



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

November 7, 1991

Information in this record was deleted in
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Exemptions b7C, b7D
FOIA/PA (7008-111)

MEMORANDUM FOR: Francis M. Costello
Acting Regional State Agreements Officer
Region I

FROM: Vandy L. Miller, Assistant Director
for State Agreements Program
State Programs, GPA *V. Miller*

SUBJECT: COMMENTS ON NPI PROPOSED WASTE
MANAGEMENT PLAN

As you requested in a memorandum dated September 27, 1991, we have reviewed the proposed radioactive waste management plan for Neutron Products, Inc. (NPI). Our review indicates that the proposed plan is deficient and raises some serious health and safety concerns based on NRC policy. We would suggest that the State of Maryland ensure that they have a similar policy in place before attempting to assess the NPI Storage Plan. Our comments are as follows:

1. In section I.1, "Estimates of Interim Waste Volume and Storage Capacity" calculations should be included in this section which clearly demonstrate that the estimated amounts of concrete shielding will be adequate to keep exposures as low as is reasonably achievable (ALARA).
2. NRC's general policy on storage states that waste be processed before storage, packaged in a form ready for transport and disposal at the end of the storage period. In addition, the waste should be clearly labeled in accordance with 10 CFR Subsection 20.203 (f) and Section 20.311. Please see the attached "NRC Information Notice No. 90-09: Extended Interim Storage of Low-Level Radioactive Waste by Fuel Cycle and Material Licensees," page 2. The proposed NPI plan does not contain these provisions nor does it include any considerations for eventual disposal of

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4. The NPI proposal should provide more information on how access to the storage facility will be controlled.
5. The NPI plan does not contain any procedures on the surveying and inspection of the stored waste on a routine basis. The NRC recommends that these inspections be conducted and documented at least quarterly (90-09, page 2). This would allow the licensee to detect any degradation in waste form and any releases of radioactive materials from the stored waste.
6. The plan should provide for the maintenance of inventory records of waste types, contents, dates of storage, shipment, etc.
7. The proposal should contain procedures for the repackaging of waste, if necessary.
8. The NPI proposal should address the need for ventilation, lighting and fire protection in the storage areas.
9. The proposal should address waste handling or waste segregation techniques.
10. It is not clear from the proposal that NPI has considered weight loading resulting from the stacking of the containers of waste.
11. It is not clear that NPI has considered decomposition and chemical reaction of incompatible waste materials over time which can result in gas generation or other reaction products.
12. It is not clear that NPI has considered providing funds for final disposal or the decommissioning of its proposed storage facility.
13. It is not clear how the stored material would affect the overall possession limits on the NPI license.

For your assistance, we are attaching a copy of NUREG/CR-4062, "Extended Storage of Low-Level Radioactive Waste: Potential Problem Areas." If you have any questions, please contact Cardelia Maupin at FTS-492-0312.

Attachments:
As stated

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G:NPI

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AGREEMENT AND NON-AGREEMENT STATES
COMPACT DISTRIBUTION

NRC INFORMATION NOTICE ON EXTENDED INTERIM STORAGE OF LOW-LEVEL
RADIOACTIVE WASTE (SP-90-27)

Enclosed for your information is NRC Information Notice No. 90-09, "Extended Interim Storage of Low-Level Radioactive Waste by Fuel Cycle and Materials Licensees." This Information Notice provides guidance to NRC fuel cycle and materials licensees on information needed in license amendments to authorize extended interim storage of low-level radioactive waste at licensed operations.

You may wish to distribute this Notice to your licensees. If you have any questions, please call me at 301-492-0326.

Original signed by:

J. O. Lubenau *for*

Vandy L. Miller, Assistant Director
for State Agreements Program
State Programs
Office of Governmental and Public Affairs

Enclosure:
As stated

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OFFICIAL RECORD COPY

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS
WASHINGTON, D.C. 20555

February 5, 1990

NRC INFORMATION NOTICE NO. 90-09: EXTENDED INTERIM STORAGE OF LOW-LEVEL
RADIOACTIVE WASTE BY FUEL CYCLE AND
MATERIALS LICENSEES

Addressees:

All holders of NRC materials licenses.

Purpose:

This information notice provides guidance to fuel cycle and materials licensees on information needed in license amendment requests to authorize extended interim storage of low-level radioactive waste (LLW) at licensed operations. NRC previously provided guidance on storage of LLW at nuclear power plant sites in Generic Letters 81-38 and 85-14. However, until now NRC has not provided similar guidance for fuel cycle and materials licensees who may, for reasons stated below, need to store their LLW for periods longer than in the past. It is expected that recipients will review this information notice, distribute it to management and staff involved with licensed activities, including responsible radiation safety staff, and consider actions, as appropriate, to assure compliance with NRC requirements. No specific written response to this information notice is required.

