

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

Region I

Report No. 50-245/81-03  
50-336/81-02  
Docket No. 50-245  
50-336  
License No. DPR-21 Priority --- Category C  
DPR-65  
Licensee: Northeast Nuclear Energy Company  
P. O. Box 270  
Hartford, Connecticut 06101

Facility Name: Millstone Nuclear Power Station, Units 1 and 2 (MNPS)

Inspection at: Millstone Site and Northeast Utilities Service Company (NUSCo)

Inspection conducted: February 9-13, 1981

Inspectors: C. Sakenas 3-23-81  
C. Sakenas, Radiation Specialist date signed  
R. Bores 4-30-81  
R. Bores, Chief, Independent Measurements date signed  
and Environmental Protection Section

Approved by: R. Bores 4-30-81  
R. Bores, Chief, Independent Measurements date signed  
and Environmental Protection Section

Inspection Summary:

Inspection on February 9-13, 1981 (Combined Report Nos. 50-245/81-03; 50-336/81-02)

Areas Inspected: Routine, unannounced inspection of environmental monitoring programs for operations at MNPS Units 1 and 2, including: the management controls for these programs; the licensee's program for quality control of analytical measurements; implementation of the environmental monitoring programs; nonradioactive effluent release rates and limits; and a follow-up on the licensee's action on previous environmental inspection findings. The inspection involved 60 inspector-hours onsite by two regionally based NRC inspectors.

Results: Of the five areas inspected, no items of noncompliance were identified in four areas. One apparent item of noncompliance (failure to collect impingement samples as required - Detail 5.c) was identified in one area.

## DETAILS

### 1. Individuals Contacted

- \*E. Mroczka, Station Superintendent
  - \*E. Farrell, Station Services Superintendent
  - \*J. Kangley, Chemistry Supervisor
  - +\*B. Johnson, Manager, Millstone Environmental Laboratory
    - J. Heg, Operations Assistant
    - R. Langer, Chemistry Foreman, Unit 2
    - D. Wilkins, Chemistry Foreman, Unit 1
    - M. Kesser, Lead Biologist, Benthos, NUSCo
    - D. Morgan, Associate Scientist, NUSCo
    - J. Foertch, Associate Scientist, NUSCo
    - C. Fontneau, Associate Scientist, NUSCo
    - R. Breeding, Associate Scientist, NUSCo
    - P. Jacobsen, Lead Biologist, Fish Ecology
    - D. Balcom, Associate Scientist, NUSCo
    - D. Hess, Technician, NUSCo
  - +R. Rodgers, Chief, Radiological Assessment Branch, NUSCo
  - +D. Lenth, Supervisor, Production Operations Services Lab, NUSCo
  - +R. Crandall, Senior Engineer, Radiological Engineering Section, NUSCo
  - +J. Doroski, Engineer, Radiation Programs Branch, NUSCo
  - J. Day, Senior Environmental Engineer, NUSCo
- \* present at the exit interview, MNPS  
+ present at the exit interview, NUSCo

### 2. Licensee Action on Previous Inspection Findings

(Open) Unresolved Item ( 245/77-27-01; 336/77-27-01): Environmental thermoluminescent dosimeters (TLDs) performance evaluation. TLD response to energies between 1MeV and 3MeV was not determined under calibration conditions as specified in ANSI N545 and Regulatory Guide 4.13. This item will remain unresolved pending completion of this study.

(Closed) Unresolved Item ( 245/79-06-02; 336/79-06-02): Investigation of tritium spike discrepancies. The inspector verified that an investigation was conducted, and the cause of the discrepancies was attributed to improper spiking. As a result of these findings, this item is closed.

(Closed) Deficiency ( 245/79-06-05; 336/79-06-05): Failure to collect and analyze oysters as required. The inspector verified that sample trays were relocated at the specified location as stated in the licensee's response dated August 10, 1979, and that samples were analyzed and reported in 1979 and 1980 as required.

(Open) Unresolved Item ( 245/79-06-04; 336/79-06-04): Changes in milk sampling locations prior to NRC approval. The inspector noted that changes in these locations submitted to the NRC have not been approved. This item will remain unresolved until the changes are approved.

