

You have asked for an opinion of this Office as to whether the Department of Energy (DOE) has authority to decontaminate the site of a former government-owned sampling plant at Middlesex, New Jersey, and private properties adjacent to that site--all of which were radioactively contaminated as a result of past government actions at the site.

It is the opinion of this Office that DOE has the requisite authority to decontaminate the plant site and adjacent private properties.

As I understand it, a sampling plant was built in 1942 on government-owned land by the Manhattan Engineer District (MED) of the War Department to sample pitchblende ores purchased from foreign sources as part of the national defense effort. In 1946, MED was abolished and its operations were transferred to the Atomic Energy Commission (AEC) which continued to operate the sampling plant until 1967 under authority of section 5(b)(5) and 6(a)(2) of the Atomic Energy Act of 1946, as amended, and sections 5 and 91(a)(2) of the Atomic Energy Act of 1954, as amended. The sampling plant operations resulted in extensive radioactive contamination of the plant site and private properties adjacent to that site.

Executive Order 9816 of December 31, 1946 (46 F.R. 11) transferred the Middlesex sampling plant to AEC.

CO  
CO  
-2-  
In 1967, the AEC conducted a decontamination effort at the plant site and subsequently exceeded the property to the General Services Administration for unlicensed and unrestricted use. It was later transferred to the U. S. Navy and is currently used as a Marine Corps Training Center. The radiological condition existing during the 1967 survey of the radiological plant was not documented by the AEC nor is there any record of decontamination efforts on the private property adjacent to the plant site. In 1976, the plant site and surrounding private properties were surveyed by ABC's operational successor -- the Energy Research and Development Administration (ERDA) -- and were found to be radioactively contaminated. The DOE assumed the responsibilities of ERDA on October 1, 1977.

In conducting the sampling operations on its property, the AEC had the responsibility in accordance with section 161(a) and (e) of the Atomic Energy Act of 1954, as amended, to assure that the public health and safety would be adequately protected. Likewise, when the AEC ceased operations at the plant and exceeded the property to GSA to be disposed of for unrestricted use, the AEC had an obligation to assure that such actions would not endanger the public health and safety. This responsibility was recognized by the AEC when it undertook to decontaminate the plant site prior to its release to GSA. However, the AEC failed to fulfill its responsibility and released the plant in a contaminated condition that has been shown to be potentially injurious to the public health and safety at the plant site as well as at adjacent private property. Consequently, it would appear to follow that DOE has the implied authority under sections 66 and 91(a)(2) of the Atomic Energy Act of 1954 as amended, to decontaminate the plant site and surrounding areas to protect the public health and safety from radioactive contamination caused by its predecessor agency's operation of the sampling facility.

cc: J. L. Liverman, EV

Section 104 of the Energy Reorganization Act of 1974, effective in the AEC and transferred to ERDA all functions and responsibilities specifically assigned to the Nuclear Regulatory Commission. Section 601 of the Department of Energy Organization Act of 1977 transferred all responsibilities of ERDA to DOE.

MAKING APPROPRIATIONS FOR ENERGY AND WATER  
DEVELOPMENT

JUNE 28, 1983.—Ordered to be printed

Mr. BEVILL, from the committee of conference,  
submitted the following

CONFERENCE REPORT

[To accompany H.R. 8182]

The committee of conference on the disagreeing votes of the two Houses on the amendments of the Senate to the bill (H.R. 3132) making appropriations for energy and water development for the fiscal year ending September 30, 1984, and for other purposes, having met, after full and free conference, have agreed to recommend and do recommend to their respective Houses as follows:

That the Senate recede from its amendments numbered 4, 5, 8, 11, 15, 19, 20, 33, 34, 38, and 39.

That the House recede from its disagreement to the amendments of the Senate numbered 12, 28, 29, 31, 36, and 41, and agree to the same.

Amendment numbered 1:

That the House recede from its disagreement to the amendment of the Senate numbered 1, and agree to the same with an amendment, as follows:

In lieu of the sum proposed by said amendment insert \$133,810,000; and the Senate agree to the same.

Amendment numbered 2:

That the House recede from its disagreement to the amendment of the Senate numbered 2, and agree to the same with an amendment, as follows:

In lieu of the sum proposed by said amendment insert \$884,104,000; and the Senate agree to the same.

Amendment numbered 3:

That the House recede from its disagreement to the amendment of the Senate numbered 3, and agree to the same with an amendment, as follows:

*General administrative expenses*

Amendment No. 20: Appropriates \$58,750,000 for general administrative expenses as proposed by the House instead of \$53,400,000 as proposed by the Senate.

## TITLE III—DEPARTMENT OF ENERGY

The summary table at the end of this title sets forth the conference agreement with respect to individual appropriations, programs and activities for the Department.

*Energy supply, research and development activities*

Amendment No. 21: Appropriates \$1,951,609,000 for Energy Supply, Research and Development Activities, instead of \$1,964,209,000 as proposed by the House and \$1,943,709,000 as proposed by the Senate.

## Solar Energy

*Solar Thermal Energy Systems.*—The conferees agree to provide \$6,000,000 for detailed design of one central solar power receiver under the House-stipulated conditions. No funds are available for salt gradient research. Up to \$2,000,000 may be used for the thermal energy storage program identified in the House Report.

*Wind Energy Systems.*—The conferees agree with the Senate Report language concerning MOD 5A and 5B funding allocations and the wind systems comprehensive program management plan.

*Biomass and Alcohol Fuels.*—The conferees agree to provide \$4,000,000 for regional biomass energy programs.

*Ocean Energy Systems.*—The conferees agree that funds are available for only feasibility studies of open-cycle systems and \$1,500,000 is available for cold water pipe research.

*Electric Energy Systems.*—The conference agreement provides for the deep sea cable project under the guidance of the Senate Report.

## Nuclear Fission

*Breeder Reactor Systems.*—The conference agreement provides \$4,000,000 for design activities on the breeder reactor engineering test facility.

*Remedial Action Program.*—The conferees direct that the Department give priority to the undertaking of a decontamination research and development project involving the following sites and their vicinity properties, and has added funds to initiate the work: \$2,000,000 for the site and vicinity properties in Wayne/Pequanock, New Jersey; \$2,000,000 for the site and vicinity properties in Maywood, New Jersey; \$500,000 for the site and vicinity properties near Albany, New York; and \$500,000 for the former Cotter Corp. site at Latty Avenue, Hazelwood, Missouri.

*Commercial Nuclear Waste.*—The conferees agree that \$9,600,000 is available for the subseabed waste program in fiscal year 1984.

loan program instead  
proposed by the

100 for gross  
of \$57,802,000 as  
by the Senate.

ng table:

BUDGET ESTIMATE	CONFERENCE ALLOWANCE
--------------------	-------------------------

200,000	3,200,000
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100,000	2,000,000
---------	-----------

181,000	3,181,000
---------	-----------

20,000	3,220,000
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94,000	1,694,000
--------	-----------

100,000	1,000,000
---------	-----------

---	1,500,000
-----	-----------

580,000	4,580,000
---------	-----------

100,000	4,800,000
---------	-----------

300,000	6,000,000
---------	-----------

87,000	3,187,000
--------	-----------

---	4,000,000
-----	-----------

48,000	1,148,000
--------	-----------

40,000	2,500,000
--------	-----------

188,000	2,700,000
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36,000	2,306,000
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52,000	1,152,000
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32,000	832,000
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60,000	6,000,000
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90,000	43,000,000
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**ENERGY AND WATER DEVELOPMENT APPROPRIATION  
 BILL, 1984**

JUNE 16 (legislative day, JUNE 13), 1983.—Ordered to be printed

Mr. HAYFIELD, from the Committee on Appropriations,  
 submitted the following

**REPORT**

(To accompany H.R. 3132)

The Committee on Appropriations, to which was referred the bill (H.R. 3132) making appropriations for energy and water development for the fiscal year ending September 30, 1984, and for other purposes, reports the same to the Senate with various amendments and presents herewith information relative to the changes recommended:

AMOUNT IN NEW BUDGET (OBLIGATIONAL) AUTHORITY, FISCAL YEAR 1984

Amount of bill as passed by the House.....	\$14,180,003,000
Budget estimates considered by House.....	14,610,671,000
Budget estimates considered by Senate.....	14,610,671,000
Amount of bill as reported to the Senate.....	14,170,853,000
Amount of appropriations, 1983 .....	14,535,691,000
The bill as reported to the Senate—	
Under the appropriations, 1983.....	—364,838,000
Under the budget estimate, 1984.....	—439,818,000
Under the House-passed bill .....	—9,150,000

For light water reactor systems and Three Mile Island activities, a total of \$52,000,000 is provided, the same as the budget request and \$9,000,000 less than the House allowance.

For advanced reactor systems, the fiscal year 1984 budget request again proposes to transfer funding for reduced-enrichment research and test reactor (RERTR) program to the Arms Control and Disarmament Agency. The Committee considers this type of research to be a responsibility of the Department of Energy. Therefore, the funding request has been transferred from the State, Justice, Commerce and Related Agencies Appropriations Subcommittee to the Energy and Water Development Subcommittee. The Committee recommends \$4,980,000 for this activity, the same as the House and the budget request.

*Commercial nuclear waste.*—The Committee recommends \$22,580,000 for the commercial nuclear waste research activities, the same as the House and the budget request. Most of the nuclear waste program has been shifted to the new Nuclear Waste Disposal Fund. This fund is intended to provide additional funding for waste disposal activities to be financed from fees paid by electric utilities which generate nuclear power.

Also included in the Committee recommendation is \$800,000 in capital equipment for the subsea bed waste disposal program.

*Remedial action.*—A total of \$95,985,000 is recommended for remedial action, the same as the House and \$5,000,000 over the budget request.

For remedial action at inactive uranium mill tailing sites, the Committee includes \$27,900,000, the same as the budget request and the House allowance. This funding will allow continuation of important ongoing remedial action activities.

Once again, the Committee calls attention to a problem potentially affecting residents in the vicinity of Edgemont, S. Dak., due to uranium mill tailings placed as fill material off-site of the TVA-owned mill. Having been assigned responsibility for remedial action at designated vicinity properties, the Department of Energy is in the process of negotiating with the State of South Dakota a cooperative agreement and finalizing its review of the radiation monitoring and engineering assessment program conducted by the NRC.

Although the Committee directed DOE to complete the necessary remedial work during the 1983 construction season, it appears that preliminary requirements mandated by the Uranium Mill Tailings Radiation and Control Act of 1978 may preclude the Department from completing the Edgemont off-site project this year.

If unable to complete this project during the current fiscal year, the Committee directs the Department to complete off-site remedial action at Edgemont during the 1984 construction season. Therefore, of the funds appropriated for title I sites, up to \$1,000,000 should be made available in fiscal year 1984 to cover the cost of this project in accordance with the provisions of section 21 of Public Law 97-415, the Nuclear Regulatory Commission Authorization for Fiscal Years 1982-83.

The Committee provides an additional \$5,000,000 to initiate necessary remedial action activities for the site in Wayne/Pequanak, N.J.; for the site in Maywood, N.J. and vicinity residences; and for the Colonie, N.Y. site.

*Nuclear fuel cycle.*—The Committee recommends \$41,807,000 for nuclear fuel cycle activities, the same as the House and the budget request. Within the funds provided, \$3,000,000 is included for thorium fuel cycle research in support of the high temperature gas reactor technology.

*Advanced nuclear systems.*—The Committee includes \$32,735,000 for space and terrestrial applications, the same as the House allowance and the budget request.

*Breeder reactor systems.*—A total of \$342,500,000 is included for breeder reactor systems research and development activities, \$10,000,000 over the budget request and \$2,000,000 above the House allowance. This amount excludes the Clinch River Breeder Reactor demonstration project which is discussed below.

For the liquid metal fast breeder reactor program, the Committee recommends \$296,800,000, which is \$10,000,000 over the budget request. The Committee supports the Department's effort to refocus and consolidate the LMFBR base program. Within the necessary budget constraints, it is important that the resources available to the base program be used in the most efficient and effective manner. The Department is expected to continue to streamline the program structure in such a way as to minimize disruption of ongoing activities.

The Committee directs DOE to continue to perform at Argonne National Lab. the program objectives established in fiscal year 1983. The additional \$10,000,000 is provided for this purpose; \$8,000,000 for operating expenses and \$2,000,000 for the TREAT Upgrade Facility capital equipment. Argonne should also perform design studies of special purpose safety test facilities aimed at establishing optimum safety features to assure licensability for new breeder designs emphasizing inherent safety and low cost. The Department must provide a sufficient level of budget authority so that no program discontinuities occur.

*Clinch River Breeder Reactor.*—The Committee recommendation provides no funds in fiscal year 1984 for the Clinch River Breeder Reactor demonstration project. In Conference Report 97-980, which accompanied the fiscal year 1983 continuing appropriations bill, Congress prohibited the initiation of construction on any permanent structures or the purchase of any major equipment for the project. Also, Congress provided up to \$1,000,000 for the Department "to vigorously explore proposals, including a reconsideration of the original cost-sharing arrangement, that would reduce Federal budget requirements for the Clinch River project or project alternative, and secure greater participation from the private sector." While the Committee has supported this project in the past, the absence of a viable and substantive alternative to reduce Federal appropriations requirements makes it impossible for the Committee to recommend funding at this time. Accordingly, the Committee is deferring this matter without prejudice. If an alternative financ-

ENERGY AND WATER DEVELOPMENT APPROPRIATION  
BILL, 1984

MAY 24, 1983.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. BEVILL, from the Committee on Appropriations,  
submitted the following

REPORT

together with

ADDITIONAL VIEWS

[To accompany H.R. 3132]

The Committee on Appropriations submits the following report in explanation of the accompanying bill making appropriations for energy and water development for the fiscal year ending September 30, 1984, and for other purposes.

INDEX TO BILL AND REPORT

Title	Bill page	Report page
I. Department of Defense—Civil		
Chiefs of Engineers—Civil		
General investigations	2	4
Construction, general	2	29
Flood control and coastal emergencies	3	41
Reservoir funds	3	54
Flood control, Mississippi River and tributaries, Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri, and Tennessee	4	36
Operation and maintenance, general	5	41
General expenses	5	56
Special recreation site fees	5	56
II. Department of the Interior		
Bureau of Reclamation		
General investigations	6	57
Construction program	8	60
Operation and maintenance	10	65

## NUCLEAR ENERGY PROGRAMS

Fiscal year 1983 appropriation.....	\$815,365,000
Fiscal year 1984 estimate.....	853,172,000
Fiscal year 1984 recommendation.....	630,147,000
Change from estimate.....	-223,025,000

The fiscal year 1984 budget request for nuclear energy programs is \$853,172,000, compared with \$815,365,000 provided under the FY 1983 Continuing Resolution. This amount represents the budget request and prior year amounts including the amount requested for the Clinch River Breeder Reactor Project. In addition, certain activities previously carried out under this program are now included in the new appropriation for the "Nuclear Waste Disposal Fund". Activities in this area include converter reactor research, commercial nuclear waste, remedial action, and nuclear fuel cycle. The Committee's recommended changes to the President's budget request are discussed below.

*Converter Reactors.*—The Committee recommends an additional \$9,000,000 to continue the LWR extended-burnup research program through the completion of existing, planned activities and continuation of the originally planned five vendor effort.

*High Temperature Reactor Technology.*—The Committee recommendation includes \$25,000,000 above the budget request to conduct generic research in high temperature gas reactor technology. The Committee has heard testimony concerning the high temperature gas reactor and is convinced it has considerable merit. However, in the current marketplace with no recent sales of light water reactors and little possibility for nuclear reactor sales in the near future, the Committee cannot endorse continuation of a high temperature reactor program oriented at design and fabrication of a lead project reactor. Future support of this project will depend on obtaining an administration commitment to a lead project reactor. Funds are provided to maintain a basic research program and sufficient staff and laboratory support to do this.

*Advanced Reactor Systems.*—Once again in FY 1984 the budget request proposed to transfer funding for reduced-enrichment research and test reactor (RERTR) program to the Arms Control and Disarmament Agency. The Committee considers this type of research to be a responsibility of the Department of Energy. Therefore, the funding request was transferred from the State, Justice, Commerce and Related Agencies Appropriations Subcommittee to the Energy and Water Development Subcommittee. The Committee recommends \$4,980,000 for this activity, the same as the request.

*Remedial Action Program.*—The Committee directs that the Department give first priority to clean-up of the following remedial action items and has added funds for them: \$2,000,000 for the site in Wayne/Pequanak, New Jersey; \$2,000,000 for the Stepan Chemical Co. site in Maywood, New Jersey and vicinity residences; \$1,000,000 to transport consolidated thorium wastes from the former Cotter Corp. site at Latty Avenue in Hazel, Missouri.

*Breeder Reactor Systems.*—The Committee recommendation includes an increase of \$8,000,000 in breeder reactor systems for design activities of a breeder reprocessing engineering test facility.