Description of Circumstances:

The Low-Level Radioactive Waste Policy Amendments Act of 1985 (LLRWPA) established a series of milestones, penalties and incentives to ensure that States or Regional Compacts make adequate progress toward being able to manage their LLW by 1993. On January 1, 1993, the existing LLW disposal sites are expected to either close or to stop receiving LLW from outside their Regional Compacts. What this means to licensees who generate LLW is that, unless their State or Regional Compact either has a disposal facility operational on January 1, 1993 or has made other arrangements for storage or disposal, such licensees may have to store their LLW onsite until disposal capacity is available. Storage of LLW in accordance with NRC requirements may be necessary for anywhere from several months to several years.

Discussion:

Not all licensees who will need to store LLW onsite will need amendments to their licenses to do so. However, if the possession limits specified in a license need to be increased to allow storage, or if the terms and conditions of a license

otherwise need to be modified, a licensee will need to apply for a license amendment. Attachment 1 to this notice identifies information which licensees will need to provide to NRC in such amendment requests. This information may also be useful to licensees who will not need license amendments to store waste, as well as to persons considering applying for a license to construct a centralized storage facility to receive waste from others until State or Regional disposal capacity is available. The following considerations are central to extended storage, and are the basis of the information included in Attachment 1.

1. Storage is not a substitute for disposal. Other than storage for radioactive decay, LLW should be stored only when disposal capacity is unavailable and for no longer than is necessary. Licensee planning should consider a specific date by which storage will end and disposal of the LLW will take place.
2. In general, waste should be processed before storage, packaged in a form ready for transport and disposal at the end of the storage period, and clearly labeled in accordance with 10 CFR Subsection 20.203(f) and Section 20.311. Adequacy of the waste form or package may have to be reassessed before disposal.
3. To ensure integrity of packaging and maintenance of waste form, stored waste should be shielded from the elements and from extremes of temperature and humidity.
4. Waste should be stored in an area which allows for ready visual (direct or remote) inspection on a routine basis. Licensees should plan to conduct and document such inspections at least quarterly.
5. Depending on the specific waste involved, licensees may need to have procedures and equipment in place or readily available to repackage the waste, should the need arise.
6. Decomposition and chemical reaction of incompatible waste materials over time can result in gas generation or other reaction products. Licensees should evaluate what they are planning to store and use measures to prevent these reactions. Further, licensees should determine if the need exists for additional ventilation or fire protection/suppression systems.
7. For most waste forms, storage of waste in containers suitable for disposal will not represent a significant increment of direct radiation exposure potential to workers. However, licensees should consider their specific waste and storage plans and determine if additional shielding or other actions are warranted to keep exposures as low as is reasonably achievable (ALARA).
8. Stored waste should be located in a restricted area and secured (e.g., in a locked room) against unauthorized removal for the term of storage.

NRC does not advocate extended storage of LLW, as long as disposal capacity is available to licensees. However, NRC recognizes that storage is allowed for, as an interim measure, in the framework of the LLRWPA, and this guidance is being issued in recognition of that fact. NRC continues to believe that, whenever possible, storage should only be an interim step between activities that generate waste and ultimate disposal of that waste. In the interest of public health and safety, as well as maintaining exposures ALARA, the length of time LLW is placed in storage should be kept to a minimum. Accordingly, NRC's approval of requests by materials and fuel cycle licensees for interim extended storage will generally be for a period of time no greater than five years.

Some licensees will need to store LLW which also contains hazardous waste as specified under the Resource Conservation and Recovery Act, as amended (RCRA). These mixed wastes, as they are called, are regulated both by NRC - for the radioactive component of the waste - and the U.S. Environmental Protection Agency (EPA) - for the hazardous component of the waste. The information and guidance contained in this notice apply to NRC's regulations only. For information on permitting of storage by EPA, licensees should contact the appropriate EPA regional office or, in those States with approved mixed waste programs, the appropriate State regulatory authority.

If you have questions about your State or Regional Compact, a list of contact persons is provided in Attachment 2 of this notice.

Questions on your specific license or general procedures for license amendments and reviews related to extended interim storage should be addressed to the appropriate NRC regional office or, in the case of fuel cycle licensees, to the Division of Industrial and Medical Nuclear Safety in NMSS.

Richard E. Cunningham

Richard E. Cunningham, Director
Division of Industrial and Medical
Nuclear Safety
Office of Nuclear Material Safety
and Safeguards

Technical Contact: George Pangburn, NMSS
(301) 492-0628

Attachments:

1. Information Needed in an Amendment Request to Authorize Extended Interim Storage of LLW.
2. Regional Compacts and Unaffiliated States.
3. List of Recently Issued NMSS Information Notices.
4. List of Recently Issued NRC Information Notices.

INFORMATION NEEDED IN AN AMENDMENT REQUEST TO AUTHORIZE
EXTENDED INTERIM STORAGE OF LOW-LEVEL RADIOACTIVE WASTE

The following paragraphs identify the information which NRC considers necessary in an amendment request from a materials or fuel cycle licensee to authorize extended interim storage of low-level radioactive waste (LLW).

