

OFFICIAL RECORD COPY

Docket No. 70-784
License No. SNM-724

FEB 03 1994

UCAR Carbon Company, Inc.
ATTN: Mr. James R. McKnight
Manager of Operations
P. O. Box 513
Columbia, TN 38402

Gentlemen:

SUBJECT: MANAGEMENT MEETING SUMMARY

This letter refers to the meeting held at our request on January 13, 1994. The meeting concerned activities previously conducted at the former Union Carbide Fuel Development Facility in Lawrenceburg, Tennessee, under NRC License No. SNM-724.

The matters discussed at the meeting included the scope and documentation of the closeout surveys conducted at the facility in 1974 and criteria for unrestricted release of facilities. A tour of areas formerly used under the NRC license was also performed. The meeting was beneficial in that everyone gained a better understanding of operations which were conducted at the facility, the current status of those areas, and of questions which remain concerning the decommissioning information available to us. Based on this meeting, we understand that you will be developing a plan, to be submitted to the NRC and the State of Tennessee, for characterization of the radiological status of the facility.

A meeting summary and a list of attendees are enclosed.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and its enclosures will be placed in the NRC Public Document Room.

Should you have any questions concerning this matter, please contact us.

Sincerely,

151

J. Philip Stohr, Director
Division of Radiation Safety
and Safeguards

140065

Enclosures:
1. Meeting Summary
2. List of Attendees

cc w/encls:
State of Tennessee

bcc w/encls: (See page 2)

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UCAR Carbon Company, Inc.

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C. Paperiello, NMSS
J. Austin, NMSS
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License Fee Management Branch

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ENCLOSURE 1

MEETING SUMMARY

On January 13, 1994, the attendees listed in Enclosure 2 met at the UCAR Carbon Company facility, Lawrenceburg, TN, to discuss documentation of survey results relating to the 1974 decommissioning of the former Union Carbide Fuel Development Facility in Lawrenceburg, TN.

NRC and State of Tennessee representatives toured, with UCAR representatives, the facilities that had been used for processing licensed material and discussed actual activities conducted. For the most part, equipment used for processing licensed material had been removed from the facilities. Generally, the only remaining equipment was portions of the exhaust ventilation system. The facilities were mostly unused; some areas were being used as support facilities (e.g. shipping and staging areas) for fire brick production at other buildings on the site.

NRC representatives discussed questions concerning the survey documentation, including whether records reflected pre- or post-decontamination readings in some cases, the absence of survey meter identification on some survey sheets, the units associated with some readings, whether survey results indicated alpha or beta/gamma levels, the assessment of possible contamination inside piping runs which were below floor/ground level, the number of survey points for areas listed with "high/average" readings, and the apparent absence of surveys of soil within the former restricted area and surveys of sludge in the plant's settling ponds that were used during licensed material processing.

The options contained in the NRC Branch Technical Position (BTP) entitled "Disposal or Onsite Storage of Thorium or Uranium Wastes from Past Operations" (Attachment 1) and the NRC's criteria for unrestricted release of facilities were also discussed. A copy of the BTP was provided to UCAR representatives.

UCAR representatives agreed that, based on the records available, surveys did not appear to have been conducted of soil within the former restricted area or for the settling ponds and noted the NRC's questions concerning the surveys conducted.

NRC representatives explained the process through which the open questions could be resolved. The steps included: UCAR submits a plan to NRC Region II and the State of Tennessee (the State) specifying the timetable and the methods by which UCAR proposed to conduct surveys of the soil in the former restricted area and of the settling ponds to determine the amount and type of radioactive material in those areas and to resolve NRC and State questions concerning the previously conducted surveys; following approval of the survey plan, to conduct surveys in accordance with the approved plan; submit survey results to the NRC and the State along with a proposal, including a schedule, for the decontamination of the facility, if necessary; and, following NRC and State approval of the decontamination plan, implementation of the decontamination plan and certification to the NRC and the State that the facilities and grounds meet the criteria for unrestricted release. It was also explained that the NRC would conduct, during or following UCAR's surveys, independent sampling and/or surveying to confirm UCAR's results. In addition, an NRC representative stated that it is the NRC position that, if UCAR

followed the outlined process and met NRC acceptance criteria, the facility would be released by the NRC and this action would be final. A UCAR representative requested that UCAR be provided a copy of this position. The NRC representative agreed to provide the copy. (It is included as Attachment 2.)

UCAR representatives stated that they had a basic understanding of the issues to be addressed and would attempt to obtain additional information on the initial decommissioning surveys and begin preparation of a survey plan for submittal to the NRC and the State. UCAR representatives stated that, because of the potential costs, they would consult with corporate officials.

UCAR representatives asked if there was any federal or State financial support available for the work. They were informed by NRC and State representatives that there was none.

