NUCLEAR REGULATORY COMMISSION

DOCKET NO. PRM-20-7

NATURAL RESOURCES DEFENSE COUNCIL, INC.

Notice of Denial of Petition for Rulemaking

Please take notice that the Nuclear Regulatory Commission (NRC) has denied a petition for rulemaking submitted by letter dated August 6, 1976 by the Natural Resources Defense Council, Inc. (NRDC), 2345 Yale Street, Palo Alto, California, 94306. The petition requested that the NRC immediately adopt interim regulations setting standards for shallow land disposal of transuranic (TRU) and other low-level radioactive waste as well as prepare a broad programmatic generic environmental impact statement (GEIS) on low-level waste disposal.

Notice of filing of the petition, Docket No. PRM-20-7, was published in the Federal Register on September 23, 1976 (41 FR 41759) and the public was invited to file comments on the petition within 60 days of publication of the notice. (The comment period was later extended to 90 days.) Fourteen of the fifteen responses from industry and the States that were received by the NRC recommended denial of the petition. In addition, the original petitioner (NRDC) filed an "analysis" and comments on the other comments received by the Commission.

Analysis of the issues and points raised by the petition was performed by the NRC staff when the petition was initially reviewed. At that time, the NRC staff concluded that no compelling potential health and safety hazard

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existed to warrant immediate NRC reassumption of regulatory authority from Agreement States, or immediate implementation of interim regulations as proposed by the petitioner. (NRC staff rationale for their decision regarding the need for immediate action as proposed by the petitioner is contained in the material presented in NRC Staff Position on Petition, which follows in this Notice.) A broad, flexible program for the orderly development of comprehensive regulations governing the management and disposal of low-level radioactive waste by shallow land burial or other alternative methods was initiated and subsequently announced in the Federal Register on December 7, 1977 (42 FR 61904). This program is currently in progress. The regulations and supporting environmental impact statements are scheduled to be issued within the next few years and will address disposal of all nuclides, including transuranic nuclides.

The Commission believes that a separate GEIS on low-level waste disposal is neither required by the National Environmental Policy Act of 1969 (NEPA) nor necessary for the development of the NRC program. It is intended that the environmental impact statements and other technical documentation being developed to support the forthcoming regulations will be of sufficient scope to make a separate GEIS as proposed by the petitioner unnecessary. The issues and points raised in the petition and in the petitioner's proposed GEIS outline are, however, being considered by NRC staff as input to their development of waste management regulations and supporting environmental impact statements.

disposal sites, minimum standards for environmental monitoring programs, and standards for long-term care with mechanisms to finance such care;

-- Establishment of minimum fees to be paid (effective immediately) for each cubic foot of waste buried at existing sites to assure adequate funds for long-term care;

Solidification of Low-Level Radioactive Waste Before Shipment

-- The solidification of all radioactive waste before shipment to reduce the potential for release to the environment either through accident or sabotage.

The petitioner also requested that the Commission immediately prepare a GEIS on the Commission's program for disposal of low-level radioactive waste. The petition stated that a national program for disposal of low-level waste by shallow land burial represents a major programmatic decision that must be examined in an appropriately broad programmatic GEIS. It also stated that separate statements on individual sites would have difficulty considering the generic questions involved since the present need is to establish criteria for adequate disposal practices, for acceptable sites, and for the type of material that the disposal sites can properly handle.

Proposed Interim Regulations. The comments received did not generally support the necessity of immediate adoption of interim regulations. With exception of the NRDC analysis of the comments, little rationale was given to support interim regulations. Ten commenters stated that there was no demonstrated public health and safety risk with present practices and thus there was no justification or legal basis for the interim regulations.

Two of the commenters responded favorably to NRDC's proposed regulations for establishment of an inspection, enforcement, and reporting system for the classification of TRU waste. One stated that such a system is at least implicit in current regulations. Another commenter stated that the NRC already has the authority to inspect against State licensed operations. (As part of NRC reviews of Agreement State radiological health programs, NRC often accompanies State inspectors in their review of State licensed operations. However, NRC does not independently inspect State licensed operations)

The commenters were neutral or divided on NRDC's proposed regulations for an immediate end to non-retrievable TRU waste disposal, and for payment of fees by producers of waste for long-term care. Two of the commenters supported the proposed regulations, with one commenter noting the toxicity and long half-lives of TRU. One other commenter suggested

not a major risk and is already regulated. They also stated that many factors should be considered before NRC requires solidification of all waste--i.e., concentrations, quantities, probabilities of release, consequence, packaging, costs and benefits.