ENERGY AND WATER DEVELOPMENT APPROPRIATION  
BILL, 1985

JUNE 5, 1984.—Ordered to be printed

Mr. HATFIELD, from the Committee on Appropriations,  
submitted the following

REPORT

[To accompany H.R. 5653]

The Committee on Appropriations, to which was referred the bill (H.R. 5653) making appropriations for energy and water development for the fiscal year ending September 30, 1985, and for other purposes, reports the same to the Senate with various amendments and presents herewith information relative to the changes recommended:

AMOUNT IN NEW BUDGET (OBLIGATIONAL) AUTHORITY, FISCAL YEAR 1985

Amount of bill as passed by the House.....	\$15,470,725,000
Budget estimates considered by House.....	15,874,791,000
Budget estimates considered by Senate.....	15,874,791,000
Amount of bill as reported to the Senate.....	15,371,133,000
The bill as reported to the Senate—	
Under the budget estimate, 1985.....	—503,658,000
Under the House-passed bill.....	—99,592,000

Phase II thermal loop at Fenton Hill,

#### DROPOWER

tion includes \$750,000 for small-scale fiscal year 1984 level and \$303,000 over

#### HYDROGEN SYSTEMS AND STORAGE

\$40,335,000 for energy storage and electricity; the House and \$5,000,000 over the re-

quest of \$20,732,000 is provided for electricity, \$500,000 over the budget request and the House. The recommendation includes adequate funding for the Hawaiian deep-sea cable

amount of \$19,603,000 is included for electricity, \$2,000,000 over the budget request. The House allows \$50,000 for battery storage which will allow for technology development and testing of thermal and mechanical storage and systems.

For energy storage systems, \$1,500,000 is provided for phase change thermal storage for industrial

#### NUCLEAR FISSION

Nuclear fission remains an important energy source for meeting the Nation's energy requirements and for lessening the Nation's dependence on foreign oil. The Committee continues to strongly support nuclear energy.

For the nuclear fission reactor program, \$3,000,000 above the budget request

and \$88,466,000 is recommended for the same as the House and the budget request

for advanced technology. \$34,609,000 is recommended for the same as the House allowance. The development of advanced technology is supported in the past because of its potential and its potential advantages over the current technology. No funding is available from this account to the new production reactor for development

of advanced technology that efforts be focused on modular concepts, in order to develop an HTGR design and optimizes the safety and economic

features of the plant. The scope of the effort should address critical technical and licensing issues, as well as the issue of fabrication of modularized nuclear plants. Identification of a lead laboratory such as the Oak Ridge National Laboratory could help assure that this program receives the proper coordination and direction.

For light water reactor systems and Three Mile Island activities, a total of \$48,200,000 is provided, the same as the budget request. The Committee notes that the TMI program is limited to necessary research and development only. Responsibility for the costs of TMI's cleanup remains with the owner of the facility.

For advanced reactor systems, the fiscal year 1985 budget request again proposes to transfer funding for reduced enrichment research and test reactor (RERTR) program to the Arms Control and Disarmament Agency. The Committee considers this type of research to be a responsibility of the Department of Energy. Therefore, the funding request has been transferred from the Commerce, State, Justice and Related Agencies Appropriations Subcommittee to the Energy and Water Development Subcommittee. The Committee recommends \$4,932,000 for this activity, the same as the House and the budget request.

*Nuclear waste technology.*—The Committee recommends \$13,305,000 for nuclear waste technology, the same as the request and the House allowance.

*Civilian waste.*—The recommendation includes \$27,640,000 for civilian waste R&D activities, the same as requested in the budget.

*Advanced nuclear systems.*—The Committee recommends \$33,500,000 for advanced systems and space applications, the same as the budget request.

*Remedial actions.*—The Committee recommends \$167,010,000 for the remedial action program, a \$15,000,000 increase over the budget request and the House allowance.

For the formerly utilized site program, the recommendation includes \$19,000,000, which is \$3,000,000 more than the budget request and the House allowance.

The Committee provides \$3,000,000 in additional funding for activities at sites and vicinity properties at Colonie, N.Y., Wayne, N.J., Maywood, N.J., and Hazelwood, Mo.

The Committee directs the Department to take the necessary steps to consolidate and dispose of the waste material from the Latty Avenue site and nearby St. Louis Airport vicinity properties locally, by reacquiring, stabilizing, and using the old 21.7 acre AEC airport site in a manner acceptable to the city of St. Louis. The Committee understands that this action adopts the lowest cost option for the remedial action R&D program at these sites.

For the uranium mill tailings remedial action program, the Committee recommends \$66,010,000, an increase of \$12,000,000 over the budget request. This program is responsible for conducting remedial actions and cleanup at numerous inactive mill tailings sites and several associated vicinity properties as mandated by Public Law 95-604. The

ENERGY AND WATER DEVELOPMENT APPROPRIATION  
BILL, 1985

MAY 15, 1984.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. BEVILL, from the Committee on Appropriations,  
submitted the following

## REPORT

together with

## ADDITIONAL VIEWS

[To accompany H.R. 5653]

The Committee on Appropriations submits the following report in explanation of the accompanying bill making appropriations for energy and water development for the fiscal year ending September 30, 1985, and for other purposes.

## INDEX TO BILL AND REPORT

	Page	
	Bill	Report
I. Department of Defense—Civil:		
Corps of Engineers—Civil:		
General investigations.....	2	6
Construction, general.....	2	24
Flood control and coastal emergencies.....	4	38
Revolving fund.....		66
Flood control, Mississippi River and tributaries, Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri, and Tennessee.....	4	33
Operation and maintenance, general.....	5	38
General expenses.....	5	56
II. Department of the Interior:		
Bureau of Reclamation:		
General Investigations.....	11	57

## LEAS RESEARCH PROGRAM

ing limited changes to the overall e are explained below:

omittee recommends an additional extended-burnup research program ing, planned activities and continu- ive vendor effort.

Once again in fiscal year 1985 the nsfer funding for reduced-enrich- RERTR) program to the Arms Con- The Committee considers this type ity of the Department of Energy. was transferred from the Depart- t of Energy. The Committee recom- r, the same as the request.

Committee recommendation pro- f \$10,000,000 in breeder base re- Department to establish priorities

Department is directed to allocate or experimental contributions and an "Integral Fast Reactor," within rogram.

-Within available funds the De- the Passive Containment System, ittees on Appropriations the Sys- ety and economical power genera-

omitee recommendation includes h related to space applications of y was formerly funded under the nd does not represent a new start

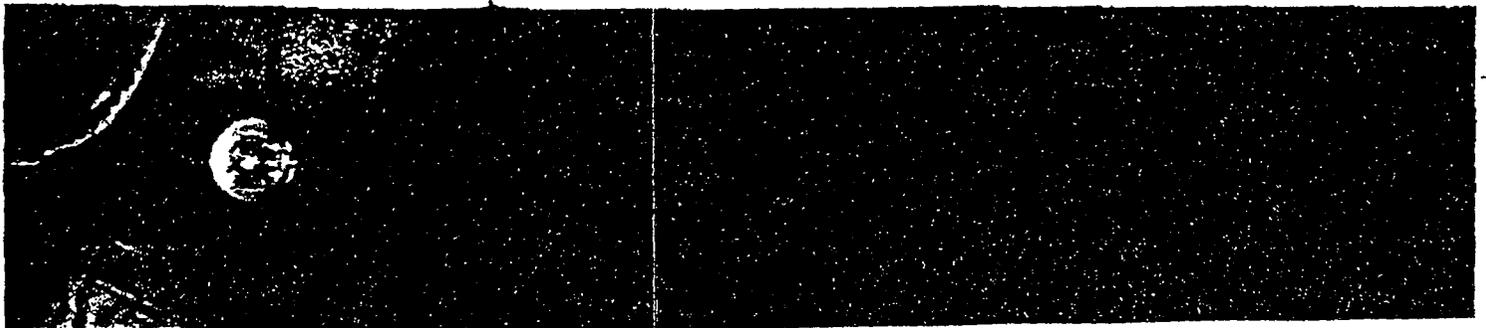
liquid fed, ceramic melter will be hwest Laboratories by the end of e first radioactive melter in oper- echnology can be demonstrated, wastes. The Department is direct- facility so that the canisters of n be destructively analyzed to de- duced. If the quality can be con- from full scale vitrification facili- pository without creating destruc- a later date. The Committee un- ation facility can be incorporated e Pacific Northwest Laborato- illion from available funds be al- program for this purpose. The is more prudent to confirm the han waiting for the requisite fa- radioactive waste to be built and higher cost, develop the capabili- ss.

*Remedial Action Program.*—The Committee is concerned about the potential transportation and disposal cost of the R&D program in removing Department of Energy wastes from the Latty Avenue site and the nearby St. Louis airport vicinity properties to some distant disposal site outside the local area. It, therefore, directs the Department to take the necessary steps to consolidate and dispose of this material locally, by reacquiring, stabilizing, and using the old 21.7 acre AEC airport site in a manner acceptable to the City of St. Louis. The Committee understands that this action adopts the lowest cost option for the remedial action R&D program at these sites.

*Uranium Mill Tailings Program.*—The Committee is concerned about a situation that is developing in the uranium mill tailings program that could dramatically and unnecessarily increase the costs of the program. The issue involves whether or not uranium mill tailings disposal and storage sites can or should be stabilized in place or relocated as a means of satisfying the health and safety requirements of the law. A related issue involves the potential economic improvements that may result from relocation of mill tailings in certain areas of the country. This issue arises in a specific instance in the fiscal year 1985 budget because the Department of Energy has agreed with the State of Utah to relocate as opposed to stabilize-in-place the uranium mill tailings currently at the Vitro site in Salt Lake City. The additional cost to relocate these tailings is estimated to be as high as \$34,000,000. There are seven other locations in the uranium mill tailings program where relocation is an alternative to stabilization in place and if relocation were done in each case, the total additional cost to this program would be \$100,000,000, according to testimony before the Committee.

While each of these situations would have to be considered on a case-by-case basis, in the Vitro case, no evidence was presented by the Department that established that a serious health or safety problem would exist after the Vitro mill tailings were stabilized in place. State and local interests have indicated that there would be the potential for health risks, but also indicated that economic development of that area of Salt Lake City was also a consideration in relocation.

Because the Committee received no evidence that additional significant health hazards would result from stabilization in place, and because one of the primary motivations for relocation of the mill tailings appears to be economic, the Committee directs that no Federal funds are available for relocation of the Vitro mill tailings and that, if the State of Utah should desire to relocate the mill tailings to another site within the State, the full additional cost of that relocation should be borne by the State. Project management should remain with the Federal Government.



*The Formerly Utilized Sites  
Remedial Action Program  
(FUSRAP)*

*Building Stakeholder  
Partnerships to Achieve  
Effective Cleanup*



U.S. Department of Energy  
Office of Environmental Restoration



This booklet describes the U.S. Department of Energy's (DOE's) Formerly Utilized Sites Remedial Action Program (FUSRAP). Stakeholders can read this booklet to learn more about the history of FUSRAP and the ongoing and planned efforts to clean up FUSRAP sites. DOE encourages stakeholder input into the FUSRAP decision-making process, and this booklet highlights opportunities for stakeholder involvement in both national and site-specific FUSRAP issues.

This booklet contains six sections and four appendices:

- ☞ **FUSRAP AT A GLANCE**—describes how FUSRAP sites were created, the importance of cleaning up these sites, DOE's objectives for the program, the types of waste commonly found at FUSRAP sites, and progress in cleaning up FUSRAP sites.
- ☞ **MANAGING THE PROGRAM**—briefly explains who manages and conducts cleanup activities at FUSRAP sites, describes the Federal budget process by which the amount of funding available for FUSRAP is determined each year, and provides a map of the United States indicating where the 46 FUSRAP sites are located.
- ☞ **FUSRAP RULES AND TOOLS**—describes the Federal laws and regulations that guide FUSRAP cleanup decisions and activities.
- ☞ **THE FUSRAP CLEANUP PROCESS**—explains how FUSRAP sites are identified, designated, and cleaned up.
- ☞ **INVOLVING STAKEHOLDERS IN FUSRAP DECISIONS**—highlights major stakeholder concerns at FUSRAP sites and describes how stakeholders can become involved in decisions affecting FUSRAP.
- ☞ **LOOKING TO THE FUTURE**—highlights some FUSRAP success stories and sets the stage for future FUSRAP activities.
- ☞ **APPENDIX 1**—contains a site-by-site summary of FUSRAP activity.
- ☞ **APPENDIX 2**—contains a summary of the cleanup evaluation criteria DOE uses to develop and evaluate FUSRAP cleanup alternatives.
- ☞ **APPENDIX 3**—contains a list of FUSRAP public information centers and other sources for getting information about FUSRAP.
- ☞ **APPENDIX 4**—contains a glossary of key FUSRAP terms.



*The Department of Energy is committed to protecting public health and the environment by dealing with the environmental legacy of the Cold War. This, in many ways, is as complex as the challenges faced by the Department of Energy's predecessor agencies in developing and manufacturing nuclear weapons to fight the Cold War.*

*The Formerly Utilized Sites Remedial Action Program (FUSRAP) cleanup, which is being conducted at 46 sites in 14 states, touches the lives of countless Americans. We have to date cleaned up 18 FUSRAP sites and anticipate the cleanup of three more by the end of Fiscal Year 1996. The course of the ongoing and future cleanups will be decided through broad public involvement—at both the national and local events. We have created this booklet to foster sustained and informed public discussion on the critical issues and challenges facing the cleanup of the formerly utilized sites.*

*Our hope is that this booklet will enable us to move forward together and succeed in this worthwhile undertaking.*

*Thomas P. Grumbly,  
Assistant Secretary for Environmental Management  
U.S. Department of Energy*





### What Is FUSRAP?

The Formerly Utilized Sites Remedial Action Program (FUSRAP) is an important Department of Energy (DOE) environmental cleanup program. DOE created FUSRAP in 1974 to identify, investigate, and clean up or control sites where contamination above today's guidelines remains from the early years of the nation's atomic energy program. Today's FUSRAP sites contributed to both peacetime and World War II nuclear energy programs. For example:

- At the Alba Craft Site in Ohio, several hundred tons of uranium metal were machined to produce slugs for nuclear reactors, as part of the Atomic Energy Commission's (AEC's) peacetime atomic energy program during the 1950s.
- At the Chapman Valve Site in Massachusetts, special valves and manifolds were produced and uranium metal was machined for use at the Brookhaven National Laboratory.
- At the C.H. Schnoor Site in Pennsylvania, uranium metal slugs were produced for use at a plutonium production nuclear reactor at the Hanford Reservation in Washington State.
- At the Middlesex Sampling Plant in New Jersey, radioactive ores from such places as the Belgian Congo were sampled, tested, and then packaged and shipped to other facilities for further processing during World War II. Peacetime atomic energy activities continued at the site until 1967.

### The Legacy of Early Atomic Weapons Production

During the 1940s, 1950s, and 1960s, work was performed at sites throughout the United States as part of the nation's early atomic energy program. Some activity can be traced back as far as the early days of World War II and the Manhattan Engineering District (MED); other sites were involved in peacetime activities under the Atomic Energy Commission (AEC). Both the MED and the AEC were predecessors of the current U.S. Department of Energy (DOE).

Generally, sites that became contaminated during this early period of the nuclear program were cleaned up or released for use under the cleanup guidelines in effect at the time. Because those cleanup guidelines were not as strict as today's

Through careful engineering, FUSRAP performs a variety of vicinity property cleanups. This house contained contamination within and under the foundation walls. By raising the house, contaminated walls and subsurface soils were removed. The old foundation walls were replaced and the house was restored to its original condition.





guidelines, small amounts of radioactive materials remained at some of the sites. Then, when the owners would demolish a building or move materials, waste sometimes spread, primarily through the soil or air, to other locations and onto vicinity properties near some of the sites.

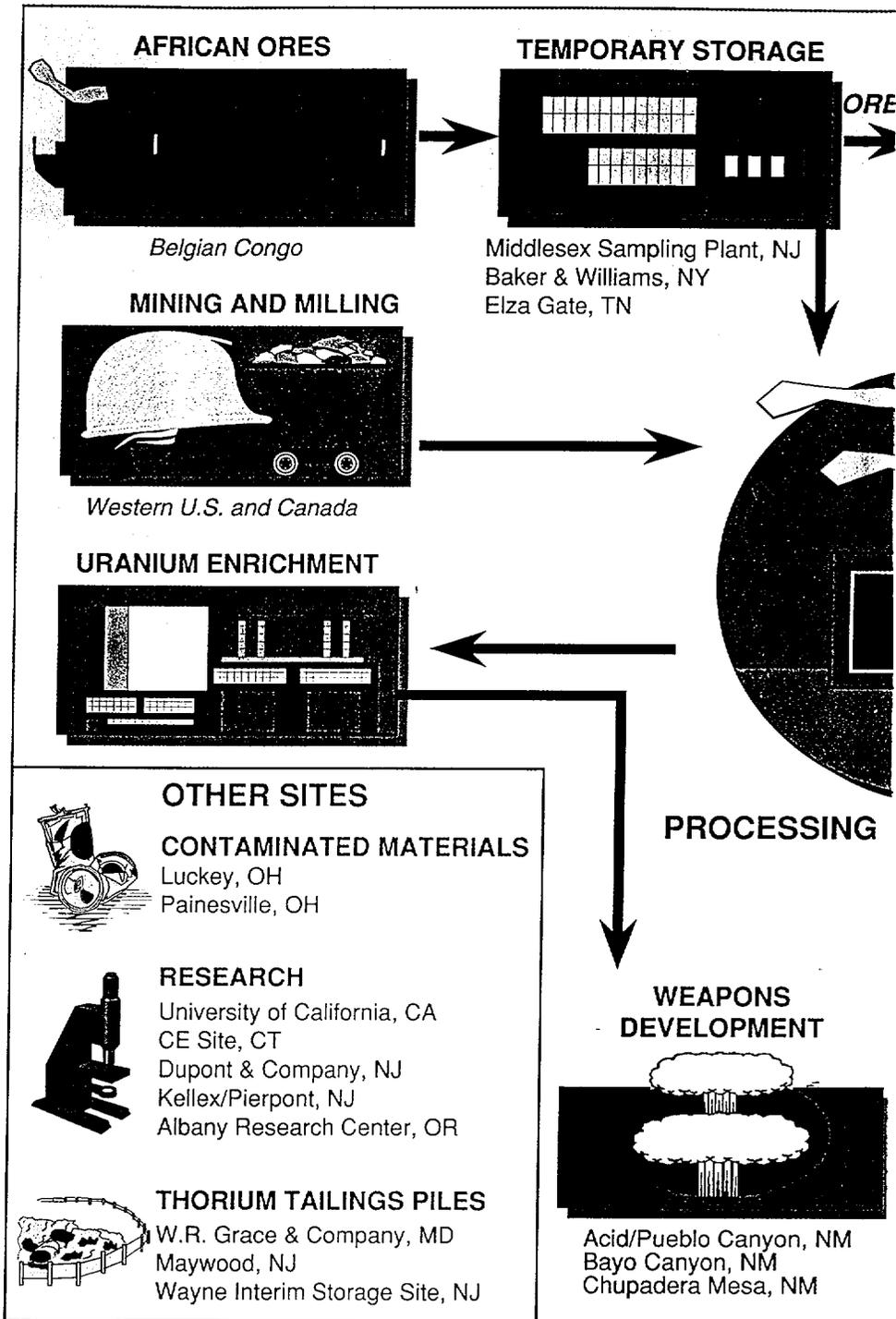
Storage, sampling, assaying, processing, or machining of uranium ore and metal took place at all FUSRAP sites. Figure 1 shows how these activities resulted in today's FUSRAP sites.