UCAR representatives questioned how a situation could develop where they had documentation available from the NRC stating that their facility could be released for unrestricted use, yet the NRC now finds that there were problems with the surveys. An NRC representative stated that, based on records available today from NRC, State, and UCAR files, there was insufficient documentation to show that the facility meets NRC release criteria. The NRC representative stated that there may have been other information, such as records of surveys of soil and/or pond sludge, available at the time the NRC terminated the license. In addition, there may also have been information available regarding the conduct of closeout surveys by Todd Research and Technical Division (a division of Todd Shipyards) that is now unavailable. The NRC representative stated that the NRC had attempted to locate additional information and former Todd staff who performed the survey, but had been unsuccessful. The NRC representative stated that the NRC would continue such efforts.

Further actions agreed upon were:

1. The NRC and UCAR will continue to review records in an attempt to locate individuals who might be able to provide further information on the surveys.
2. The NRC, State, and UCAR will meet to review the records each has and assure each organization's files are complete.
3. The NRC will document the meeting and provide UCAR and the State with a copy of the NRC position on final release of formerly-licensed facilities.
4. UCAR will develop a plan for characterization of the radiological status of the facility, including reviews of survey records available and any further surveys necessary, and provide the plan to the NRC and State.

The Assistant Secretary finds that good cause exists for not publishing the supplement to the Puerto Rico State Plan as a proposed change and making the Regional Administrator's approval effective upon publication for the following reasons:

1. The standards are identical to the Federal standards which were promulgated in accordance with Federal law meeting requirements for public participation.

2. The standards were adopted in accordance with the procedural requirement of State Law and further participation would be unnecessary.

The decision is effective October 23, 1981.

(Sec. 18 Pub. L. 91-508, 84 Stat. 1608 (29 U.S.C. 667))

Signed at New York City, New York, this 15th day of June 1981.

Roger A. Clark,

Regional Administrator.

(FR Doc. 81-32743 Filed 10-23-81; 8:46 am)
BILLING CODE 4810-26-81

NUCLEAR REGULATORY COMMISSION

Advisory Committee on Reactor Safeguards, Subcommittee on Callaway Plant; Location Change

The ACRS Subcommittee on Callaway Plant will hold a meeting on November 4 and 5, 1981, at the HOLIDAY INN-WEST, 1900 I-70 Drive Southwest, Columbia, MO instead of the Hilton Inn.

Notice of this meeting was published in the Federal Register on October 19, 1981 (46 FR 51329), and all other items remain the same except for the location change as indicated above.

Dated: October 19, 1981.

John C. Hoyle,

Advisory Committee, Management Officer.

(FR Doc. 81-32743 Filed 10-23-81; 8:46 am)
BILLING CODE 7540-01-81

Disposal or Onsite Storage of Thorium or Uranium Wastes From Past Operations

AGENCY: Nuclear Regulatory Commission (NRC).

ACTION: Discussion of options for NRC approval of applications for disposal or onsite storage of thorium or uranium wastes: interim use and public comment.

SUMMARY: This notice discusses five options for NRC approval of disposal or onsite storage of thorium or uranium wastes from past nuclear operations. The options are contained in a Branch

Technical Position for administration by the Uranium Fuel Licensing Branch, Division of Fuel Cycle and Material Safety, Office of Nuclear Material Safety and Safeguards.

DATE: Comments on the options for disposal or onsite storage of thorium or uranium are encouraged. Such comments will be considered in any subsequent revision of the Branch Technical Position. Comments are due December 22, 1981.

Note.—Comments received after the expiration date will be considered if it is practical to do so, but assurance of consideration cannot be given except as to comments filed on or before that date.

FOR FURTHER INFORMATION CONTACT: Ralph G. Page, Chief, Uranium Fuel Licensing Branch, Division of Fuel Cycle and Material Safety, Office of Nuclear Material Safety and Safeguards, Washington, D.C. 20555, telephone 301-427-4309.

SUPPLEMENTARY INFORMATION

I. Introduction

Some of the sites formerly used for processing thorium and uranium are known today to be contaminated with residual radioactive materials. Some are currently covered by NRC licenses. Others were once licensed, but the licenses to possess and use material have expired. In many cases, the total amount of contaminated soil is large, but the activity concentrations of radioactive materials are believed sufficiently low to justify their disposal on privately owned lands or storage onsite rather than their transport to a licensed radioactive materials disposal (commercial) site. In many instances packaging and transporting these wastes to a licensed disposal site would be too costly and not justified from the standpoints of risk to the public health or cost-benefit. Furthermore, because of the total volume of these wastes, limited commercial waste disposal capacity, and restrictions placed on receipt of long-lived wastes at commercial sites, it is not presently feasible to dispose of these wastes at commercial low-level waste disposal sites.

Effective January 28, 1981, NRC regulations in 10 CFR 20, "Standards for Protection Against Radiation", were amended (45 FR 71761-71762) to delete § 20.304 which provided general authority for disposal of radioactive materials by burial in soil. Under the amended regulations, licensees must apply for and obtain specific NRC approval to dispose of radioactive materials in this manner under the provisions of 10 CFR 20.302. A case-by-case review was believed needed to

assure that burial of radioactive wastes would not present an unreasonable health hazard at some future date.

