U. S. NUCLEAR REGULATORY COMMISSION
Region I

Report No. 50-336/83-14

Docket No. 50-336

License No. DPR-65 Priority -- Category C

Licensee: Northeast Nuclear Energy Company

P. O. Box 270

Hartford, Connecticut 06101

Facility Name: Millstone Point Nuclear Power Station, Unit 2

Inspection At: Waterford, Connecticut

Inspection Conducted: May 18-20, 1983

Inspectors: R. L. Nimitz 6/8/83
Ronald L. Nimitz, Senior Radiation Specialist — date signed

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date signed

Approved By: M. S. Shanbaky 6/8/83
M. M. Shanbaky, Ph.D., Chief, Facilities Radiation Protection Section — date signed

Inspection on Summary: Inspection on May 18-20, 1983 (Report No. 50-336/83-14)

Areas Inspected: Routine, unannounced safety inspection of licensee planning and preparation for the outage and a review of selected areas of the Radiation Protection Program including: qualification of the licensee's Radiation Protection Manager; Radiation and High Radiation Area posting and control; Airborne Radioactive Material Area posting and personnel exposure control; and evaluation of alpha emitters. Upon arrival at 7:30 p.m. on May 18, 1983 the inspector toured controlled areas to review licensee adherence to radiological control procedures and practices. The inspection involved 15 inspector-hours onsite by one region-based inspector.

Results: No violations were identified.

DETAILS

1. Persons Contacted

1.1 Northeast Nuclear Energy Company

J. Etheridge, Radwaste Supervisor
*B. Granados, Health Physics Supervisor
*R. Herbert, Station Services Superintendent
*J. Kangley, Radiological Services Supervisor
E. Laine, Radiation Protection Supervisor, Unit 2
*E. Mroczka, Station Superintendent
J. Olson, Shift Supervisor, Unit 1
H. Siegrist, Supervisor - Corporate Radiological Protection Section
D. Wright, Shift Supervisor, Unit 2

1.2 NRC

*J. T. Shedlosky, Senior Resident Inspector

*denotes those individuals attending the exit interview on May 20, 1983

The inspector also contacted other licensee employees during the inspection.

2. Purpose

The purpose of this routine safety inspection was to review the licensee's advanced planning and preparation for the upcoming outage and to review selected areas of the licensee's Radiation Protection Program. The following areas were reviewed:

. advanced planning and preparation for the outage;

. qualification of the licensee's Radiation Protection Manager;

. Radiation and High Radiation Area Posting and Control;

. Radioactive and Contaminated Material Posting, Labeling, and Control;

. Airborne Radioactive Material Area Posting and Personnel Exposure Control;

. Evaluation of Alpha Emitters;

3. Advance Planning and Preparation

The licensee's efforts in advanced planning and preparation for the outage were reviewed against criteria contained in:

. 10 CFR 20.201, "Surveys";

. Regulatory Guide 8.8, "Information Relevant to Ensuring that Occupational Radiation Exposures at Nuclear Power Stations will be As Low As Reasonably Achievable", Revision 3;

. Regulatory Guide 8.10, "Operating Philosophy for Maintaining Occupational Radiation Exposures As Low As is Reasonably Achievable (Nuclear Power Reactors)", Revision 1-R;

. Regulatory Guide 8.27, "Radiation Protection Training for Personnel at Light-Water-Cooled Nuclear Power Plants", dated April 1981.

Specific tasks reviewed included: steam generator sleeving; steam generator sludge lancing; and core barrel removal.

The licensee's efforts in this area were determined through interviews of Radiological Controls personnel and review of applicable documentation. The following was noted:

-- The licensee has established a Radiological Controls Organization for use during the outage. The organization will provide for around-the-clock coverage by Radiation Protection Operations and Support Personnel.

-- The licensee will augment the permanent staff with appropriately trained and qualified contractor personnel.

-- The licensee has arranged for contractor support in the area of respirator fit testing and laundry processing.

-- The licensee plans to decontaminate the steam generator channel heads and the reactor cavity for purposes of reducing personnel exposure to ALARA.

-- Licensee radiation protection personnel visited other reactor sites to observe similar radiological work which is to be performed during the current outage. The work reviewed included steam generator sleeving and reactor core barrel removal.

-- The licensee plans to use steam generator mockups to train individuals performing steam generator sleeving and nozzle dam work. In addition, the licensee plans to ensure that those individuals performing steam generator sludge lancing have received training on the sludge lance contractor's mockup.

-- The licensee has inventoried the supply of radiation protection instrumentation to be utilized during the outage. The licensee has ordered additional instrumentation as needed.

-- The licensee has ordered additional portable ventilation equipment for use during the outage.

-- The licensee plans to use portable ventilation systems to preclude release of airborne radioactive material from the steam generators to work areas. In addition, the licensee plans to use steam generator manway access containments, which will be continuously monitored for airborne radioactive material, to preclude releases and inadvertent personnel exposures.

-- The licensee has performed steam generator radiation dose rate evaluations using phantoms, and plans to perform other evaluations, also using phantoms as needed, prior to personnel entry into steam generators.

Based on the above review, the licensee appears to have performed adequate advanced planning and preparations in the areas reviewed.

No violations were identified.

4. Radiation Protection Manager Qualification

The inspector reviewed the qualifications of the licensee's Radiological Services Supervisor with respect to the qualification requirements of Technical Specification 6.3, "Facility Staff Qualifications". Inspector discussions with licensee representatives indicated this individual is the designated individual required to meet Regulatory Guide 1.8, Revision 1, "Personnel Selection and Training", which is referenced in the Technical Specification. The individual was found to meet the qualification requirements.

