

UNC NAVAL PRODUCTS

70-371

rt. to: Andre Tibbs
396-SS



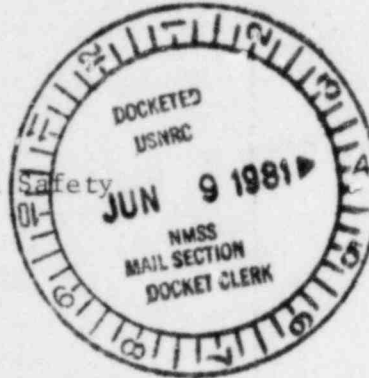
Division of United Nuclear Corporation
A **UNC RESOURCES** Company

67 Sandy Desert Road
Uncasville, Connecticut 06382

Telephone 203/848-1511

April 30, 1981

Mr. R. J. Page, Chief
Nuclear Fuel Licensing Branch
Division of Fuel Cycle and Material Safety
U.S. Nuclear Regulatory Commission
7915 Eastern Avenue
Silver Springs, Maryland 20910



U.S. N.R.C.
LIC. FEE HIGH BRANCH

81 MAY 13 P2:12

RECEIVED

Subject: Amendment of License

Reference: 1) SNM License 368, Docket 70-371

Dear Mr. Page:

UNC Naval Products requests amendment to license SNM #368 to change the following:

- a. Section 4.7 Environmental sampling for non-radioactive materials. These requirements were placed in the NRC license prior to the establishment of the U. S. Environmental Protection Agency and the Connecticut Department of Environmental Protection.

Presently, we are subject to the Conn. DEP regulations for facility effluent and discharge control.

Revised Part I, pages 4-24 and 4-25 dated 4/27/81 are attached.

Even radioactive effluents are controlled by 40 CFR 190 (EPA) and recognized by 10 CFR 20, 46 FR 18525-6.

- b. Section 2.7 Inspections and Audits Due to several problems encountered in performing these reviews, we request revision as noted in Part I, pages 2-12 and 2-13 dated 4/27/81 as attached.
- c. Licensed Possession Limits. Please change our licensed possession limit from 12,000 Kg. U-235 to 20,000 Kg. U-235. Changing work levels are anticipated requiring higher inventory limits.
- d. Reorientation Training. We request that this retraining be changed from "annual" to "every two years". In reviewing NRC Region II inspection reports, we recently noted that SNM #42 license is only required to do such retraining every two years. Both SNM #42 and #368 were renewed in March 1977.

Revised Part I, page 2-14 dated 5/1/81 is attached.

Applicant.....
Check No. 129412.....
Amount Fed. Debt \$1400-1A.....
Type of Fee. major audit.....
Date Check Rec'd. 5/15/81.....
Received By. [Signature].....

due add \$33,200

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PDR ADOCK 07000371
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19071

e. De minimus uranium release concentrations.

Ref.: Letter V. L. Miller to All Industrial Licensees on Reduction of Level Wastes dated September 12, 1980.

This amendment will permit the disposal via conventional means of specific batch quantities of liquid waste containing de minimus quantities of uranium.* Information and controls are presented to justify this waste disposal without impacting the general environment.

* See Table A.

Sampling, Analysis and Disposition:

A representative sample from each drum or carboy will be taken and analyzed for uranium. The results shall be evaluated and used to disposition the container to either conventional waste disposal in accordance with Table A or licensed waste disposal.

Record Keeping:

Results of analyses will be recorded in parts per million uranium and/or pCi/gm uranium. Each drum or carboy released under this amendment will be recorded in a log containing the following information: Date filled; source of waste; date of representative sampling and signatures of person taking sample; analysis results; OK for Release signature; date of removal from company property; name of vendor removing item or emptying tank.

UNC-NP shall maintain a current list of state approved waste disposal vendors with which it contracts to do business.

Discussion:

Oils: Waste oil, non contaminated, are routinely poured into an on-site 1,000 gallon tank. When the tank is full, the oil is pumped out by a state licensed hauler and trucked away. We currently haul away approximately 12,000 gallons per year.

The de minimus contaminated oil would be poured into this same on-site tank, (not to exceed two drums per tank) thus receiving additional dilution of at least 10:1 prior to release from licensee's property. Further combination of the 1,000 gallon batch with batches from other industries on the vendors pick-up circuit dilute the original de minimus uranium value to undetectable levels by any means. The waste oil is burned by the vendor.