The deleted provisions of § 20.304 previously permitted burial of up to 100 millicuries of thorium or natural uranium at any one time, with a yearly limitation of 12 burials for each type of material at each site. The only disposal standards specified were (1) burial at a minimum depth of four feet, and (2) successive burials separated by at least six feet. Thus a total of 1.2 curies of these materials were permitted to be disposed of each year by burial in a 12 foot by 18 foot or larger plot of ground.

Under the amended regulations, it is incumbent on an applicant who wants to bury radioactive wastes to demonstrate that local land burial is preferable to other disposal alternatives. The evaluation of the application takes into account the following information:

- Types and quantities of material to be buried
- Packaging of waste
- Burial location
- Characteristics of burial site
- Depth of burial
- Access restrictions to disposal site
- Radiation safety procedures during disposal operations
- Recordkeeping
- Local burial restrictions, if any

For applications involving disposal of soils contaminated with low level concentrations of thorium and uranium (other than concentrations not exceeding EPA cleanup standards), the matters of principal importance are:

- Concentrations of thorium and uranium (either in secular equilibrium with their daughters or without daughters present)
- Volume of contaminated soil
- Costs for offsite and onsite disposal
- Availability of offsite burial space
- Disposal site characteristics
- Depth of burial and accessibility of buried wastes
- State and local government views

II. Branch Technical Position

There are five acceptable options for disposal or onsite storage of thorium and uranium contaminated wastes. Applications for disposal or storage will be approved if the guidelines discussed under any option are met. Applications for other methods of disposal may be submitted and these will be evaluated on their own merits.

1. Disposal of acceptably low concentrations (which meet EPA cleanup standards) of natural thorium with daughters in secular equilibrium, depleted or enriched uranium, and

uranium ores with daughters in secular equilibrium with no restriction on burial method.

Under this option, the concentrations of natural thorium and depleted or enriched uranium wastes are set sufficiently low that no member of the public is expected to receive a radiation dose commitment from the disposed materials in excess of 1 millirad per year to the lung or 3 millirads per year to the bone from inhalation and ingestion, under any foreseeable use of the material or property. These radiation dose guidelines were recommended by the Environmental Protection Agency (EPA) for protection against transuranium elements present in the environment as a result of unplanned contamination (42 FR 60956-60959). In addition, the concentrations are sufficient, low so that no individual may receive an external dose in excess of 10 microrentgens per hour above background. This is compatible with guidelines EPA proposed as cleanup standards for inactive uranium processing sites (46 FR 2556-2563).

For natural uranium ores having daughters in equilibrium, the concentration limit is equal to that set by the EPA (46 FR 2556-2563) for radium-226 (i.e., 5 pCi/gm, including background) and its decay products.

The concentrations specified below are believed appropriate to apply. It is expected, however, that currently licensed operations will be conducted in such a manner as to minimize the possibility of soil contamination and when such occurs the contamination will be reduced to levels as low as reasonably achievable.

Kind of material	Concentration (pCi/gm)
Natural Uranium (Th-232 plus Th-232's daughters if all are present and in equilibrium)	10
Depleted Uranium	35
Enriched Uranium	30
Natural Uranium Ores (U-238 plus U-234's daughters if all are present and in equilibrium)	10

The analysis upon which the Branch Technical Position is based is available for inspection at the Commission's Public Document Room at 1717 H St., N.W., Washington, D.C.

The concentrations specified under this option may be compared with naturally occurring thorium and uranium ore concentrations of 1.3 pCi/gm in igneous rock and uranium concentrations of 120 pCi/gm in Florida phosphate rock and 50-80 pCi/gm in Tennessee bituminous shale. Concentration limits for natural thorium

and natural uranium ore wastes containing daughters not at secular equilibrium can be calculated on a case-by-case basis using the applicable isotopic activities data.

2. Disposal of certain low concentrations of natural thorium with daughters in secular equilibrium and depleted or enriched uranium with no daughters present when buried under prescribed conditions with no subsequent land use restrictions and no continuing NRC licensing of the material.

Under this option the concentrations of natural thorium and uranium are set sufficiently low so that no member of the public will receive a radiation dose exceeding those discussed under option 1 when the wastes are buried in an approved manner absent intrusion into the burial grounds. This option will require establishing prescribed conditions for disposal in the license, such as depth and distribution of material, to minimize the likelihood of intrusion. Burial will be permitted only if it can be demonstrated that the buried materials will be stabilized in place and not be transported away from the site.

Acceptability of the site for disposal will depend on topographical, geological, hydrological and meteorological characteristics of the site. At a minimum, burial depth will be at least four feet below the surface. In the event that there is an intrusion into the burial ground, no member of the public will likely receive a dose in excess of 170 millirems to a critical organ. An average dose not exceeding 170 millirems to the whole body for all members of a general population is recommended by international and national radiation expert bodies to limit population doses. With respect to limiting doses to individual body organs, the concentrations are sufficiently low that no individual will receive a dose in excess of 170 millirems to any organ from exposure to natural thorium, depleted uranium or enriched uranium.