NRDC "Allegations of Fact." Each of the ten allegations of fact made by the petitioner in support of the petition generally received from one to four comments, not including the petitioner's analysis. The commenters remarked that seven of the allegations of fact were inaccurate or distorted. One allegation received no comments. Two of the allegations of fact - (1) ERDA has prohibited burial of government-TRU waste, and (2) the Atomic Energy Commission (AEC) proposed but did not finalize regulations for commercial-TRU waste burial - were accepted as true. All that commented on these two allegations of fact (except the petitioner) felt that the actions discussed provided insufficient justification for the petition.

Low-Level Waste Generic Environmental Impact Statement. Comments on the necessity of a GEIS were more balanced, with one commenter supporting and three opposing. The supportive commenter felt that a GEIS should be done because low-level waste has significant environmental impacts and a comprehensive evaluation had not been done to date. Those opposing stated that there was no need or basis for a GEIS or thought that such a statement should be part of the waste management GEIS being prepared by the Energy Research and Development Administration (ERDA). (For the reader's information,

ground regulation and operation. These recommendations included accelerated development of a specific regulatory program for low-level waste disposal including regulations, standards, and criteria; and studies to identify and evaluate the relative safety and impacts of alternative low-level waste disposal methods.

The staff subsequently published a program plan for low-level waste management entitled "NRC Low-Level Radioactive Waste Management Program" (NUREG-0240, September 1977), including technical studies to prepare a regulatory base, development of regulations, criteria, and supportive EIS's, and development of criteria and procedures for applicants to prepare license applications and for NRC to make uniform and timely licensing decisions. To formulate the program, the staff considered the Task Force recommendations; public comments on the Task Force Report; data gleaned from review of technical documents and participation in conferences, meetings, and discussions attended by industrial, state, and public organizations; and considerations of the points and recommendations contained in the petition, petition comments, and other correspondence and documents. Periodic updates of NUREG-0240 are planned and the first update is expected in early 1979. The progress made to date in NRC's program of technical study and regulation development will be summarized in the update and further refinements to the program discussed.

problems (e.g., poor justification for the 10 nanocurie per gram limit, no cost-benefit analysis, no accompanying regulatory guides) were identified by persons commenting on the proposed rule, and the rule was never adopted by the AEC for commercial waste.

A ten nanocurie per gram TRU burial limit, however, was adopted by AEC in 1970 for government-produced radioactive waste and this limit is still in effect at sites operated by the Department of Energy (DOE). An investigation is currently in progress by DOE to redefine the concentration levels at which government-produced TRU nuclides may be disposed of by shallow land burial. It is expected that some modification of the interim ten nanocurie per gram limit will result based on this investigation.

In the current waste classification study contracted by NRC, TRU waste is not classified as a separate waste category. Instead, concentrations of individual radionuclides, including TRU nuclides, are classified according to the disposal requirements of the radionuclide concentrations. In the study, it was determined that all radioactive waste disposal methods can be placed into one of three generic categories.*

*Further refinements to this basic concept regarding radioactive wastes and disposal methods are being addressed in the study.

of the classification system, the completion of the study, and the development of the waste classification regulation. An updated report on the classification system study is planned for publication in March 1979.

With the present study as a starting point, NRC plans to develop a waste classification regulation, a supporting EIS, and a regulatory guide providing assistance to waste generators in complying with the regulation. The EIS will emphasize the potential environmental consequences and cost-benefit relationships of alternative waste classification methods and waste classes, and will guide NRC in decisions regarding the form and structure (e.g., number of waste classes, limiting radionuclide concentrations in the classes) of the regulation.

Rule Making Actions. The licensing requirements for management and disposal of the types of waste defined by the waste classification regulation as well as the technical requirements for various disposal methods will be addressed in two other rule making actions. A proposed regulation (10 CFR Part 60: "Disposal of High-Level Waste in Geologic Repositories") plus a supporting EIS governing the management and disposal of high-level waste are scheduled for publication in a draft from during 1979. (The administrative and technical parts of the regulation are scheduled for publication in March and August, respectively.) Additionally, NRC is now initiating a contractual effort to prepare an EIS to guide and support the development of a proposed regulation 10 CFR Part 61, entitled

Appendices to the low-level waste disposal regulation will specify the technical requirements for licensing of shallow land burial and alternative disposal methods, and for unlicensed confinement by disposal to ordinary refuse channels or other options. Specifications regarding waste form/container performance, site selection and suitability, design and operation of sites, monitoring during and after site operations, and decommissioning* will be included. An EIS will be prepared to support the regulation that will consider the environmental impacts of shallow land burial and alternative methods of low-level waste disposal.