During the 1940s, uranium ore was shipped from the Belgian Congo (African ores) or the Western United States and Canada. The Belgian Congo ore was placed in temporary storage. Most of the ore from the Western United States and Canada went directly into processing.

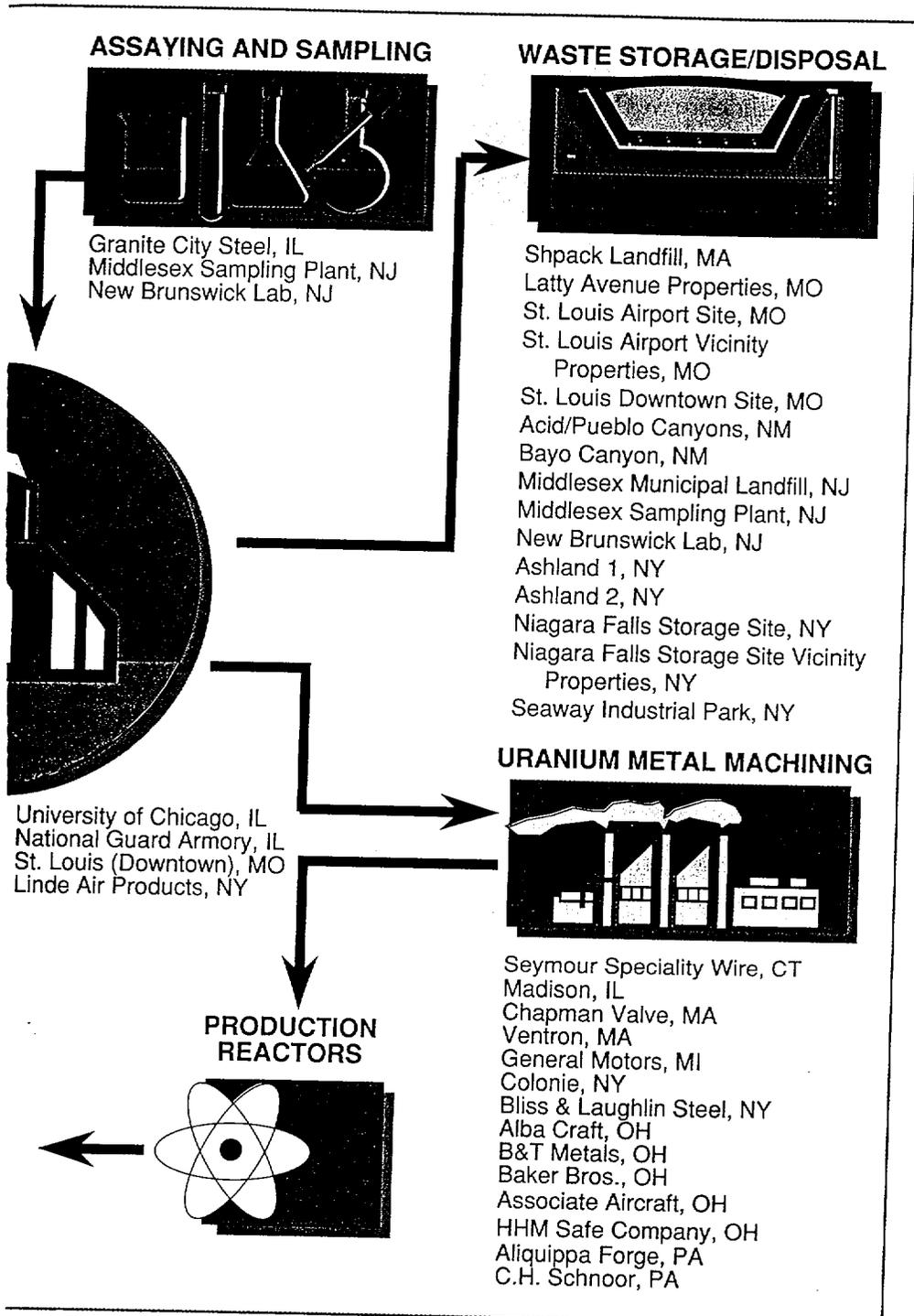
From temporary storage, the African ore either was sent directly to a processing facility or was sent to a sampling and assaying facility prior to processing. Once the ore had been processed, it was sent to either a uranium enrichment facility or a uranium metal machining plant.

Wastes from uranium processing were sent to storage and disposal facilities. Enriched uranium was sent directly to weapons development sites, and machined

FIGURE 1  
Material Flow at FUSRAP Sites



This figure shows the flow of uranium ore from the Belgian Congo, Western United States, and Canada to storage, sampling, processing, machining, or weapons development facilities



throughout the United States. Each of the 46 FUSRAP sites is associated with one or more of these activities.

uranium was sent to production reactors—primarily the Hanford Reservation in Washington State in the 1940s and the Savannah River Plant in South Carolina in the 1950s. These reactors produced basic materials used in making nuclear weapons. These resulting materials were then sent from the production reactors to weapons development facilities.

DOE began FUSRAP in 1974 to study and clean up these sites. If a site is a candidate for FUSRAP, old records are reviewed, previous employees are interviewed, and the site is surveyed. If contamination is found that is connected to MED or AEC activities, cleanup is approved under FUSRAP. Congress also has added specific sites to FUSRAP.

#### FUSRAP Legal Authority

Three Federal laws give DOE the authority to conduct FUSRAP activities:

- The Atomic Energy Act of 1954 (AEA) requires that public health and safety be protected during all atomic energy research and production activities.
- The 1984 Energy and Water Development Appropriations Act established FUSRAP projects at four specific sites: Colonie, New York; Wayne, New Jersey;



Maywood, New Jersey; and the Latty Avenue Properties in Missouri.

- The 1985 Energy and Water Development Appropriations Act directed DOE to acquire the St. Louis Airport Site in Missouri, clean it up, and then develop the property as a disposal site for waste from this site and its vicinity properties, as well as the Latty Avenue Properties in Missouri.

### The Importance of FUSRAP

Even though FUSRAP sites have radioactive material above current DOE cleanup guidelines, none of the sites pose immediate health risks to the public or the environment under current land uses. FUSRAP site materials have very low concentrations of radioactivity, and people are not exposed to them for long periods of time.

In fact, under present conditions at most FUSRAP sites, concentrations of radioactivity are so low that the greatest annual exposure to a member of the public is about 1 to 2 millirems per year. This is less than 1 percent of the annual exposure that a person receives from other sources of radiation in their daily lives. Figure 2 shows the major sources of natural and artificial radiation in a person's daily life.

Although materials at FUSRAP sites are not a hazard under

current land uses, they will remain radioactive for thousands of years, and health risks could increase if the use of the land were to change. For example, if a residence was built on a contaminated area, radon gas could accumulate in the house. Persons breathing dust particles or eating food grown in the soil could also receive unacceptable exposure.

Under FUSRAP, each site is cleaned up to a standard that considers possible future uses for the land. Highest priority is given to cleanups that reduce radiation exposure to the public.

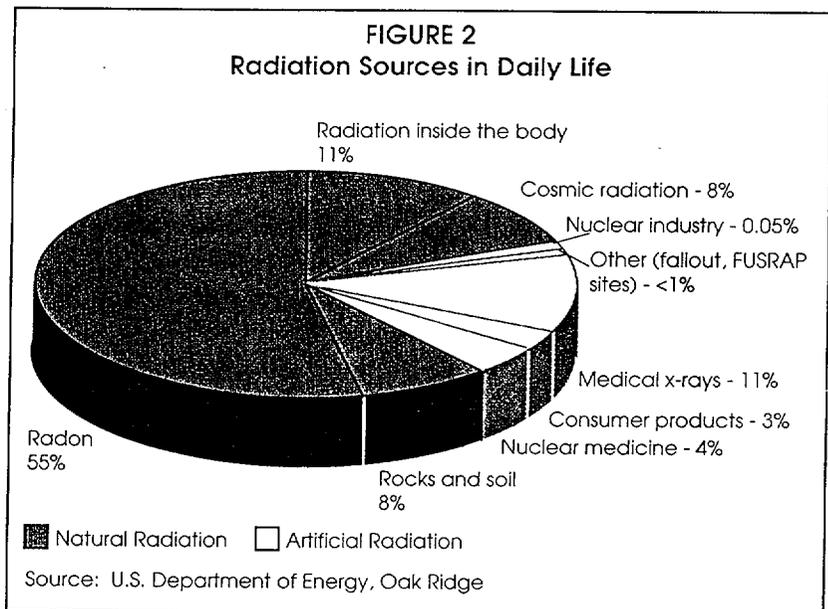
Cleaning up FUSRAP sites not only eliminates potential health hazards and protects the environment, but may allow previously unusable or restricted property to be returned to uses that benefit the community. For sites cleaned up to levels which

allow unrestricted land use, people can live safely on the property, drink water from the on-site wells, or grow crops or livestock for food.

### FUSRAP Objectives

FUSRAP has five major objectives:

- Find and evaluate sites that supported MED/AEC early atomic energy program work and determine whether the sites need cleanup and/or control;
- Clean up or control these sites so that they meet current DOE guidelines;
- Dispose of or stabilize wastes in an environmentally acceptable way;
- Complete all work so that DOE complies with





### FUSRAP Waste Handling Options

**Treatment:** Any method, technique, or process, including neutralization, designed to change the physical, chemical or biological character or composition of any hazardous waste so as to make it nonhazardous or less hazardous, safer to transport, or safer to dispose of or store.

**Storage:** Holding hazardous waste for a temporary period, at the end of which the hazardous waste is treated, disposed of, or stored elsewhere.

**Disposal:** Permanent placement of waste that ensures isolation of the waste and no intention of retrieval in the foreseeable future.

appropriate Federal laws and regulations and State and local environmental and land-use requirements (to the extent permitted by Federal law); and

- Certify the sites for appropriate future use.

DOE continues to improve its FUSRAP objectives and modify the scope of the program as it learns from previous FUSRAP cleanup activities.

#### Waste Types at FUSRAP Sites

The waste at many FUSRAP sites is like a sandy soil. Much of this material resulted from processing ore to recover uranium and thorium. This waste is a "by-product" material known as 11e(2), as defined under the Uranium Mill Tailings

Radiation Control Act of 1978. Very low levels of uranium from the machining of uranium metal are found at several FUSRAP sites. This waste is known as low-level radioactive waste (see Glossary in Appendix 4).

The low-level waste at FUSRAP sites is stored or disposed of according to applicable Federal, State, and local regulations and DOE guidelines. Wastes may be stored in containerized drums, engineered containment structures, or shipping containers to control leakage. DOE currently uses commercial disposal facilities and other Federal sites to dispose of the waste.

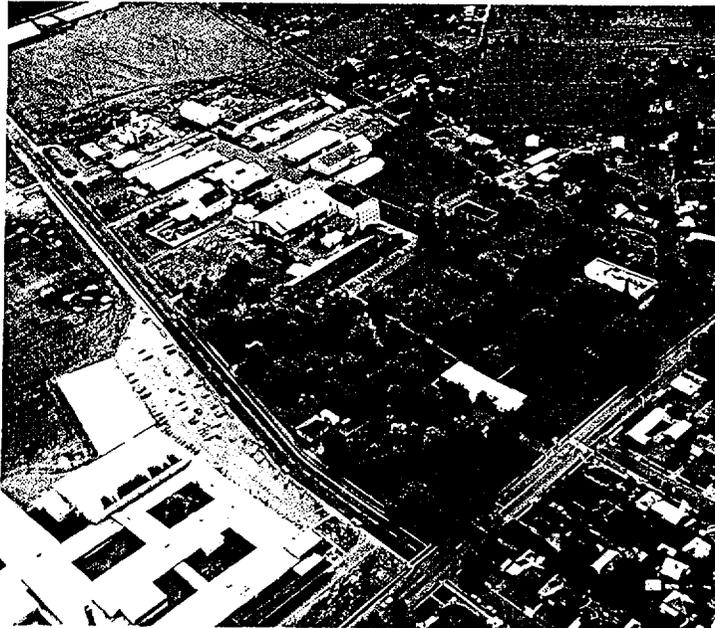
#### FUSRAP Cleanup Progress

Since 1974, FUSRAP has identified several hundred sites that were used to support the MED/

AEC from the early 1940s through the early 1960s. Most of these sites were involved in some way in processing or handling radioactive material owned by the Government. More than 400 sites have been identified as potential candidates for FUSRAP. Many of these sites are covered by other Federal cleanup programs or are under the jurisdiction of other agencies and, therefore, will not be cleaned up under FUSRAP.

Other sites require more detailed investigations, and in some cases, radiological surveys. To date, 46 sites and their vicinity properties have been included in FUSRAP. More than 300 sites have been eliminated from FUSRAP, because there is no significant potential for radioactive materials at the site, DOE does not have authority to conduct the cleanup, and/or another government agency or program has authority and is responsible for cleanup.

DOE currently estimates that all FUSRAP sites will be cleaned up by the year 2016, at a total cost of approximately \$2.5 billion.



The Albany Metallurgical Research Center in Oregon was established in 1943 to investigate metal manufacturing, mining, and corrosion. The U.S. Bureau of Mines conducted metallurgical operations at this site involving natural radioactive materials for the AEC, including uranium, thorium, and zirconium. As at many FUSRAP sites, DOE does not own the property but is responsible for cleaning up the contamination. This site consisted of 39 buildings on 45 acres of land. Although the contamination levels were not high at this site, DOE cleaned it up to reduce radiation exposure to "as low as reasonably achievable" (ALARA) levels. Cleanup activities included scrubbing and sanding (see upper photo) and removing a building and some nearby soil (see lower photo). Nearly 3,700 cubic yards of waste were produced at this site. The cleanup is complete.



**Location of FUSRAP Sites—  
46 Sites in 14 States**

Since it began in 1974, FUSRAP has made significant progress. Of the 46 sites shown in Figure 3 on the following page, 18 sites have been totally cleaned up, and partial cleanup has taken place at 11 others. In addition, more than 180 properties—residences, businesses or public lands—associated with FUSRAP sites have been totally cleaned up. Six of the 46 FUSRAP sites are listed on the National Priorities List (NPL)—the U.S. Environmental Protection Agency's (EPA's) list of waste sites across the country. The estimated total volume of waste at the 46 FUSRAP sites is 2.3 million cubic yards, roughly the equivalent of covering 460 football fields with 3 feet of waste. This volume of waste, however, has very low levels of contamination.

Appendix 1 to this booklet gives a site-by-site summary of FUSRAP activity, including information on estimated waste volumes and types.

**Funding FUSRAP Cleanups**

A budget is a plan for setting levels of spending, financing spending, and managing funds. Since developing a budget involves choosing among alternative expenditures, a budget also provides a plan of operations and a description of program goals and priorities.

By February of each year, the President submits to the U.S. Congress a budget for the Fiscal Year (FY) starting on the following October 1 (the beginning of the Fiscal Year). Preparation of the budget begins about 18 months before the Fiscal Year in which the budgeted funds will be spent. For example, for the FY 1997 budget, which is sent to the Congress in early 1996, the process began early in 1995. Therefore, Federal agencies are dealing with three fiscal year budgets at the same time. For example, in April of 1995 DOE is developing its FY 1997 budget (known as the outyear budget), has its FY 1996 budget (called the President's budget) working its way through Congress, and is spending its FY 1995 budget (known as the operating budget).

Figure 4 shows the FUSRAP operating budget over time. The FUSRAP budget has grown steadily since FY 1993 as more FUSRAP sites were identified and cleaned up. However, FUSRAP believes it has now identified all FUSRAP sites that would significantly affect the cost or schedule of the program.