Solvents:

Waste solvents, non contaminated, are routinely collected into 55 gallon drums, stored and picked up by a state licensed waste hauler. We currently haul away approximately 30 drums per year. The de minimus contaminated solvent drums would be mixed with similar solvents at the vendors waste disposal site and incinerated.

Acid:

Spent nitric acid, non contaminated, is presently trucked away by a licensed waste vendor in 5,000 gallon batches from a 10,000 holding tank located on site. We currently haul away approximately 180,000 gallons per year. The de minimus contaminated spent acid would be poured into the vendor tank truck 20 gallons per truck load. Thus on-site dilution of 250:1 will reduce the uranium concentration to undetectable levels prior to leaving licensee property.

Septic Tank Sludge:

Septic tank sludge is removed from the primary settling chamber on a preventive maintenance schedule of 1-2 times per year. Slurry can be carried over from this chamber into a secondary chamber where it has the potential to become slightly contaminated. The slightly contaminated septic slurry would be pumped out via a commercial septic tank service along with the primary sludge. This material is disposed via state or local approved sanitary landfills. Dilution will be sufficient to reduce any uranium quantities to non-detectable. As an option, UNC-NP could retain the slightly contaminated septic tank slurry and, with NRC approval, dispose of it within our on-site septic field.

Benefit/Risk:

There is a primary benefit to accepting the proposed de minimus release levels for the wastes identified. Approval of de minimus release levels will lessen the burden on the licensed burial grounds. Particularly, in this situation, the waste materials identified are difficult to solidify using readily available methods. Solidification will result in 3 to 4 times volume increase.

There is no additional risk to the public health or environment for the de minimus waste disposals described. Current federal state and/or local regulations are already in effect for the disposal of the oils, solvents and septic tank sludge identified. This addition of de minimus amounts of uranium to the overall waste disposal methods already approved by these agencies will have no added measurable impact.

Alternatives:

Alternatives for disposal of these materials are:

1. Purchase, installation and operation of suitable equipment for removing the uranium. This will still involve generation of waste for burial.
2. Continue to drum up materials and store on-site.
3. Set up on-site NRC licensed incineration facility.

Mr. R. G. Page, Chief, Uranium Fuel Licensing Branch

April 30, 1981

Page 4.

Item (1) is unacceptable from the economic standpoint as well as from the reasonable use of remaining space in currently licensed low waste burial grounds.

Item (2) does not solve the problem of disposal. It does create an additional problem of on-site waste management.

Item (3) is not justified for the quantities presently generated.

Attached is our check for \$1,400.00 covering the cost of a minor Safety and Environmental Amendment.

Very truly yours,



W. F. Kirk, Manager
Nuclear and Industrial Safety

WFK/dlb
Enclosures

TABLE A

IDENTIFICATION OF WASTES:

<u>Item</u>	<u>Package</u>	<u>Estimated Quantity Per Year</u>	<u>Uranium Release Concentrations (prior to combination with on-site non-radio- active waste)</u>	<u>Analysis</u>
(A) Oils (hydraulic, vacuum)	55 gal. drum	20 drums	≤ 2 ppm	fluorometric
	55 gal. drum			
(B) isopropyl alcohol	55 gal. drum	5 drums	≤ 10 ppm	radiometric
(C) spent nitric acid	20 gal. carboy	10 carboys	≤ 10 ppm	fluorometric
(D) septic tank sludge	commercial 'septic waste tank truck'	2000 gallons	≤ 20 pci/gm	radiometric or isotopic
(E) Miscellaneous solvents	55 gal. drum	50 drums	≤ 10 ppm	radiometric or isotopic



UNITED NUCLEAR
CORPORATION

LICENSE:	SNM-368, DOCKET NO. 70-371 NAVAL PRODUCTS DIVISION	Revision 3
PART I:	CONDITIONS AND SPECIFICATIONS	Approved
CHAPTER:	4 - HEALTH PHYSICS STANDARDS	Issued April 27, 1981
SECTION:	4.7 - ENVIRONMENTAL SURVEILLANCE	Supersedes Approved Rev. 2 May 3, 1977

4.7 - ENVIRONMENTAL SURVEILLANCE

4.7.1 General

The UNC fabrication activities at Montville consist of receipt of uranium-bearing materials, fabrication of uranium fuel fillers, fabrication of encapsulated elements, and core assembly operations.