NRC Staff Position on Petition

To recapitulate and consolidate, the NRDC petition essentially requests five kinds of actions from NRC**:

1. Reassert regulatory authority for TRU waste from Agreement States and limit TRU waste disposal to a retrievable form.
2. Invoke a moratorium on new or enlarged burial site licensing pending the establishment of certain requirements.
3. Establish a perpetual-care fund by regulation.
4. Restrict transportation of low-level waste in liquid form.
5. Prepare a generic environmental impact statement.

*NRC efforts to develop institutional arrangements and technical standards for site decommissioning and long-term funding and care are further discussed in a following section.

**Although the ten "allegations of fact" that accompanied the petition are not individually and specifically addressed in this Notice, NRC staff comments on the allegations are contained in the material available in the Commission's Public Document Room. Many of the issues raised in these allegations are discussed in the NRC Task Force Report(NUREG-0217), the NRC Low-Level Waste Management Program (NUREG-0240), and the forthcoming program update.

Nonetheless, an interim short-term period will elapse before executive and legislative decisions are made on the issues of management and disposal of radioactive waste and prior to the completion of the regulations currently under development by NRC. The NRC staff notes the concern of the petitioner, the public, and others regarding the safe disposal of TRU and other wastes and is currently investigating the incremental environmental effects of continued short-term TRU burial as well as possible alternatives--such as retrievable storage--to TRU waste burial. In any case, the staff believes that retrievable storage procedures similar to procedures used today by DOE for storage of TRU waste may be necessary for certain types of waste defined by the waste classification regulation when this regulation is adopted.

Today, only the site operated by the Nuclear Engineering Company, Inc. (NECO) and located in the center of the Hanford Reservation near Richland, Washington, accepts TRU-contaminated materials in concentrations greater than ten nanocuries per gram for burial in soil. The disposal site is located on land leased from the Federal Government to the State of Washington, who then subleases a portion of the leased land to the disposal site operator. At the commercial site, the disposal of special nuclear material (SNM), including plutonium, is regulated by NRC. As Washington is an Agreement State, the State of Washington regulates the disposal of source and byproduct material (including TRU isotopes other than plutonium).

An alternative action is acceptance for storage of commercial TRU waste by the Federal government (e.g., DOE), with a charge levied on the waste generator to cover costs of storage, retrieval, repackaging (if necessary), transport, and ultimate disposal. NRC staff also notes that Federal government responsibility for waste management will be addressed in the report of the Interagency Review Group for Radioactive Waste Management (IRG).

As noted earlier, the NRC is now developing a waste classification regulation to stipulate the concentrations of particular radionuclides that can be disposed of by various generic disposal methods. This regulation is scheduled to be published for public comment in early 1980. As a result of the regulation, certain types of waste will require retrievable storage pending transfer to a repository for final disposal. It is expected that retrievable storage of such waste would be accomplished in a similar manner as that used today for the storage of government-produced TRU waste.

Licensing of New or Enlarged Burial Sites. NRDC interprets the Atomic Energy Act as requiring a moratorium on NRC and Agreement State licensing of new burial sites and expansions of existing sites pending promulgation of Commission regulations governing shallow land burial. This request is based on NRDC's findings that current NRC and State regulation is inadequate as demonstrated by waste migration and other incidents. In addition,

disposal of hazardous materials at the time the Commission enters into a State Agreement if the Commission by regulation or order determines that continued Federal control is necessary. Furthermore, NRDC's "dual authority" theory is contrary to the recent decision in NRDC v. NRC, 8 ELR 20163, 20164 (D.C. Cir. Jan. 6, 1978), in which the Court held the Commission retains no residual authority over individual licensing actions taken by Agreement States. Consequently, the Commission is not required to impose on the Agreement States regulations which it is not required to promulgate.

The staff believes that licensing new or enlarged burial grounds on the basis of need is an option which, for continued assurance of protection of the public health and safety, should not be foreclosed. There is a continuing production of low-level waste at hospitals, universities, laboratories, reactors, etc., that requires disposal and the only currently available disposal method is shallow land burial. Until the regulations governing shallow land burial and alternative disposal methods are established, applications for new or enlarged disposal sites will be handled on a case-by-case basis. Any new licenses that are issued by NRC will be qualified by the provision that the licenses may be modified as new criteria and regulations are developed. Because of NRC's close liaison with the Agreement States, NRC staff expects that the States will initiate similar actions. Every Agreement State's radiological health program is reviewed annually to ensure that it is adequate for the protection of the public health and safety and that it is compatible with similar NRC programs.

