August 21, 1998

FOR: The Commissioners

FROM: L. Joseph Callan /s/
Executive Director for Operations

SUBJECT: DEFERRAL OF REGULATORY OVERSIGHT OF CERTAIN PORTIONS OF THE LAKE CITY ARMY AMMUNITION PLANT TO THE U.S. ENVIRONMENTAL PROTECTION AGENCY

PURPOSE:

To obtain the Commission's approval of the staff's plan to defer a portion of the oversight of remediation activities involving radioactive contamination of specified portions of the Lake City Army Ammunition Plant (LCAAP), in Independence, Missouri, to the U.S. Environmental Protection Agency (EPA EXIT).

SUMMARY:

The staff is proposing to defer regulation of radioactive contamination remediation of the LCAAP to EPA, except for Area 10, Building 3A, and the area known as the 600-yard bullet catcher. The U.S. Nuclear Regulatory Commission (NRC) would retain regulatory oversight of these areas based on requests from both the Army and EPA. Deferral of the remaining areas to EPA should reduce the administrative and regulatory burden on responsible parties conducting the remediation and conserve NRC resources. The staff believes that the remedial actions required by EPA would be adequate to protect the public health and safety and the environment from the risks associated with the radioactive contamination at the LCAAP.

CONTACT: Stewart W. Brown, NMSS/DWM
(301) 415-6605

BACKGROUND:

The LCAAP is listed in NRC's Site Decommissioning Management Plan (SDMP). It is also being remediated under EPA's Superfund Program, in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Contingency Plan in 40 CFR Part 300 (see Attachment 1 for information on statutory background).

In the recent past, the staff has requested Commission approval to defer regulatory oversight for remediation of two sites contaminated with radioactive material to EPA. These sites were: E.I. DuPont, Newport, Delaware; and West Lake Landfill, Bridgeton, Missouri (SECY-95-056, dated March 9, 1995). The Commission, in its memorandum dated April 9, 1995, granted its approval for this transfer of regulatory oversight to EPA. However, neither of these sites was covered by an NRC license.

DISCUSSION:

LCAAP is a U.S. Army facility that was used for the production and testing of munitions containing depleted uranium (see Attachment 2 for information on the site). LCAAP is on EPA's National Priorities List (i.e., it is a Superfund site) as well as NRC's SDMP list. However, because the contamination at LCAAP is predominantly non-radiological, the staff views continued dual EPA and NRC regulation to be unduly burdensome on the parties conducting remediation. To address this, the staff believes it would be appropriate to defer the oversight of radioactive decontamination of certain areas of the LCAAP to EPA.

Deferral to EPA should reduce the amount of duplicative effort by both agencies and by the Army as the site owner. For example, the types of analyses performed by EPA as part of the development of the Remedial Investigation/Feasibility Studies under CERCLA (40 CFR 300.430), are very similar to the analyses conducted by NRC in developing an environmental impact statement (EIS) under the National Environmental Policy Act of 1969 as implemented by 10 CFR Part 51. Both agencies require submission of information on the environmental characteristics of a contaminated site and the nature and extent of contamination. In addition, the agencies require preparation and submission of a plan for implementing remedial measures found necessary to remove or contain contamination, in accordance with applicable remediation criteria. EPA's plan is called a remedial design; NRC calls this a decommissioning plan.

However, as the Commission is aware, NRC and EPA currently disagree on what constitutes adequate radiological cleanup criteria for license termination. NRC's Radiological Criteria for License Termination (62 FR 39058 , July 21, 1997) sets an allowable cleanup level of 25 millirems per year plus measures to reduce the contamination as low as reasonably achievable (ALARA) as its primary standard. EPA has indicated that this standard is not adequate. In a recent discussion with EPA Regional staff, EPA staff indicated that it was not sure what standard EPA would impose were NRC to defer to EPA for remediation of certain portions of LCAAP. EPA staff indicated that normally EPA requires all remedial actions at CERCLA sites to comply with "Applicable or Relevant and Appropriate Requirements" unless a waiver is justified. Because LCAAP is a Superfund site, whether the portions are deferred to EPA or not, EPA will have to determine whether the site is adequately remediated and acceptable for release. In discussion with Army staff, the Army indicated that it is aware that EPA may elect to apply a stricter cleanup standard than NRC; however, the Army indicated that it is willing to accept this possibility.

