U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

Region I

Report No. 70-371/80-12

Docket No. 70-371

License No. SNM-368 Priority 1 Category UR

Licensee: United Nuclear Corporation
67 Sandy Desert Road
Uncasville, Connecticut 06382

Facility Name: UNC Naval Products

Inspection at: Montville, Connecticut

Inspection conducted: August 20-22, 1980

Inspectors: J. Roth for
W. W. Kinney, Project Inspector — 3/4/81 date signed

Approved by: J. Roth for
H. W. Crocker, Chief, Fuel Facility Projects Section, FF&MS Branch — 3/4/81 date signed

Inspection Summary:

Inspection on August 20-22, 1980 (Report No. 70-371/80-12)

Areas Inspected: Routine unannounced inspection by a region-based inspector of: licensee action on previously identified enforcement items; organization; nuclear criticality safety; safety committee activities; and internal reviews and audits. The inspection involved 20 inspector-hours onsite by one NRC region-based inspector.

Results: Of the 5 areas inspected, no items of noncompliance or deviations were identified in 3 areas; one apparent item of noncompliance was identified in nuclear criticality safety (Infraction - the liquid level in tank RT-1 was as much as 3 inches above the raschig rings and the requirement allowed the liquid level to be 1 1/2 inches above the raschig rings (80-12-01), paragraph 4a); one deviation was identified in licensee action on previously identified enforcement items (the licensee had not revised their Container Specification and Insrection Report form for the UNC 2600 shipping container, paragraph 2).

DETAILS

1. Persons Contacted

*G. H. Waugh - Vice President, Quality Control
*T. J. Collopy - Manager, Nuclear Safeguards
*W. Kirk - Manager, Nuclear and Industrial Safety
*J. Neumann - Criticality Specialist
D. Luster - Health Physics Specialist
J. Czapski - Engineer

The inspector also interviewed a health physics technician, laboratory supervisors, and nuclear material accounting technicians during the inspection.

*denotes those present at the exit interview.

2. Licensee Action on Previously Identified Enforcement Items

(Closed) Infraction (70-371/79-13-01): A United Nuclear Corporation employee entered a fuel crib storage area with four whole elements and thereby exceeded the posted criticality safety limit for the work zone. The zone posting allowed, "Three (3) whole elements, or One (1) piece in assembly form, or 350 grams U-235 in any form". In addition, there was more than 350 grams of U-235 in the zone prior to the introduction of the four whole elements in the zone. The inspector verified from licensee records that training sessions on the requirement to follow posted criticality safety limits were given on August 31 and September 6, 1979. The criticality specialist performed an audit of criticality safety in the B-South area.

(Open) Infraction (70-371/79-20-01): The licensee was using UNC-2600 shipping containers which were either not constructed in accordance with or were not using the materials called for in the drawings specified in Certificate of Compliance No. 5086. The inspector verified that the licensee made a review of the construction of the shipping containers and the drawings for the containers. The licensee submitted the revised drawings to the Transportation Certification Branch of the Division of Fuel Cycle and Material Safety. Certificate of Compliance No. 5086, Revision 2, dated May 20, 1980 approved the licensee's application dated April 22, 1980. In those instances where the licensee was not using materials in accord with the drawings and the drawings were not revised, the licensee required that the specified materials be used in the packages.

According to licensee records, Nuclear Materials Control personnel were instructed on the need for compliance with packaging requirements on January 18, 1980.

The above actions completed the licensee's action to correct the item of noncompliance except for the following. In order to avoid future noncompliance, the licensee committed to revising the Container Specification and Inspection Report (CSIR) form upon the acceptance of the revised drawings by the NRC. As previously mentioned, the concerned certificate of compliance was revised on May 20, 1980. As of August 22, 1980, the CSIR form for the UNC-2600 shipping container had not been revised. This is a deviation from a commitment.

(Closed) Infraction (70-371/79-20-02): The licensee packaged fissile material in DOT Specification 6M containers using Specification 2R inside containment vessels with a screw-type cap without the required lute on the pipe threads. The inspector verified that licensee personnel were reinstructed on the need for luting the pipe threads on Specification 2R containers in a training session conducted on January 18, 1980.

(Closed) Deficiency (70-371/79-20-03): Operations Supervision did not assure that Nuclear Criticiality Safety control measures as defined by NIS authorizations were followed. Operations had a fuel element located in the zone for coupon pickling operation, and the limit allowed only S&P coupons. Operations had lab coats, cardboard boxes, and a jacket stored on top of a fissile material container located in the scrap retainers and sectioned element storage room, and the limit required keeping hydrogenous materials (plastic, cardboard) and combustibles to a minimum in the room. The inspector saw a statement from B-South Supervisor that the operator involved with the fuel element was reprimanded and that an emergency awareness session was held for all operators in the area. The operators were reminded of their responsibility to observe criticality control limits.

3. Organization

Mr. D. E. Ganley is the President of UNC Naval Products. On June 2, 1980, Mr. G. O. Amy was named NPD Executive Vice President, and the Operations Manager, Materials Manager, and Nuclear Safety and Material Control Manager report to Mr. Amy. The President's staff as of June 2, 1980, is given below.

G. O. Amy - Executive Vice President
R. C. Johnson - Vice President, Finance
B. J. Lowe - Vice President, Business Planning and Marketing
G. H. Waugh - Vice President, Quality Control
R. B. Andrews - Manager, Engineering
J. P. Corrigan - Senior Project Manager, KAPL Projects (D-W/D-G)
T. A. Shea - Senior Project Manager, S-G Projects
J. J. Vickary - Senior Project Manager, S-W/A-P Projects

The organization which includes Nuclear and Industrial Safety is given below.