The average activity concentration of radioactive material that may be buried under this option in the case of natural thorium (Th-232 plus Th-232's daughters) is 50 pCi/gm, if all daughters are present and in equilibrium; for enriched uranium it is 100 pCi/gm if the uranium is soluble and 250 pCi/gm if insoluble; for depleted uranium it is 100 pCi/gm if the uranium is soluble and 300 pCi/gm if insoluble. Natural uranium ores containing radium 226 and its daughters are not included under this option, because of possible radon 222 emanations and resultant higher than acceptable exposure of individuals in private residences if houses were built over buried materials.

3. Disposal of low concentrations of natural uranium ores, with all daughters in equilibrium, when buried under prescribed conditions in areas zoned for industrial use and the recorded title documents are amended to state that the specified land contains buried radioactive materials and are conditioned in a manner acceptable under state law to impose a covenant running with the land that the specified land may not be used for residential building. (There is no continuing NRC licensing of the material.)

Disposal will be approved if the burial criteria outlined in option 2 (including burial at a minimum of 4 feet) are met. Depending upon local soil characteristics, burials at depths greater than 4 feet may be required. In order to assure protection against radon 222 releases (daughter in decay chain of uranium 238 and uranium 234), it is necessary that the recorded title documents be amended to state in the permanent land records that no residential building should be permitted over specified areas of land where natural uranium ore residues (U-238 plus U-234) in concentrations exceeding 10 pCi/gm has been buried. Industrial building is acceptable so long as the concentration of buried material does not exceed 40 pCi/gm of uranium (i.e., Ra-226 shall not exceed 20 pCi/gm).

4. Disposal of land-use-limited concentrations of natural thorium or natural uranium with daughters in secular equilibrium and depleted or enriched uranium without daughters present when buried under prescribed conditions in areas zoned for industrial use and the recorded title documents are amended to state that the land contains buried radioactive material and are conditioned in a manner acceptable under state law to impose a covenant running with land that the land (1) may not be excavated below stated depths in specified areas of land unless cleared by appropriate health authorities, (2) may not be used for residential or industrial structures over specified areas where radioactive materials in concentrations higher than specified in options 2 and 3 are buried, and (3) may not be used for agricultural purposes in the specified areas. (There is no continuing NRC licensing of the disposal site.)

Under this option, conditions of burial will be such that no member of the public will receive radiation doses in excess of those discussed under option 1 absent intrusion into the burial ground. Criteria for disposal under these conditions is predicated upon the assumption that intentional intrusion is less likely to occur if a warning is given

in land documents of record not to excavate below burial depths in specified areas of land without clearance by health authorities; not to construct residential or industrial building on the site; and not to use specified areas of land for agricultural purposes. Because of this, we believe it appropriate to apply a maximum critical organ exposure limit of 500 millirems per year to thorium and uranium buried under this restriction instead of 170 millirems as used in options 2 and 3. In addition, any exposure to such materials is likely to be more transient than assumed (essentially continual exposure) under those options. These two factors combine to increase the activity concentration limits calculated under option 2 by about 10. Thus, the average concentration that may be buried under this option for thorium (Th-232 plus Th-228) is 500 pCi/gm if all daughters are present and in equilibrium; for enriched uranium it is 1000 pCi/gm if the uranium is soluble and 2500 pCi/gm if insoluble; and for depleted uranium it is 1000 pCi/gm if the uranium is soluble and 3000 pCi/gm if insoluble.

With respect to natural uranium with daughters present and in equilibrium, the concentration that may be buried under this option is 200 pCi/gm ^{238}U plus ^{234}U , i.e., 100 pCi/gm Ra-226. This concentration is based on a limited exposure of 2.4 hours per day to limit the radon dose to less than 0.5 working level month (WLM) which is equivalent to continuous exposure to 0.02 working level (WL). Depending upon local soil characteristics, burials at depths greater than 4 feet may be required.

SUMMARY OF MAXIMUM CONCENTRATIONS PERMITTED UNDER DISPOSAL OPTIONS

Kind of Material ¹	Disposal Options			
	1 ²	2 ³	3 ⁴	4 ⁵
Natural Thorium (Th-232 + Th-230) with daughters present and in equilibrium	10	30		500
Natural Uranium (U-238 + U-234) with daughters present and in equilibrium	10		40	200
Depleted Uranium				
Soluble	30	100		1,000
Insoluble	30	300		3,000
Enriched Uranium				
Soluble	30	100		1,000
Insoluble	30	250		2,500

¹ Based on EPA cleanup standards.

² Concentrations based on limiting individual doses to 170 mrem/yr.

³ Concentration based on limiting equivalent exposure to 0.02 working level of 1985.

⁴ Concentrations based on limiting individual doses to 500 mrem/yr and, in case of natural uranium, limiting exposure to 0.02 working level of 1985.

5. Storage of licensed concentrations of thorium and uranium onsite pending

the availability of an appropriate disposal site.