DOE anticipates cuts in its FY 1996 environmental budget, with further cuts looming in FY 1997. These cuts are consistent with general decreases across the Federal Government, and will impact the amount of money available for FUSRAP site cleanups. In developing its FY 1997 budget, DOE is inviting states, EPA, and other stakeholders to participate in the process. DOE is taking steps to develop a meaningful "bottom-up" prioritization, through

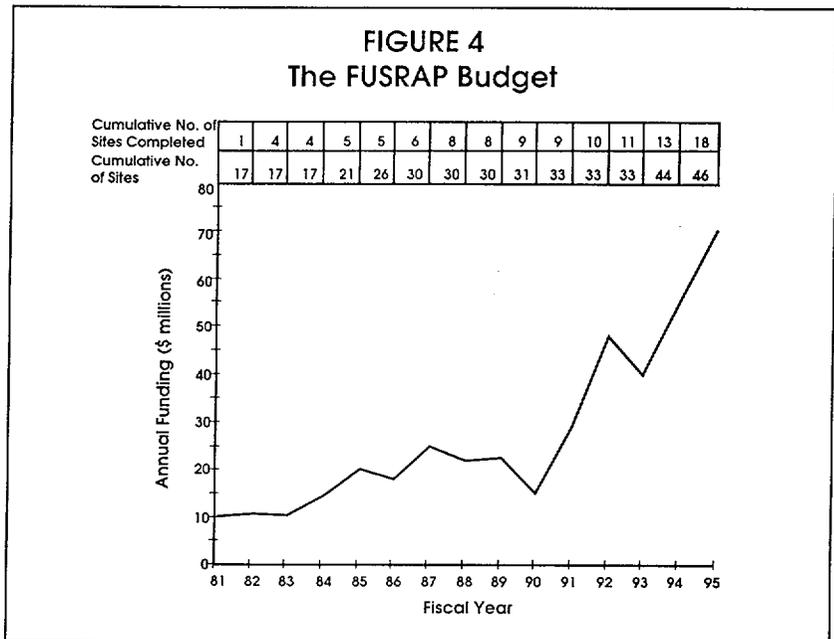
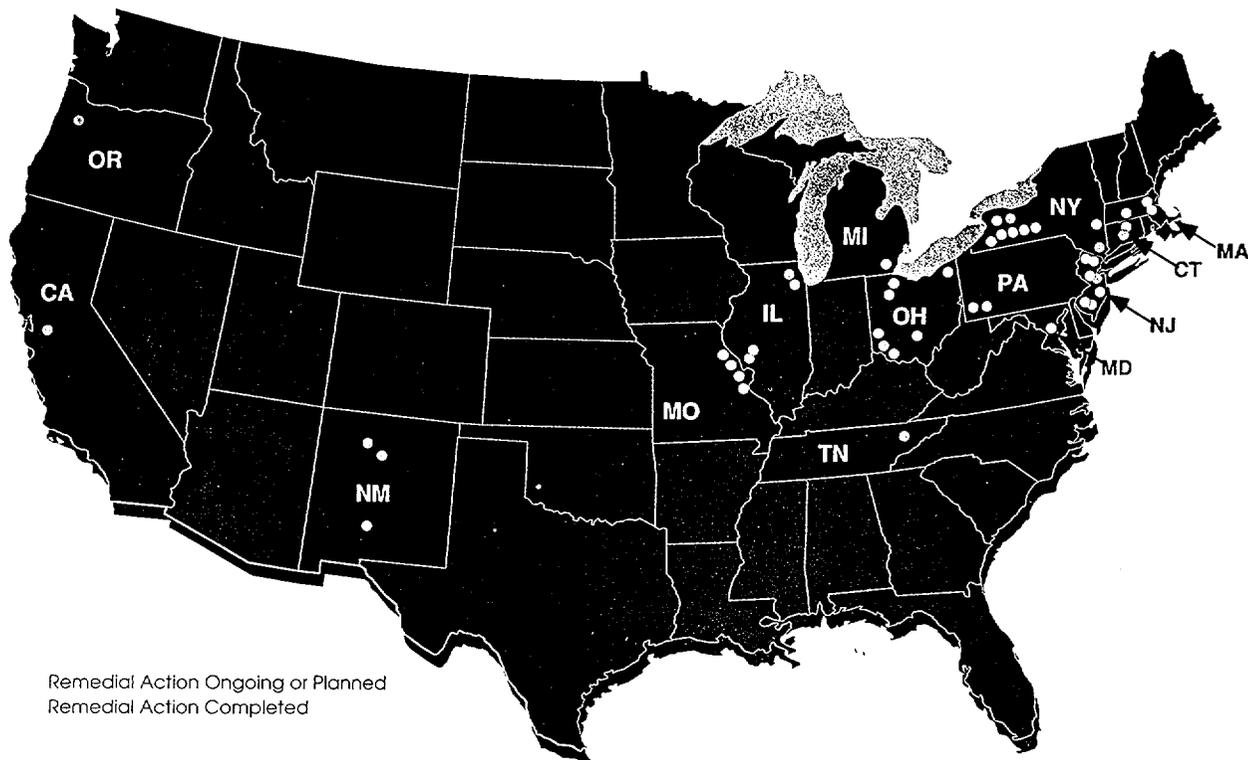




FIGURE 3  
FUSRAP—46 Sites in 14 States



Remedial Action Ongoing or Planned  
Remedial Action Completed

**Missouri Sites**

- +◇† Laffey Avenue Properties, Hazelwood
- +◇ St. Louis Airport Site, St. Louis
- ◇ St. Louis Airport Site (Vicinity Prop.), Hazel wood and Berkeley
- St. Louis Downtown Site, St. Louis

**New Jersey Sites**

- Du Pont & Company, Deepwater
- +◇† Maywood, Maywood
- † Middlesex Sampling Plant, Middlesex
- † New Brunswick Laboratory, New Brunswick
- +◇† Wayne Interim Storage Site, Wayne

**New York Sites**

- Ashland 1, Tonawanda
- Ashland 2, Tonawanda
- Linde Air Products, Tonawanda
- Seaway Industrial Park, Tonawanda
- Bliss & Laughlin Steel, Buffalo
- † Niagara Falls Storage Site, Lewiston
- +† Colonie, Colonie

**Ohio Sites**

- Associate Aircraft, Fairfield
- B&T Metals, Columbus
- Baker Brothers, Toledo
- Luckey, Luckey
- Painesville, Painesville

**Additional Sites**

- CE Site, Windsor, CT
- Madison, Madison, IL
- Chapman Valve, Indian Orchard, MA
- ◇ Shpack Landfill, Norton, MA
- Ventron, Beverly, MA
- General Motors, Adrian, MI
- W.R. Grace & Company, Curtis Bay, MD

**Completed Sites (18)**

- Kellex/Pierpont, Jersey City, NJ (1981)
- Acid/Pueblo Canyons, Los Alamos, NM (1982)
- Bayo Canyon, Los Alamos, NM (1982)
- University of California, Berkeley, CA (1982)
- Chupadera Mesa, White Sands Missile Range, NM (1984)
- Middlesex Municipal Landfill, Middlesex, NJ (1986)
- Niagara Falls Storage Site Vicinity Prop., Lewiston, NY (1986)
- University of Chicago, Chicago, IL (1987)
- National Guard Armory, Chicago, IL (1988)
- Albany Research Center, Albany, OR (1991)
- Elza Gate, Oak Ridge, TN (1992)
- Seymour Specialty Wire, Seymour, CT (1993)
- Baker & Williams Warehouses, New York, NY (1993)
- Granite City Steel, Granite City, IL (1993)
- Aliquippa Forge, Aliquippa, PA (1994)
- C.H. Schnoor, Springdale, PA (1994)
- Alba Craft, Oxford, OH (1995)
- HHM Safe Co., Hamilton, OH (1995)

† DOE-Owned or leased Site

+ Assigned By Congress

◇ NPL Site



which stakeholders will work with DOE to prioritize site activities in a way that maximizes available resources. With shrinking budgets, DOE with its stakeholders must develop creative approaches to ensure that all legal requirements under enforceable agreements are met without reducing cleanup activities. DOE is dedicated to working with FUSRAP stakeholders to identify and use creative solutions.

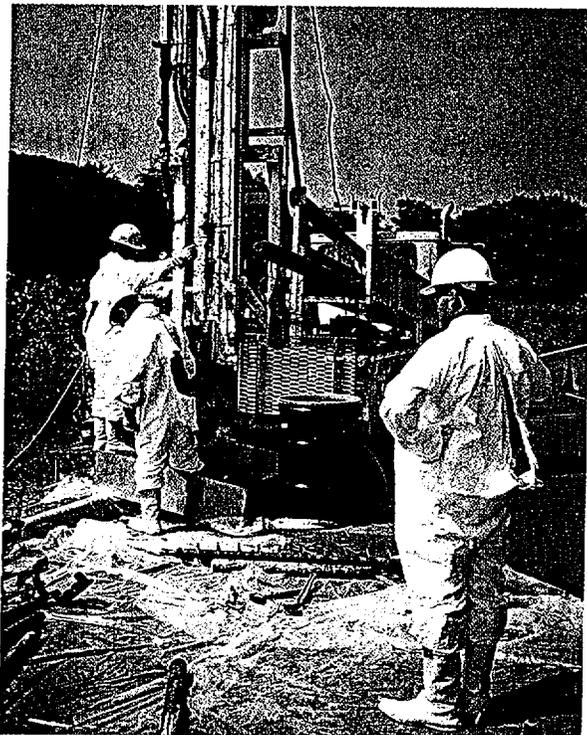
### FUSRAP Roles and Responsibilities

The Office of Environmental Restoration, within the Office of Environmental Management at DOE Headquarters in Washington, DC, develops guidance and provides policy

advice to FUSRAP. Technical, administrative, and financial management of FUSRAP activities are the responsibility of the DOE Operations Office in Oak Ridge, Tennessee.

DOE hires companies from the private sector to perform FUSRAP activities. A project management contractor conducts site investigations and cleanups. An environmental services contractor helps DOE plan site investigations, evaluate cleanup alternatives, and ensure that all FUSRAP activities comply with environmental requirements. Other contractors independently verify that FUSRAP activities have, in fact, cleaned up the site or property.

State and local governments and property owners also play key roles in FUSRAP. State governments help decide appropriate and acceptable disposal sites for FUSRAP wastes and ensure compliance with State regulations. Local governments work to ensure the protection of the community and help inform the public about cleanup activities. Property owners may provide critical information about past activities at FUSRAP sites. DOE actively solicits input from these and other stakeholders at FUSRAP sites. Opportunities for stakeholder involvement are discussed later in this booklet.



*At the Elza Gate site in Oak Ridge, Tennessee, high-grade uranium ore from Africa and ore processing residues were stored. This photograph shows drilling at the site to determine contamination levels. Cleanup was completed in 1992.*



### Federal Laws and Regulations

A number of Federal laws and regulations guide every step of the FUSRAP cleanup process—from initial site identification through final cleanup certification. It is typical for many FUSRAP sites to fall under several of these laws at the same time, depending on the type of waste and the actions required to clean it up. Because so many different Federal laws and regulations apply to environmental cleanup, compliance with these laws becomes very complex. Under certain circumstances, for example, the act of digging up soil could be affected by several major Federal environmental laws. While the focus of each Federal law or regulation is different, the goals are the same: to protect human health and the environment.

### CERCLA

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 (also known as Superfund) is the main law governing the cleanup of many FUSRAP sites. Two types of cleanups are conducted under CERCLA: removal actions and remedial actions. Removal actions are short-term actions taken to clean up, remove, and monitor contamination. Remedial actions are the study, design, and construction of longer-term responses aimed at permanently cleaning up a site. As shown in Figure 5, the

CERCLA process for longer-term cleanup actions has three phases:

- Phase I: Conducting a preliminary assessment/site inspection;
- Phase II: Studying the site, evaluating cleanup alternatives, and selecting a cleanup plan; and
- Phase III: Designing and implementing the chosen plan.

The preliminary assessment/site inspection is used to decide which sites should be added to the NPL. Sites are scored based on their impact to public health and the environment, and those sites that exceed a certain Hazard Ranking System (HRS) score are added to the NPL.

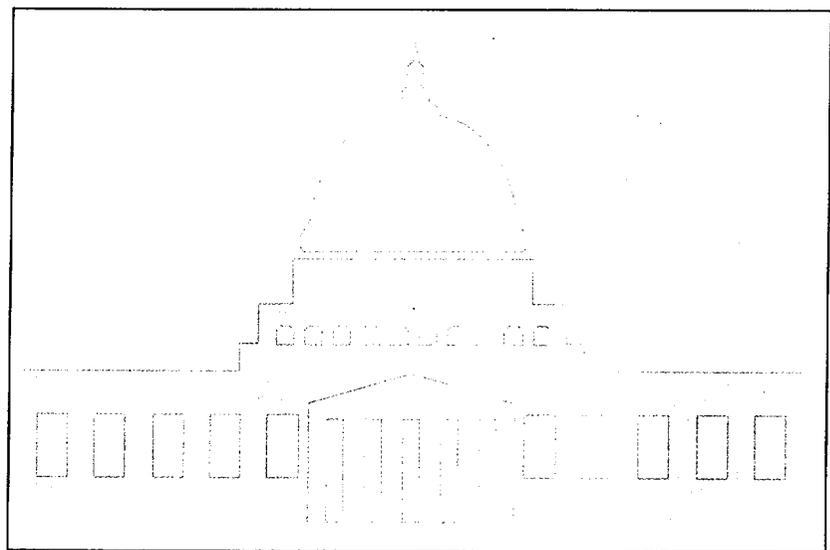
EPA oversees CERCLA activities at most NPL sites. Cleanup at FUSRAP NPL sites is guided by

Federal Facility Agreements (FFAs) between DOE and EPA, often with input from the States where sites are located. DOE integrates CERCLA activity with other laws that apply to the site. The FFA also sets cleanup priorities; defines responsibilities and interactions; and establishes a schedule for work at a site.

### The NCP

CERCLA cleanups are guided by the National Oil and Hazardous Substances Pollution Contingency Plan, commonly referred to as the NCP. As shown in Figure 5, the NCP requires specific steps for investigating and cleaning up sites.

After an initial planning period, workers begin a remedial investigation to identify the types and locations of contamination present at the site. At the same time, a feasibility study is con-





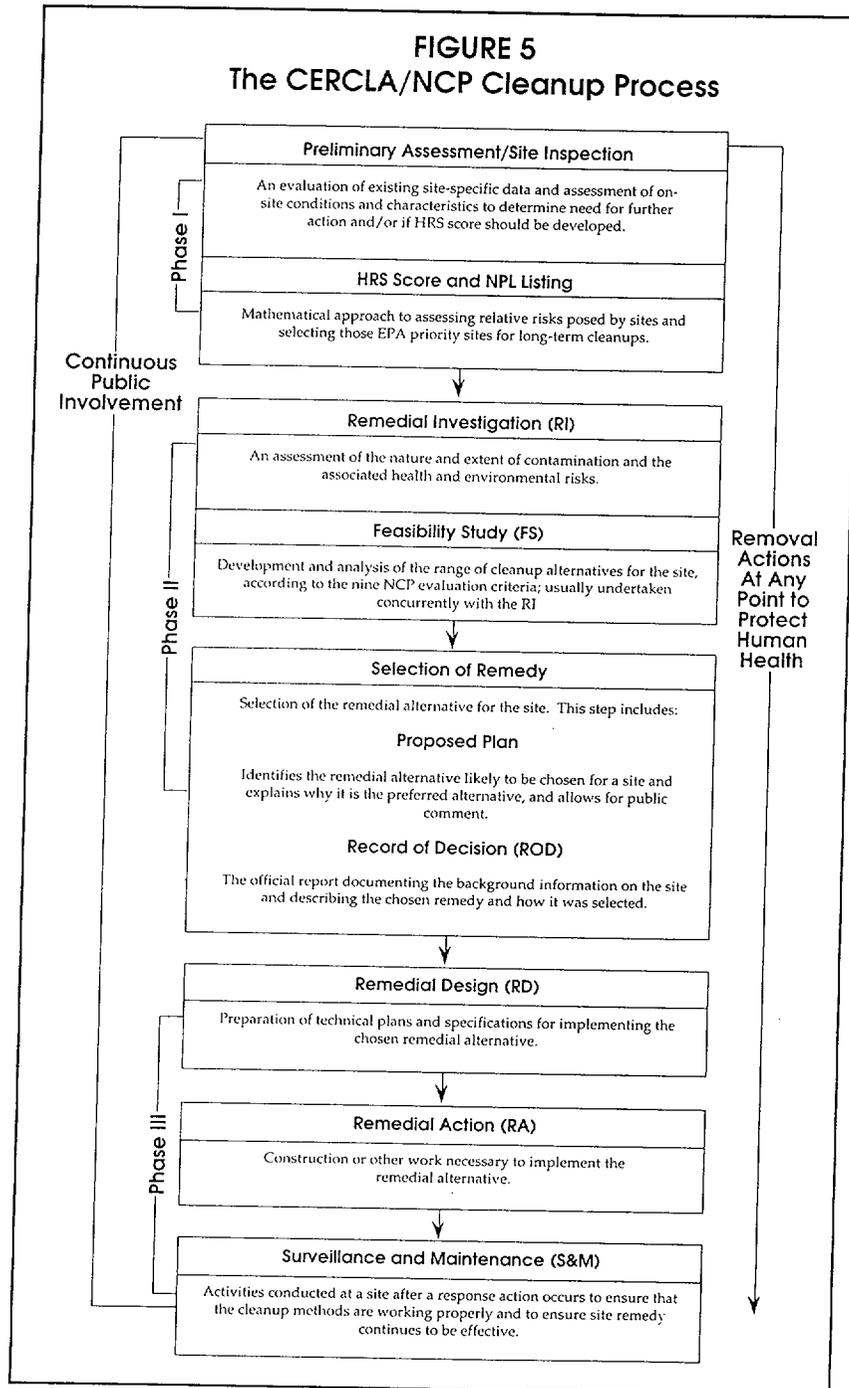
ducted that uses the results of the remedial investigation to formulate a range of cleanup options. DOE evaluates these options and recommends a preferred alternative for clean-

ing up the site. Appendix 2 summarizes the NCP evaluation criteria that DOE uses to develop and evaluate FUSRAP cleanup alternatives.