The staff estimates that deferral should save the NRC about 0.5 full-time equivalent (FTE) in direct staff resources required to oversee remediation at the site. In addition, deferral could save NRC an additional 0.5 FTE and $600,000, depending on whether an NRC EIS would have been required. Deferral should also improve the timeliness of remediation by avoiding the potential delay that could be associated with the administration of independent and complementary regulatory approvals from EPA and NRC.

For these reasons, the staff believes that NRC should defer regulatory oversight of the LCAAP remediation of radioactive contamination to EPA, except for Area 10, Building 3A, and the 600- yard bullet catcher (see Attachment 2). The staff believes that remediation of the three areas retained by NRC can proceed in a straightforward manner. EPA has already orally agreed to assume lead responsibility for remediation of the other specified portions of LCAAP, if the Commission approves of the deferral. The staff is proposing to defer oversight of remedial measures to EPA by letter (Attachment 3), while retaining the site on the Army's NRC Material License SUC-1380. The staff would remove this site from the SDMP once Area 10, Building 3A, and the 600-yard bullet catcher have been remediated and the regulatory oversight for the remaining portion of the site has been transferred to EPA. However, until NRC concurs with EPA's determination that the site has been remediated, the entire site will remain on the Army's NRC license. The Army expects remediation of the NRC areas to take less than a year and the remaining potentially contaminated areas to take between five and ten years.

Except for oversight of the areas not transferred to EPA, NRC does not plan to take any further action on LCAAP, unless specifically requested by EPA. NRC would maintain a contact person on this project to address any EPA request for assistance. In addition, EPA has asked NRC to participate in the review of the LCAAP Proposed Plan and in the development of any record of decision that involves radioactive-contamination-related issues. The staff estimates that this level of support should be less than 0.1 FTE annually. When EPA issues its determination that the remaining portion of LCAAP has been remediated, NRC would review EPA's basis for that decision. As noted above, based on a determination that the remediation is compatible with NRC's decommissioning criteria, NRC would remove the site from the Army's license.

PREVIOUS DIRECTION FROM THE COMMISSION ON DEFERRAL TO EPA:

The Commission, in a Staff Requirements Memorandum (SRM) dated December 21, 1989, rejected the staff's recommendation to develop a general protocol with EPA to govern the application of Superfund to contaminated sites. Instead of developing a protocol, the Commission directed the staff to provide, for each site the staff proposed to defer to EPA under Superfund or a State agency, analyses of: (1) the cleanup standard that would apply under Superfund, and the differences between that standard and the standard that would be applied under the Atomic Energy Act of 1954, as amended; (2) the rights and authorities the State would have, if Superfund were extended to the site; and (3) the rights and authorities that private citizens would have to sue the Federal Government or the licensee(s), using the citizens suit provisions of Superfund (see Attachment 4 for this analysis).

In an SRM dated March 31, 1997, the Commission directed that referral of stalled sites to EPA should be a last resort. However, the LCAAP is not a stalled site in that the licensee, the U.S. Army, is willing and able to carry out required remediation. Rather, the staff is recommending deferral to EPA to minimize duplication of agency efforts, save NRC resources, and promote efficiency.

RECOMMENDATION:

That the Commission:

Approve deferral of the remediation of the depleted uranium contamination located on the LCAAP Superfund site to EPA's CERCLA Program, with the exception of Area 10, Building 3A, and the 600-yard bullet catcher.

Note that both EPA and the Army have orally concurred with this proposal. A letter to EPA would be used to begin the formal process for deferral to EPA (Attachment 3).