When concentrations exceed those specified in option 4, long term disposal other than at a licensed disposal site will not normally be a viable option under the provisions of 10 CFR 20.302. In such cases, the thorium and uranium may be permitted to be stored onsite under an NRC license until a suitable method of disposal is found. License conditions will require that radiation doses not exceed those specified in 10 CFR Part 20 and be maintained as low as reasonably achievable.

Before approving an application to dispose of thorium or uranium under options 2, 3, or 4, NRC will solicit the view of appropriate State health officials within the State in which the disposal would be made.

Dated at Silver Spring, Maryland this 19th day of October, 1981.

Richard E. Cunningham,

Director, Division of Fuel Cycle and Material Safety, Office of Nuclear Material Safety and Safeguards.

[FR Doc. 81-30826 Filed 10-22-81; 8:48 AM]

BILLING CODE 7530-01-M

OFFICE OF PERSONNEL MANAGEMENT

Postponement of Application Deadline for Fund-Raising Privileges Among Federal Employees by Private Voluntary Organizations

Section 5.43 of the "Manual on Fund-Raising Within the Federal Service for Voluntary Health and Welfare Agencies" sets December 1 of each year as the deadline by which national voluntary agencies must submit applications for participation in the Combined Federal Campaign (CFC) to be conducted in the fall of the following year. This year's deadline is being postponed from December 1, 1981, to February 1, 1982. In June 1981, the U.S. Office of Personnel Management (OPM) announced that the eligibility criteria for participation in the 1982-83 CFC are being reviewed. The deadline date is being postponed to avoid national voluntary agencies having to revise their applications to meet eligibility criteria which may be changed.

Donald J. Devine,

Director.

[FR Doc. 81-30730 Filed 10-22-81; 8:43 AM]

BILLING CODE 5325-01-M

OFFICE OF THE UNITED STATES TRADE REPRESENTATIVE

Resolution of Complaint of Price-Undercutting of Subsidized Cheese Imports

On October 1, 1981, the United States Trade Representative received a letter from the Secretary of Agriculture informing him of the Secretary's finding that imported Grade A Swiss type cheese produced in Finland has been offered for sale in the United States at duty-paid wholesale prices which are five cents per pound less than the domestic wholesale market price of similar cheese produced in the United States.

In accordance with Section 702(c)(2) of the Trade Agreements Act of 1979 (the Act) (19 U.S.C. 1202 note), the Office of the United States Trade Representative notified Finland of the price undercutting determination made by the Secretary of Agriculture, requested that corrective action be taken, and asked for appropriate assurances concerning the commitments made in the Arrangement Between the United States and Finland Concerning Cheese.

On October 14, 1981, Finland notified the United States Trade Representative that measures have been taken to ensure that the duty-paid wholesale price of imported Grade A Swiss type cheese produced in Finland will not be less than the domestic wholesale market price of similar cheese produced in the United States. In addition, Finland gave assurance that it will respect the price commitments in the Arrangement. Since the above notification by Finland has occurred within the 15-day period provided in Section 702(c)(3) of the Act, the United States Trade Representative has notified the Secretary of Agriculture of his belief that no further action is required.

William E. Brock,

United States Trade Representative.

[FR Doc. 81-30824 Filed 10-22-81; 8:43 AM]

BILLING CODE 3190-01-M

SECURITIES AND EXCHANGE COMMISSION

(Release No. 22236; 70-6650)

Arkansas Power & Light Co.; Proposed Issuance and Sale of First Mortgage Bonds

October 19, 1981.

Arkansas Power & Light Company

**Action Plan to Ensure Timely Cleanup
of Site Decommissioning Management
Plan Sites**

AGENCY: Nuclear Regulatory
Commission.

ACTION: Notice of availability of NRC
action plan.

SUMMARY: The NRC has developed an Action Plan to describe the approach the agency will use to accelerate the cleanup of radiologically contaminated sites listed in NRC's Site Decommissioning Management Plan (SDMP). The objective of this plan is to communicate the Commission's general expectation that sites listed in the SDMP be cleaned up in a timely and effective manner. This plan (1) identifies existing criteria to guide cleanup of contaminated soils, structures, and equipment and emphasizes site-specific application of the As Low As Reasonably Achievable (ALARA) principle; (2) states the NRC's position on the finality of decommissioning decisions; (3) describes the NRC's general expectation that SDMP site cleanup will be completed within a 4-year timeframe after operations cease or 3 years after the issuance of an initial cleanup order; (4) identifies currently available guidance on site

characterization work in support of decommissioning; and (5) describes the process the NRC staff will use to establish and enforce schedules for timely cleanup on a site-specific basis.

ADDRESSES: Other documents referenced in this notice may be reviewed and/or copies for a fee from the NRC Public Document Room, 2120 L Street NW, (Lower Level), Washington, DC 20555.

FOR FURTHER INFORMATION CONTACT: John A. Austin, Chief, Decommissioning and Regulatory Issues Branch, Division of Low-Level Waste Management and Decommissioning, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555, telephone (301) 504-2560.