### Public Involvement Throughout the CERCLA/NCP Process

CERCLA and the NCP encourage public involvement at all stages in the process leading to a cleanup decision. The public has an opportunity to comment on the Proposed Plan for the site, which summarizes the results of the remedial investigation and the analysis of alternatives. To keep the public informed, DOE also uses various community outreach techniques, including public information centers, public meetings, and periodic fact sheets. Key documents used in making a site cleanup decision make up an Administrative Record, which is available to the public at a location near the site.

After the comment period on the Proposed Plan is closed, DOE reviews all comments on the plan and prepares a Responsiveness Summary of how comments were considered in determining the final cleanup plan. The final cleanup plan is known as a Record of Decision or ROD. DOE submits draft RODs to EPA. For NPL sites, EPA concurs or makes the final decision on site cleanup after considering input from the State and the public. The decision is final when the regulators and DOE sign a legally binding final ROD. For sites that are not on the NPL, DOE makes the final cleanup





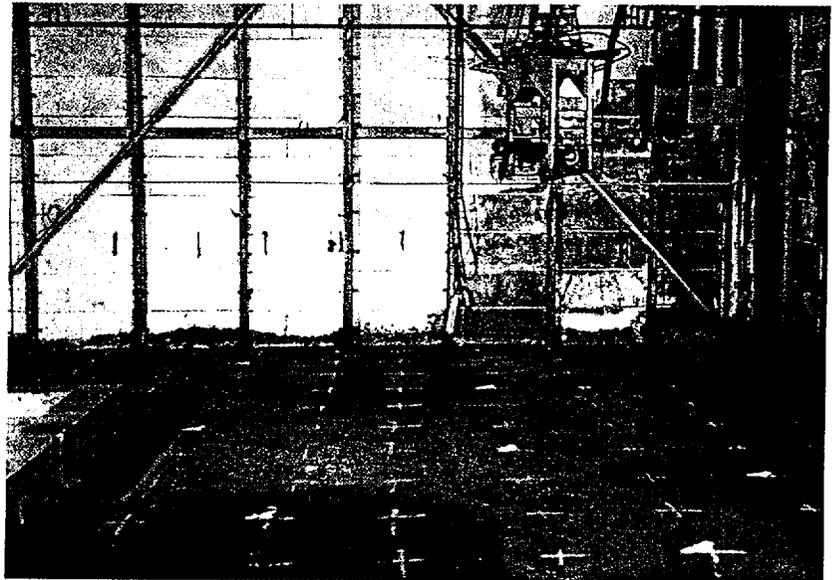
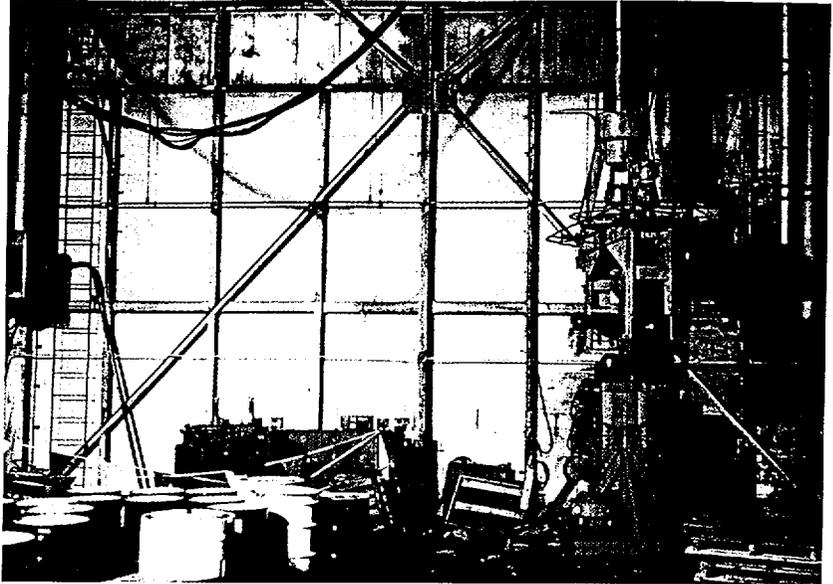
decision, also with input from the public. A remedial design/remedial action is then conducted to carry out the decision and monitor the cleanup. Following the remedial action, surveillance and maintenance activities, such as ground water and air monitoring, may be conducted to ensure that the remedy continues to work.

### CERCLA/NEPA Integration

The National Environmental Policy Act (NEPA) of 1969 sets basic national policy on environmental protection. NEPA established a process for determining if a proposed Federal action will have significant environmental effects.

Because many requirements of CERCLA and NEPA are similar or overlapping, FUSRAP sites are cleaned up under an integrated CERCLA/NEPA process. Community relations activities are combined under the more comprehensive provisions of CERCLA.

Coordination of CERCLA and NEPA requirements results in decision making that involves the public, as well as local, State, and Federal agencies and Native American Tribal governments. Site investigations, analyses, and documentation requirements of these two laws are integrated to simplify review, reduce paperwork, and increase cost-effectiveness.



*During the late 1950s and early 1960s, the Granite City, Illinois, site was used to x-ray uranium ingots to detect metallurgical flaws. Cleanup at the site involved the removal of metal ductwork and vacuuming and wet scrubbing contaminated areas. The top photograph shows the corner of the building used to operate betatrons before cleanup. The bottom photograph shows the same area after the cleanup was completed in 1993.*



## RCRA

In addition to CERCLA and NEPA, the Resource Conservation and Recovery Act (RCRA) applies to some FUSRAP sites. RCRA establishes a "cradle to grave" system for controlling hazardous waste from the time it is generated until its ultimate disposal. Contaminated materials at some FUSRAP sites contain both hazardous and radioactive waste; this mixed waste presents special challenges to FUSRAP. RCRA provides requirements for how the hazardous component of

mixed waste can be managed, treated, and disposed. RCRA also outlines a variety of opportunities for stakeholder involvement including public comment periods on permits and cleanup plans, public hearings on cleanup plans, and small informational meetings to discuss RCRA requirements for cleanup.

### Other Environmental Requirements

Each FUSRAP site is unique and must meet the requirements of many other environmental laws. Some of these laws apply to

certain types of wastes or to particular types of cleanup circumstances. For example, if digging up dirt releases contaminated dust particles into the air, then FUSRAP must comply with the requirements of the Clean Air Act and its amendments. Other Federal laws that may apply to FUSRAP include the Toxic Substances Control Act, the Clean Water Act, and the Safe Drinking Water Act. In addition, there are many other Federal, State, and local standards that may apply to a FUSRAP site.



*A radiation specialist explains radiation detection devices to students from Grace Hill Neighborhood College near the St. Louis sites in Missouri.*



## Cleaning Up FUSRAP Sites

Although each site is different, there are four general steps for cleaning up FUSRAP sites. These steps are: 1) preliminary analysis; 2) radiological characterization and designation as a FUSRAP site; 3) engineering and remedial action; and 4) verification of site conditions and certification for future use. Figure 6 outlines this four-step process.

### Preliminary Analysis

*Preliminary Analysis leads either to potential FUSRAP designation or elimination.*

*The American Manufacturing Company in Fort Worth, Texas tested uranium for the AEC during the early 1960s. Records indicate that 30 tons of Government-owned uranium were shipped to this mill for testing. DOE has authority for cleanup. A team surveyed the plant in September 1994, and found no radioactivity.*

*The Philadelphia Navy Yard assisted MED during 1944 by building and operating a liquid thermal diffusion plant to produce enriched uranium for atomic weapons. Since the Department of Defense owns this facility, DOE does not have authority for cleanup. This site was eliminated from further consideration as a FUSRAP site.*

During the preliminary analysis step, DOE identifies and locates potentially contaminated sites and determines, on a site-by-site basis, whether DOE has authority for cleanup. Sites are identified and located by researching records and reviewing informa-

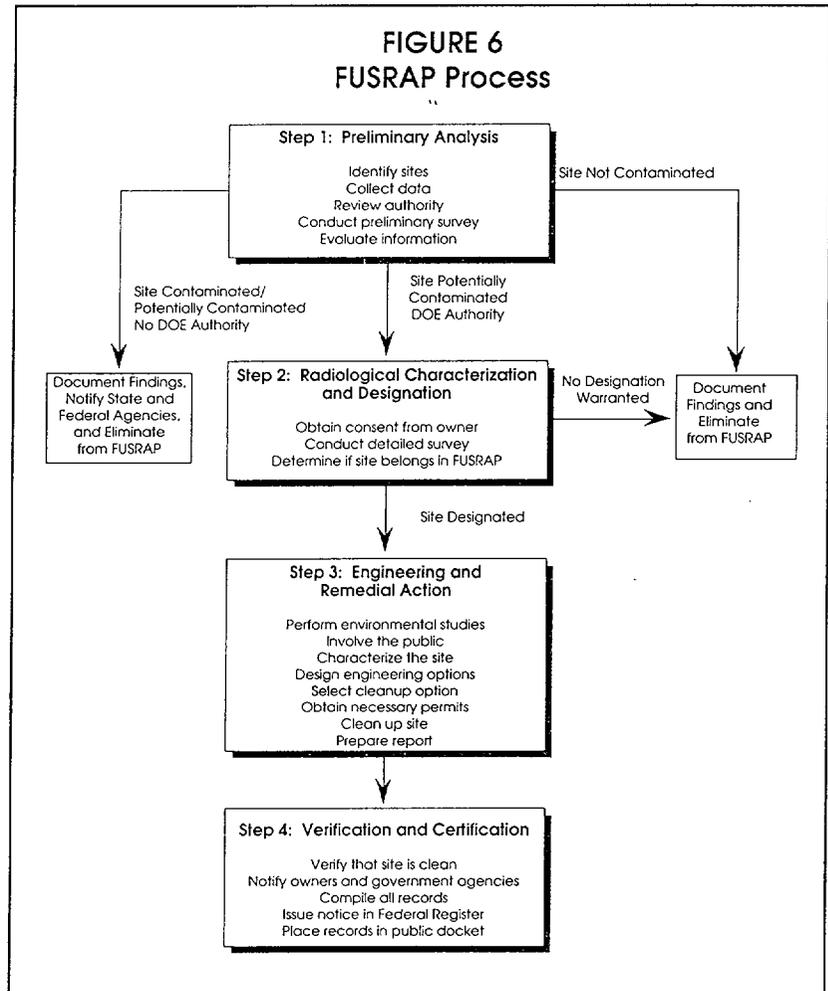
tion submitted by the public or industry, and interviewing stakeholders.

DOE does not include sites in FUSRAP if: 1) DOE does not have authority, 2) there is no existing or potential radioactive contamination, or 3) the site is being cleaned up by another program or agency. In these cases, DOE documents its findings, notifies other responsible agencies if the site is contaminated or potentially contaminated, and no further action is taken.

## Radiological Characterization and Designation

*Further Radiological Characterization can lead to FUSRAP designation.*

*In the early 1940s, the Clinton Semi-Works (as the Oak Ridge Reservation was then known) subcontracted with the Baker Brothers metal fabrication shop in Toledo, Ohio, to machine uranium rods. Records indicate that all uranium was Government-owned and that the Government received both the finished rods and the scrap. Records do not indicate that MED cleaned up the site at the end of the uranium work. Radiological surveys found*





the site to be contaminated with uranium at levels above current guidelines. DOE has the authority for cleanup and the site was designated a FUSRAP site.

If existing documents and survey data do not clearly indicate the need for cleanup but DOE has authority, DOE performs a radiological and/or chemical survey. Findings of this survey are summarized in a report that describes the condition of the site and compares the condition to current radiological guidelines. All reports and documentation are then evaluated by DOE to determine whether cleanup is necessary to remove or reduce radioactive material to levels that conform to current guidelines. If cleanup is required, the site is designated as a FUSRAP site, and the process moves to the engineering and remedial action step.

### Engineering and Remedial Action

*FUSRAP Remedial Actions include removing and disposing of above-guideline radioactive contamination.*

*During the late 1950s and early 1960s, the Granite City site in Illinois was used to x-ray uranium ingots to detect metallurgical flaws. DOE surveys in 1989 found areas of contamination in the building that were above current guidelines. Contamination was found on the concrete floor, particularly along a railroad track used to bring materials into and out of the building; overhead in the ductwork; and in an industrial vacuum cleaner, its contents, and the*

*surrounding area. All material generated during the cleanup was shipped to a private disposal facility in Utah.*

For larger FUSRAP sites, this step includes planning and implementing a Remedial Investigation, which is the process for defining the nature and extent of contamination and for generating the necessary information to develop and evaluate cleanup alternatives and report results. This step also includes developing a Feasibility Study, which is the analysis of alternative cleanup actions.

The cleanup process for larger sites includes preparing a Record of Decision, hiring a cleanup contractor, overseeing the contractor's cleanup activities, and preparing the site for any necessary long-term surveillance and maintenance.

Engineering designs are used to guide selected cleanup. These designs include developing detailed cost estimates, work plans, drawings, and cleanup schedules. Radiological and chemical measurements are taken and documented throughout the cleanup and at cleanup completion to determine the effectiveness of the cleanup.

The process for the majority of smaller FUSRAP sites is less complex and time-consuming. For these smaller sites, DOE may follow the procedures for CERCLA non-time-critical removal actions. Non-time-critical

removal actions still include preliminary analysis and radiological characterization, but the engineering analysis and development of alternative cleanup approaches [known as the Engineering Evaluation/Cost Analysis (EE/CA)] is more streamlined. If circumstances warrant, an expedited removal action may be conducted, which does not require an EE/CA. The verification and certification step occurs at all FUSRAP sites.

### Verification and Certification

*Verification and Certification documents the completion and effectiveness of the cleanup process.*

*During the early 1940s, the Elza Gate site in Oak Ridge, Tennessee, was used by MED to store pitchblende (a high-grade uranium ore) and wastes from ore refining. In 1972, after cleanup and radiation surveys, the site was released for unrestricted use. DOE performed additional surveys in 1987 and 1988 at the request of the Tennessee Department of Health and Environment. Contamination was found to be above recent, more stringent guidelines. Cleanup was conducted in 1991 and 1992 and the site was released for unrestricted use. An independent expert surveyed the site after final cleanup and verified that all current guidelines were met. All reports, surveys, and other data were placed in the official public file and the site was certified as clean.*

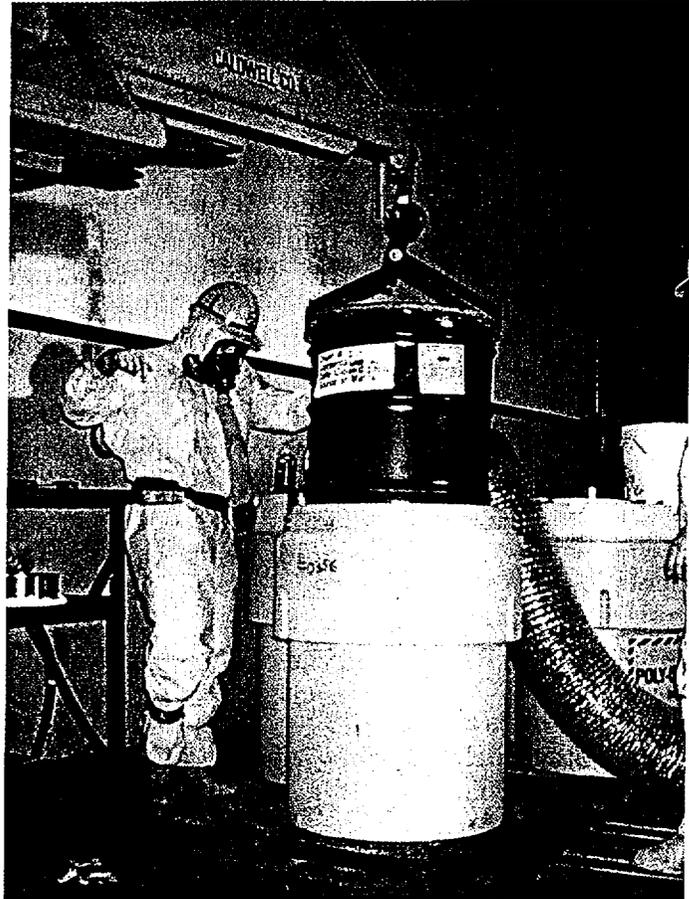
An independent verification contractor measures levels of contamination following cleanup and reviews the measurements taken during the cleanup. This contractor also re-



views the technical and quality assurance procedures that were used during cleanup. If the measurements taken by the independent verification contractor show that the levels of radioactive materials meet established guidelines, and DOE's review of cleanup certification data determines that the site cleanup was successful, then the site is certified as clean.

Certification includes publishing a certification public notice and establishing a docket containing documentation that describes cleanup activities. This notice and file certifies that the cleanup is complete and has been successful, and describes any continued limitations on future use of the site. Following certification, annual surveillance and maintenance of the site, if needed, is provided by DOE.

While stakeholder involvement activities occur at specific points in the cleanup process (such as public comment periods on the Proposed Plan), DOE makes every attempt to ensure that stakeholder involvement is a continuing activity designed to meet the specific needs of individual FUSRAP stakeholder communities.



*The Colonie Site in New York is a DOE-owned/leased site where uranium processing took place. Waste from 53 vicinity properties was stored inside the plant. This photograph shows the process of overpacking RCRA materials to ensure that contents do not leak into the environment. Contaminated materials were sent to a commercial disposal facility.*



### Importance of Stakeholder Involvement

DOE needs broad-based public participation and support in order to carry out its environmental programs. DOE's activities directly affect public health and safety and the environment—for which DOE must show stewardship and respond to public interests. Citizens have the right to influence decisions about matters that affect them, and public participation requirements are found in many environmental laws.

