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

IE Inspection Report No: 50-47/76-02

Docket No: 50-47

Licensee: U. S. Army Materials and Mechanics Research Center

License No: R-65

Watertown Arsenal

Priority: --

Watertown, Massachusetts 02172

Category: G

Safeguards
Group: --

Location: Watertown, Massachusetts

Type of Licensee: Research Reactor (Possess Only)

Type of Inspection: Routine, Unannounced

Dates of Inspection: August 26-27, 1976

Dates of Previous Inspection: November 25, 1975 (Operations)

Reporting Inspector: *L. Norrholm*
L. Norrholm, Reactor Inspector

9/10/76
DATE

Accompanying Inspectors: NONE

DATE

DATE

DATE

Other Accompanying Personnel: NONE

DATE

Reviewed By: *D. L. Caphton*

9/10/76
DATE

D. L. Caphton, Chief, Reactor Projects Section No. 2,
Reactor Operations and Nuclear Support Branch

SUMMARY OF FINDINGS

Enforcement Action

None.

Licensee Action on Previously Identified Items of Noncompliance

The following Items of Noncompliance were identified in NRC:I Inspection Report 50-47/75-01 dated December 12, 1975. By response letter dated January 22, 1976, the licensee outlined corrective action for these items.

- A. Infraction relating to failure of Reactor Safeguards Committee to conduct periodic audits. The inspector had no further questions on this item. (Detail, 2b)
- B. Deficiency relating to failure to conduct visual surveillance inspections. The inspector had no further questions on this item. (Detail, 5a)
- C. Deficiency relating to failure to post documents required by 10 CFR 19.11. The inspector had no further questions on this item. (Detail, 6c).

Design Changes

None.

Unusual Occurrences

None.

Other Significant Findings

A. Current Findings

1. Acceptable Items

(These are matters not involving an item of noncompliance or an unresolved item.)

- a. Administration and Organization (Detail, 2)
- b. Operations (Detail, 3)

- c. Containment (Detail, 4)
- d. Surveillance Tests-General (Details, 5a, b, c)
- e. Radiation Protection (Detail, 6)

2. Unresolved Items

(An unresolved item is a matter about which more information is required in order to ascertain whether it is an acceptable item or an item of noncompliance.)

Records to demonstrate that semi-annual checks of the fire alarm system had been satisfactorily performed were not available. (Detail, 5d)

B. Status of Previous Unresolved Items

None.

Management Interview

An exit interview was conducted on August 27, 1976, at Watertown Arsenal with the following persons in attendance:

Mr. J. J. O'Connor, Reactor Facility Supervisor
Mr. L. J. Norrholm, Reactor Inspector, USNRC

Items Discussed

A. Purpose of Inspection

The inspector outlined the scope of the routine unannounced inspection as a review of activities under the "possess only" license, including inspections, surveillance and health physics practices.

B. Other Items

The following specific items were discussed:

1. Previous Items of Noncompliance. (Details, 2b, 5a, 6c)
2. Unresolved item relative to periodic testing of fire alarms. (Detail, 5d)
3. Cathodic protection system surveillance. (Detail, 4)
4. Record Keeping. (Detail, 4b)
5. Independent survey results. (Detail, 6a)

DETAILS

1. Persons Contacted

Mr. J. J. O'Connor, Chief, Technology Planning and Exploitation Division and Reactor Facility Supervisor

Mr. S. Levin, Chief, Radiation and Occupational Safety Branch

Mr. A. J. Colacey, Chief, Facilities Engineering Branch

Mr. A. Kalinaukas, Captain, Security Section

Mr. G. Flanders, Electrical Engineering Technician

2. Administration and Organization

- a. No change in the facility organization has been made in either structure or personnel since the previous inspection.
- b. The Reactor Safeguards Committee membership is as described in the previous inspection report. The same report* identified, as an item of noncompliance, the failure of the Committee to conduct periodic audits as required by Technical Specifications.