The types of effluent discharges anticipated at the facility are:

Onsite release and control of warm water that is used daily in cleaning operations and to remove heat from chemical reactions and process equipment such as furnaces and vacuum pumps (there is no heat generated by nuclear reaction or decay at our facilities).

Onsite release and control of small quantities of spent chemicals (containing trace amounts of uranium) to the environs, after treatment.

Onsite release and control of detergents and chemicals to the environs.

Offsite release of small quantities of spent chemicals containing trace amounts of uranium to state approved conventional waste disposal vendors.

Onsite release and control of sanitary sewage to the environs after treatment. Off-site release of trace uranium bearing septic tank sludge to a commercial tank hauler.

Release of trace quantities of uranium and chemicals to the atmosphere.

Prior to the onsite release of trace quantities of uranium, the waste shall be sampled and administrative controls shall be applied before discharge.

Solid waste shall be packaged and shipped off site for disposal.

Chemicals (Spent Acids) are sold to a vendor, and removed from the site by truck. These chemicals are normally contamination free, but they shall be analyzed for uranium prior to removal from site to assure that uranium concentrations shall not exceed 0.1 ppm.

Based on the Environmental Impact Appraisal prepared by the Commission, a negative declaration has been issued. This is further discussed in Part II.



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Site surveillance shall be designated to establish the quantities and concentrations of effluents regulated by 10 CFR 20 after they have been released but prior to leaving the site boundaries. The environmental acceptance of 10 CFR 20 effluents shall be evaluated on an annual basis against applicable State and Federal regulations.

4.7.2.2 Site Surveillance

.1 Air

Locations surrounding the plant, coordinated with meteorological data, shall be sampled approximately 24 continuous hours using high volume air samples. Sampling frequency for each site shall be every other month. Filters shall be analyzed for gross alpha and beta/gamma activity.

.2 Water

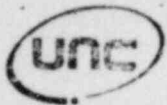
Surface water shall be analyzed at least quarterly at the four locations:

- (1) Thames River-Upstream and downstream from the plant
- (2) Traders Cove
- (3) Outfall of drainage trench
- (4) Incoming city water

Samples from all four locations shall be analyzed for uranium.

Ground water samples shall be obtained at least quarterly from wells surrounding the plant and shall be analyzed for uranium radioactivity and trends evaluated, to assure that the plant discharge water is not adversely affecting residential wells.

At least four residential wells surrounding, and in close proximity to the site boundary, shall be sampled, analyzed and evaluated at least annually for uranium, to detect any changes in the basic quality of the residential wells.



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SECTION:	4.7 - ENVIRONMENTAL SURVEILLANCE	Supersedes Approved Rev. 2 May 3, 1977

4.7.2.3 Release Surveillance

.1 Air Effluents

All stacks emitting radioactive particulates shall be continuously monitored for alpha activity at the point of release. Emissions shall be kept within and below 10 CFR 20 limits as stated in Par. 4.1.2. Beta/Gamma activity shall be monitored and analyzed when necessary.

.2 Liquid Effluents

Rac Waste

A proportional sample shall be taken of the liquid effluent from each 2500 gallon retention tank and shall be analyzed prior to discharge to the septic tank. Based on results, the liquids shall either be discharged or be given further treatment, resampled and then released.

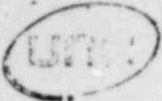
Uranium content of the liquid effluent shall be monitored for each discharge as it shall be released to the septic tank. Uranium content of the effluent stream from the septic tank shall be monitored every other month.

Sampling of septic tank sludge shall be scheduled at two year intervals or if records shall show that 350 gms of uranium could have been released, whichever is earlier.

Sludge samples shall be taken and analyzed prior to authorizing tank cleanout. Results of the analysis shall key deposition to either a licensed burial or to routine sludges handling by authorized offsite vendors.

Spent Acid

Spent acid shall be sampled and analyzed for uranium prior to shipment departure by the buyer. The analysis results shall be recorded.