While DOE plans and conducts FUSRAP cleanups, it does so within a complex web of organizations that have roles in overseeing, regulating, funding, reviewing, and participating in FUSRAP activities. These organizations, which include the U.S. Congress, the EPA and State regulatory agencies, and citizen groups, are key FUSRAP stakeholders.

### Stakeholder and Public Involvement Goals and Objectives

DOE's overall goal is to create an open and accessible FUSRAP decision-making process that results in decisions that:

- Address public values and concerns;
- Are health and safety conscious;

- Are environmentally sound;
- Are technically and economically feasible; and
- Can be implemented.

Providing for public participation and stakeholder involvement in the FUSRAP decision-making process is one way to achieve this goal.

FUSRAP has several objectives for its public and stakeholder involvement program:

- Solicit help in identifying FUSRAP sites, problems, and issues;
- Solicit involvement in identifying cleanup

approaches for addressing FUSRAP problems and issues and work toward broad-based consensus early in the cleanup process;

- Increase understanding of legal, regulatory, political, technical, funding, and resource constraints; and the need to balance a variety of interests and considerations;
- Coordinate, integrate, and communicate information about FUSRAP participation opportunities;
- Provide a range of participation opportunities tailored to meet the needs

#### FUSRAP Outreach Tools and Techniques

*DOE listens to community concerns and tailors its outreach activities to address those concerns. Specific FUSRAP outreach activities include:*

- *Increasing the presence of DOE personnel on site to answer questions and guide cleanup efforts.*
- *Diversifying meeting opportunities, including large town meetings, one-on-one discussions, and small group workshops.*
- *Expanding information centers at or near FUSRAP sites.*
- *Expanding the use of electronic communications to identify community opinions and inform the public of meetings and other involvement opportunities.*
- *Developing a college internship program for selected FUSRAP sites.*
- *Sponsoring FUSRAP conferences and workshops on technical and budget-related topics.*



and interests of site-specific FUSRAP communities;

- Provide timely feedback on how input was considered during the FUSRAP decision-making process; and
- Meet the letter and spirit of all laws, regulations, and negotiated agreements relating to public and stakeholder participation.

### Getting Information and Answers

DOE has formal public comment periods at certain stages of a FUSRAP cleanup. DOE encourages the public to use these formal review periods to share their ideas on FUSRAP site cleanup. To help commenters understand site activities and history, DOE establishes an Administrative Record at a location near each FUSRAP site. An Administrative Record is a collection of documents that is the basis for selecting a specific cleanup approach.

Administrative Records can be part of a Public Information Center for larger sites (see Appendix 3 for a list of FUSRAP Public Information Centers). In addition to technical cleanup documents, Public Information Centers often contain video presentations, site fact sheets, site displays, and maps of FUSRAP

areas and survey results. These centers also are used for workshops, availability sessions, and town meetings with site project staff. Speakers for schools and civic organizations can be arranged through these centers as well.

DOE has also set up a toll-free long distance public access number that is available in areas where there are FUSRAP sites. The public access number is answered in Oak Ridge, Tennessee, by an answering machine, which records calls and takes messages. The answering machine is checked frequently and calls are returned. The public access number is one of the ways DOE provides opportunities for the public to receive site infor-

mation. Messages can be left on the answering machine by calling 1-800-253-9759.

### FUSRAP Site Concerns

The major public concern at all FUSRAP sites is the protection of human health in the community. This concern leads most citizens to want all contaminated materials to be dug up and shipped out of the area. Communities may be reluctant to accept protective cleanup alternatives that involve treatment or on-site remedies.

DOE understands this dilemma and wants to work with citizens and regulators to make the best choice for cleaning up each FUSRAP site. Making the best



*At the St. Louis Public Information Center, area residents gather documents on cleanup activity.*

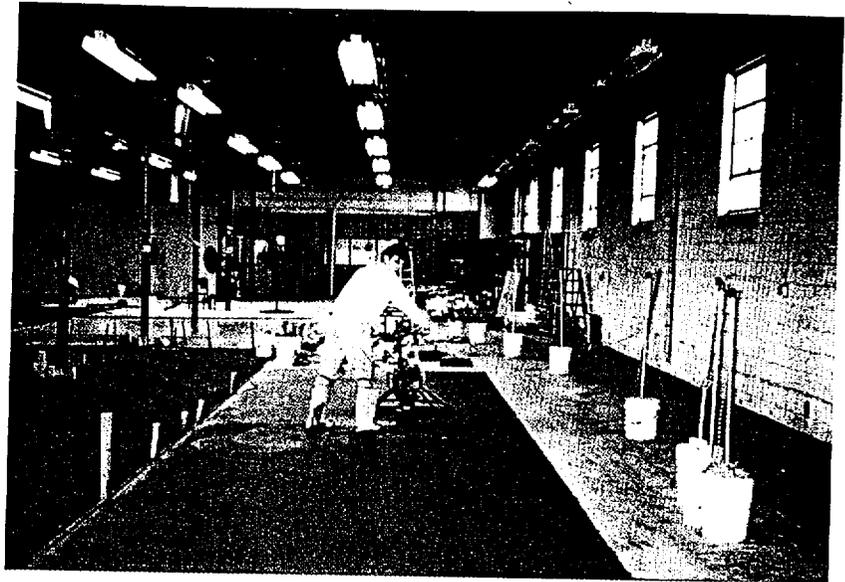


choice, however, is dependent upon many technical and budget considerations.

In making sound decisions at FUSRAP sites, DOE and its stakeholders balance the need to:

- Protect community health and the environment;
- Achieve equity among FUSRAP sites in a time of decreasing budgets and limited resources;
- Understand the technical and cost uncertainties associated with new and emerging technologies for treating FUSRAP wastes;
- Search for long-term solutions—the permanent disposal of wastes that are currently placed in interim storage piles; and
- Reach timely consensus on short-term and long-term cleanup alternatives.

DOE is addressing these concerns by developing strong partnerships with its stakeholders, increasing community awareness of FUSRAP activities and plans, expanding educa-



*The Schnoor facility, which machined slugs from extruded uranium metal in World War II, became a FUSRAP site in early FY 1992. As an active industrial site, part of the operation had to be relocated to give cleanup workers access to contaminated portions of the building—specifically concrete flooring and underlying soils. The photograph above shows the final stages of restoration work underway. The cleanup was completed in late FY 1994.*

tional outreach opportunities, and establishing broader site-specific citizen groups.

#### **FUSRAP National Stakeholder Meetings**

DOE is planning a series of FUSRAP stakeholder meetings in Washington, D.C., where working groups will be formed to address national FUSRAP issues.

In addition to these meetings, the Environmental Management

Advisory Board (EMAB) has set up a special FUSRAP committee, which will develop risk principles for FUSRAP sites. These principles will be discussed at an EMAB public meeting in Washington, D.C., and shared later at FUSRAP National stakeholder meetings.

Information on these meetings and other opportunities to get involved can be obtained from the FUSRAP 24-hour public access line at 1-800-253-9759.



### FUSRAP Success Stories

Houses in Maywood, New Jersey and Colonie, New York, are now free of contamination.

A commercial property in Rochelle Park, New Jersey, that could not be developed because of contamination is now the site of a nursing home that provides jobs and tax revenues to the community.

A recreation field in Wayne, New Jersey, which sat idle for years, is now back in use.

At the Niagara Falls Storage Site in Lewiston, New York, contamination has been consolidated from a 191-acre DOE-owned site and about 25 adjacent properties. The wastes are contained in a disposal cell designed to stop leakage into ground water.

Thousands of cubic yards of contaminated material have been removed from residential and commercial properties and stored at DOE-controlled and monitored interim storage sites.

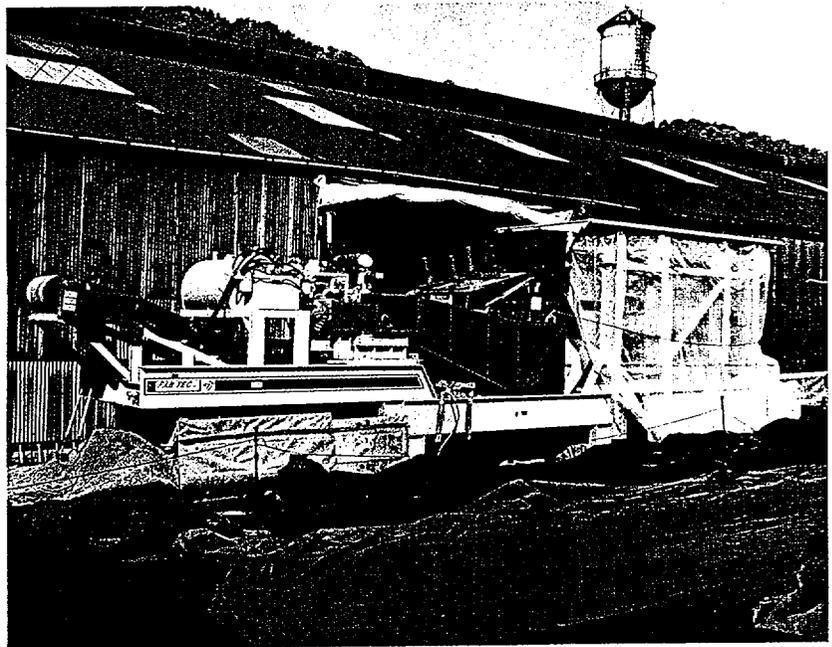
### The Future of FUSRAP

While FUSRAP has successfully cleaned up many sites and vicinity properties, much work remains. Many residential and commercial properties still require cleanup. In addition, interim storage piles of wastes from properties already cleaned up continue to concern local communities. Permanent

disposal sites are needed before contaminated soil from the interim sites can be removed.

Nearly 2.3 million cubic yards of contaminated material eventually will need to be managed. The majority of this material is in the States of Missouri, New Jersey, and New York. Selecting and developing appropriate permanent disposal sites is the biggest challenge facing DOE, the States, and the people living in the affected communities. DOE is

currently evaluating several technologies for reducing waste volume at FUSRAP sites, and is looking at a variety of disposal alternatives for FUSRAP wastes. Through FUSRAP National stakeholder meetings and site-specific public involvement activities, DOE believes that FUSRAP success stories will continue. FUSRAP encourages stakeholders to share ideas and to work closely with DOE in making sound FUSRAP clean-up decisions.



*Aliquippa Forge, added to FUSRAP in 1983, consisted mainly of an abandoned factory once used to convert uranium billets into rods. Late in FY 1994, Aliquippa Forge became the 15th site to be completed by FUSRAP. Work at the site involved removing contaminated ducts, concrete flooring, soil, bricks, and turn-of-the-century furnaces. To reduce volume and facilitate the transport of the contaminated brick and concrete, a rock crusher, as shown below, was used in the last stages of remediation. A rock crusher has been used at three FUSRAP sites to date. In each case, DOE reached an agreement with State regulators to crush concrete into a size suitable for use as base material under roadways and building foundations.*



Site Name	Location	Description	Site Origin	Vicinity Properties	Waste Types	Estimated Waste
Missouri Latty Avenue Properties	Hazelwood	DOE-owned/leased site. Properties are located .75 miles northeast of SLAPS and include 2 NPL sites [Futura Coatings and the Hazelwood Interim Storage Site (HISS)] in Hazelwood, and six Latty Ave. vicinity properties in Berkeley. HISS and Futura cover an 11.6 acre tract and are fenced to prevent public access.	2 NPL sites; Assigned by Congress	6	By-product material, Radium, Thorium, Uranium	211.000yd <sup>3</sup>
St. Louis Airport Site (SLAPS)	St. Louis	21.7-acre fenced tract approx. 15 miles from Downtown St. Louis. No buildings. Waste is tailings from high-grade uranium ore processing. Owned by City of St. Louis; Congress authorized DOE to acquire title for use as a waste disposal site.	NPL site; Assigned by Congress	See below	By-product material, Radium, Thorium, Uranium	250.000yd <sup>3</sup>
SLAPS (Vicinity Properties)	Hazelwood and Berkeley	The vicinity properties consist of approximately 78 properties along the transportation routes, the Norfolk and Western Railroad, the ballfield, and Coldwater Creek. Waste is tailings from high-grade uranium ore processing.	DOE assigned	78	By-product material, Radium, Thorium, Uranium	195.000yd <sup>3</sup>
St. Louis Downtown Site (SLDS)	St. Louis	45-acre industrial area in eastern St. Louis near Mississippi River with many buildings. Waste is tailings from high-grade uranium ore processing.	DOE assigned	6	By-product material, Radium, Thorium, Uranium	246.000yd <sup>3</sup>
New Jersey DuPont & Company	Deepwater	700 acres on north shore of Delaware River where uranium products research was conducted in 1940s. One large building, waste lagoon, central drainage ditch, and waste burial area.	DOE assigned	None	Uranium	8,270yd <sup>3</sup>



APPENDIX 1 — PROFILE OF CURRENT FUSRAP SITES

Site Name	Location	Description	Site Origin	Vicinity Properties	Waste Types	Estimated Waste
New Jersey [cont'd] Maywood	Maywood/ Rochelle Park	DOE-owned/leased site. This site consists of the Maywood Interim Storage Site (MISS) and the Stepan Company property. MISS is a 12-acre fenced lot with a 2-acre interim waste storage pile. The Stepan property, a 18-acre fenced area adjacent to MISS, contains an active chemical production facility.	NPL site; Assigned by Congress	83	By-product material, Thorium, Uranium, Radium	395,000yd <sup>3</sup>
Middlesex Sampling Plant	Middlesex	DOE-owned site. Bulk of Belgian Congo uranium ores and other uranium ores used by U.S. was handled on 9.6 acres, 4 buildings, and 2 storage piles. More than 70% of site is covered with asphalt.	DOE assigned	None	Radium, Thorium, Uranium (Mixed Waste)	88,510yd <sup>3</sup>
New Brunswick Laboratory	New Brunswick	DOE-owned/leased site. 5.6 acres in densely populated area 30 miles from NYC and 60 miles from Philadelphia. Laboratory includes large main building, a plutonium laboratory complex, a hot-cell building, and 9 ancillary structures.	DOE assigned	None	LLW (Radium, Thorium, Plutonium)	4,500yd <sup>3</sup>
Wayne Interim Storage Site	Wayne	DOE-owned/leased site. 6.4-acre fenced site including an office building, a warehouse, and a 2.7-acre interim waste storage pile. Waste is radioactively contaminated surface and subsurface soil and building rubble from previous cleanup actions.	NPL site; Assigned by Congress	23	By-product material, Thorium, Uranium, Radium	109,000yd <sup>3</sup>
New York Ashland 1	Tonawanda	10.8-acre site that is part of the Ashland Oil Company Refinery. Waste is low-grade uranium residues (approx. 8,000 tons) of 0.54% uranium found over 2/3 of site to a depth of 1 to 5 ft.	DOE assigned	None	By-product material, Radium, Thorium, Uranium	120,200yd <sup>3</sup>



Site Name	Location	Description	Site Origin	Vicinity Properties	Waste Types	Estimated Waste
New York [cont'd]						
Ashland 2	Tonawanda	115 acres of contaminated soil covered by vegetation at a non-operating facility. Contaminated soil from Ashland 1 disposed at Ashland 2.	DOE assigned	None	By-product material, Radium, Thorium, Uranium	52,100yd <sup>3</sup>
Linde Air Products	Tonawanda	135 acres bordered by industries, businesses, undeveloped land, and a golf course. 5 buildings were used for uranium separation and conversion processes.	DOE assigned	1	By-product material, Radium, Thorium, Uranium	71,000yd <sup>3</sup>
Seaway Industrial Park	Tonawanda	93 acres with no buildings and little vegetation containing approx. 6,000yd <sup>3</sup> of soil excavated from Ashland 1 site. Soil containing low-grade uranium ore tailings is limited to 14 acres of the site.	DOE assigned	None	By-product material, Radium, Thorium, Uranium	117,000yd <sup>3</sup>
Bliss & Laughlin Steel	Buffalo	A single large building with a floor area of 12,000m <sup>2</sup> . Contamination is limited to a 300m <sup>2</sup> floor area in the southeast part of the building where uranium rods were machined and straightened in 1952.	DOE assigned	None	LLW (Uranium)	20yd <sup>3</sup>
Colonie	Colonie	DOE-owned/leased site. 11 acres of fenced plant buildings with uranium processing equipment. All buildings and some grounds are radioactively contaminated. Mixed light-industrial, commercial, and residential area. Contaminated waste from 53 vicinity properties are stored inside plant.	Assigned by Congress	56	LLW (Uranium), Mixed Waste, Chemical	53,909yd <sup>3</sup>
Niagara Falls Storage Site	Lewiston/ Youngstown/ Niagara Falls	DOE-owned/leased site. 191-acre fenced area where radioactive low-grade residues from the Linde site and portion of high-grade residues from SLDS are stored in an encapsulated disposal design.	DOE assigned	26	By-product material, K-65, Radium, Thorium, Uranium	205,000yd <sup>3</sup>