1. Identification of Waste to be Stored

- a. Specify any possession limit increases needed for extended interim storage of LLW.
- b. Identify the estimated maximum amount of LLW to be stored, both in terms of volume and activity, by radionuclide.
- c. Characterize the LLW to be stored:
 - (1) Volume of waste by Class (A, B, or C)
 - (2) Physical form of the waste: solid, liquid or gas
 - (3) Waste processing: volume reduction, solidification or other treatment.
 - (4) Additional non-radiological properties of LLW (if any): hazardous, biologic/pathogenic, corrosive, flammable, etc.
- d. Describe the amount and type of LLW currently being stored or processed.
- e. Identify any additional permits or approvals necessary for storage (i.e., EPA hazardous waste permit, State or local approvals, etc.) and the status of each required approval.

2. Plans for Final Disposal

- a. Specify when disposal capacity will no longer be available to you and onsite storage will begin.
- b. Specify the State/Regional disposal facility to be used for ultimate disposal of your LLW and when that facility is scheduled to begin accepting LLW. Your Regional Compact or State LLW authority should be able to provide this information if you do not have it.
- c. Specify when you will begin shipping LLW to that facility and how long it will take for your estimated storage inventory to be moved out.

3. Physical Description of Storage Area

- a. Identify the location and provide a diagram of the LLW storage area which demonstrates where packages will be stored and how packages will be accessible for inspection purposes. Include the locations of waste processing equipment (if applicable), air sampling stations, effluent filters and any sources of flammable or explosive material.
- b. Specify the maximum volume of LLW that can be stored in the proposed waste storage area and relate this to annual volume of waste generated.
- c. Specify the type of building/structure in which the waste will be stored and demonstrate that the waste will be protected from weather at all times.
- d. Describe the measures to control access to the LLW storage area and thereby ensure security of the waste.
- e. Describe the ventilation system and how it will assure adequate ventilation of the storage area.
- f. Describe the fire protection and suppression system to minimize the likelihood and extent of fire.
- g. Describe how the adverse effects of extremes of temperature and humidity on waste and waste containers will be avoided.
- h. Describe vulnerability to other hazards such as tornado, hurricane, flood, industrial accident, etc.

4. Packaging and Container Integrity

- a. Describe the packages or containers to be used for storage of LLW, any hazards the waste may pose to their integrity, and the projected storage life of the packages or containers.
- b. Describe your program for periodic inspections of LLW packages to ensure that they retain their integrity and containment of LLW.
- c. Describe your program and equipment (if applicable) for remote handling and/or repackaging damaged or leaking waste containers.

5. Radiation Protection

- a. Describe your program for safe placement and inspection of waste in storage and maintaining occupational exposures as low as is reasonably achievable (ALARA). This program should include periodic radiation and contamination surveys of individual packages and the storage area in general, as well as posting the storage area in accordance with 10 CFR Section 20.203.

- b. Describe projected exposure rates, needs for shielding (if any) and any changes in personnel monitoring which will be required as a result of waste storage.
- c. Describe your procedures for responding to emergencies, including notification of and coordination with local fire, police and medical departments.
- d. Describe your system for maintaining accurate records of waste in storage (including any waste receipts or transfers from or to other licensees) to assure accountability.

6. Training

- a. Describe your program for training personnel in procedures for packaging, handling, placement, inspection, surveying and emergency response for LLW storage.

7. Financial Assurance

- a. Review the relevant sections of Parts 30, 40 and 70 regarding financial assurance for decommissioning. If your proposed maximum possession limits exceed the limits specified in Sections 30.35, 40.36 or 70.25, submit with your amendment request a decommissioning funding plan or certification of financial assurance, as appropriate. In either case, this submittal should demonstrate that financial resources are or will be in place not only to decommission the licensed operation, but also to provide for the estimated costs of handling, transport and ultimate disposal of all LLW stored onsite.

8. Emergency Preparedness

- a. Review the relevant sections of Parts 30, 40 and 70 regarding emergency preparedness. If your proposed maximum possession limits exceed the limits specified in Subsections 30.32 (i)(1), 40.31(j)(1) or 70.22 (i)(3), you will be required to either demonstrate that an emergency plan is not needed or to develop and maintain a plan that meets the requirements of the aforementioned sections.

REGIONAL COMPACTS AND UNAFFILIATED STATES

The following is a list of the existing Regional LLW Compacts and unaffiliated States. The list includes a contact person at either the Compact or State level, if you have questions about LLW disposal. In addition, each Regional Compact is further divided to show its member States.

1. Non-sited Regional Compacts*

Appalachian Compact

Mark McClellan
Deputy Secretary for Environmental
Protection
Department of Environmental Resources
Commonwealth of Pennsylvania
P.O. Box 2063
Harrisburg, PA 17120
717/787-5028

(Member States are Pennsylvania [host
State], Delaware, Maryland and West
Virginia.)

