



MARYLAND DEPARTMENT OF THE ENVIRONMENT

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...is N. Glendening
Governor

FEB 24 2000

Jane T. Nishida
Secretary

CERTIFIED MAIL: NOTICE OF VIOLATION

Jackson A. Ransohoff, President
Neutron Products, Inc.
22301 Mt. Ephraim Road
P.O. Box 68
Dickerson, MD 20842

**RE: Radioactive Materials License Number: MD-31-025-01,
MD-31-025-04**

Dear Mr. Ransohoff:

This letter refers to the radioactive materials inspection conducted by Messrs. Raymond Manley, Alan Jacobson, Robert Nelson and Ms. Donna Gaines of the Maryland Department of the Environment's (MDE) Radiological Health Program (RHP) on November 16, 18 and 19, 1999. The inspection examined radiation safety, compliance with conditions of your license, adherence to procedures and proper maintenance of records, interviews with personnel, general observations, and independent measurements. In addition, the RHP staff examined the circumstances surrounding the November 12, 1999 Dickerson II irradiator pool overflow as well as conducted investigational interviews pursuant to NPI's October 16, 1999 letter to RHP regarding additional information determined about the June 1998 NPI teletherapy engineer overexposure incident.

During the inspection, certain activities were found to be in violation of the Department's requirements. The findings were discussed with Messrs. Jeff Williams, Marvin Turkanis, Bill Ransohoff, Joe Tang of your staff and you (via teleconference) on December 23, 1999. The violations found regarding the MD-31-025-01 and MD-31-025-04 are listed in the enclosed "Description of Violations." Violations identified regarding the MD-31-025-03 license will be addressed via other correspondence. In addition to the violations indicated above, RHP has the following specific radiation safety concerns from this inspection:

1. **Completion of the records room:** NPI is currently working on completion of the new records room as required by license condition #24. It was noted by RHP inspection staff that NPI has not completed the implementation of the transfer of documents into this room. It is understood that NPI has concerns regarding the copying of potentially contaminated documents from the LAA prior to placement in the records room. Please clearly define how NPI intends to complete this license requirement.
2. **Failure to indicate all critical operations in procedures:** NPI procedure specific to radioactive material source changes in Dickerson II fails to specifically instruct the user of the procedure to close the valve between the main pool and the irradiator pool following the conclusion of the source transfer.
3. **Irradiator low water notification to NPI personnel:** NPI at the time of the inspection did not have in place a notification system sufficient to immediately inform appropriate NPI personnel regarding an overflow of water from the Dickerson II irradiator pool.
4. **NPI evaluation of L.A.A. courtyard cleanup:** NPI personnel informed RHP inspectors regarding an extensive cleanup of LAA courtyard surfaces. No formalized documentation of results of this cleanup were available for review during the inspection.

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5. **Current NPI "01" procedures:** RHP still does not have a copy of all NPI procedures used pursuant to activities of the "01" license. NPI needs to submit these procedures for review and incorporation into the "01" license. Until such time, NPI is accountable for all procedures currently tied down in license condition #37 of the "01" license.

As a result of these findings, you are expected to take immediate action to correct all violations and to respond to this letter, the above concerns and the enclosed "Description of Violations" within twenty (20) calendar days of your receipt of this notice. Written statements should be provided for each of the violations indicating:

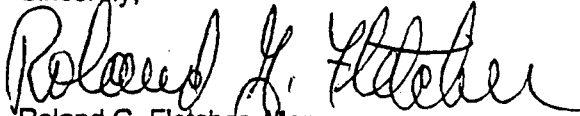
- a. Corrective steps, which have been or will be taken by you to remedy the present violations and the results achieved or anticipated;
- b. Corrective steps which will be taken to avoid further violations, who will undertake these steps, and who will supervise them; and
- c. The date when full compliance will be achieved.

Failure to provide these statements in the required time frame may result in the Department taking escalated enforcement action under Maryland Radiation Regulations to:

- (a) modify, revoke or suspend your license,
- (b) issue a Departmental Order under the Annotated Code of Maryland, Environment Article, Sections 1-301 and 8-101 through 8-601, and
- (c) seek an administrative penalty of up to \$1,000 per violation, per day [Section 8-510(b)], or a civil penalty in Circuit Court in an amount not exceeding \$10,000 per violation, per day [Section 8-509(b)].