APPENDIX 1 — PROFILE OF CURRENT FUSRAP SITES

Site Name	Location	Description	Site Origin	Vicinity Properties	Waste Types	Estimated Waste
Ohio						
Associate Aircraft	Fairfield	One-story masonry block structure 130ft. by 80ft. with spotty areas of contaminated oil where uranium metal machining occurred.	DOE assigned	None	LLW (Uranium)	690yd <sup>3</sup>
B&T Metals	Columbus	Uranium machining occurred in the northeast corner of the main office building. Uranium billets were extruded into rods during 1940s.	DOE assigned	None	LLW (Uranium)	1,500yd <sup>3</sup>
Baker Brothers	Toledo	Commercial property consisting of several brick buildings with concrete floors. All machinery and equipment for AEC work was sold at auction. Contaminated areas include four outdoor areas and one isolated indoor area.	DOE assigned	1	LLW (Uranium)	4,920 yd <sup>3</sup>
Luckey	Luckey	DOE owned, contractor operated beryllium production plant in 1950's. 40-acre L-shaped site with production building, warehouse, transport systems, utility buildings, and several active and inactive lagoons and spoil areas. Radioactivity present in soil.	DOE assigned	None	LLW, By-product material	34,500yd <sup>3</sup>
Painesville	Painesville	Former government-owned plant for magnesium production. Approximately 1,450 tons of contaminated ferrous scrap metal were shipped to the site.	DOE assigned	None	By-product material	69,000yd <sup>3</sup>
Other Sites						
Madison	Madison, IL	Large multistory metal building with concrete floor where uranium extrusion and rod straightening occurred.	DOE assigned	None	LLW (Uranium)	10yd <sup>3</sup>
W.R. Grace & Company	Curtis Bay, MD	1 building and 4-acre landfill at 260-acre facility where 997.61 tons of thorium were processed and wastes were buried. Elevated radioactivity was measured at disposal site and building, and equipment exceeds surface contamination guidelines.	DOE assigned	None	By-product material, Thorium	36,000yd <sup>3</sup>



Site Name	Location	Description	Site Origin	Vicinity Properties	Waste Types	Estimated Waste
<b>Other Sites [cont'd]</b>						
Chapman Valve	Indian Orchard, MA	2 vacant buildings where large quantities of uranium rods were machined.	DOE assigned	None	LLW (Uranium)	100yd <sup>3</sup>
Shpack Landfill	Norton/ Attleboro, MA	8-acre fenced site where trash and other material associated with nuclear fill operations was disposed. Contaminated with radioactive residues and nonradioactive hazardous materials unrelated to DOE-sponsored work or work by DOE predecessor agencies.	Added to NPL in 1986; DOE is not lead agency	None	LLW (Uranium)	9,370yd <sup>3</sup>
Ventron	Beverly, MA	100,000 ft <sup>2</sup> building containing furnace and leaching facilities, a mixing room, a drying room, and analytical laboratories. Contamination of outdoor soils and interior and exterior building surfaces.	DOE assigned	1	LLW (Thorium, Uranium), Mixed Waste	1,501yd <sup>3</sup>
General Motors	Adrian, MI	44,500 ft <sup>2</sup> of the main plant, approx. 2,000 ft <sup>2</sup> of office space, loading dock and storage area where thorium extrusion and depleted, natural, and slightly enriched uranium work was conducted.	DOE assigned	None	LLW (Uranium)	200yd <sup>3</sup>
CE Site	Windsor, CT	1,100-acre site comprised of more than a dozen buildings with several smaller support facilities. Part of the site was used for reactor fuel development. DOE authority is for highly-enriched uranium.	DOE assigned	None	LLW (Highly-Enriched Uranium)	TBD following site characterization
Cleanup Completed						
Acid/Pueblo Canyons	Los Alamos, NM	1-acre area bounded by residential subdivision and town of Los Alamos where deep canyons were the discharge area for untreated radioactive liquid wastes from research.	DOE assigned	None	LLW	390yd <sup>3</sup>



APPENDIX 1 — PROFILE OF CURRENT FUSRAP SITES

Site Name	Location	Description	Site Origin	Vicinity Properties	Waste Types	Estimated Waste
Cleanup Completed [cont'd]						
Alba Craft	Oxford, OH	Operating 25,000ft <sup>2</sup> machine shop where uranium slugs were machined. Contamination was found indoors (floor, roof support beam, and drains) and in two isolated spots outdoors that were cleaned up.	DOE assigned	None	LLW (Uranium)	2,900yd <sup>3</sup>
Albany Research Center	Albany, OR	45-acre partially fenced area with 39 buildings where the U.S. Bureau of Mines conducted metallurgical operations involving natural radioactive materials.	DOE assigned	None	Uranium, Thorium, Zirconium, (Mixed Waste)	3,743yd <sup>3</sup>
Aliquippa Forge	Aliquippa, PA	7.4-acre area with 19 buildings where AEC operated a rolling mill, two furnaces, and cutting and extruding equipment for converting uranium billets into rods.	DOE assigned	None	Uranium	421yd <sup>3</sup>
Baker & Williams Warehouses	New York, NY	3 adjacent warehouses used to store uranium concentrates produced in Port Hope, Canada. Each building is 9,200 ft <sup>2</sup> .	DOE assigned	None	LLW (Uranium)	13yd <sup>3</sup>
Bayo Canyon	Los Alamos, NM	1.5-acre waste burial area 25 miles NW of Santa Fe and 62 miles NE of Albuquerque where debris from D&D of buildings, sewer facilities, and surface areas was disposed. Site originally used for experiments using conventional high explosives and radioactive sources in conjunction with nuclear weapons development.	DOE assigned	None	LLW	1,520yd <sup>3</sup>
Chupadera Mesa	White Sands Missile Range, NM	Part of fallout area from first atomic bomb test. Area is used for cattle grazing and some alfalfa and row crop production.	DOE assigned	None	None	None
Elza Gate	Oak Ridge, TN	5 warehouse pads, 1 building, and construction trailer where high-grade uranium ore from Africa and ore processing residues were stored.	DOE assigned	None	By-product material	7,750yd <sup>3</sup>



Site Name	Location	Description	Site Origin	Vicinity Properties	Waste Types	Estimated Waste
Cleanup Completed [cont'd]						
Granite City Steel	Granite City, IL	Plant building with 10-ft thick concrete walls and railroad track where uranium ingots were x-rayed and x-ray film developed. Two government-owned betatrons (Magnetic Induction Electron Accelerators) were in plant.	DOE assigned	None	LLW (Uranium)	1yd <sup>3</sup>
HHM Safe Co.	Hamilton, OH	A large rectangular building where uranium slugs were machined from uranium billets. Contamination is located on the third floor section of the southeast corner of the building.	DOE assigned	None	LLW (Uranium)	690yd <sup>3</sup>
National Guard Armory	Chicago, IL	Armory was leased from State of Illinois for uranium processing and storage of radioactive materials and returned to the State in 1951.	DOE assigned	None	LLW (Uranium)	24yd <sup>3</sup>
Kellex/Pierpont	Jersey City, NJ	Originally 43 acres and more than 20 buildings. Remediation of radioactive contamination was in FY 1981; DOE maintains no materials at the site.	DOE assigned	None	LLW (Uranium)	273yd <sup>3</sup>
Middlesex Municipal Landfill	Middlesex/Piscataway, NJ	Former landfill used for disposal of nonradioactive wastes from Middlesex Sampling Plant. 3 acres of contaminated wastes from residues of uranium ore sampling.	DOE assigned	2	LLW (Radium, Thorium, Uranium)	31,210yd <sup>3</sup>
Niagara Falls Storage Site Vicinity Properties	Lewiston, NY	Remedial action was completed on all but 3 vicinity properties. These properties were not remediated due to access restrictions or to location on a commercial hazardous waste disposal facility.	DOE assigned	26	By-product material, K-65, Radium, Thorium, Uranium	50,000yd <sup>3</sup>
Seymour Specialty Wire	Seymour, CT	60-acre site where 1 building was used for developmental extrusion of natural uranium metal, uranium machining, metal storage, and laboratory support.	DOE assigned	None	LLW (Uranium)	37yd <sup>3</sup>



APPENDIX 1 — PROFILE OF CURRENT FUSRAP SITES

Site Name	Location	Description	Site Origin	Vicinity Properties	Waste Types	Estimated Waste
Cleanup Completed [cont'd]						
C.H. Schnoor	Springdale, PA	Concrete block building and loading dock where extruded uranium metal rods were machined to produce slugs that were used as feed material for production reactors.	DOE assigned	None	LLW (Uranium)	686yd <sup>3</sup>
University of California	Berkeley, CA	Gilman Hall was the site of nuclear research involving plutonium and uranium in the 1940s.	DOE assigned	None	LLW	30yd <sup>3</sup>
University of Chicago	Chicago, IL	Seven buildings associated with nuclear research and development.	DOE assigned	None	LLW	45yd <sup>3</sup>



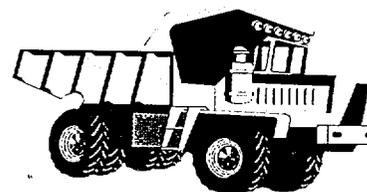
**Overall Protection of Human Health and the Environment**—addresses whether an alternative provides adequate protection and describes how risks are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

**Compliance With Federal and State Environmental Regulations**—addresses if a remedy would meet all of the applicable or relevant and appropriate requirements of other Federal and State environmental laws and/or provide grounds for receiving a waiver.

**Long-Term Effectiveness and Permanence**—addresses the amount of remaining risk and the ability of an alternative to protect human health and the environment over time, once the cleanup goals have been met.

**Short-Term Effectiveness and Environmental Impacts**—addresses the speed with which the remedy achieves protectiveness, as well as its potential to create adverse impacts on human health and the environment during construction and implementation of the cleanup.

**Reduction in Toxicity, Mobility, or Volume Through Treatment**—addresses the anticipated performance of treatments that permanently and significantly reduce toxicity, mobility, or volume of waste.



**Implementability**—addresses the technical and administrative feasibility of an alternative including the availability of materials and services required for the cleanup.

**Cost**—compares the differences in cost, including capital, operation, and maintenance costs.



**State or Support Agency Acceptance**—evaluates whether the State agrees with, opposes, or has no comment on the preferred alternative. This criterion is not evaluated formally until comments on the Feasibility Study and Proposed Plan are received.

**Community Acceptance**—addresses the issues and concerns the public may have regarding each of the alternatives. This criterion is not evaluated formally until comments on the Feasibility Study and Proposed Plan are received.



DOE maintains Public Information Centers for FUSRAP at the following locations:

**National FUSRAP Information Center**

U.S. Department of Energy  
P.O. Box 2001  
Oak Ridge, TN 37831-8723  
(615) 576-0948

**Four Additional FUSRAP Information Centers**

DOE Public Information Center  
9170 Latty Avenue  
Berkeley, MO 63134  
(314) 524-4083  
FAX: (314) 524-6044  
Hours: 9 a.m. to 2 p.m. weekdays

DOE Public Information Center  
43 West Pleasant Avenue  
Maywood, NJ 07607  
(201) 843-7466  
FAX: (201) 843-7560  
Hours: 9 a.m. to 4:30 p.m. Monday,  
Wednesday, and Friday

DOE Public Information Center  
868 Black Oak Ridge Road  
Wayne, NJ 07470  
(201) 835-1666  
FAX: (201) 835-3046  
Hours: 9 a.m. to 4:30 p.m. Tuesday and  
Thursday

DOE Public Information Center  
810 Sheridan Drive  
Tonawanda, NY 14150  
(716) 871-9660  
FAX: (716) 871-1192  
Hours: 10 a.m. to 3 p.m. Monday,  
Tuesday, Thursday, and Friday  
12 p.m. to 5 p.m. on Wednesday

**24-Hour Public Access Line ☎ 1-800-253-9759**

This public access number is answered in Oak Ridge, Tennessee, by an answering machine, which records calls and takes messages. The answering machine is checked frequently and calls are returned.

**Center for Environmental Management Information ☎ 1-800-7-EM-DATA (1-800-736-3282)**

Trained information specialists staff this toll-free telephone line, conduct research necessary to respond to information requests, and provide answers to your questions. The Center's hours of operation are weekdays from 9 a.m. to 7 p.m., Eastern Standard Time.



**Atomic Energy Act (AEA):** The Act of 1946 placed responsibility for production and control of nuclear materials within a civilian agency, originally the Atomic Energy Commission. The Act of 1954 allowed the Atomic Energy Commission to license private companies to use nuclear materials to build and operate nuclear power plants.

**Atomic Energy Commission (AEC):** The authority established by Congress to provide civilian control of atomic weapons under the Atomic Energy Act of 1946. The Act was amended in 1954 to permit peaceful uses of atomic energy. The AEC was dissolved by the Energy Reorganization Act of 1974.

**By-Product Material:** Includes wastes from the processing of ores primarily to recover their source material (uranium and thorium) content.

**Decontamination and Decommissioning (D&D):** Decontamination is the removal of contamination from facilities, soils, or equipment by washing, chemical action, mechanical cleaning, or other techniques. Decommissioning is the process of removing a facility from operation followed by entombment, decontamination, dismantlement, or conversion to another use.

**Enrichment:** The process of separating the isotopes of uranium from each other. In the United States, this is done using the gaseous diffusion process. Enriched uranium has more uranium-235 than natural uranium.

**Fission:** The splitting of a heavy nucleus into two roughly equal parts (which are nuclei of lighter elements), accompanied by the release of a relatively large amount of energy and frequently one or more neutrons. Fission can occur spontaneously, but usually is caused by the absorption of gamma rays, neutrons, or other particles.

**Hazardous Waste:** A solid waste (which includes solids, liquids, and contained gases), or combination of solid wastes, that because of its quantity, concentration, or physical, chemical, or infectious characteristics may 1) cause or significantly contribute to an increase in mortality or an increase in irreversible or incapacitating illness, or 2) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed. Some wastes are listed as hazardous under certain U.S. Environmental Protection Agency regulations.

**High-Level Waste:** Material that remains following the chemical reprocessing of spent nuclear fuel and irradiated targets from reactors. It contains a combination of transuranics and fission products in concentrations high enough to require permanent isolation.

**Irradiation:** Exposure to radiation of wavelengths shorter than those of visible light (gamma, x-ray, or ultraviolet). Irradiation is used for medical purposes, for the destruction of bacteria in foodstuffs, or for the sterilization of medical instruments.

**Isotopes:** One of two or more atoms with nuclei that have the same number of protons but a different number of neutrons.

**K-65:** Highly concentrated radium waste from processing high-grade uranium ore.

**Lithium:** A soft, silvery, highly reactive metallic element that is used as a heat transfer medium in thermonuclear weapons.

**Low-Level Waste:** Radioactive waste not classified as high-level, transuranic, spent nuclear fuel, by-product material, or uranium mill tailings. Low-level waste typically has small amounts of radioactivity in large amounts



of material. It is generated in every process involving radioactive materials in DOE, including cleanup projects.

**Manhattan Engineering District (MED):** The U.S. Corps of Engineers name for the U.S. Government top-secret program to produce an atomic bomb for use during World War II. Also known as the Manhattan Project.

**Millirem:** One thousandth of a rem. Rems are a way to measure radiation according to the ability of the specific radiation to do damage to biological tissue.

**Mixed Waste:** Waste that contains both hazardous wastes, and source, special nuclear, or by-product material subject to the AEA (42 U.S.C. 2011 et. seq.).

**Nuclear Fuel Cycle:** The complete series of steps involved in supplying fuel for nuclear reactors. It includes mining, refining, enrichment, fabrication of fuel elements, and fuel use in a reactor.

**Ore:** A mineral or aggregate of minerals from which a valuable constituent, especially a metal, can be mined or extracted profitably.

**Pitchblende:** The principal ore of uranium, a brownish-black mineral of uranite and uranium trioxide with small amounts of water and uranium decay products.

**Plutonium:** A man-made, heavy, radioactive, metallic element produced in reactors and used in nuclear weapons. It can also be used to produce power. It is a transuranic element.

**Radioactivity:** The rate at which radioactive material is emitting radiation, given in terms of the number of nuclear disintegrations occurring in a unit of time. The common unit of radioactivity is the curie, which measures the number of disintegrations in one second of one gram of radium.

**Radium:** A rare luminescent, highly radioactive metallic element having 13 isotopes with mass numbers between 213 and 230 of which 226 is the most common.

**Spent Nuclear Fuel:** Nuclear reactor fuel that has been irradiated to the extent that it can no longer effectively sustain a chain reaction. Fuel becomes spent when its fissionable isotopes have been partially consumed and fission products have accumulated in it.

**Stakeholders:** Anyone with an interest in DOE activities, or anyone who may be affected by DOE activities.

**Thorium:** A silvery-white metallic element with 13 radioactive isotopes only one of which, thorium 232, occurs naturally. It is used in magnesium alloys and isotope 232 is a source of nuclear energy.

**Transuranic Elements:** Man-made elements with an atomic number greater than 92, including neptunium, plutonium, americium, and curium.

**Uranium:** A heavy silvery-white metallic element, radioactive, easily oxidized and having 14 known isotopes. The element occurs in several minerals including pitchblende and carnotite, from which it is extracted and processed for use in research, nuclear fuels, and nuclear weapons.

**Vicinity Properties:** Properties located nearby FUSRAP sites that are contaminated with radioactive materials from a FUSRAP site.

**Zirconium:** A lustrous grayish-white, strong, metallic element obtained primarily from zircon and used chiefly in ceramic and refractory compounds as an alloying agent, and in nuclear reactors.

**MEMORANDUM OF UNDERSTANDING BETWEEN  
THE U.S. DEPARTMENT OF ENERGY  
AND  
THE U.S. ARMY CORPS OF ENGINEERS  
REGARDING PROGRAM ADMINISTRATION AND EXECUTION OF  
THE FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM  
(FUSRAP)**

**ARTICLE I - PURPOSE AND AUTHORITY**

A. This Memorandum of Understanding (MOU) is entered into by and between the U.S. Department of Energy (DOE) and the U.S. Army Corps of Engineers (USACE), ("The Parties") for the purpose of delineating administration and execution responsibilities of each of the parties for the Formerly Utilized Sites Remedial Action Program (FUSRAP).