G. O. Amy - Executive Vice President

T. J. Collopy - Manager, Nuclear Safety and Material Control

W. Kirk - Manager, Nuclear and Industrial Safety

J. Czapski - Engineer "A"
D. Luster - Health Physics Specialist
J. Neumann - Criticality Specialist
E. Barton - Safety Specialist
R. Berzins - Industrial Nurse (1st)
S. Monahan - Industrial Nurse (2nd)
R. Brubaker, M.D. - Plant Physician

J. Czapski, Jr. is a new member of Nuclear and Industrial Safety. Dr. R. Schwensfeir, former criticality specialist, left UNC Naval Products. Mr. Czapski is an engineer "A" and is in training to become a criticality specialist.

4. Nuclear Criticality Safety

a. Inspection of Facility

The sectioning area, vault, scrap storage, press areas, laboratories, and health physics basement area were inspected.

The posted criticality safety limits, posting II-A-3, for a fuel weighing glovebox does not mention sieve trays in the equipment listing. Condition 5 of the posting states that no can in the glovebox is to exceed 2 1/2 quarts (150 in^3) in volume. When the inspector inspected the glovebox, the sieve trays were separated. However, if the sieve trays were assembled in a stack the volume of the stack would exceed

the 2 1/2 quart volume limit. The inspector suggested that if the trays were stacked during sieving the nuclear safety evaluation should address this situation.

During the inspection of the laboratories a posting for work zones was hidden. The laboratory supervisor said that the posting would be made visible.

During the inspection of the Health Physics Basement the raschig ring filled tanks of the rad waste and coolant systems were inspected. It was noted that the level of the liquid in tank RT-1 was as much as 3 inches above the raschig ring level in the tank. Authorization No. VII-F-1, revised 5/27/80, control 3 called for keeping the liquid level in tanks RT-1 and RT-2 no higher than 1 1/2 inches above the top of the raschig rings. Liquid level more than 1 1/2 inches above the top of the raschig rings was an item of noncompliance.

b. Licensee's Nuclear Criticality Safety Inspection Reports and Violation Reports

The inspector reviewed the licensee's nuclear criticality inspection reports 80-1 through 80-36. Seven of these inspection reports listed problems in compliance with criticality safety requirements. The licensee criticality safety personnel were working toward corrections of the problems. The inspections performed by Mr. Czapski demonstrated a rigorous approach to nuclear safety.

The inspector reviewed the licensee's Log of Nuclear Criticality Safety Violation Reports. Thus far during 1980, Nuclear and Industrial Safety has issued eighteen violation reports. Ten of the items had been satisfactorily resolved at the time of the inspection. Eight were in various stages of correction.

c. Operability Checks of Criticality Alarm Instruments

The licensee has 35 NMC Model GA-2T and GA-2TO instruments measuring gamma radiation in the fabrication areas. According to the licensee, the instruments are set at 7 mR/hr to show a blue "Alert" alarm. The instruments are set to cause the evacuation horns to sound at 18 mR/hr. The licensee also has a monitor in C Building office area and a monitor in the lobby. These monitors are set to start a red beacon at 5 mR/hr.

The inspector reviewed the records of the operability checks of the 35 fabrication area criticality alarm instruments performed by health physics technicians. The records showed the instruments were checked and adjusted as needed on February 17, May 4, and August 3, 1980.

The inspector also reviewed the records of the alarm horn testing for June 1979 through August 1980. The records showed that each month one of the horn alarm systems was checked.

5. Safety Committee

The licensee has three Shop Safety Committees: one for Shop I; one for Shop II; and one for Shop III and IV. These committees meet and inspect their areas once per month.

The safety committees use a checklist for noting conditions. The checklist includes fire protection, housekeeping, tools, personal protective equipment, machinery, pressure equipment, unsafe practices, first aid, and miscellaneous items. The inspector reviewed the checklists for April 1979 through July 1980. There were no checklists for June, August, and November 1979 and March, June, and July 1980. The inspections continued to find numerous items requiring correction. There were several repeat items each inspection.

6. Internal Reviews and Audits

In addition to the nuclear criticality inspections and safety committee inspections, the licensee's safety program was reviewed by a UNC Corporate Nuclear Safety Team on February 14 and 15, 1979. The licensee also showed the inspector information concerning inspections of the facility on May 28 and 29, 1980, by American Nuclear Insurers.

In Inspection No. 80-07 on April 9-11, 1980, the inspector identified an item of noncompliance in which the review conducted by the UNC Corporate Nuclear Safety Team was found not to constitute an audit. As a result of this finding, much correspondence between the licensee and Region I ensued. The final correspondence was on December 17, 1980, in which Region I stated, "IE has concluded that Item A, Appendix A of our letter dated May 15, 1980, stands as an item of noncompliance. We understand to prevent recurrence of this item, future assignments to conduct the annual audit will include specific instructions to meet the requirements of License No. SNM-368 with particular attention to section 2.7.4 of Part I of your license application which was incorporated into it.'

It is also pertinent that in a letter to the licensee dated November 5, 1980, Region I stated that an inspection conducted by American Nuclear Insurers in the fall of 197º did not constitute an adequate audit to satisfy the license requirements.

7. Exit Interview

The inspector met with the licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on August 22, 1980. The scope of the inspection was presented, and the following items were discussed.

The item of noncompliance involving the liquid level in tank RT-1 being 2-3 inches above tne raschig rings while the nuclear safety authorization called for the liquid level being no higher than 1 1/2 inches above the top of the rings was discussed. (paragraph 4a)

The deviation involving the licensee's failure to revise and reissue the Container Specification and Inspection Report (CSIR) form for the UNC-2600 shipping container was discussed. (paragraph 2)

The inspector pointed out that the nuclear safety posting for the fuel weighing operation did not address the use of a stack of sieve trays. (paragraph 4a)