SUPPLEMENTARY INFORMATION:

I. Introduction and Purpose

Over the past several years, the Nuclear Regulatory Commission (NRC) has identified over 40 nuclear material sites that warrant special attention by the Commission. These sites have buildings, former waste disposal areas, large piles of tailings, groundwater, and soil contaminated with low levels of uranium or thorium (source material) or other radionuclides. Consequently, they present varying degrees of radiological hazard, cleanup complexity, and cost. Some of the sites are still under the control of active NRC licenses, whereas licenses for other sites may have already been terminated or may have never been issued. At some sites, licenses are financially and technically capable of completing cleanup in a reasonable timeframe, whereas at other sites, the licensee or responsible party is unable or unwilling to perform cleanup. In addition, the sites are currently in various stages of decommissioning. At some sites, licensees have initiated decommissioning, whereas at other sites, decommissioning has not yet been planned or initiated.

The NRC believes that the best approach for minimizing the potential for unnecessary radiation exposures and environmental contamination in the future is to ensure that these sites are cleaned up in a timely and effective manner. In 1990, the NRC implemented the Site Decommissioning Management Plan (SDMP) to identify and resolve issues associated with the timely cleanup of these sites. The SDMP provides a comprehensive strategy for NRC and licensee activities dealing with the cleanup and closure of contaminated nuclear material facilities over which the NRC has jurisdiction. The appendix to this document lists the sites that are

currently included in the SDMP (the SDMP does not include more routine decommissioning cases such as nuclear power reactors). The SDMP has been effective in ensuring coordination and resolution of some of the policy and regulatory issues affecting site decommissioning. Progress on actual site remediation, however, continues to be slow. The limited progress to date has prompted the Commission to direct the NRC staff to initiate actions to accelerate the cleanup of SDMP sites.

It should be noted that this Action Plan itself does not contain enforceable standards and is not intended to create new rights or obligations on third parties or to preclude litigation of properly framed issues in any pending proceeding. Implementation of this plan may result in the establishment of legally binding requirements by order or license amendment that may be enforced on a site-specific basis. However, nothing in this Action Plan is intended to affect hearing rights associated with such orders or licensee amendments or the hearing rights of parties to presently pending adjudications and, to the extent that rules promulgated in accord with 5 U.S.C. 553 are not applicable, each case will be judged on its own merits.

II. Action Plan

In accordance with the overall objective of ensuring timely and effective cleanup of SDMP sites, the NRC staff will review site-specific plans and take decommissioning actions consistent with the following elements:

A. Cleanup Criteria

Pending NRC rulemaking on generic radiological criteria for decommissioning, the NRC will continue to consider existing guidance, criteria, and practices listed below to determine whether sites have been sufficiently decontaminated so that they may be released for unrestricted use, pursuant to, or consistent with, the decommissioning rules in 10 CFR 30.36, 40.42, 50.82, 70.38, and 72.54. These cleanup criteria will be applied on a site-specific basis with emphasis on residual contamination levels that are ALARA.

1. Options 1 and 2 of the Branch Technical Position "Disposal or Onsite Storage of Thorium or Uranium Wastes from Past Operations" (46 FR 52801; October 23, 1981).

2. "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material," Policy and Guidance Directive FC 83-23,

Division of Industrial and Medical Nuclear Safety, November 4, 1983.

3. "Termination of Operating Licenses for Nuclear Reactors," Regulatory Guide 1.96, June 1974, Table 1, for surface contamination of reactor facility structures. Also Cobalt-60, Cesium-137, and Europium-152 that may exist in concrete, components, and structures should be removed so the indoor exposure rate is less than 5 microrentgen per hour above natural background at 1 meter, with an overall dose objective of 10 millirem per year (cf. Letter to Stanford University from James R. Miller, Chief, Standardization and Special Projects Branch, Division of Licensing, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, April 21, 1982, Docket No. 50-141).

4. The Environmental Protection Agency's (EPA's) "Interim Primary Drinking Water Regulations," 40 CFR part 141 (41 FR 38404; July 9, 1976). In accordance with FC 83-23, the maximum contaminant levels for radionuclides in public drinking water as established by the EPA should be used as reference standard for protection of groundwater and surface water resources.

5. The EPA's "Persons Exposed To Transuranium Elements In The Environment" (42 FR 80956; November 30, 1977). This document provides guidelines for acceptable levels of transuranium elements in soil.

The criteria of this section will be considered in establishing site-specific ALARA levels for each of the SDMP sites in license amendments and orders.

B. Finality

The NRC's decision to terminate a license will relieve the licensee from any further obligation to the NRC to conduct additional cleanup, as long as the licensee decommissioned the site in full accordance with an approved decommissioning plan. The licensee will demonstrate compliance with the cleanup levels described in the decommissioning plan by performing a radiologic survey of the site prior to license termination. The NRC usually conducts an independent survey to confirm the accuracy of the licensee's termination survey. Therefore, if a licensee or responsible party cleaned up a site, or was in the process of cleaning up a site, under an NRC-approved decommissioning plan, the NRC will not require the licensee to conduct additional cleanup in response to NRC criteria or standard established after NRC approval of the plan. An exception to this case would be in the event that additional contamination, or

noncompliance with the plan, is found indicating a significant threat to public health and safety. Noncompliance would occur with a licensee or responsible party does not comply with an approved decommissioning plan, or provides false information.