B. USACE is administering and executing cleanup at eligible FUSRAP sites pursuant to the provisions of the Energy and Water Development Appropriations Act, 1998, (Title I, Public Law 105-62, 111 Stat. 1320, 1326), the Energy and Water Development Appropriations Act, 1999, (Title I, Public Law 105-245, 112 Stat. 1838,1843), and in accordance with, and subject to regulation under, the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), 42 U.S.C. 9601 et seq., and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C.F.R., Chapter 1, Part 300.

C. DOE and USACE acknowledge that DOE does not have regulatory responsibility or control over the FUSRAP activities of USACE or USACE contractors.

D. This MOU addresses the responsibilities of the parties with regard to the 25 completed sites, listed in Attachment "A" hereto, where response actions were completed by DOE as of October 13, 1997, and the 21 active sites listed in Attachment "B" hereto, where response actions were not completed by DOE as of October 13, 1997.

E. This MOU also addresses the responsibilities of the parties for determining the eligibility of any new sites and vicinity properties for response actions under FUSRAP, determining the extent of response actions necessary at any eligible site, and dealing with other matters necessary to carry out this Program.

**F. USE OF TERMS.**

1. The term "accountability" in regards to real property refers to the obligation imposed by law or regulation to keep an accurate record of real property, regardless of whether the person or agency charged with this obligation has actual possession of the real property, or any control over activities occurring on the real property.
2. The term "active site" means any "eligible FUSRAP site" which is undergoing or is programmed to undergo response actions by USACE, or which is determined to require initial or additional response action in accordance with the provisions of Article III, below.
3. The term "cleanup" means all response actions performed under FUSRAP.
4. The term "closeout" means the completion of cleanup and publication of notice in accordance with the provisions of CERCLA, the NCP and USACE procedures.
5. The term "completed site" means any site listed in Attachment "A", or any site closed out by USACE as defined in paragraph 4, above.
6. The term "completion of FUSRAP activities" means the conclusion of USACE responsibilities at active sites in accordance with the provisions of this MOU.
7. The term "eligible FUSRAP site" means any geographic area determined by DOE to have been used for activities in support of the Nation's early atomic energy program, or placed into FUSRAP pursuant to Congressional direction. (See Article III, section D, for designation of sites not part of FUSRAP on October 13, 1997).
8. The term "management" in regards to real property means the safeguarding of the Government's interest in property, in an efficient and economical manner consistent with the best business practices, including administering applicable National Pollutant Discharge Elimination System (NPDES) permits, National Emissions Standards for Hazardous Air Pollutants (NESHAPS) reports, and other applicable administrative environmental requirements.
9. The term "protection" in regards to real property means the provision of adequate measures for prevention and extinguishment of fires, special inspections to determine and eliminate fire and other hazards, and necessary guards to protect property against thievery, vandalism, and unauthorized entry.
10. The term "response" shall have the same meaning as in CERCLA at 42 U.S.C. § 9601(25).

11. The term "vicinity properties" means properties adjacent to or near eligible FUSRAP sites which have been contaminated by radioactive and/or chemical waste materials attributable to activities which supported the nation's early atomic energy program.

12. For purposes of this MOU, "active sites" become "completed sites" upon USACE determination that completion of FUSRAP activities has occurred with necessary regulatory approvals under CERCLA and the NCP.

13. For purposes of this MOU, "completed sites" become "active sites" upon USACE determination that further response action is necessary in accordance with Article III of this MOU.

## ARTICLE II - INTERAGENCY COMMUNICATION

To provide for consistent and effective communication between DOE and USACE, each shall appoint a Principal Representative to serve as its headquarters-level point of contact on matters relating to this MOU.

## ARTICLE III - RESPONSIBILITIES

### A. PROGRAM MANAGEMENT AND FUNDING.

1. USACE shall manage all activities and prepare program estimates, funding requirements, and budget justifications for all FUSRAP activities for which it is responsible under the terms of this MOU. USACE shall request FUSRAP appropriations in the annual Energy and Water Development Appropriations Act for these activities. USACE shall respond to inquiries from public officials, Congressional interests, stakeholders, and members of the press regarding USACE activities under FUSRAP. Except as otherwise provided in this MOU, USACE is responsible for all response action activities at FUSRAP sites until two years after closeout.

2. DOE shall use resources appropriated to it to meet its responsibilities under the terms of this MOU. Except as otherwise provided in this MOU, DOE is responsible for any required activities at FUSRAP sites beginning two years after closeout.

**B. COMPLETED SITES.**

**1. DOE:**

a. Shall be responsible for: surveillance, operation and maintenance, including monitoring and enforcement of any institutional controls which have been imposed on a site or vicinity properties; management, protection, and accountability of federally-owned property and interests therein; and any other federal responsibilities, including claims and litigation, for those sites identified as completed in Attachment "A". Should it be necessary to undertake further administrative actions to finalize the completion of those sites in Attachment "A", DOE will identify the administrative actions to be taken, coordinate funding requirements for those actions with USACE, and upon receipt of funds from USACE, complete the necessary administrative actions to finalize completion of those sites;

b. Shall request USACE to conduct additional FUSRAP cleanup in a manner consistent with those procedures described in Article III section D, FUSRAP ELIGIBILITY (NEW SITES);

c. Shall be successor to USACE in Federal Facility Agreements for long-term surveillance, operation and maintenance, for which DOE is responsible under the provisions of this MOU;

d. Shall be responsible for administration of payments in lieu of taxes for any federally-owned lands held in connection with FUSRAP; and

e. Upon completion of FUSRAP activities by USACE, shall be responsible for: surveillance, operation and maintenance, including monitoring and enforcement of any institutional controls which have been imposed on a site or vicinity properties; management, protection and accountability of federally-owned property and interests therein; and any other federal responsibilities, including claims and litigation, not directly arising from USACE FUSRAP response actions.

**2. USACE:**

a. Shall assume no responsibility for the completed sites listed in Attachment "A" unless additional response actions are determined to be necessary under the provisions of Article III paragraph B.1.a. and Article III section D; and

b. In accordance with Article III section B.1.a., will provide funding to DOE for administrative actions required to finalize completion of the sites in Attachment "A". Such funding will be requested in USACE FUSRAP budget requests, or provided through Congressionally-approved reprogramming actions.

C. ACTIVE SITES.

1. DOE:

- a. Upon request from USACE, shall provide USACE with site designation decision documents and reports, contractual documents, program administration files, technical records, and documents related to federally-owned property, including associated financial records, cost estimates, schedules of program activities, and supporting data;
- b. Hereby provides USACE with authorization for access to such lands or interests in land for which DOE has administrative accountability or to which DOE otherwise is authorized to provide access pursuant to statute, permit, license or similar agreement, to the extent that it may do so under the terms of any such agreements;
- c. Upon request from USACE, to the extent permitted by law, shall acquire, using funds appropriated for FUSRAP activities, such additional real property and interests therein as may be required by USACE to execute the program, if USACE cannot otherwise accomplish the acquisition under its own authority;
- d. To the extent permitted by law, hereby agrees to provide such authorization to USACE as may be required to terminate any existing leases, licenses, permits, or other agreements for access to, and the use of, land or facilities which USACE determines are no longer required to execute FUSRAP;
- e. Beginning two years after closeout, shall be responsible for long-term surveillance, operation and maintenance, including monitoring and enforcement of any institutional controls which have been imposed on a site or vicinity properties, and, upon closeout, shall accept the transfer of federally-owned real property and interests therein, acquired by USACE for FUSRAP execution;
- f. Shall be responsible for administration of payments in lieu of taxes for any federally-owned lands held by either USACE or DOE in connection with FUSRAP;
- g. Shall be responsible, only after a determination of liability by a court of

competent jurisdiction and exhaustion of applicable appeal rights, for payment of claims by property owners for damages to property and personal injuries due to DOE's actions prior to October 13, 1997, provided that:

- i. This MOU does not alter or diminish the right of DOE to raise any defenses available under law, including sovereign immunity, in the case of any third party claims, whether in an administrative or a judicial proceeding; and
  - ii. Nothing in this agreement shall be interpreted to require any obligation or payment of funds in violation of the Anti-Deficiency Act (31 U.S.C. § 1341);
- h. Shall have accountability for federally-owned real property interests acquired by or transferred to DOE, including inventory reporting to the General Services Administration as may be required by that agency; and
- i. To the extent permitted by law, hereby agrees to make such outgrants on federally owned real property interests, referred to in paragraph h. above, as may be requested by USACE in connection with the relocation of utilities and facilities or to otherwise facilitate FUSRAP execution.

## 2. USACE:

- a. Shall be responsible for property management and response action activities at active FUSRAP sites, except for DOE's inventory reporting of federally owned real property interests related to FUSRAP under Article III paragraph C. 1.h. and as otherwise provided in this section;
- b. Shall be responsible for site cleanup in accordance with its obligation to administer and execute FUSRAP imposed by Public Law 105-62; Public Law 105-245; any subsequent laws specifically relating to FUSRAP; CERCLA; and the NCP;
- c. Shall accordingly be responsible for site closeout in accordance with CERCLA, the NCP, and USACE procedures;
- d. During cleanup operations and for the first two years after site closeout, shall be responsible for surveillance, operation and maintenance, as required, and for management and protection of federally-owned real property in connection with FUSRAP;
- e. Shall establish cleanup standards in consultation with federal, State and local regulatory agencies;
- f. Within its authorities, may acquire real property and interests therein required for

FUSRAP execution;

- g. Shall maintain accountability for real property and interests therein which USACE acquires under its authorities for FUSRAP execution, until such time as such real property and interests therein are transferred to DOE;
- h. Shall be responsible, in cooperation with the Department of Justice, for identifying and for seeking recovery from Potentially Responsible Parties (PRPs) under CERCLA for response actions performed at eligible FUSRAP sites;
- i. Shall accept responsibility as DOE's successor for all response actions required by Federal Facility Agreements executed between DOE and EPA at eligible FUSRAP sites;
- j. Shall determine the need for response actions under FUSRAP of any vicinity property;
- k. Shall conduct a technical review of the adequacy of USACE-selected remedies on the fifth anniversary of site closeout where necessary;
- l. Shall execute and sign new FFA's and permits required for FUSRAP activities;
- m. Shall coordinate with DOE as appropriate on issues relating to activities on:
  - i. DOE's inventory reporting of federally-owned real property referred to in Article III paragraph C. 1.h., above;
  - ii. Any DOE outgrants on federally-owned real property interests referred to in Article III paragraph C.1.i., above; and
  - iii. Changes to existing FFA provisions or to new provisions that relate to long-term surveillance, operation and maintenance by DOE referred to in Article III paragraphs C.2.i. and l. above;
- n. Shall be responsible, only after a determination of liability by a court of competent jurisdiction and exhaustion of applicable appeal rights, for damages due to the fault or negligence of USACE or its contractors, and shall hold and save harmless DOE free from all damages arising from USACE FUSRAP activities to the extent allowable by law, provided that:

- i. This MOU does not alter or diminish the right of USACE to raise any defenses available under law, including sovereign immunity, in the case of any third party claims, whether in an administrative or a judicial proceeding; and
- ii. Nothing in this agreement shall be interpreted to require any obligation or payment of funds in violation of the Anti-Deficiency Act (31 U.S.C. § 1341);
- o. Upon completion of FUSRAP activities, shall provide a copy of surveys, findings, decision documents, and access agreements for property not owned by the government, as well as close out documents, to DOE for the historical record. This includes all sites determined eligible, whether or not any response action was taken.

**D. FUSRAP ELIGIBILITY (NEW SITES).**

**1. DOE:**

- a. Shall perform historical research and provide a FUSRAP eligibility determination, with historical references, as to whether a site was used for activities which supported the Nation's early atomic energy program;
- b. Shall provide USACE with the determination, a description of the type of processes involved in the historical activities at the site, the geographic boundaries of those activities. (as reflected by documentation available to DOE), and the potential radioactive and/or chemical contaminants at the site; and
- c. Shall maintain records of determination of eligibility and other files, documents and records associated with the site.

**2. USACE:**

- a. Upon receipt of DOE's determination and its description of the type of processes involved in the historical activities at the site and potential radioactive and/or chemical contaminants, shall conduct necessary field surveys and prepare a preliminary assessment in accordance with CERCLA and the NCP;
- b. Shall determine the extent of FUSRAP-related contamination at the eligible site, at vicinity properties, and at other locations where contamination originated from the eligible site;
- c. Shall determine if the contamination is a threat to human health or the

environment;

d. Shall consult with DOE if USACE surveys, investigations, and data analyses are inconsistent with the DOE description of the potential radioactive and/or chemical contaminants and processes involved in the historical activities at the site;

e. Shall determine the extent to which response action under CERCLA is required to address FUSRAP-related contamination at the site; and

f. Upon completion of FUSRAP activities, shall provide a copy of surveys, findings, decision documents, and access agreements for property not owned by the government, as well as close out documents, to DOE for the historical record. This includes all sites determined eligible, whether or not any response action was taken.

#### ARTICLE IV – FURTHER ASSISTANCE

DOE and USACE shall provide such information, execute and deliver any agreements, instruments and documents, and take such other actions, to include DOE assistance with technical and waste disposal matters, as may be reasonably necessary or required, which are not inconsistent with the provisions of this MOU, in order to give full effect to this MOU and to carry out its intent.

#### ARTICLE V - DISPUTE RESOLUTION

A. Every effort will be made to resolve issues between USACE and DOE by the staff directly involved in the activities at issue, through consultation and communication or other forms of non-binding alternative dispute resolution mutually acceptable to the parties. If a mutually acceptable resolution cannot be reached, the dispute will be elevated to successively higher levels of management up to, and including, the Secretary of Defense and the Secretary of Energy.

B. In the event such measures fail to resolve the dispute, the parties shall refer the matter to the Office of Management and Budget (OMB) for resolution, unless the dispute involves questions of law, which shall be referred to the Office of Legal Counsel of the Department of Justice pursuant to Executive Order 12146.

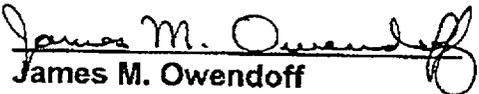
## ARTICLE VI - AMENDMENT AND TERMINATION

This MOU may be modified or amended in writing by the mutual agreement of the parties. Either party may terminate the MOU by providing written notice to the other party. The termination shall be effective sixty (60) days following notice, unless a later date is agreed to by the parties.

## ARTICLE VII - EFFECTIVE DATE

This MOU shall become effective when signed by authorized officials of DOE and USACE.

U.S. Department of Energy

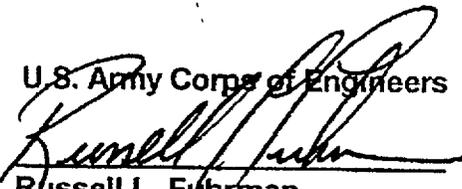
  
James M. Owendoff  
Acting Assistant Secretary  
For Environmental Management

Date: 3/17/99

Attachments:

- A. List of Completed Sites
- B. List of Active Sites

U.S. Army Corps of Engineers

  
Russell L. Fuhrman  
Major General, U.S. Army  
Director of Civil Works

Date: 16 MAR 99

**Attachment A**  
**Completed FUSRAP Sites**

<u>Site Name</u>	<u>City and State</u>
Kellex/Pierpont	Jersey City, New Jersey
Acid/Pueblo Canyon	Los Alamos, New Mexico
Bayo Canyon	Los Alamos, New Mexico
University of California	Berkley, California
Chupadera Mesa	White Sands Missile Range, New Mexico
Middlesex Municipal Landfill	Middlesex, New Jersey
Niagara Falls Storage Site	
Vicinity Properties	
University of Chicago	Lewiston, New York
National Guard Armory	Chicago, Illinois
Albany Research Center	Chicago, Illinois
Elza Gate	Albany, Oregon
Seymour Specialty Wire	Oak Ridge, Tennessee
Baker & Williams Warehouses	Seymour, Connecticut
Granite City Steel	New York, New York
Aliquippa Forge	Granite City, Illinois
C.H. Schnoor	Aliquippa, Pennsylvania
Alba Craft Laboratory	Springdale, Pennsylvania
HHM Safe Company	Oxford, Ohio
Associate Aircraft	Hamilton, Ohio
B & T Metals	Fairfield, Ohio
Baker Brothers	Columbus, Ohio
General Motors	Toledo, Ohio
Chapman Valve	Adrian, Michigan
Ventron	Indian Orchard, Massachusetts
New Brunswick Laboratory	Beverly, Massachusetts
	New Brunswick, New Jersey

**Attachment B  
Active FUSRAP Sites**

<u>Site Name</u>	<u>City and State</u>
Latty Ave. Properties	Hazelwood, Missouri
St. Louis Airport	St. Louis, Missouri
Vicinity Properties	Hazelwood & Berkley, Missouri
St. Louis Downtown Site	St. Louis, Missouri
DuPont	Deepwater, New Jersey
Maywood	Maywood, New Jersey
Wayne	Wayne, New Jersey
Middlesex Sampling Plant	Middlesex, New Jersey
Ashland 1	Tonawanda, New York
Ashland 2	Tonawanda, New York
Seaway Industrial Park	Tonawanda, New York
Linde Air Products	Tonawanda, New York
Niagara Falls Storage Site	Lewiston, New York
Colonie	Colonie, New York
Bliss & Laughlin Steel	Buffalo, New York
Luckey	Luckey, Ohio
Painesville	Painesville, Ohio
CE Site	Windsor, Connecticut
Madison	Madison, Illinois
Shpack Landfill	Norton, Massachusetts
W.R. Grace	Curtis Bay, Maryland