Central Interstate Compact

Ray Peery
Executive Director
Central Interstate Low-Level
Radioactive Waste Compact
3384 Peachtree Road NE, Suite 260
Atlanta, GA 30326
404/261-7114

(Member States are Nebraska [host
State], Arkansas, Kansas, Louisiana,
and Oklahoma.)

Central Midwest Compact

Clark Bullard
Chair, Central Midwest Compact Commission
Director, Office of Energy Research
University of Illinois
901 South Matthews
Urbana, IL 61801
217/333-7734

(Member States are Illinois [host
State] and Kentucky.)

Midwest Compact

Gregg Larson
Executive Director
Midwest Low-Level Radioactive Waste
Compact Commission
350 North Robert, Room 588
St. Paul, MN 55101
612/293-0126

(Member States are Michigan [host State], Iowa, Indiana, Minnesota, Missouri, Ohio and Wisconsin.)

Northeast Compact

Denise Drace
Executive Director
Northeast Interstate Radioactive
Waste Compact Commission
195 Nassau Street, 2nd Floor
Princeton, NJ 08540
609/497-1447

(Member States are Connecticut and New Jersey, both of which are host States.)

Southwestern Compact

Don Womeldorf
Chief, Environmental Management Branch
Department of Health Services
State of California
714 P Street, Room 616
Sacramento, CA 95814
916/445-0498

(Member States are California [host State], Arizona, North Dakota and South Dakota.)

2. Sited Regional Compacts**

Northwest Compact

Elaine Carlin
Executive Director
Northwest Compact Commission
Department of Ecology
State of Washington
Mail Stop PV-11
Olympia, WA 98504
206/459-6244

(Member States are Washington [host State], Alaska, Hawaii, Idaho, Montana, Oregon and Utah.)

Rocky Mountain Compact

Leonard Slosky
Executive Director
Rocky Mountain Compact Commission
1675 Broadway, Suite 1400
Denver, CO 80202
303/825-1912

(Member States are Nevada [current host State], Colorado, New Mexico and Wyoming.)

Southeast Compact

Kathy Visocki
Executive Director
Southeast Compact Commission
3901 Barrett Drive, Suite 100
Raleigh, NC 27609
919/781-7152

(Member States are South Carolina
[current host State], Alabama,
Florida, Georgia, Mississippi, North
Carolina, Tennessee and Virginia.)

3. Unaffiliated States***

District of Columbia

Frances Bowie
Administrator
Service Facility Regulation
Administration
Department of Consumer and
Regulatory Affairs
District of Columbia
614 H Street, NW, #1014
Washington, D.C. 20001
202/727-7190

Maine

Matthew Scott
Executive Director
Low-Level Radioactive Waste Siting
Authority
State of Maine
99 Western Avenue, Suite 101
Augusta, ME 04330
207/626-3249

Massachusetts

Carol Amick
Executive Director
Low-Level Radioactive Waste
Management Board
Commonwealth of Massachusetts
100 Cambridge, 20th Floor
Boston, MA 02202
617/727-9800

New Hampshire

Bryan Stromh
Deputy Director
Public Health Services Division
Department of Environmental Services
State of New Hampshire
6 Hazen Drive
Concord, NH 03301
603/271-3503

New York

Jay Dunkelberger
Executive Director
Low-Level Radioactive Waste Siting
Commission
State of New York
1215 Western Avenue, Suite 306
Albany, NY 12203
518/438-6130

Puerto Rico

Santos Rohena
Chair
Environmental Quality Board
Commonwealth of Puerto Rico
P.O. Box 11488
San Turce, Puerto Rico 00910
809/725-5140

Rhode Island

Victor Bell
Chief
Office of Environmental Coordination
Department of Environmental Management
State of Rhode Island
9 Hayes Street
Providence, RI 02908
401/277-3434

Vermont

Jonathan Lash
Secretary
Agency of Natural Resources
State of Vermont
103 South Main
Waterbury, VT 05676
802/244-7347

Texas

Lawrence R. Jacobi
General Manager
Low-Level Radioactive Waste Disposal
Authority
State of Texas
7701 North Lamar Boulevard, #300
Austin, TX 78752
512/451-5292

* Non-sited Regional Compacts are those Compacts of States approved by Congress that do not currently have an operational LLW disposal facility.

** Sited Regional Compacts are those Compacts of States approved by Congress that do have an operational LLW disposal facility.

*** Unaffiliated States are those States that are not a member of a Regional Compact and that are pursuing LLW disposal capacity or other LLW disposal arrangements independently.