(Closed) Deficiency ( 245/79-06-07; 336/79-06-07): Failure to follow fish impingement sampling procedures. The inspector verified that procedure EPB-II-1-10 was revised to include a precaution against mixing with debris from previous collections, as stated in the licensee's response dated August 10, 1979. The inspector also observed impingement sampling and verified that the procedure was followed. (Detail 6.a)

(Closed) Unresolved Item ( 336/79-06-09): Lack of corrective actions in thermal discharge monitoring system procedures. The inspector verified that procedure OP 2325A was revised to include corrective actions when thermal limits were exceeded.

(Closed) Deficiency ( 245/79-06-09; 336/79-06-10): Simultaneous chlorination at Units 1 and 2 outside of specified temperature range. The inspector verified that procedure SP 813/2813 was modified to instruct the technician to notify the shift supervisor to terminate continuous chlorination when limiting temperatures are reached. The inspector reviewed selected records from 1979 and 1980 and noted that continuous chlorination was terminated when limiting temperatures were reached.

(Closed) Unresolved Item ( 245/79-06-10; 336/79-06-11): Discrepancies in chemical usage and discharges for 1977 and 1978. The inspector reviewed the 1978-1980 annual reports and verified that no discrepancies existed.

(Closed) Unresolved Item ( 245/79-06-11; 336/79-06-12): Stabilization of waterfront near meteorological tower. The inspector verified by touring the area that grading and seeding was completed in this area.

### 3. Management Controls

#### a. Assignment of Responsibility

The inspector reviewed the organization and administration of the environmental monitoring programs with respect to changes made since the last inspection of this area. The biological studies are now performed by NUSCo at the Millstone site laboratory under B. Johnson, Manager. Responsibilities for other environmental programs have remained essentially the same since the last inspection.

No items of noncompliance were identified.

The inspector verified through procedure review that the changes made in the assignment of responsibility did not reduce management control of the programs.

#### b. Audits

The inspector noted that program audits were conducted on a semiannual basis by the Environmental Review Board. The inspector reviewed audit reports 78-2, 79-1, 79-2 and 80-1 and noted that corrective actions were completed as required.

#### 4. Licensee Program for Quality Control of Analytical Measurements

The inspector reviewed results of the licensee's quality control program for radiological analyses for 1980. Acceptance criteria for interlaboratory analyses of duplicate and spiked samples were defined in NUSCo Procedure RAB 2-2. The licensee stated that samples for which results fell outside the acceptance band are reanalyzed. The inspector verified that unacceptable results were investigated, although gamma spectroscopy samples were not usually reanalyzed when only K-40 values were outside the acceptance range. The inspector discussed with the licensee that discrepancies in K-40 values are just as indicative of a laboratory problem as for other isotopes.

The inspector also reviewed quarterly quality control reports submitted to the licensee by the primary radiological lab contractor. The inspector stated that insufficient information was provided in these reports to adequately assess the laboratory's performance on a regular basis. Additional information such as instrument backgrounds, check sources, and intralaboratory blanks should be included in the periodic quality control reports to provide sufficient data to assess adequacy of the laboratory. The infrequency of intralaboratory duplicate analyses was also addressed by the inspector. Due to the lack of adequate information in the laboratory's quality control report, this area will be reevaluated in a subsequent inspection. (245/81-03-01; 336/81-02-01)

The inspector discussed with the licensee portions of the licensee's quality control program for biological analyses. The licensee stated that verification of plankton identifications was conducted on approximately ten percent of the samples. The inspector verified that appropriate keys were identified in species identification and that consultation with outside authorities was utilized for non-identifiable species.

The inspector also discussed with the licensee the program for calibration of the flowmeters used in the plankton sampling program, and verified that calibrations were performed on a routine basis.

The inspector had no further questions in this area.

#### 5. Implementation of the Environmental Monitoring Program - Radiological

##### a. Direct Observations

The inspector accompanied a licensee technician through a portion of the weekly sample collection route. Sampling of air particulates and surface water grab samples was observed.

The inspector discussed with the licensee several aspects of the collection of weekly grab water samples which could cause a bias in the reporting of results:

1. Not rinsing the sampling bucket (This could result in transmission of activity from a previous location and result in sample contamination); and
2. Not adding acid to sample container until returning to the laboratory (The plate-out of radionuclides on sample container walls would be expected to occur rapidly, prior to the acid addition).

The licensee stated that these modifications would be incorporated into the program.

The inspector noted that charcoal cartridges kept in air sampling stations for plant emergency use have now been sealed in aluminum cans to protect them from exposure to moisture.