3. estimate future financial needs for the decommissioning of burial grounds and evaluate bases for the establishment of financial structures for long-term care of burial grounds;

4. evaluate potential record keeping needs; and

5. evaluate the environmental monitoring needs.

Another study is now being contracted to investigate the alternative institutional arrangements necessary to ensure adequate long-term care and funding. Also to be addressed in this study are alternative organizational roles involving low-level waste site regulation, site operation, site ownership, financial liability, decommissioning and inspection.

One of the alternative methods to provide long-term funding is, as recommended by the petitioner, the establishment of a special fund based upon a cubic foot charge by NRC regulation. (The NRC Task Force recommended a Federally-administered long-term care fund in NUREG-0217.) However, the establishment by NRC of a long-term care fund through fees based upon volume of materials buried poses difficult questions of law. Although fees for use of property may be established between landlord and tenant, as is currently the case, to order a fee per unit volume of waste by Commission regulation and to establish an earmarked fund would require Congressional authorization.

Transportation of Liquid Low-Level Waste. In the request for regulations prohibiting transportation of all liquid waste, the petitioner observes that the liquid form increases the potential mobility of the waste material. However, the existing regulations adopted by the NRC and the Department of Transportation (DOT)* specify the types and limiting concentrations of all radioactive material, including liquids, acceptable for shipment as well as the packaging requirements. As would be expected, materials of greater hazard or mobility are regulated more stringently than materials of lesser hazard or mobility.

For example, liquid radioactive material in Type A quantities must be packaged in or within a leak-resistant and corrosion-resistant inner containment vessel. The packaging must be adequate to prevent loss or dispersal of the contents of the inner container vessel if the package was subjected to a prescribed 30-foot drop test. Either enough absorbent material must be provided to absorb at least twice the volume of the liquid contents or a secondary containment vessel must be provided to retain the radioactive contents under normal conditions of transporting, assuming the failure of the inner primary containment vessel. Quantities of radioactive material greater than Type A limits can be transported

*In the United States, the DOT and the NRC share primary regulatory authority for transport and packaging for transport of radioactive material. The DOT and the NRC partition their overlapping responsibilities by means of a Memorandum of Understanding, last issued in March 1973, between DOT and the Atomic Energy Commission (AEC), the predecessor of NRC.

December 1977. The statement covered the transportation of all types of radioactive material--from spent fuel to low specific activity material--and indicated that transportation of radioactive material is being conducted under the present regulatory system in an adequately safe manner.

Based on this statement and the staff's continuing review of potential problems associated with transport of radioactive material, the staff concludes that no health and safety problem currently exists to warrant the immediate establishment of regulations prohibiting transporation of liquid waste. Present practices for disposal of radioactive waste, including on-site solidification of small quantities of low-level liquid waste and disposal of special types of low-level waste such as scintillation vials, are being assessed as part of the ongoing NRC low-level waste program.

Low-Level Waste GEIS. The NRC staff believes that issuance of a separate programmatic GEIS as proposed by the petitioner is in this case neither required by NEPA nor necessary to conduct NRC's existing program for study and development of regulations for low-level waste disposal. The arguments relied upon by NRDC do not compel a GEIS. The facts do not warrant it. The Commission independently licenses only one such facility located near Sheffield, Illinois. Five Agreement States license five other low-level waste disposal sites pursuant to their own authorities. (At two of these five sites, Hanford, Washington and Barnwell, South Carolina, NRC issues

provided by a NRC-contracted study of alternative disposal methods. This study is identifying viable alternative disposal methods and submitting to further detailed study alternative methods determined on the basis of a preliminary screening effort. Preliminary results of the study to date has been published in a status report entitled, "Screening of Alternative Methods for the Disposal of Low-Level Radioactive Waste" (NUREG/CR-0308), October 1978.

The alternatives study may yield several acceptable alternative methods for low-level waste disposal. As part of the NEPA process, shallow land burial must be considered within the context of other alternatives and their technical uncertainties. However, technical criteria and requirements for disposal by shallow land burial are needed to meet regulatory requirements for existing and any new shallow land burial sites. As guided by the EIS, NRC plans to initially develop technical criteria and requirements for shallow land burial. Development of criteria for identified viable alternatives are programmed to follow shortly.

NRC staff are considering the issues raised in the petition and in the petitioner's proposed GEIS outline in their development of the proposed low-level waste disposal regulation and guiding EIS. In addition to this input, NRC staff are considering public input from an Advance Notice of Proposed Rulemaking which was published in the