The inspector also reviewed the qualification of the licensee's Health Physics Supervisor with respect to the qualification criteria referenced in the Regulatory Guide. The review indicated the individual meet the qualification requirements. The individual filling this position is required per the Technical Specification to meet Regulatory Guide 1.8 qualification requirements.

No violations were identified.

5. Radiation And High Radiation Area Posting and Control

The inspector toured the controlled areas and performed radiation intensity measurements where necessary to verify licensee compliance with the requirements of 10 CFR 20.203, "Caution Signs, Labels, Signals, and Controls", and Technical Specification 6.12, "High Radiation Area".

No violations were identified.

6. Radioactive and Contaminated Material Posting, Labeling, and Control

The inspector toured the controlled area and reviewed licensee posting, labeling, and control of radioactive and contaminated material with respect to the requirements of 10 CFR 20.203, "Caution Signs, Labels, Signals, and Controls".

No violations were identified.

7. Airborne Radioactive Material Area Posting and Personnel Exposure

7.1 Posting

The inspector reviewed the posting of airborne radioactive materials areas with respect to the requirements of 10 CFR 20.203, "Caution Signs, Labels, Signals, and Controls".

No violations were identified.

7.2 Personnel Exposure Control

The inspector reviewed the control of personnel exposure to airborne radioactive material with respect to the requirements of 10 CFR 20.103, "Exposure of Individuals to Concentrations of Airborne Radioactive Materials in Air in Restricted Areas".

10 CFR 20.103(a)(3) states in part that, when assessment of a particular individual's intake of radioactive material is necessary, intakes less than those which would result from inhalation for 2 hours in any one day or for 10 hours in any one week at the uniform concentrations specified in Appendix B, Table 1, Column 1 need not be included in such assessment, provided that for any assessment in excess of these amounts, the entire amount is included.

During site tours, the inspector noted a number of areas posted as airborne radioactive material areas. The inspector discussed the above areas with licensee representatives with respect to assessing personnel exposure for those individuals who may exceed the 2 or 10 hour assessment criteria referenced above. Licensee representatives indicated the airborne radioactivity areas were established due to the presence of low concentrations of noble gasses and the exposure to these gasses was measured by use of thermoluminescent dosimeters. Licensee representatives indicated the dosimetry provided was capable of measuring such exposure. The data was however, not available at the site but was available at the licensee's corporate office. The inspector noted that the use of dosimeters for this purpose is acceptable, provided they are properly calibrated for this purpose.

Inspector discussions with licensee representatives and review of procedures indicated that the assessment of personnel exposure to airborne particulate and iodine radioactivity is not initiated until airborne radioactivity concentrations are greater than or equal to 0.7 times the appropriate concentration limit of Appendix B to 10 CFR 20. The inspector stated that this procedure, under certain conditions, could be inconsistent with the requirements of 10 CFR 20.103. In addition, the inspector noted that the licensee's procedures did not provide guidance relative to assessing individual exposures in excess of the 2 and 10 hour exposure criteria previously referenced. Licensee representatives indicated airborne particulate and iodine concentration values have not been experienced which would require individual assessment that is not already assessed using existing procedure guidance (i.e. assessment initiated at 0.7 times the appropriate 10 CFR 20 Appendix B concentration value). However, licensee representatives indicated the requirement to assess personnel exposure to airborne radioactivity in the event the 2 or 10 hour assessment criteria is exceeded will be reviewed and resolved by June 3, 1983.

The inspector stated that the calibration of dosimeters used for measuring noble gas exposure and the licensee's resolution of assessment of personnel exposure in excess of the 2 or 10 hour exposure criteria will be reviewed during a subsequent inspection (50-336/83-14-01).

8. Evaluation of Alpha Emitters

8.1 Airborne Radioactivity Sampling for Alpha Emitters

The inspector reviewed the licensee's sampling and analysis of airborne radioactivity for alpha emitters against criteria contained in:

-- 10 CFR 20.201, "Surveys";

-- 10 CFR 20.103, "Exposure of Individuals to Concentrations of Radioactive Materials in Air in Restricted Areas";

-- Procedure SHP 4905, Revision 3, "Radiological Surveys".

The review indicated the licensee sent samples of primary coolant (collected from the primary side of the steam generators) to an analytical lab for analyses. The sample analyses indicated the presence of alpha emitters. During steam generator work in March 1983, which was reviewed during NRC Inspection No. 50-336/83-07, the licensee collected and evaluated air samples taken from the steam generator. The samples were analyzed for alpha emitters. No significant alpha emitters were identified.

The licensee plans to sample for possible alpha airborne radioactivity during the coming outage.

No violations were identified.

8.2 Alpha Emitters in Radioactive Waste

The inspector reviewed the licensee's evaluation of alpha emitters in radioactive waste with respect to the criteria of 10 CFR 20.301, "Waste Disposal - General Requirements".

Inspector discussions with the licensee's Radwaste Supervisor indicated that this was the first fuel cycle in which alpha emitters were identified in primary coolant. The Radwaste Supervisor said that no spent resins, from this fuel cycle, have been shipped for disposal. The Radwaste Supervisor also said that various methods of evaluating alpha emitters in radioactive waste were being evaluated and that an appropriate method would be selected and used to quantify alpha emitters in spent resins from this fuel cycle prior to their shipment for disposal.

No violations were identified.

9. Exit Interview

The inspector met with licensee representatives (denoted in Section 1) at the conclusion of the inspection on May 20, 1983. The inspector summarized the purpose, scope, and findings of the inspection.