**UNION NUCLEAR
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PART I:	CONDITIONS AND SPECIFICATIONS	Approved
CHAPTER:	4 - HEALTH PHYSICS STANDARDS	Issued April 27, 1981
SECTION:	4.7 - ENVIRONMENTAL SURVEILLANCE	Supersedes Approved Rev. 2 May 3, 1977

.3 Meteorological Monitoring

A wind measuring system for accurate data on the immediate micro wind conditions at the effluent release points shall be operating on site. Wind speed and direction shall be recorded on a dual recorder.

.4 Terrestrial

Soil samples shall be taken around the perimeter of the plant in the prevailing downwind direction semi-annually. Three to six samples shall be taken at each sample period.

Sampling shall be performed within the leaching field every two years.

All samples shall be analyzed for enriched uranium.

.5 Batch Release of De Minimus Uranium Concentrations

Controlled release of de minimus uranium concentrations in oils, solvents, acid, and septic tank sludge shall be made as identified in Table 4.7 - 1 and in accordance with the quantity, concentrations and analyses specified.

Results of analyses will be recorded in parts per million uranium and/or pci/gm 235 uranium. Each drum or carboy released under this amendment will be recorded in a log containing the following information: Date filled; source of waste; date of representative sampling and signatures of person taking sample; analysis results; OK for Release signature; date of removal from company property; name of vendor removing item or emptying tank.

UNC-NP shall maintain a current list of state approved waste disposal vendors with which it contracts to do business.

TABLE 4.7-1

<u>IDENTIFICATION OF WASTES:</u>	<u>Package</u>	<u>Estimated Quantity Per Year</u>	<u>Uranium Release Concentrations (prior to combination with on-site non-radio- active waste)</u>	<u>Analysis</u>
<u>Item</u>				
(A) Oils (hydraulic, vacuum)	55 gal. drum	20 drums	≤ 2 ppm	fluoromet
	55 gal. drum		.	
(B) isopropyl alcohol	55 gal. drum	5 drums	≤ 10 ppm	radiometr
(C) spent nitric acid	20 gal. carboy	10 carboys	≤ 10 ppm	fluoromet
(D) septic tank sludge	commercial 'septic waste tank truck'	2000 gallons	≤ 20 pci/gm	radiometr or isotopic
(E) Miscellaneous solvents	55 gal. drum	50 drums	≤ 10 ppm	radiometr or isotopic



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LICENSE:	SNM-368, DOCKET NO. 70-371 NAVAL PRODUCTS DIVISION	Revision 3
PART I:	CONDITIONS AND SPECIFICATIONS	Approved
CHAPTER:	2-ORGANIZATION, PERSONNEL AND ADMINISTRATION	Issued April 27, 1981
SECTION:	2.7 - INSPECTIONS AND AUDITS	Supersedes Approved Rev. 2 May 3, 1977

2.7 Inspections and Audits

2.7.1 General

A continuous re-appraisal of the safety program shall be provided through a system of daily checks, regular inspections, and audits.

Violations are corrected on the spot with the concurrence of the cognizant Specialist and/or Manager of NIS and recorded. If corrective action requires additional time to complete, a record of the violation shall be prepared and maintained until corrective action is complete. For daily checks, inspections and audits, all observed violations including corrective action initiated and/or completed, shall be documented. A planned schedule of regular inspections and audits shall be established by the Department Manager.

2.7.2 Daily Checks

Daily checks and visits shall be made routinely by Health Physics Technicians who make general observations in addition to their radiation survey functions. A technician shall report observed problems to the Supervisor, and the Supervisor shall take appropriate action as required. Violations shall require a written notice and correction.

2.7.3 Inspections

Plant inspections of Health Physics and Criticality Control shall be performed by NIS Department personnel (other than technicians) i.e., (Health Physics or Nuclear Criticality Specialist, an Engineer, the NIS Manager, the Division Medical Physician or the Industrial Safety Specialist. An inspection includes a review of recorded violations to determine the area of areas requiring more detailed observation. Generally, a specific area will be observed for a sufficient time to indicate if corrective action is needed. Inspections shall be documented and maintained as a record for at least one year. These inspections shall be performed as follows:



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<u>Function</u>	<u>By</u>	<u>Minimum Frequency</u>
Health Physics	NIS Professional Personnel (a)	1 month
Nuclear Criticality Safety	NIS Professional Personnel (a)	1 month
Operating Procedures and Records Control	Production, Process or Quality Control Engineering	Continuing with NMM being annually

including

Nuclear Materials
Management

Note (a) Health Physics Specialist, Nuclear Criticality Specialist,
Engineer, NIS Manager, Division Medical Physician, or
Industrial Safety Specialist

2.7.4 Audits

An audit is a comprehensive review of the total protection or control aspects of the Criticality Control or Health Physics Program.

