UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

Report No. 50-245/79-14

Licensee: Northeast Nuclear Energy Company
ATTN: Mr. W. G. Counsil, Vice President
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P. O. Box 270
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Facility Name: Millstone Unit 1

Docket No. 50-245

Inspection at Millstone Site near Waterford, Connecticut

Inspector: C. A. Julian — Date Signed: June 5, 1979

Approved by: R. D. Martin, Section Chief, RONS Branch — Date Signed: June 5, 1979

SUMMARY

Inspection on May 19-21, 1979

Areas Inspected

This routine, unannounced inspection involved 29 inspector-hours onsite in the areas of preparation for refueling, observation of refueling activities and review of refueling associated procedures.

Results

Of the three areas inspected, no apparent items of noncompliance or deviations were identified.

DETAILS

1. Persons Contacted

*J. Opeka, Station Superintendent
*R. Herbert, Unit 1 Superintendent
W. Romberg, Unit 1 Operations Supervisor
*E. Mroczka, Station Services Superintendent
*A. Cheatham, Health Physics Supervisor
*T. Piascek, Reactor Engineer
J. Crosby, Assistant Unit 1 Operations Supervisor
*J. Shedlosky, NRC Resident Inspector

Other licensee employees contacted included various technicians, operators, security force members, and office personnel.

* denotes those present at the exit interview.

2. Licensee Action on Previous Inspection Findings

(Closed) Infraction (78-19-01): The inspector verified that daily surveillance procedures have been changed to caution the operator to recheck the demand settings for the process computer if surveillance results are not consistent with the results from the previous day's checks. This item is closed.

(Closed) Unresolved item (78-19-02): The inspector verified that the required comparison of the P-1 and BUCLE computer programs was made. This item is resolved.

(Closed) Unresolved Item (78-19-04): The inspector determined that procedure SP-1051 has been modified to require a more timely evaluation of control rod scram time data. This item is resolved.

3. Preparation for Refueling

The inspector reviewed the records of the new fuel receipt and inspection. Adequate approved procedures were implemented and the documentation was found to be complete.

No deviations or items of noncompliance were identified in this area.

4. Inoperable Control Rod

The inspector discussed with the licensee representatives the circumstances of control rod 22-07 becoming stuck between positions 46 and 48 during the latter part of cycle 6. The reactor continued operation to the end of cycle with this control rod inoperable, and at the start

of the refueling evolution, control rod 22-07 was disassembled to investigate. It was determined that the control rod drive mechanism was jammed by a fragment of stainless steel from a broken neutron source tube. The neutron source had been discovered broken two cycles previous and several fragments were not recovered at that time.

The stuck control rod drive unit was replaced and the refueling sequence was modified to allow removal of the fuel bundles around the position where the broken source was discovered. The licensee plans to use an underwater vacuum system to attempt to remove any remaining source fragments or other foreign material from the vessel. This area will be re-examined during a subsequent inspection (245/79-14-01).

5. Refueling Related Logs and Records

The inspector examined the Shift Supervisor's Log for the period April 23, 1979 through May 21, 1979, the Material Transfer Forms for this refueling, and numerous records of surveillances and tests conducted before and during the refueling operation. Data were examined from functional tests and channel checks of the source range monitor and intermediate range monitor nuclear instrumentation, surveillance on refuel bridge interlocks, and verification of secondary containment, standby gas treatment, HEPA and charcoal filter operability.

Licensee representatives informed the inspector that they had recently recognized that the Source Range Monitors were not functionally tested prior to the start of fuel handling on May 2, 1979, as required by Technical Specification 4.10.b. The licensee is making a written report on this matter to Region I within 30 days after the occurrence. The inspector stated that this would be considered an Unresolved Item pending NRC review of the licensee's written report (245/79-14-02). The inspector verified that corrective action has been taken in that the requirement to functionally test the SRM's has been added to operations form 328B-1 "Refuel Check List".

No deviations or items of noncompliance were identified in this area.

6. Observation of Refueling Activities

The inspector witnessed various refueling activities in progress on the refueling floor. As a result, the following items were discussed with the licensee representatives:

a. While transferring fuel, the operator observed that a channel fastener had become separated from a fuel bundle previously inserted in the core, and was resting on top of the adjacent control blade. An attempt was made to recover the fastener but it dropped out of sight toward the bottom of the vessel. During vacuuming operations later in the outage, the licensee plans to recover the fastener.

The inspector noted that this bundle was one of 115 previously irradiated bundles which were re-channeled under water and the channel fastener was apparently improperly installed. Some fuel bundles have spring clips on the lower end fitting which make the channel hard to seat on the bundle. With a channel not fully seated, the remote channel fastener installation tool is of such a design that the operator can put the prescribed torque on the tool and still not have the channel fastener properly threaded into the upper end fitting. The inspector examined the tool and reviewed procedure RE1073 Revision 0 "Channeling Fuel in Spent-Fuel Pool". The procedure includes precautions concerning the proper installation of channel fasteners.

The inspector expressed concerns that other channel fasteners could be improperly installed and become loose during reactor operation and that a channel not properly seated presents a path for bypass flow around the fuel bundles. The licensee representatives stated that the problem would be reviewed to determine action to be taken to recover the lost channel fastener and to insure that all channels and channel fasteners are properly installed before further reactor operation. The inspector stated that these matters will be reviewed during a subsequent inspection (245/79-14-03).

b. The inspector noted that two indication lights for "core level" and "Indication of Position and Grapple Close" were not working on the refuel grapple. The licensee initiated action to repair these light functions and the inspector stated that the timely completion of these repairs would be verified at a later inspection (245/79-14-04).

c. The inspector observed that a portable radiation monitoring instrument located near the refuel grapple controls was turned off. Licensee representatives stated that the radiation monitor was not required to be operable during refueling operations and merely served as an aid to the health physics technician who is continuously present on the refuel floor during fuel movements. The inspector verified that periodic radiation surveys are being performed by the health physics technician. The licensee agreed to review the need for this additional radiation monitor and clarify by procedure revision the required status of this instrument during refueling operations. This area will be re-examined during a subsequent inspection. (245/79-14-05).

d. The inspector observed a portable continuous air monitor instrument located on the north end of the spent fuel pool that was in an intermittent alarm condition as evidenced by a red light on the top of the unit. The audible bell alarm was bypassed by an installed switch. Investigation revealed that the gas channel of the unit was alarming due to the monitor being located in a high background area.

The inspector discussed the condition of this monitor with various health physics personnel and reviewed procedure HP[illegible]08D-2 "Continuous Air Monitor Operation and Interpretation". No regulatory or procedural requirement presently requires this unit to be continuously operable on the refuel floor. The licensee representatives agreed to review the matter and revise procedures as necessary to specify the criteria for use of the continuous air monitoring units during refueling. The inspector reviewed data of air samples taken fromthe refuel floor to verify that adequate sampling is being performed in addition to use of the continuous air monitoring units. The results of the licensee's review and actions taken on this matter will be reviewed at a later inspection (245/79-14-06).

7. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve noncompliance or deviations. New unresolved items identified during this inspection are discussed in paragraph 5.

8. Exit Interview

The inspection scope and findings were summarized on May 21, 1979 with those persons indicated in Paragraph 1. The inspector discussed with the licensee representatives the one unresolved item and the five open items resulting from this inspection as described in paragraphs four through six. In each case, the licensee's representatives stated that actions will be taken to close these items.