



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

JAN 28 1991

Mr. George Durfee
Wyman-Gordon Company
244 Worcester Street
P.O. Box 8001
North Grafton, MA 01536-8001

Dear Mr. Durfee:

Based on the groundwater analyses performed by your company, the Commonwealth of Massachusetts, and the U.S. Nuclear Regulatory Commission, we believe that there is no immediate public health and safety hazard from groundwater use in the vicinity of the magnesium-thorium alloy disposal area at your North Grafton site. However, we still need to consider whether the disposals made in accordance with 10 CFR § 20.304 meet current criteria for release for unrestricted use. These current criteria are included in the Commission's Policy Statement on Below Regulatory Concern dated July 1980 (Enclosure 1). In order for us to assess the current adequacy of the past disposals and any need for remediation, we request that you provide us with the information described in Enclosure 2. In addition, we request that you perform a dose assessment that includes an analysis of both intruder and groundwater scenarios.

The following documents may be helpful to you in the preparation of your performance assessment:

1. Neuder, S.M., "Onsite Disposal of Radioactive Waste: Guidance for Disposal by Subsurface Burial," U.S. Nuclear Regulatory Commission, NUREG-1101, Volume 1, 1986.
2. Neuder, S.M., Kennedy, W.E., "Onsite Disposal of Radioactive Waste: Methodology for the Radiological Assessment of Disposal by Subsurface Burial," U.S. Nuclear Regulatory Commission, NUREG-1101, Volume 2, 1987.
3. Goode, D.J., et al., "Onsite Disposal of Radioactive Waste: Estimating Potential Groundwater Contamination," U.S. Nuclear Regulatory Commission, NUREG-1101, Volume 3, 1986.
4. Napier, B.A., et al., "Intruder Dose Pathway Analysis for the Onsite Disposal of Radioactive Waste: The ONSITE/MAXII Computer Program," U.S. Nuclear Regulatory Commission, NUREG/CR-3620, 1984.
5. Kennedy, W.E., et al., "Intruder Dose Pathway Analysis for the Onsite Disposal of Radioactive Waste: The ONSITE/MAXII Computer Program," U.S. Nuclear Regulatory Commission, NUREG/CR-3620, Supplement 1, 1986.
6. Kennedy, W.E., et al., "Intruder Dose Pathway Analysis for the Onsite Disposal of Radioactive Waste: Operation on a Personal Computer,"

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NUCLEAR REGULATORY COMMISSION

Below Regulatory Concern; Policy Statement

AGENCY: Nuclear Regulatory Commission.

ACTION: Policy statement.

SUMMARY: This policy statement establishes the framework within which the Commission will formulate rules or make licensing decisions to exempt from some or all regulatory controls certain practices involving small quantities of radioactive material. Opportunity for public comment will be provided with each rulemaking and each licensing action where generic exemption provisions have not already been established. The exemptions may involve the release of licensee-controlled radioactive material, either to the generally accessible environment or to persons who would be exempt from Commission regulations. Practices for which exemptions may be granted include, but are not limited to, (1) the release for unrestricted public use of lands and structures containing residual radioactivity; (2) the distribution of consumer products containing small amounts of radioactive material; (3) the disposal of very low-level radioactive waste at other than licensed disposal sites; and (4) the recycling of slightly contaminated equipment and materials. As described in this policy statement, NRC intends to continue exempting specific practices from regulatory control if the application or continuation of regulatory controls is not necessary to protect the public health and safety and the environment, and is not cost effective in further reducing risk. The policy statement defines the dose criteria and other considerations that will be used by NRC in making exemption decisions. The policy establishes individual dose criteria (1 and 10 mrem per year [0.01 and 0.1 millisievert per year]) and a collective dose criterion (1000 person-rem per year [10 person-sievert per year]). These criteria, coupled with other considerations enumerated in the policy statement, will be major factors in the Commission's determination on whether exemptions from regulatory controls will be granted.

The policy statement establishes a consistent risk framework for regulatory exemption decisions, ensures an adequate and consistent level of protection of the public in their use of radioactive materials, and focuses the Nation's resources on reducing the most significant radiological risks from practices under NRC's jurisdiction. The average U.S. citizen should benefit from implementation of the BRC policy through (1) enhanced ability of NRC, Agreement States, and licensees to focus resources on more significant risks posed by nuclear materials; (2) timely and consistent decisions on the need for cleanup of contaminated sites; (3) increased assurance that funds available to decommission operating nuclear facilities will be adequate; (4) reduced costs and overall risks to the public from managing certain types of slightly radioactive

waste in a manner commensurate with their low radiological risk; and (5) increased assurance of a consistent level of safety for consumer products containing radioactive material under the Commission's jurisdiction.

EFFECTIVE DATE: July 3, 1990

ADDRESSES: Documents referenced in this policy statement are available for inspection in the NRC Public Document Room, 2120 L Street, N. W. (Lower Level), Washington, DC.