LIST OF RECENTLY ISSUED
NMSS INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
90-01*	Importance of Proper Response to Self-Identified Violations by Licensees	01/12/90	All holders of NRC materials licenses.
89-85	EPA's Interim Final Rule on Medical Waste Tracking and Management	12/15/89	All medical, academic, industrial, waste broker, and waste disposal site licensees.
89-82	Recent Safety-Related Incidents at Large Irradiators	12/07/89	All U.S. NRC licensees authorized to possess and use sealed sources at large irradiators.
89-78	Failure of Packing Nuts on One-Inch Uranium Hexafluoride Cylinder Valves	11/22/89	All U.S. NRC licensees authorized to possess and use source material and/or special nuclear material for the heating, emptying, filling, or shipping of uranium hexafluoride in 30- and 48-inch diameter cylinders.
89-60	Maintenance of Teletherapy Units	08/18/89	All U.S. NRC Medical Teletherapy Licensees.
89-47	Potential Problems with Worn or Distorted Hose Clamps on Self-Contained Breathing Apparatus	05/18/89	All holders of operating licenses or construction permits for nuclear power reactors and fuel facilities.
89-46	Confidentiality of Exercise Scenarios	05/11/89	All holders of licenses for fuel cycle facilities and byproduct material licensees having an approved emergency response plan.

*Correct Nudocs Accession Number for 90-01 should be 9001080145

LIST OF RECENTLY ISSUED
 NRC INFORMATION NOTICES

Information Notice No.	Subject	Date of Issuance	Issued to
88-30, Supplement 1	Target Rock Two-Stage SRV Setpoint Drift Update	2/2/90	All holders of OLs or CPs for nuclear power reactors.
90-08	Kr-85 Hazards from Decayed Fuel	2/1/90	All holders of OLs or CPs for nuclear power reactors and holders of licenses for permanently shut-down facilities with fuel on site.
88-23, Supp. 2	Potential for Gas Binding of High-Pressure Safety Injection Pumps During a Loss-of-Coolant Accident	1/31/90	All holders of OLs or CPs for PWRs.
90-07	New Information Regarding Insulation Material Performance and Debris Blockage of PWR Containment Sumps	1/30/90	All holders of OLs or CPs for nuclear power reactors.
90-06	Potential for Loss of Shutdown Cooling While at Low Reactor Coolant Levels	1/29/90	All holders of OLs or CPs for nuclear power reactors.
90-05	Inter-System Discharge of Reactor Coolant	1/29/90	All holders of OLs or CPs for nuclear power reactors.
90-04	Cracking of the Upper Shell-to-Transition Cone Girth Welds in Steam Generators	1/26/90	All holders of OLs or CPs for Westinghouse-designed and Combustion Engineering-designed nuclear power reactors.
90-03	Malfunction of Borg-Warner Bolted Bonnet Check Valves Caused by Failure of the Swing Arm	1/23/90	All holders of OLs or CPs for nuclear power reactors.

OL = Operating License
 CP = Construction Permit

FROM Frank Costello, Region I		DATE OF DOCUMENT 9/27/91	DATE RECEIVED 10/8/91 for act	NO. on SP-181
TO Vandy L. Miller		TYPE OF DOCUMENT		DATE ANSWER DUE 10/25/91
		LETTER		DATE ANSWERED BY:
MEMO				
REPORT				
OTHER (Specify)				
CLASSIFICATION	FILE CODE	<input checked="" type="checkbox"/> ACTION NECESSARY		
		<input type="checkbox"/> NO ACTION NECESSARY		
DESCRIPTION NPI PROPOSED WASTE MANAGEMENT PLAN FOR REVIEW AND COMMENT		REFERRED TO	DATE	RECEIVED BY
		V. Miller		
ENCLOSURES		C. Maupin	10/8 199	
REMARKS				

NRC FORM 326
(5-90)

CORRESPONDENCE CONTROL

U.S. NUCLEAR REGULATORY COMMISSION



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

September 27, 1991

MEMORANDUM FOR: Vandy L. Miller, Assistant Director for
State Agreements Program

FROM: Francis M. Costello
Acting Regional State Agreements Officer

SUBJECT: NPI PROPOSED WASTE MANAGEMENT PLAN

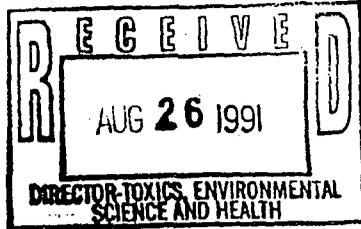
On July 11, 1991, I sent a memorandum which enclosed a copy of correspondence from the State of Maryland about the proposed radioactive waste management plan from Neutron Products, Inc. (NPI). The State had requested NRC comments on the NPI proposal. My review of the NPI proposal concurs with that of the State and concludes that this proposal is not consistent with NRC policy regarding storage of radioactive waste at licensee's facilities.

On August 23, 1991, NPI submitted a revised version of its radioactive waste management plan, a copy of which is enclosed. I have not included the facility diagram because of its size. The State has requested NRC comments on the revised plan. Please provide me any comments which I should include in my response to the State. The State appears to be looking for NRC's support for its intention to require NPI to begin disposing of NPI's radioactive waste this year.

A handwritten signature in cursive script that reads "Francis M. Costello".