The NRC will inform EPA about specific decommissioning actions at sites. NRC will also inform State and local agencies that have jurisdiction over aspects concerning decommissioning actions.

C. Timing

The NRC staff will address the timing of SDMP site cleanups on a case-by-case basis, with the expectation that cleanup generally be completed within about 4 years after operations that caused the contamination cease or 3 years after issuance of an initial cleanup order. To achieve this objective, major decommissioning milestones should be established within the following timeframes:

1. As soon as practical, but generally not later than 12 months after notification by the NRC that decommissioning is expected to commence, the licensee or responsible party identified by the NRC should submit to the NRC an adequate site characterization report, if that has not yet been completed. The NRC encourages early and substantive coordination and communication between the licensee or responsible party in planning for site characterization, including NRC review of site characterization plans.

2. As soon as practical, but generally not later than 6 months after NRC approval of the site characterization report, the licensee or responsible party should submit to the NRC a site decommissioning plan for approval based on the site characterization results. The decommissioning plan should include schedules for completing site decommissioning work in a timely and effective manner, including plans to dispose of contaminated materials either onsite pursuant to 10 CFR 20.302 (or 10 CFR 20.2002 of the revised 10 CFR part 20), or at a licensed disposal facility offsite.

3. As soon as practical, but generally not later than 18 months after NRC approval of the site decommissioning plan, the licensee or responsible party should complete all decommissioning work and termination surveys, so that sites or facilities can be released for unrestricted use after termination of the license, as appropriate.

In implementing this approach, the NRC will establish specific and enforceable milestones for each phase

of decommissioning through license amendments or orders. These schedules will provide flexibility to allow a licensee or responsible party to demonstrate good cause for delaying cleanup based on technical and risk reduction considerations, or for reasons beyond their control. NRC recognizes that at sites containing hazardous chemical wastes, schedules will depend, at least in part, on the necessary reviews and approvals by other responsible agencies (e.g., EPA or State agencies).

D. Site Characterization

Inadequate site characterization has been one of the technical issues that has delayed timely approval and implementation of site-specific decommissioning actions. Therefore, the NRC is developing new guidance on the content of acceptable site characterization programs conducted in support of decommissioning actions. The NRC has developed a draft "Guidance Manual for Conducting Radiological Surveys in Support of License Termination" (NUREG/CR-5849)¹ through Oak Ridge Associated Universities. This draft manual, which will be published for interim use and evaluation in April 1992, should be consulted regarding general aspects of site characterization activities. In addition, this draft manual should be used by licensees when conducting radiological surveys in support of license terminations in the interim until the manual is finalized. NRC is developing additional guidance on specific aspects of site characterization, such as hydrogeologic assessment of contaminated sites.

Until specific NRC guidance on site characterization is developed, licensees should continue to review relevant information from existing documents on site characterization such as those identified below. Although NRC recognizes that these documents do not completely address site characterization needs for decommissioning, use of these references, in addition to site-specific consultation with the NRC staff, will help ensure that site characterization is appropriately planned and conducted so that final site characterization reports are submitted with minimal deficiencies and in a timely manner. The following documents, available from the NRC Public Document Room, should be

reviewed regarding general aspects of site characterization activities:

1. "Survey Procedures Manual for the ORAU Environmental Survey and Site Assessment Program." Oak Ridge Associated Universities, March 1990.
2. "Laboratory Procedures Manual for the Environmental Survey and Site Assessment Program." Revision 5. Oak Ridge Associated Universities, February 1990.
3. "Quality Assurance Manual for the Oak Ridge Associated Universities' Environmental Survey and Site Assessment Program." Revision 3. Oak Ridge Associated Universities, February 1990.
4. "Monitoring for Compliance With Decommissioning Termination Survey Criteria." NUREG/CR-2082, June 1981.
5. "Guidance on the Application of Quality Assurance for Characterizing a Low-Level Radioactive Waste Disposal Site." NUREG-1363, October 1990.

E. Procedures to Compel Timely Cleanup

The NRC staff will seek voluntary cooperation by licensees or other responsible parties in establishing and implementing decommissioning plans in accordance with the objectives of this Action Plan. For sites with active NRC licenses, an approved decommissioning plan that includes appropriate schedules and cleanup levels will be incorporated into the license by amendment through normal licensing procedures. For sites with joint licenses (i.e., facilities that possess both a materials and a non-power reactor license), a coordinated approach under both licenses will be taken in establishing appropriate schedules and plans for decommissioning. If a site is not under an active license, the NRC may impose a decommissioning plan by order.