Please be reminded that Departmental compliance letters and licensee responses shall be posted pursuant to the requirements of the Maryland regulations, Section J.11 (d) titled, "Posting of Notices to Workers." Should you have any questions concerning this letter, please contact Messrs. Raymond Manley, Alan Jacobson, Robert Nelson, Ms. Donna Gaines or Mr. Carl Trump Jr. at (410) 631-3301. You may also reach our office by dialing toll-free at 1-800-633-6101 and requesting extension 3301.

Sincerely,



Roland G. Fletcher, Manager
Radiological Health Program

REM
RGF/REM/ADJ/cc

LET

Enclosure: Description of Violations

DESCRIPTION OF VIOLATIONS

Neutron Products, Inc.
22301 Mt. Ephraim Road
P.O. Box 68
Dickerson, MD 20842

RE: Radioactive Materials License Number: MD-31-025-01

Certain activities conducted under your license were found to be in violation of Code of Maryland Regulations 26.12.01.01 titled, "Regulations for Control of Ionizing Radiation." These violations are presented below:

1. Section C.31(c) titled, "Specific Terms and Conditions of License" and license condition # 20 requires that NPI maintain and implement a detailed Radiation Safety Training Program as approved by the Department. At a minimum, the Program shall provide, on a quarterly basis, training sessions provided by the Health Physicist Consultant to all employees who have under any circumstances, may have access to the Limited Access Area (LAA). Attendance at such training sessions shall be mandatory and documented.

Contrary to the above, a LAA worker failed to attend the above required NPI training sessions for the 3rd and 4th quarters of 1998 and the 1st and 2nd quarters of 1999.

2. Section C.31(c) titled, "Specific Terms and Conditions of License" and license condition #17D requires, in part, that the Department be notified within two hours concerning all contaminations above 50,000 dpm which are detected by the licensee's portal monitor.

Contrary to the above, NPI failed to notify the Department regarding a contamination identified by the portal monitor that exceeded 50,000 dpm. Specifically, on July 1, 1999, the licensee's portal monitor detected and identified that an LAA employee had internal radioactive material contamination. NPI evaluated that this internal contamination was approximately 120 nanocuries (264,000 dpm). This contamination was not reported to the Department.

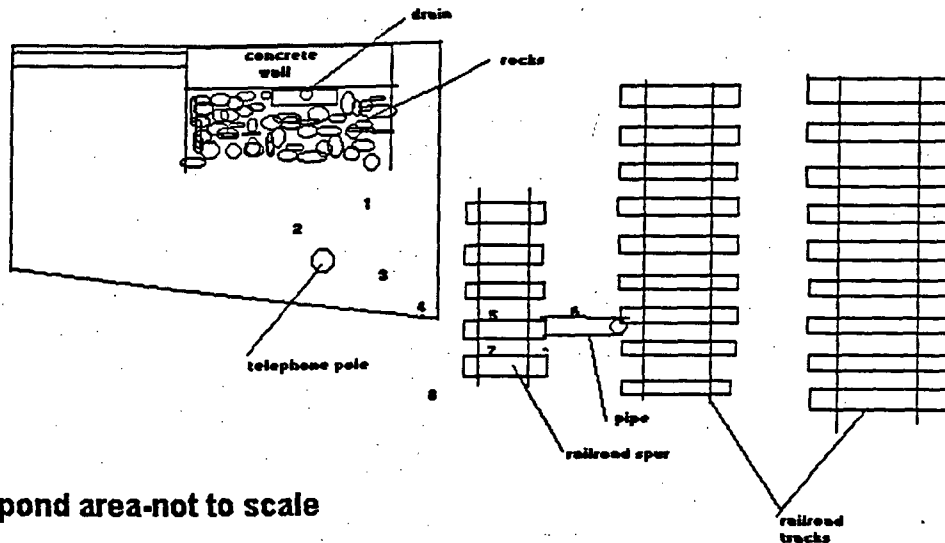
3. Section D.501(a)(ii)(3) titled, "Surveys and Monitoring-General" requires that each licensee make, or cause to be made, surveys that are necessary under the circumstances to evaluate the potential radiological hazards that could be present.

Contrary to the above, NPI failed to make or cause to be made sufficient surveys to identify and fully evaluate areas with cobalt-60 soil contamination resultant from licensed activities. These areas were identified on November 18, 1999 by RHP staff and are located at the railroad spur (140 pCi/gm and 170 pCi/gm), soil immediately west of NPI's drypond fence, soil immediately west of NPI's courtyard fence (103 pCi/gm) and soil from the break in the drainage pipe located on the south side of the railroads tracks and across from the feed store (13.5 pCi/gm). All locations of RHP soil samples taken were documented by NPI staff during the inspection.