Francis M. Costello
Acting Regional State Agreements Officer

Enclosure: Letter, NPI to State of Maryland, dated August 23, 1991



NEUTRON PRODUCTS inc

22301 Mt. Ephraim Road, P.O. Box 68
Dickerson, Maryland 20842 USA
301-349-5001 TWX: 710-828-0542
FAX: 349-2433

August 23, 1991

Department of the Environment
2500 Broening Highway
Baltimore, MD 21224

Attn: Lawrence M. Ward, TESH
Richard W. Collins, Hazardous Waste

Ref: Neutron's Conceptual Waste Management Plan, dated June 5, 1991;
Meetings of June 6 and 19, 1991 between Neutron and MDE;
Meeting on July 5, 1991 with Secretary Perciasepe; and
RHP's letter of July 3, 1991 - received in Dickerson on July 6, 1991.

Gentlemen:

This letter is written in response to the constructive sense of the referenced meeting with Secretary Perciasepe; and to provide the factual information requested in the referenced letter of July 3, 1991. The negative aspects of RHP's letter of July 3 will be addressed elsewhere as necessary.

I. Estimates of Interim Waste Volume and Storage Capacity

I.1 The information requested on page 2 of the referenced letter of July 3, 1991 is set forth in Attachment #1 hereto. Requirements for additional waste storage space, based on projected waste volumes and activities, and the desirable thickness of shielding, are summarized in Table I.1.

(b)(4)

(b)(4)

I.2 We suggest that the information furnished and the revised plan be reviewed in the context set forth in this subsection.

(a) In view of the much more restrictive regulatory limits on personnel exposures that will become effective during the next 16 months:

background levels now of little concern will become unacceptable;

radiation levels now acceptable for unshielded storage will require order of magnitude shielding; and

radiation levels that now require shielding will require substantially more shielding.

(b) Moreover, the larger shielded volume that will be required to satisfy interim storage requirements will further reduce the desired exposure rate at external shield surfaces.

(c) Thus, what has been high activity storage space will be useful for Low and Intermediate Activity Waste; intermediate activity storage space will be acceptable for Low Activity Waste; and low activity storage will be used for what is now Waste of Little Concern.

(d) It is economically optimum and technically feasible for Neutron to densify its compactible waste; and for purposes of planning and evaluation, we have assumed that ~~such waste will be compacted on site.~~ It will accrue at a rate of about (b)(4)

I.3 Technically, it has been feasible for Neutron to compact waste for two years. By discharging air from the compactor to the hot cell ventilation system, the risk of airborne release has been reduced to trivial levels; and pursuant to Conditions C and J of Amendment 33, we requested RHP approval on August 19, 1989. We have yet to receive a reply.

II. Background of This Revised Plan

II.1 The Conceptual Design of a Waste Management Plan for Neutron Products that was submitted on June 5, 1991 was responsive to the policy articulated by the State, comprehensive in scope, environmentally considerate and rendered in good faith. In our opinion, none of the reasons set forth in RHP's letter of July 3 for rejecting the Plan were valid; there is no indication of what portions are acceptable as drafted, and the letter gives little indication of what modifications are required to make the plan acceptable to MDE.

II.2 Nevertheless, the meeting of July 5 with Secretary Perriasepe was instructive; and in its context, we believe the revised Plan that is proposed herein should be acceptable to MDE for the purpose of defining scope.

We have reduced the scope of proposed storage to that which is likely to be required between now and mid 1997.

Rather than install contingent capacity now, we have provided flexibility so that additional storage capacity can be added if and when it is clearly required; and

we have shipped, for further processing and disposal, about 550 cubic feet of waste on August 2, 1991.

We doubt that the shipment of additional waste can be justified in the context of ALARA, or by a fair analysis of the relative costs and risks of shipping shielded waste for burial now vis-a-vis 30% of the Curies for above grade shielded storage later. We are, of course, prepared to consider MDE's reasons for believing otherwise.

II.3 It is a second purpose of this revised plan to respond constructively to RHP's request that Neutron cover the entire Courtyard of the Limited Access Area, and thereby reduce its waterborne emissions. Thus, the Revised Plan retains those provisions of the June 5 version which eliminate the flow of stormwater into the Limited Access Area and establish control over the flow of water from the Limited Access Area to the environment.

II.4 In undertaking the investment required to store our waste during the interim period now expected to end in 1997, we acknowledge that MDE has advised us that it is MDE's intent to require Neutron to ship waste to the Regional Compact within a reasonable period after its site becomes operational. We believe that policy is flawed, and it is our intent to do what we reasonably can in the interim to have it altered or set aside. The issue need not be resolved before we proceed with the facility proposed hereby.

(b)(4)

(b)(4)

IV. Concept for Interim Dry Waste Storage and Management

IV.1 From considerations of safety, reductions in personnel exposures and opportunities for reducing the volume and activity of waste, the waste management techniques and principals are substantially as presented in Section III of the June 5, 1991 proposal. However, the volume of the vaults provided in the current plan is only about a third of the shielded volume proposed in the concept that was presented in June, and although an ability to expand capacity is provided for contingencies, the installed capacity is much diminished from the original concept.