FOR FURTHER INFORMATION CONTACT:

The appropriate NRC Regional Office:

- Region I - Dr. Malcom Knapp, King of Prussia, Pennsylvania; telephone (215) 337-5000
- Region II - Mr. J. Philip Stohr, Atlanta, Georgia; telephone (404) 331-4503
- Region III - Mr. Charles E. Norelius, Glen Ellyn, Illinois; telephone (708) 790-5500
- Region IV - Mr. Arthur B. Beach, Arlington, Texas; telephone (817) 860-8100
- Region V - Mr. Ross A. Scarano, Walnut Creek, California; telephone (415) 943-3700

Federal and State Government Officials may contact: Mr. Frederick Combs, U.S. Nuclear Regulatory Commission, Washington, DC 20555, Office of Governmental and Public Affairs, telephone (301) 492-0325.

Questions may also be directed to the following individuals at the U.S. Nuclear Regulatory Commission, Washington, DC 20555.

Dr. Donald A. Cool, Office of Nuclear Regulatory Research; telephone (301) 492-3785

Mr. John W. N. Hickey, Office of Nuclear Material Safety and Safeguards; telephone (301) 492-3332

Mr. L. J. Cunningham, Office of Nuclear Reactor Regulation; telephone (301) 492-1086

SUPPLEMENTARY INFORMATION:

Statement of Policy

I. Introduction.

Ionizing radiation is a fact of life. From the day we are born until the day we die, our bodies are exposed to

INFORMATION NEEDED FOR EVALUATION OF PREVIOUS 10 CFR 20.304 BURIALS

Information needed to perform a dose assessment of 10 CFR §20.304 disposals is provided below:

1. Description of Waste

- a. The radionuclides, estimated activity, concentration, and volume of waste disposed in each burial.
- b. The physical form(s) of the waste. Descriptions and quantities of any chelating agents involved in waste disposals should also be placed into decommissioning records files.
- c. Information concerning burial of hazardous wastes as defined in the regulations of the Environmental Protection Agency, 40 CFR Parts 260 through 265.

2. Packaging of Waste

- a. Information concerning the type of package used, such as: strong tight containers; Department of Transportation Specification 17H 55-gallon steel drums; high-density, high molecular weight polyethylene drums; and, cardboard and wooden boxes.
- b. Descriptions of any absorbents and plastic liners used in waste packaging.

3. Burial Procedures Used

- a. The burial depth below the normal surface grade.
- b. Separation distances between burials.
- c. The method of waste emplacement to maintain the package integrity, minimize void spaces between packages, or permit void spaces to be filled. Information on fill material to reduce future subsidence is also relevant.
- d. The use of covers to minimize water infiltration, direct percolating or surface water away from the disposed waste, or resist degradation by surface geologic processes and biotic activity. The use of covers to limit radiation exposure rates is also considered relevant.
- e. Stabilization measures used for each disposal trench or the entire burial site.

4. Burial

- a. General description of the location of the burial site and its relation to the surrounding environs. Descriptions of surrounding environs and their use(s) should also be placed into decommissioning records files.
- b. A map or sketch of the licensee's property which shows the specific location on the property where the burial was made. Information on nearby residences, surface waters, and water wells is considered relevant, along with information about hazardous waste burials made in the vicinity of the §20.304 or §20.302 burial site.

5. Nature of Burial Site

- a. The type of soil (sand, gravel, silt, clay) and soil classification, including grain size distribution.
- b. Stratigraphy of the near surface.
- c. Precipitation: monthly average and peak water balance.
- d. Water wells in the vicinity: location, use, depth, and water level.
- e. Ground waters: use, depth to aquifer, fluctuation, discharge location, and saturated thickness.
- f. Surface waters in the vicinity: location and use.
- g. Hydrogeologic data: porosity, distribution coefficient, hydraulic conductivity, dispersivity, and hydraulic gradient.
- h. Resources: local land use and location of nearby residences.
- i. Maps: topographic, hydrologic, and geologic.
- j. Site performance history: erosion, flooding, and subsidence.

George Durfee

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- 7. Napier, B.A., et al., "GENII - The Hanford Environmental Radiation Dosimetry Software System, Volume 1: Conceptual Presentation," Pacific Northwest Laboratories, PNL-6584, Volume 1, 1988.
- 8. Napier, B.A., et al., "GENII - The Hanford Environmental Radiation Dosimetry Software System, Volume 2: User's Manual," Pacific Northwest Laboratories, PNL-6584, Volume 2, 1988.

We request that you provide us the information described in Enclosure 2 by February 28, 1991, and your dose assessment by May 31, 1991. If you have any questions, please contact Mr. Timothy C. Johnson of my staff at 301-492-0558.

Sincerely,

John H. Austin, Chief
 Decommissioning and Regulatory
 Issues Branch
 Division of Low-Level Waste Management
 and Decommissioning

Enclosures: As stated

Distribution: Central File# NMSS r/f LLDR r/f TCJohnson
 JAustin PLohaus JSurmeier JGreeves RBangart

PDR YES NO Category: Proprietary or CF Only
 ACNW YES NO

SUBJECT ABSTRACT:

As signed 1/28 and faxed to Johnson - Gordon

 OFC :LLDR* :LLDR* :LLDR* :

 NAME:TCJohnson :JAustin :RFonner :

 DATE:01/11/91 :01/28/91 :01/25/91 :

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