An audit shall be performed once a year by a specialist or higher level personnel from outside the Nuclear and Industrial Safety Department.

The methodology used and the areas of review shall be determined by the person(s) performing the audit. License requirements, 10 CFR 20 and appropriate NRC Regulatory Guides shall be used in establishing the areas of review. The professional qualifications of the personnel performing the audit shall be reviewed and approved by the Manager, Nuclear and Industrial Safety and the President, UNC Naval Products.

A report shall be made to the President on the effectiveness of the program.

Records of audits shall be maintained for at least two years.



UNITED NUCLEAR CORPORATION

LICENSE: SNM-368, DOCKET NO. 70-371
NAVAL PRODUCTS DIVISION
PART I: CONDITIONS AND SPECIFICATIONS
CHAPTER: 2 - ORGANIZATION, PERSONNEL AND ADMINISTRATION
SECTION: 2.8 - TRAINING

Revision 3
Approved
Issued May 5, 1981
Supersedes Approved
Rev. 2 May 3, 1977

2.8 TRAINING

2.8.1 General

Training programs concerning the safety aspects of handling source and special nuclear materials shall be established on a Division-wide basis. Indoctrination and training for new employees (persons on the employment roll less than 2 months) shall be provided. Reorientation for those already in the employ of United Nuclear Corporation shall be given at least every two years. These portions of the training program shall be given or supervised by Specialists in the field of safety involved.

2.8.2 Indoctrination and Training

The indoctrination and training of new employees in the safety aspects of the fuel fabrication process shall be conducted by, or under the supervision of, Specialists in the topic covered.

An indoctrination shall be given on the basic concepts of radiation, protective action and devices, atomic fission and the chain reaction control methods in general, and those methods utilized in NPD operations specifically; with emphasis on observing safety restrictions on mass, dimension, or concentration. Other topics shall, include, the Radiation Detection and Alarm System, its sound, and action to be taken in such emergency; company safety regulations and action in event of fire, explosion or other non-nuclear emergency. Written examinations shall be given to monitor employee understanding. A record is kept of training received.

Further training of the new employee shall be continued by the supervisor, who is responsibly for instruction in all aspects of the particular assignment. Health Physics and Nuclear Criticality aspects are routinely included as a part of the regular department safety meetings. A minimum of 8 hours indoctrination and training shall be given to each new employee. Documentation shall be provided to assure compliance.

2.8.3 Re-Orientation

UNC shall conduct mandatory refresher training in Radiation Protection, nuclear criticality safety and emergency procedures at least every two years. Documentation shall be provided to assure compliance.

~~DATE 5/13/81~~
② Tyson 5/13/81

"LICENSE AMENDMENTS"

Docket No. 70-371

4/5 ③ DW

William O. Miller, License Fee Management Branch, ADM

MATERIALS LICENSE AMENDMENT CLASSIFICATION

Applicant: UNC
License No: SXM-368 Fee Category: 1A \$1400
Application Dated: 4/30/81 Received: 5/13/81
Applicant's Classification: minor safety

The above application for amendment has been reviewed by NMSS in accordance with §170.31 of Part 170, and is classified as follows:

1. Safety and Environmental Amendments to Licenses in Fee Categories 1A through 1H, 2A, 2B, 2C, and 4A
 - (a) Major safety and environmental
 - (b) Minor safety and environmental
 - (c) Safety and environmental (Categories 1D through 1G only)
 - (d) Administrative

2. Justification for reclassification: This amendment application actually includes 5 different amendments and item "e" by itself may require more hours of work than a normal minor amendment at fee covers.

3. The application was filed (a) pursuant to written NRC request and the amendment is being issued for the convenience of the Commission, or (b) Other (State reason): _____

Signature W.S. Crow
Division of Fuel Cycle & Material Safety
Date 5/14/81

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