U. S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-423/87-25

Docket No. 50-423

License No. NPF-49 Priority -- Category C

Licensee: Northeast Nuclear Energy Company
P. O. Box 270
Hartford, Connecticut 06101

Facility Name: Millstone Unit 3

Inspection At: Waterford, Connecticut

Inspection Conducted: November 16-20, 1987

Inspectors: B. S. Davidson 12/28/87
B. S. Davidson, Radiation Specialist date

Approved by: Walter J. Pasciak 12/31/87
Walter J. Pasciak, Chief date
Effluents Radiation Protection Section

Inspection Summary: Inspection on November 16-20, 1987 (Report No. 50-423/87-25)

Areas Inspected: Routine, unannounced safety inspection of the licensee's gaseous and liquid effluents control program. Liquid and gaseous waste processing, sampling, measurement and release records; air cleaning system tests and filter challenge tests; Radiation Monitoring System calibrations and tests; Audits.

Results: Within the areas inspected, no items of noncompliance were identified.

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DETAILS

1.0 Persons Contacted

1.1 Licensee Personnel

*T. Burns, Unit 3 Chemistry Supervisor
*C. Clement, Unit 3 Superintendent
*G. D'Auria, Chemist
*H. Haynes, Station Services Superintendent
*F. Libby, Jr., Supervisor, Assessment Services
*F. Mueller, Unit 3 Chemist
*J. Waters, Chemistry Supervisor

1.2 NRC Personnel

*W. Raymond, SRI

*Attended the exit meeting on November 20, 1987.

2.0 Status of Previously Identified

(Closed) Inspector Follow-Up Item (50-423/86-06-02):
Licensee to implement a program to compare radiation monitor readings to actual samples. The licensee compares gaseous samples monthly and liquid samples are compared during each release. This item is closed.

(Closed) Inspector Follow-Up Item (50-423/86-16-01):
Review licensee's actions to resolve ALARA concerns on taking reactor coolant sample from the hot leg. The licensee has blanked off the sample line from the hot leg and is using a sample from the cold leg. Dose rates have been reduced from 900 mR/hour to 5-10 mR/hr. This item is closed.

(Closed) Inspector Follow-Up Item (50-423/86-16-03):
Licensee to correct deficiencies in hot well sampling for detecting steam condensor tube leaks. The licensee has modified the system, increasing flow rates on the system and decreasing the time to detect which condensor is affected by about a factor of five. This item is closed.

(Closed) Inspector Follow-Up Item (50-423/86-16):
Licensee to resolve sulphate problem in steam generators. The licensee determined that a sulfonated organic group existed on the resins used in the condensate polishing system and has changed to a different nuclear grade resin. This resulted in a change in secondary water conditions from 10-15 parts per billion (ppb), which exceeded the steam generator owner's group guidelines to 2-3 ppb, which is well within the guide. This item is closed.

3.0 Chemistry

The inspector reviewed the licensee's organization for implementing the effluents control program. The Assistant Supervisor, Chemistry is responsible for implementing the day to day program. This individual reports to the Chemistry Supervisor who reports to the Station Services Superintendent.

The licensee uses a Master Surveillance Schedule, ACP-QA-9.02C to implement the routine surveillance tasks. LCO driven requirements are controlled within the department as needed.

The licensee implements a chemistry controls program using procedures, CP3802C, "Chemistry Controls" and NEO 2.17, "Secondary Water Chemistry Program" in control of Primary and Secondary Coolants, Balance of Plant (BOP) and steam generator owner's group (SGOG) guidelines.

The licensee implements inter-and intra-laboratory quality control programs using split sample spikes and unknowns. With regard to vendor activities, monthly duplicates are used to evaluate precision and semi-annual spikes for accuracy. The inspector noted that the May, 1987 spiked sample was biased by 40% for Sr-89.

The licensee stated that this was acceptable using the criteria for comparing analytical results used in conducting confirmatory measurements inspections. The licensee uses the vendor's uncertainty in calculating resolutions, which in turn is used to determine acceptability. The inspector stated that since the licensee purchases NBS traceable standards which are provided with a statement of uncertainty to spike the samples, that this value could be combined in quadrature with other sources of error in preparing the sample, to estimate the overall uncertainty, and therefore require stricter performance by a vendor.

3.1 Reactor and Secondary Coolant Chemistry Surveillance Program

The inspector reviewed the licensee's program for implementing surveillance requirements germane to reactor and secondary coolant chemistry. Areas reviewed included the following:

- Technical Specification 3/4.4.8-Dose Equivalent Iodine
  Gross Activity
  Average Energy (E-BAR)
- Technical Specification 3/4.7.1.4- Gross Activity
  Dose Equivalent Iodine
- Technical Specification 3/4.4.7 - Chloride, Conductivity
- Technical Specification 3/4.5.4 - Boron Determination (RWST)

Procedures for complying with these requirements and selected records for 1987 were reviewed. No items of noncompliance were noted.

3.2 Effluent Release Program

The inspector reviewed the licensees program for sampling and measurement of radioactive effluents. Technical Specifications 3/4.11.1 and 3/4.11.2 requirements for continuous and batch releases apply for liquid and gaseous wastes, respectively. The licensee conducts liquid waste discharge from the Waste Test Tanks. Gaseous releases from the auxiliary building, ventilation, and gaseous wastes from cover gases, air ejector and CVCS are released continuously. Containment purges are conducted in a batch mode.