(b)(4)

IV.3 During the period 1992 to 1997, we will experiment with various means of reducing waste volume, and if we succeed in any substantive way, the planned waste storage volume may prove to be generous. However, it is also possible that a shortfall in waste storage capacity will develop; and in such an event,

(b)(4)

V. Underwater Storage of Encapsulated Waste

(b)(4)

VI. Schedule

VI.1 Our proposed schedule for design, licensing, construction and the initiation of operations is set forth in this Subsection.

a) Approval of Scope by MDE - We need the approval of Montgomery County to cover as much of the courtyard as both MDE and Neutron believe is desirable; and MDE approval of scope is highly desirable, if not required. No authorization to proceed with construction is thereby conveyed, and it would help the schedule if MDE's approval is received by August 31.

b) Approval of Scope by Montgomery County - Given a letter from MDE endorsing the increased scope of courtyard coverage (over that which was proposed nearly ten years ago) we anticipate County approval of the scope by mid September.

c) We would like to reduce background exposure rates without further delay, and would prefer to do so by placing an appreciable portion of our waste in the proposed shield. Accordingly, we would appreciate a fast track review for any approvals that RHP considers necessary, and if we

could arrange that, we propose to furnish a detailed design by September 15; receive approval by September 30; complete construction during October; and put our waste to sleep in that way by Thanksgiving.

d) Alternatively, we can probably achieve an acceptable, but less efficient reduction in background exposure rate by the use of ad-hoc shields of a type that are within our existing scope; and if the accelerated review of a permanent shield is impractical, we will proceed in that manner.

e) With reference to subsection I.3 of this letter, we respectfully request that we be authorized, without further delay, to compact our waste more or less in the manner proposed in writing with the blessing of our Health Physics Consultant more than two years ago.

f) After we have received both MDE and County approval of the scope, we shall proceed with detailed design of both the courtyard enclosure and the entire Waste Storage and processing complex. The effort comprises:

application for license amendment submitted by October 31, 1991;

parameter design of functional items critical to the structural design, to be completed by November 30, 1991;

detailed structural design to be completed by January 15, 1992;

building permit by March 15, 1992;

detailed design of long lead equipment complete by January 31, 1992;

ordering of long lead items completed by March 31, 1992;

construction starts April 1, 1992, closed in by August 31, operational by October 31, 1992.

VI.2 A mechanism for interim, informal, face-to-face licensing reviews of the functional design as it progresses is required if we are to maintain schedule. Each such review can be topical, they need not take much time, and they will give your people an opportunity to ask timely questions (and state preferences if they wish) as the design progresses. Then when the license application is submitted (or as it is being reviewed) the questions and issues will have been resolved, the approval time will be reduced, and we can proceed efficiently.

VI.3 Although no approval is sought or required, we would be pleased to discuss with MDE, at our mutual convenience, the details of the in-pool waste management program that has evolved over the years, and the expanded program of capsule evaluation, repair (where warranted) and reorganization that is now in the process of being defined and implemented.

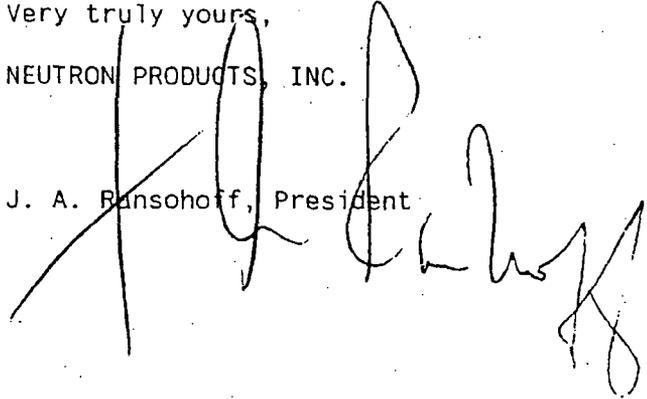
Department of the Environment
August 23, 1991
Page 7

The favor of an approval of scope, or a meeting to resolve any issues, during the week of August 26 is respectfully requested. Thank you for your attention.

Very truly yours,

NEUTRON PRODUCTS, INC.

J. A. Ransohoff, President

A handwritten signature in black ink, appearing to read "J. A. Ransohoff", is written over the typed name. The signature is fluid and cursive, with a large initial "J" and "R".

Attachment

JAR/1190

ATTACHMENT #1

RADWASTE VOLUMES, ACTIVITIES AND STORAGE VOLUMES

- Refs: 1. MDE/RHP letter to Neutron Products dated July 3, 1991
2. NPI letter to MDE/RHP dated August 7, 1991

GENERAL

This attachment responds to the four questions contained in Ref. 1, and indicates where existing waste storage space is adequate and where additional storage space is required for the 6-year period from now until mid-1997. The numbers of the following section headings correspond to the numbers of the questions in Ref. 1.