4. Section C.31(c) titled, "Specific Terms and Conditions of License" and license condition #22.B(2) requires, in part, that all soils, wherever found, contaminated by NPI licensed activities and exhibiting levels of cobalt-60 contamination exceeding 8 picocuries per gram

above background must be removed by NPI and properly stored/disposed of as radioactive waste.

Contrary to the above, NPI failed to remove cobalt-60 contaminated soil exceeding the above-specified limit. Specifically, on November 18, 1999 RHP inspectors collected soil samples at sites located both on and off of the NPI facility. Maryland Radiation Laboratory sampling results from these samples indicated soil having cobalt-60 concentrations exceeding 8 picocuries (except for location #6) in the following locations:



dry pond area-not to scale

Sample #	Co-60 pCi/gm
#1	$2.036 \times 10^2 \pm 8.992$
#2	$1.915 \times 10^2 \pm 9.375$
#3	$4.557 \times 10 \pm 2.233$
#4	$8.180 \times 10 \pm 4.281$
#5	$1.402 \times 10^2 \pm 6.382$
#7	$1.707 \times 10^2 \pm 7.622$
#8	$4.982 \times 10 \pm 2.709$
#9	$1.349 \times 10 \pm 1.207$ break in pipe across from feed store
#10	$1.033 \times 10^2 \pm 4.922$ near drain by fence (unrestricted side) west side of courtyard
#11	$8.176 \times 10 \pm 4.015$ corner of the courtyard by the generator on the unrestricted side of the fence

- Section C.31(c) titled, "Specific Terms and Conditions of License" and license condition 21.B requires that within 90 days of the issuance of the license, NPI must submit to the Department for approval a comprehensive plan for disposal of all low level radioactive wastes in accordance with those specifications defined in this condition. Department clarification regarding this condition given to NPI during RHP testimony at the January 1999

Office of Administrative Hearing specific to the above referenced license is also taken in account in the licensee submittal requirements and Departmental review of NPI's waste plan. The effective date of this license is August 24, 1999. NPI report was due to RHP on November 23, 1999.

Contrary to the above, RHP received NPI's radioactive material waste plan on December 10, 1999, 17 days past the November 23, 1999 deadline. Furthermore, NPI has not yet submitted a comprehensive waste plan to the Department. NPI's plan received December 10, 1999 failed to contain sufficient information in the areas of specific activities to be shipped at specific times, plans for shipment of all categories of radioactive waste (e.g. contaminated soil and waste generated from future melt campaigns) and commitments from NPI management to meet the five (5) year shipping deadline for the "old" radioactive material waste in NPI's inventory immediately prior to the effective date of this license.

6. Section C.29(c)(2) titled, "Financial Assurance and Recordkeeping for Decommissioning" requires, in part, that each licensee who is a holder of a specific license issued before October 15, 1998 and of a type described in paragraph (a) of C.29 must submit, on or before October 15, 1998 a decommissioning funding plan or a certification of financial assurance for decommissioning in an amount of at least equal to \$750,000.

Section C.29(g)(2) requires that no person receive, possess, use, transfer, own or acquire radioactive material of a type described in paragraphs (a) and (b) of C.29 for more than 180 days following the dates prescribed in this section for submittal of a decommissioning funding plan or certification, if the that decommissioning funding plan or certification has not been approved by the Agency.

Contrary to the above, NPI has not met the \$750,000 certification by the specified dates of this regulation. Furthermore, NPI's decommissioning funding plan has not been approved by the Agency. Pursuant to NPI's failure to provide an adequate decommissioning funding plan or the \$750,000 certification by April 13, 1999, (180 days post October 15, 1998) NPI has continued to receive, possess, use, transfer, own or acquire radioactive material of a type described in paragraphs (a) after the 180 day (April 13, 1999) deadline.

RE: Radioactive Materials License Number: MD-31-025-04

Certain activities conducted under your license were found to be in violation of Code of Maryland Regulations 26.12.01.01 titled, "Regulations for Control of Ionizing Radiation." These violations are presented below:

Section X.53(b)(5) requires that the licensee have in place and follow emergency or abnormal event procedures, appropriate for the irradiator type for a low or high water level indicator, and abnormal water loss, or leakage from the source storage pool.

Contrary to the above, NPI failed to have emergency procedures for response to an abnormal water loss that occurred at the Dickerson II irradiator facility on November 12, 1999.