The inspector had no further questions in this area.

b. Routine Reports

The inspector reviewed the licensee's annual environmental radiological monitoring report for the period January 1 to December 31, 1979. The inspector verified that the report was submitted in accordance with the licensee's technical specification requirements.

c. Nonroutine Reports

The inspector reviewed anomalous measurement reports 79-1, 80-1 and 80-3 regarding radioactivity observed in oysters collected from the Millstone quarry. The inspector reviewed the licensee's dose assessment and verified by independent calculations that the maximum dose to individuals consuming oysters with this amount of activity would be 0.5 mrem/year to the GI tract. This represents a small fraction of the 10 CFR Part 50, Appendix I design criteria which are based on an annual projected dose of 3 mrem/unit. The licensee stated that no actual dose consequence was anticipated from these levels since the oysters in the quarry were within the confinement of the restricted area. The licensee has requested a change to the Environmental Technical Specifications (ETS) deleting this sample, since natural oysters do not exist at this location.

The inspector had no further questions in this area.

d. Data Review

The inspector reviewed analytical data for samples collected in 1980 and noted that samples were collected and analyzed as required by the technical specifications.

e. Meteorology

The inspector examined the onsite meteorological instrumentation and readout system in the Unit 1 Control Room. The inspector noted agreement between readings at the meteorological tower and the computer printout at the NUSCo office in Berlin, Connecticut. No comparison could be made with the control room chart due to chart overprinting at the noted time.

The inspector reviewed calibration records for 1979 and 1980 and noted that calibrations were performed as specified in Procedure SP 2406C.

The inspector had no further questions in this area.

6. Implementation of the Environmental Monitoring Program - Biological

a. Direct Observations

The inspector observed a portion of the impingement and entrainment sampling.

The inspector noted that the trash trough was cleaned out prior to dumping the collection basket into the area for impingement counting. This was an item of noncompliance from the previous inspection.

The inspector had no further questions in this area.

b. Routine Reports

The inspector reviewed selected portions of the licensee's annual environmental monitoring report for 1979. The inspector noted that exposure panels were not analyzed in accordance with the licensee's technical specification requirements. The licensee stated that an ETS change was requested in 1979, to delete exposure panels from the program. The inspector determined through discussions with the licensee that the panels, in question, were exposed for the twelve-month period required in the technical specifications and were frozen following removal. Panels exposed for six months were analyzed and the data were reported. The inspector stated that this item will remain unresolved until changes to the technical specifications are received or the backlog of unanalyzed panels (in the freezer) is eliminated. (245/81-03-02; 336/81-02-02)

c. Data Review

The inspector reviewed selected records of data collected in 1980 for impingement and entrainment sampling. The inspector noted that impingement samples were not always collected at the frequency specified in Section 3.1.2.1.10 of the Environmental Technical Specifications, which requires that: "A minimum of three days each week, with no more than four days between counts, fish and shell fish washed from the traveling screens into the collection baskets over a 24 hour period shall be identified, counted and the length recorded...". Contrary to this, no sample was collected for five days, from June 13-17, 1980 (Unit 2, July 25-29, 1980 (Unit 1), November 7-11, 1980 (Unit 2), and January 1-5, 1981 (Unit 2). In addition, samples collected on January 2, 1980 (Units 1 and 2), June 18, 1980 (Unit 2), July 30, 1980 (Unit 1), and November 12, 1980 (Unit 2), were collected over a 48-hour period rather than the 24 hours specified. The inspector stated that this was in noncompliance with the technical specifications in that there were more than four days between counts and/or more than a 24-hour period was sampled. (245/81-03-03; 336/81-02-03)

7. Nonradioactive Effluent Release Rates and Limits

The inspector examined procedures and selected records of measurements of intake and discharge temperatures and pH, and residual chlorine at the discharge. The inspector verified through records review that periodic checks and calibration were performed for 1979 and 1980 as specified in the Environmental Technical Specifications.

No items of noncompliance were identified in this area.

8. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance or deviations. One unresolved item was disclosed during this inspection as described in Detail 6.b.

9. Exit Interview

On February 12 and 13, 1981, the inspector met at MNPS and at the corporate offices of NUSCo, respectively, with the individuals noted in Detail 1. During these meetings, the inspector discussed, with the licensee, the scope and findings of this inspection, including the item of noncompliance and the unresolved item.