1. EXISTING DRY WASTE STORAGE AREAS

For "high activity" drums and high integrity containers (HICs):

(b)(4)

For polyethylene waste tubes:

(b)(4)

For "intermediate activity" drums and HEPA filters:

(b)(4)

For "low activity" drums and bagged waste:

(b)(4)

(b)(4)

For very low activity contaminated soil and gravel:

(b)(4)

2. CAPACITY OF EXISTING DRY WASTE STORAGE AREAS

"Capacity" as used here is the volume of waste material that can be stored in the existing dry waste storage areas. Capacities are necessarily smaller than area volumes because of geometric effects (e.g., circular drums in rectangular spaces), space occupied by pallets, inaccessibility to some spaces with our forklift, and limits on dose rates, both inside and outside waste storage areas, that limit how much waste can be stored.

For high activity drums and HICs:

(b)(4)

For low activity drums and bagged waste:

(b)(4)

For low activity B-25a:

(b)(4)

(b)(4)

3. PRESENT VOLUME AND ACTIVITY OF RADWASTE IN DRY STORAGE AREAS

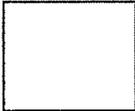
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4A. ESTIMATED VOLUMES AND ACTIVITIES OF DRY WASTE TO BE GENERATED THROUGH MID-1997

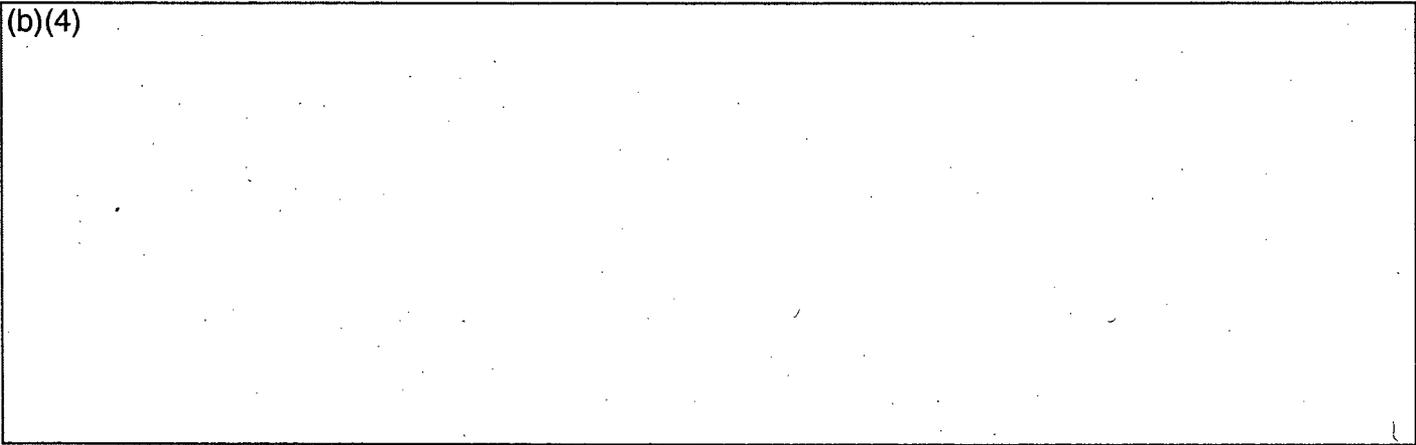
The bases for the estimates are as follows:

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The estimated quantities for a six year period to mid-1997 are then as follows.



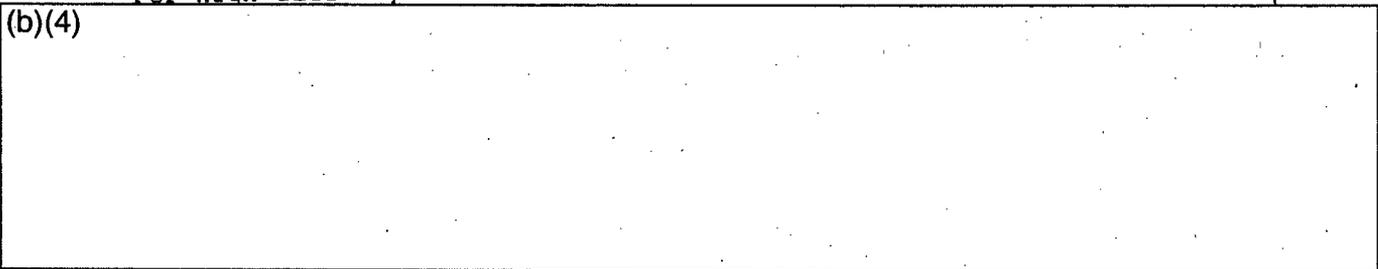
(b)(4)



4B. ADDITIONAL SPACE NEEDED TO STORE DRY RADWASTE THROUGH MID-1997

For high activity drums and HICs:

(b)(4)



For intermediate activity drums (compacted @ 5:1):

(b)(4)