The inspector reviewed release permits for liquid and gaseous releases, weekly charcoal and particulate samples/releases and selected one liquid release, and compared two gaseous releases. The licensee generated the dose values using the models and equations of the Radiological Environmental Offsite Dose Calculation Manual (REMODCM). The licensee values were found correct. Gaseous releases are summarized by the corporate health physics group. Values generated in March, 1987 were checked:

	Date	Curies	Gamma Air	Beta Air
Gaseous:	3/26	0.024	1.11E-5	3.18E-5
	3/28	0.089	4.1E-5	1.18E-4

(values are in mrem) NRC calculated values were identical.

			Total Body	Organ	
Liquid:	11/10/87	3.27	2.5E-4	2.6E-3	Licensee
			2.51E-4	2.64E-3	NRC

(Waste Test Tank "A", Release No. 1908)
(Values are in mrem)

These differences were due to rounding. No concerns were identified in this area.

4.0 Radiation Monitoring Instrumentation

The licensee's Instrumentation and Controls (I&C) group is responsible for this system.

The inspector reviewed the licensee's program for calibration and functional testing of the Radiation Monitoring System (RMS). Requirements of Technical Specifications 3/4.3.3.9 and 3/4.3.3.10 for

liquid and gaseous RMS were reviewed. The inspector conducted a walkdown of plant systems and components, including several radiation monitors:

- CHS 69 Reactor Coolant Letdown Monitor
- RE10A/B Turbine Building Vent Monitor
- RE22A/B Containment Vent Monitor
- RM31-1 Component Cooling Monitor
- RMSSR08-1 Steam Generator Blowdown Monitor
- DASS0-1 Condensate Polishing Monitor
- ARC21-1 Condensor Air Ejector Monitor

The following procedures were reviewed:

- SP3450 H01, Liquid Waste Monitor Calibration
- SP3450 H11, Liquid Waste Monitor Operability
- SP3450 L41, Radiation Monitor Source Check
- SP3449J01, ESF Building Radiation Monitor Calibration
- SP3449J11, ESF Building Radiation Monitor Operability
- SP3449J21, ESF Building Discharge Flow Rate Channel Calibration

The inspector reviewed selected records of RMS tests, calibrations, and channel checks. Records from July to October, 1987 were reviewed. In addition to monthly source and quarterly analog checks, the calibrations required once per refueling cycle, were reviewed.

The inspector also reviewed records of performance of surveillances on hydrogen recombiners and monitors pursuant to the requirements in Technical Specification 3/4.6.4. Included in this review were procedures:

- SP3447C01 Hydrogen Monitor Train B System Calibration
- SP3447C02 Hydrogen Monitor Train "B" Channel Calibration
- SP3447L01 Hydrogen Recombiner Test

and records of tests:

- Train "A" Channel Calibration 9/1/87
- Train "B" Channel Calibration 10/19/87
- Hydrogen Recombiner 01/21/86

Within the scope of this review, no violations or deviations were noted.

5.0 Air Cleaning Systems

The operations group is responsible for fulfilling requirements in this area. The inspector reviewed requirements in Technical Specifications 3/4.6.6, 3/4.7.1, 3/4.7.7, 3/4,7.8, 3/4.7.9 and 3/4.9.12 and reviewed pertinent regulatory guides and ANSI standards to which the licensee is committed. In addition, the following procedures were reviewed:

- SP3614A.1-1 Aux. Building Filter System Operability Test
- SP3614C.1-1 Fuel Building Filter System Operability Test

Test records were reviewed as follows:

- Aux. Building Operability (monthly) Jan. to Oct. 1987
- Aux. Building Filter Challenge, Pressure Drop, Methyl Iodide Removal Efficiency Tests 1985 to 1987
- Control Room Operability (monthly) Jan. 6. to October 1987
- Control Room Methl Iodide Removal Test Results,. May, 1986
- Control Room Pressurization Envelope Tests February, 1987
- Fuel Building Filter Challenge, Pressure Drop, Methyl Iodide Removal Efficiency Tests August to November, 1987.

The filter tests are performed by a vendor. Accumulated run times are recorded on a computer. No surveillances were missed. Some records were misfiled but successfully found.

Within the scope of this review, no violations or deviations were found.

6. Audits

The inspector reviewed audits germane to the liquid and gaseous effluent control program. Audit No. A24001 was conducted on 10/86 by the licensee's Radiological Assessment Branch (RAB) in the corporate office. The audit was found comprehensive and technically complete. The RAB is due to perform an audit of setpoint methodology and program implementation in December, 1987.

A Technical Specification audit is presently being conducted. Aspects germane to chemistry and the effluents program were reviewed in August. The inspector received the checklist of the Audit and discussed it and the results with the licensee. No violations were found by the licensee.

Quality Control inspections are presently performed in a manner which is driven by activities initiated as work orders. Thus, routine preventative maintenance, surveillances and tests are excluded. Intra-departmental check by supervisors and on-the-job training are relied upon to control activities in the chemistry area. The I&C group uses an independent verification of system operability when equipment is restored to service post calibration or testing.

Within the scope of this review, no violations were noted.

7.0 Exit Interview

The inspector met with licensee representatives (denoted in Section 1.0) at the conclusion of the inspection on November 20, 1987. The inspector summarized the purpose and scope of the inspection and the inspection findings. At no time during the inspection were any written materials provided to the licensee by the inspector.