COORDINATION:

The Office of the General Counsel has reviewed this paper and has no legal objection. Staff consulted with EPA and the State of Missouri in preparing this paper. Neither EPA nor the State officials objected to the staff's proposed approach. The Office of the Chief Financial Officer has reviewed this Commission Paper for resource implications and has no objections.

L. Joseph Callan
Executive Director for Operations

Attachments:
1. Statutory Background
2. LCAAP Background Information
3. Proposed Letter to EPA
4. Commission-Required Analyses

ATTACHMENT 1

STATUTORY BACKGROUND

The U.S. Nuclear Regulatory Commission (NRC) conducts regulatory programs for site remediation under Atomic Energy Act of 1954, as amended (AEA). The U.S. Environmental Protection Agency (EPA) conducts these programs under the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) also known as Superfund. The staff previously discussed the EPA's RCRA and CERCLA programs in SECYs 93-235 and 93-322. RCRA uses a general regulatory program to manage hazardous waste from generation to ultimate disposal. CERCLA provides authority to respond whenever there is a release or potential release of hazardous material. The facility owner or operator implements RCRA corrective actions, whereas CERCLA responses may be implemented by a number of different parties, including private or

public responsible parties, States, or Federal authorities. In addition, under CERCLA, EPA establishes the guidelines for assessment and evaluation of Federal facilities. RCRA and CERCLA address hazards to the environment. CERCLA is the more comprehensive statute because it addresses both operating and inactive facilities and includes hazardous materials, as well as source, special nuclear, and byproduct material regulated by NRC, under the AEA. CERCLA "hazardous substances" include RCRA "hazardous wastes," as well as toxic pollutants under the Clean Water Act (CWA); Clean Air Act (CAA); and Toxic Substances Control Act (TSCA). Although source, special nuclear, and byproduct materials are excluded from regulation under the CWA, TSCA, and RCRA, they are included under the CAA; therefore, they are included within the scope of CERCLA. Consequently, EPA can require remediation of both non-radiological and radiological contamination, including source, special nuclear, and byproduct material, in accordance with CERCLA.

At sites where radioactive and non-radioactive materials are located in distinct and separate areas, NRC and EPA oversight and regulation of remedial actions can proceed effectively and efficiently. Although the effectiveness of the government's response and oversight can be strengthened through interagency cooperation, each area can be remediated independently in accordance with each agency's requirements and administrative process.

However, independent regulation of remedial activities is not always possible. There are some sites, including Lake City Army Ammunition Plant, that contain commingled radioactive and non-radioactive contamination. At other sites, the contamination is not commingled, but remediation of one type of contamination would affect the responsible party's ability or approach to characterization and remediation of the other type of contamination.

ATTACHMENT 2

LAKE CITY ARMY AMMUNITION PLANT
BACKGROUND INFORMATION

The Lake City Army Ammunition Plant (LCAAP) site is located in the western portion of Missouri, approximately 32 km (20 miles) east of Kansas City in Independence. Land use near LCAAP is primarily agricultural. The major crops produced in this area are corn and soybean, and there is considerable cattle and pig farming.

The Environmental Protection Agency (EPA), pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) initiated remediation of the site in the 1980s, and the LCAAP site was included on the National Priorities List in 1987. EPA proposed the site for remediation under CERCLA because of extensive non-radiological contamination. The LCAAP site was included in U.S. Nuclear Regulatory Commission's (NRC's) Site Decommissioning Management Program on March 29, 1990, because of depleted uranium (DU) contamination.(1)

The LCAAP consists of approximately 1600 hectares (3909 acres). There are 30 major buildings on the facility, and the facility is provided with 24-hour security. Currently, about 1000 individuals work at the LCAAP. Military personnel and their families (about 30 individuals) live on the facility property. The LCAAP is a government-owned, contractor-operated facility. The Remington Arms Company operated the facility until November 1985 and held NRC Materials License SUB-1195. Materials License SUB-1195 was terminated and the responsibility for the DU that remained on site was subsumed by the U.S. Department of the Army in its Materials License SUC-1380. The current contractor is the Olin Corporation. This company holds NRC License 24-24576-01 for the possession and use of cesium-137 and americium-241 in fixed measuring gauges. Contamination at the LCAAP site arose from the assembly, testing, and demilitarizing of cartridges containing DU. DU was used at the LCAAP from the early 1960s through the mid-1980s.