In cases where voluntary cooperation is ineffective in establishing acceptable schedules for completing decommissioning actions, the NRC will establish legally binding requirements and take enforcement action, as necessary, to compel timely and effective cleanup of SDMP sites. Demands for information may be used to establish licensee commitments to perform major decommissioning activities. Enforcement actions may

¹ A free single copy of draft NUREG/CR-5849 may be requested by writing to the U.S. Nuclear Regulatory Commission, Attn: Distribution and Mail Services Section, room P-130A, Washington, DC 20555. A copy is also available for inspection and/or copying in the NRC Public Document Room, 2120 L Street, NW, (Lower Level), Washington, DC.

² Copies of NUREGS may be purchased from the Superintendent of Documents, U.S. Government Printing Office, P.O. Box 37082, Washington, DC 20013-7082. Copies are also available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161. A copy is also available for inspection and/or copying at the NRC Public Document Room, 2120 L Street, NW, (Lower Level), Washington, DC.

include issuance of orders, including immediately effective orders, to compel actions by licensees or other responsible parties. If necessary, NRC will issue orders requiring payment of funds into a decommissioning escrow account when a licensee or responsible party fails to meet an agreed upon schedule and has not already established an adequate decommissioning fund pursuant to, or consistent with, the decommissioning funding rules (10 CFR 30.35, 40.36, 50.82, 70.25, and 72.30). The amount of the escrow account will be based upon and be consistent with the estimated cost required to complete site cleanup. Other enforcement actions may include escalated payment of funds into the escrow account based on a licensee's or responsible party's failure to comply with the order. Accumulations into that account will be dedicated for use to finance the cleanup of the site. Finally, the NRC will consider issuing civil penalties where (1) the licensee or responsible party fails to comply with an order compelling payment into an escrow account; or (2) the licensee or responsible party fails to comply with a requirement or an order compelling cleanup when there is already sufficient decommissioning funding. Additionally, NRC may seek court injunctions to compel enforcement of these orders.

Dated at Rockville, Maryland, this 10th day of April, 1992.

For the Nuclear Regulatory Commission,

John H. Austin,

Chief, Decommissioning and Regulatory Issues Branch, Division of Low-Level Waste Management and Decommissioning, Office of Nuclear Material Safety and Safeguards.

APPENDIX—EXISTING SDMP SITES—
Continued

Site name	Location
Hartley and Hartley	Bay County, MI
Heritage Minerals	Lakewood, NJ
Kerr-McGee (Cincinnati)	Crescent, OK
Kerr-McGee	Cushing, OK
Magnesium Electron	Freshington, NJ
Molycorp	Washington, PA
Molycorp	York, PA
NE Ohio Regional Sewer District	Cuyahoga Heights, OH
Nuclear Metals	Canaan, MA
Permagan	Meda, PA
Pease Chemical	Pittsboro, PA
Remington Arms Company	Independence, MO
RMI Titanium	Ashland, OH
RTL Inc.	Rockaway, NJ
Safety Light Corporation	Blossburg, PA
Schott Glass	Duquesne, PA
Sheldahl	Cambridge, OH
Sheldahl	Newfield, NJ
Texas Instruments	Attitash, MA
United Nuclear Corporation	Wood River Junction, RI
Victoreen	Cleveland, OH
Westinghouse (Waltz Mill)	Madison, PA
West Lake Landfill	St. Louis, MO
Wretaker Metals	Greenville, PA
Wyman-Gordon	North Grafton, MA
3M Company	Kennick, MN

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APPENDIX—EXISTING SDMP SITES

Site name	Location
Advanced Medical Systems	Cleveland, OH
ALCOA	Cleveland, OH
AMAX	Wood County, WV
Aberdeen Proving Ground	Aberdeen, MD
Army Arsenal	Watertown, MA
Babcock and Wilcox	Apolis, PA
Babcock and Wilcox	Park Township, PA
BP Chemicals	Lima, OH
Buck Company	Philadelphia, PA
Cabot Corporation	Boyetown, PA
Cabot Corporation	Reading, PA
Cabot Corporation	Rivers, PA
Chemtron Corporation (Bert Ave.)	Cleveland, OH
Chemtron Corporation (Harvard Ave.)	Cleveland, OH
Chevron Corporation	Pasring, New York
Dow Chemical	Midland, MI and Bay City, MI
Eber Metals	Marion, OH
Engelhard	Pittsfield, MA
Farriseal	Muskogee, OK
General Services Administration	Watertown, MA

ENCLOSURE 2

LIST OF ATTENDEES

UCAR Carbon Company, Inc.

J. McKnight, Manager of Operations
D. Erwin, Site Manager
M. Smith, Plant Engineer
G. Willey, Applied Technology Engineer

Nuclear Regulatory Commission Region II

D. Collins, Chief, Nuclear Materials Safety and Safeguards Branch
T. Decker, Chief, Radiological Effluents and Chemistry Section
G. Kuzo, Radiation Specialist
J. Ennis, Radiation Specialist

State of Tennessee, Division of Radiological Health

J. Graves, Licensing Manager
D. Shults, Technical Services Manager