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

Region I

Report No. 50-245/78-16

Docket No. 50-245

License No. DPR-21 Priority 4 Category C

Licensee: Northeast Nuclear Energy Company

P. O. Box 270

Hartford, Connecticut 06101

Facility Name: Millstone Point Unit 1

Inspection at: Northeast Utilities Service Corporation & Millstone Nuclear Power Station, Unit 1

Inspection conducted: May 9-11, 1978

Inspectors: E. Thom Shaub — 5.23.78 (date signed)
E. I. Shaub, Safeguards Technician

E. Thom Shaub for — 5.23.78 (date signed)
D. J. Holody, Mathematical Statistician

_____ (date signed)

Approved by: J. H. Joyner — 5/25/78 (date signed)
J. H. Joyner, Chief, Nuclear Material Control Support Section, Safeguards Branch

Inspection Summary:

Inspection on May 9-11, 1978 (Report No. 50-245/78-16)
Areas Inspected: Routine, unannounced inspection of nuclear material control and accounting including: organization and operation; measurement and control; shipping and receiving; storage and internal control; inventory; records and reports; and, management of material control system. The inspection covered the period from January 1, 1978, through March 31, 1978, and involved 16 inspector-hours on site by two NRC inspectors.
Results: No items of noncompliance were identified.

DETAILS

1. Persons Contacted

Northeast Utilities Service Corporation (NUSCO), Berlin, Connecticut

*S. F. Zebzda, SNM Accountability Representative

Millstone Point Unit 1

*E. J. Ferland, Millstone Point Plant Superintendent
*T. G. Piascik, Reactor Engineer Unit 1
R. Herbert, Operations Supervisor

* denotes those present at the exit interview.

2. Facility Organization and Operation

The licensee has established an organizational structure that is responsive to nuclear material control and accounting requirements. The overall custody of SNM and management of the nuclear material control and accountability program is the responsibility of the Site Superintendent.

Sufficient item control areas (ICA) have been established for the physical and administrative control of SNM.

The possession and use of SNM has been confined to the locations and purposes authorized in the license. All operations involving Special Nuclear Material within an ICA are the responsibility of a single individual, the Reactor Engineer.

The licensee is authorized to possess 4600 kilograms of contained Uranium U^{235}. The activity for the period covered by this inspection is shown on Exhibits I and II of this report.

No items of noncompliance were identified.

3. Measurement and Controls

The inspector reviewed the licensee's method of determining exposure data on the core, and the use of this data in the determination of the uranium and uranium-235 depletion and the plutonium production. The inspector also recalculated the depletion and production. This review covered the four Form NRC-742 reporting periods from January 1, 1976, to March 31, 1978.

The licensee has a site process computer used to determine heat rate from which GE determines exposure. This data is then used as input into another licensee computer program for the determination of the uranium and uranium-235 depletion and the plutonium production. The inspector finds these methods acceptable in that the inspector's recalculated values were in excellent agreement with the values reported by the licensee on the Forms NRC-742 for each of the four reporting periods that were reviewed.

No items of noncompliance were identified.

4. Shipping and Receiving

The licensee has established and maintains procedures to assure that all special nuclear material received or shipped is accounted for.

The Reactor Engineer is responsible for fuel accountability, the final inspection of all new assemblies, and the review of associated documentation. The Unit Superintendent or his designee signs the Material Transfer Report (NRC-741) and provides the NUSCO Berlin, Connecticut, office with a photo copy of the NRC-741 for the SNM accountant's records.

A review of all Forms NRC-741 generated for the period covered was conducted to determine proper signature, timely dispatch, and accuracy of the data.

No items of noncompliance were identified.

5. Storage and Internal Control

The licensee has established a system of storage and internal control of SNM which provides for current knowledge of the quantity, identity, and location of all SNM within the facility.

A card file is established for all fuel assemblies, stating the above information. Computer print-outs for each ICA are provided every six months and after fuel outages detailing fuel element location and isotopic composition. Core, new fuel storage, and spent fuel pool schematics are maintained current.

No items of noncompliance were identified.

6. Inventory

The licensee has conducted inventories as required by 10 CFR 70.51(d) and the licensee's SNM Accountability Procedure. The inventory procedures are contained within this procedure. The licensee's last inventory was performed in March 1978.

The inspector's inventory verification consisted of a piece count of the fuel in the spent fuel pool and a comparison with the core schematic for the location of each assembly.

Selected spent fuel bundle's serial numbers were compared to the schematics and the card file for position accuracy. Core map serial numbers were compared to the card file and Internal Material Transfer Forms for position accuracy.

No items of noncompliance were identified.

7. Records and Reports

The licensee's NUSCO, Berlin, Connecticut, office maintains a computerized program which provides the necessary information for material control. The computerized control ledgers are maintained by the SNM Accountability representative who also maintains copies of material transfer documents (Form NRC-741) which are used for preparation of the semiannual material status reports (Form NRC-742).

As noted in Paragraph 4, all material transfer documents covering this period were reviewed. Material Status Reports submitted during this period were also reviewed for proper signature, time submission, and accuracy of data.

No items of noncompliance were identified.

8. Management of Material Control System

The licensee has established a management system that provides for development, implementation, and revision of the nuclear material control procedures.

As required by Reactor Procedure 1001/2001, the last annual audit of the SNM accountability system was performed by the SNM accountant of the Berlin, Connecticut, office in June 1977.

No items of noncompliance were identified.

9. Exit Interview

The inspectors met with the licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on May 11, 1978. The inspectors summarized the purpose and the scope of the inspection and the findings and noted that no items of noncompliance were identified.

EXHIBIT I

Millstone Nuclear Power Station Unit 1
Period: January 1, 1976 - March 31, 1978

Material Balance Summary
Enriched Uranium

RIS: YLG

	Grams Element	Isotope
Beginning Inventory @ 1/1/76	182078418	2495482
Receipts	45395772	1238841
Material to Account For	227474190	3734323
Removals:		
Shipments	26775	603
Burn-Up	1665261	844330
MUF	0	0
Total Removals:	1692036	844933
Ending Inventory @ 3/31/78	225782154	2889390
Material Accounted For	227474190	3734323

EXHIBIT II

Millstone Nuclear Power Station Unit 1
Period: January 1, 1976 - March 31, 1978

Material Balance Summary
Plutonium

RIS: YLG

	Grams	
	Element	Isotope
Beginning Inventory @ 1/1/76	968350	753874
Receipts	0	0
Production	401923	275993
Material to Account For	1370273	1029867
Removals:		
Shipments	75	66
Decay	5842	5842
Total Removals:	5917	5908
Ending Inventory @ 3/31/78	1364356	1023959
Material Accounted For	1370273	1029867