The LCAAP continues to operate; however, present operations do not include work with DU and should not increase the volume of the radiologically contaminated material already on site. The firing range containing the contaminated soil and sand is still used for the testing of non-radioactive munitions. The LCAAP is not expected to close soon.

Radioactive material use at the LCAAP site is confined to two production buildings and a firing range. The production buildings, 3A and 12A, were remediated as of April 1987. However, during an inspection in 1995, the staff identified additional contamination in Building 3A. The firing range is located at the southeast portion of the LCAAP and is approximately 2500 meters by 300 meters (8200 feet by 1000 feet) in area. Three areas on the range--the 549-meter (600-yard) bunker, the 2400-meter (7900-foot) impact area, and the sand storage pile--are infiltrated with fragmented DU penetrators, lead, and unexploded munitions. These three areas together contain approximately 3500 kg (7700 pounds) or 57,000 MBq (1530 mCi) of DU. The 549-meter (600-yard) bunker (bullet catcher) was used to demilitarize approximately 44,000 cartridges, each containing 206 grams (0.45 pounds) of DU. The sand storage pile is made up of sand from the 549-meter (600-yard) bunker and other bunkers on the firing range. The firing range is completely fenced and secured from unauthorized entry at all times. Contaminated areas on the range are posted and health physics personnel inspect these areas annually.

Most radioactive waste from the LCAAP site consists of contaminated soil from the firing range and sand from the sand storage pile. These materials are contaminated with DU, lead, and unexploded munitions. The volume of contaminated soil from the range is estimated to be 11,469 m^3 (15,000 yd^3). In addition, an interior portion of Building 3A remains contaminated from past machining operations involving DU.

The volume of contaminated sand is estimated to be 283 m^3 (370 yd^3). The DU-contaminated waste resulting from the remediation of buildings 3A and 12A was previously containerized and disposed of in a licensed low-level waste disposal facility by Chem-Nuclear, the contractor responsible for remediating the buildings. However, some residual contamination remains in Building 3A in excess of NRC release criteria.

The principal hazards associated with this site are direct exposure, inhalation, ingestion, and potential groundwater contamination. On the basis of the conditions at the site, staff believes that the DU contamination does not pose an immediate threat to the public health and safety. Public exposure is minimized because the site is fenced and is protected by 24-hour security. Inhalation, ingestion, and groundwater contamination are minimized by the

physical form of the DU. Most of the DU is in an insoluble solid form that is not expected to readily migrate either through the atmosphere or through surface water or groundwater. The licensee has designated seven onsite locations where water samples are taken annually. An initial water sampling program, in August and October 1988, did not reveal significant DU in any areas sampled. The results of subsequent sampling indicated several samples with elevated concentrations. However, the licensee did not have these samples isotopically analyzed to determine the source of the elevated readings. The licensee plans to collect additional groundwater samples. Further, if elevated levels of radioactivity are detected, the licensee plans to determine the source of the elevated levels and take appropriate remedial action.

NRC would retain regulatory oversight for Area 10, Building 3A, and the 600-yard bullet catcher if the Commission approves deferral to EPA of the oversight of radioactive-contamination remediation for the remainder of LCAAP. The Army's Remediation Plan for Area 10 is nearly complete and transfer of oversight of this area to EPA would delay remediation. With respect to Building 3A and the 600-yard bullet catcher, the Army has requested that the oversight for Building 3A and the 600-yard bullet catcher reside with either NRC or EPA because the Army believes it would be more cost effective to remediate both areas in tandem by providing alternative work sites: its contractor can remediate Building 3A when either the weather is inclement or access to the bullet catcher is denied during the hours specified for daily use of the firing range. EPA believes that NRC is technically in a better position than EPA to oversee remediation of Building 3A.

ATTACHMENT 3

Mr. Gene Gunn
Chief, Federal Facilities and
Special Emphasis Branch
Superfund Division
U.S. Environmental Protection Agency
Region VII
726 Minnesota Avenue
Kansas City, Kansas 66101

SUBJECT: DEFERRAL OF REGULATORY OVERSIGHT OF CERTAIN PORTIONS OF THE LAKE CITY ARMY AMMUNITION PLANT SITE, INDEPENDENCE, MISSOURI, TO THE U.S. ENVIRONMENTAL PROTECTION AGENCY

Dear Mr. Gunn:

The purpose of this letter is to propose partial deferral of U.S. Nuclear Regulatory Commission (NRC) regulatory oversight to the U.S. Environmental Protection Agency (EPA), for the remediation of radiological contamination of certain portions of the Lake City Army Ammunition Plant (LCAAP) site, Independence, Missouri. We previously discussed this matter with Mr. Scott Marquess of your staff.

NRC has concluded that the remedial program being administered by EPA at the LCAAP site is adequate to protect the public and the environment from the risks associated with the radioactive contamination at this site. Further, deferral should conserve EPA and NRC resources and minimize duplication of effort.

Based on discussion with the U.S. Army and your staff, we propose to defer the oversight of remediation activities at the LCAAP site to EPA, except for Area 10, Building 3A, and the 600-yard bullet catcher. The U.S. Army plans to remediate these areas promptly in accordance with NRC requirements. With the exception of these areas, NRC would not plan to take any further action on the LCAAP site following deferral, unless specifically requested by EPA.

As you have already requested, NRC will participate in the review of the LCAAP Proposed Plan and in the development of any record of decision that involves radioactive contamination-related issues. EPA will notify NRC when EPA believes that remediation is complete. After NRC has reviewed EPA's basis for concluding that remediation is complete, NRC will, based on that determination, remove LCAAP from the Army's materials license.

We would like to meet with you at your convenience to arrange final implementation of this proposal. If you have any questions about this action, please contact Stewart Brown of my staff at (301) 415-6605.

Sincerely,
John W. N. Hickey, Chief
Low-Level Waste and Decommissioning Projects Branch
Division of Waste Management
Office of Nuclear Material Safety and Safeguards

ATTACHMENT 4

STAFF ANALYSIS DIRECTED BY COMMISSION'S
DECEMBER 21, 1989, STAFF REQUIREMENTS MEMORANDUM

In accordance with the Commission's previous direction on information to support deferral decisions, the staff provides the following analyses of: (1) the cleanup standard that would apply under Superfund and the differences between that standard and the Atomic Energy Act standard; (2) the rights and

authorities the State would have, if Superfund were extended to the site; and (3) the rights and authorities that private citizens would have to sue the Federal Government or the licensee(s), using the citizen-suit provisions of Superfund.

1. REMEDIATION STANDARD

The U.S. Environmental Protection Agency (EPA) or the lead agency determines the remediation standards that govern the remedial actions at a site containing radiological contamination, by performing a Feasibility Study (FS). This study would be used as the basis for the development of a record of decision (ROD), establishing remediation standards and remedial actions for each site.

Based on information provided by the EPA staff, the U.S. Nuclear Regulatory Commission (NRC) has reviewed 19 RODs for sites that include some radiological contamination. Most cases involved contamination by radium-226 and its decay products and other naturally occurring radionuclides. In most of the RODs, EPA selected Applicable or Relevant and Appropriate Requirements (ARARs) based on EPA's standard found in 40 CFR Part 192, for remedial action at uranium mill tailings sites. In many cases, EPA also identified NRC guidance in Regulatory Guide 1.86, "Termination of Operating Licenses for Nuclear Reactors," as an ARAR for surface contamination on buildings and equipment. Other sources of ARARs for radiological contamination include: (a) NRC's air concentration limits in 10 CFR Part 20, Appendix B; (b) State guidance on acceptable surface contamination; (c) U.S. Department of Energy orders for acceptable public and worker doses; (d) Federal and State water quality standards; and (e) Federal and State air-emission limits.

It is important to note that EPA recently expressed disagreement with NRC's Radiological Criteria for License Termination (62 FR 39058, July 21, 1997) which sets an allowable cleanup level of 25 millirem per year (mrem/yr) plus measures to reduce contamination as low as is reasonably achievable. In discussion with EPA staff, EPA staff indicated that it was not sure what standard EPA would impose were NRC to defer to EPA for remediation of certain portions of LCAAP. EPA staff indicated that normally EPA requires all remedial actions at CERCLA sites to comply with ARARs unless a waiver is justified. We note that EPA's guidance in the August 22, 1997, memorandum, indicates EPA's view that NRC's 25 mrem/yr standard is not sufficiently protective. Because LCAAP is a Superfund site as well as an SDMP site, whether it is transferred to EPA for oversight or not, the site falls within the purview of EPA's guidance regarding the acceptable standard for release. In any case, NRC staff is confident that EPA will meet or exceed the Commission's standards for remediation of the radiological contamination at LCAAP.

2. STATE AUTHORITY UNDER SUPERFUND

EPA, Region 7, has entered into a Federal Facility Agreement (hereafter, Agreement) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Resource Conservation and Recovery Act (RCRA) with the Department of the Army and the State of Missouri, Department of Natural Resources (MDNR). The Parties intend that the activities covered by the Agreement will achieve compliance with CERCLA and satisfy the corrective actions required by RCRA, and will meet or exceed all applicable relevant and appropriate Federal and State laws and regulations, to the extent required by CERCLA. This includes a Remedial Investigation, (RI), which is conducted to fully determine the nature and extent of release or threat of release of hazardous substances, pollutants, or contaminants and to gather necessary data to support the required FS that is developed to fully evaluate remedial action alternatives to prevent or mitigate the migration or the release of hazardous substances, pollutants, or contaminants at Lake City Army Ammunition Plant (LCAAP). To that end, 40 CFR 300.430(f)(i)(ii)(c)(4) requires the lead agency (in this case, the Army) to consult with MDNR regarding the criteria that are to be considered in the remedy selection. In addition, 40 CFR 300.430(f)(4)(i) requires the Army to consider MDNR's view in its final remedy selection from among the various alternatives. The staff expects MDNR to continue its participation with EPA and the Army, under CERCLA and RCRA, in the LCAAP remediation process.

3. THE RIGHTS OF PRIVATE CITIZENS UNDER SUPERFUND

As discussed above, the Army is to solicit community participation in the identification of ARARs and other aspects of the RI/FS process. In addition, private citizens are authorized under CERCLA to undertake a response action to eliminate a release of a hazardous substance, pollutant, or contaminant, subject to the citizens' compliance with the provisions of 40 CFR 300.700. Various mechanisms are provided in CERCLA for a private citizen to recover the cost of such response action. These mechanisms are summarized in 40 CFR 300.700, and include: (a) recovery of the response cost, plus interest, from the parties found to be liable; and (b) recovery from Superfund of the private citizen's reasonable costs, plus interest.

In addition, "citizen suits" are authorized under Section 310 of CERCLA. Private citizens are authorized to begin civil actions, on their own behalf, against: (a) any person who is alleged to be in violation of any standard, regulation, condition, requirement, or order under CERCLA; and (b) any Federal official who is alleged to have failed to perform a required duty, under CERCLA. Judicial relief, in such actions, may consist of an order to enforce and/or correct the violation or an order imposing any civil penalty provided for the violation. The court may award the prevailing party its costs of litigation, including reasonable attorney and expert witness fees.

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1. Site Decontamination Management Program, SECY-90-121, dated March 29, 1990