The inspector reviewed the minutes of a Reactor Safeguards Committee meeting held on April 1, 1976, which included all members. During this meeting, a tour of the facility was conducted which precipitated several recommendations relative to safety and integrity of the facility. In addition, a schedule was established to hold meetings semi-annually, following periodic radiation surveys.

The inspector had no further questions in this area at this time.

*NRC:I Inspection Report 50-47/75-01 dated December 12, 1975.

3. Operations

a. Logs and Records

To review the conduct of operations since the previous inspection, the inspector examined, on a sampling basis, the following licensee records covering the periods indicated:

- (1) Record of Access to Reactor Facility 11/25/75 - 8/26/76
 - (2) Cathodic Protection Surveillance Record 10/23/75 - 6/4/76
 - (3) Reactor Safeguards Committee Minutes - 4/1/76
 - (4) Fire Prevention Inspection Reports 1/1/75 - 7/31/76
 - (5) Weekly Reactor P. M. Inspection Reports 1/15/76 - 7/28/76
 - (6) Reactor Facility Radiation and Contamination Surveys 1976 - (Selected)
 - (7) Liquid Release Records - 6/28/76
- b. The facility remains in a shutdown "standby" status. Containment entries are made only for periodic surveillance and inspections. No other use has been made of the facility.

No changes to this status are anticipated.

4. Containment

- a. Technical Specification 4.b requires that voltage and current readings of the cathodic protection system be obtained quarterly and that the effectiveness of the system be checked semi-annually using a half-cell.

The above checks are made by the Arsenal Facility Engineering Branch.

The inspector reviewed the results of checks made on the following dates:

10/23/75	SATISFACTORY
12/22/75	SATISFACTORY
2/10/76	GROUND FROZEN
4/6/76	SATISFACTORY
6/4/76	SATISFACTORY

The inspector had no further questions in this area at this time.

- b. Records of the above tests are retained by the Facility Engineering Branch. A licensee representative acknowledged the inspector's suggestion that a report or duplicate record be provided to the Reactor Supervisor to assure a check of compliance with Technical Specifications.

5. Surveillance Tests

- a. Technical Specification 4.a.(1) requires a weekly visual inspection of the heating and ventilation systems. The inspector reviewed the Intelligence and Security Branch (ISB) records of access to the reactor facility in order to verify that individuals with responsibility in this area made entries to the facility at least weekly.

A previous inspection* identified failures to perform the above weekly inspections. No subsequent failures were identified.

The inspector had no further questions in this area.

- b. Technical Specification 4.a.(2) requires a monthly check of all heating and ventilation equipment in accordance with a written checklist.

The inspector's review of checklists identified no problems in this area.

- c. Technical Specification 4.c requires a check of fire fighting equipment be performed at least monthly.

These checks are conducted by the Post Fire Marshal who completes a Fire Prevention Inspection Report.

The inspector reviewed the reports and conducted a tour of the facility to verify fire protection/prevention adequacy.

The inspector had no questions in this area at this time.

- d. Technical Specification 4.d requires that the fire alarm system be operability checked semi-annually.

These checks are performed by a sub-contractor. Due to the absence of the Post Fire Marshal at the time of this inspection, records of fire alarm checks were not available for review.

The inspector's review of the ISB access records indicated that entries to the facility to check fire alarm operability had been made.

*NRC:I Inspection Report 50-47/75-01 dated December 12, 1975.

This item is unresolved (76-02-01) pending review of licensee records of fire alarm checks.

6. Radiation Protection

- a. Technical Specification 3.a requires that a facility radiation survey, including smears, be performed at least quarterly.

The inspector reviewed records of surveys conducted on February 21, April 3, and July 24, 1976.

Licensee results of the July 24, 1976 survey indicated the following:

Airborne activity	Less than MDA
Removable Contamination	Less than 21 pci/100 cm ²
General Area	.01-.02 mrem/hr
Pool Top	2 mrem/hr
Core level, in pool	3.8 Rem/hr

The inspector conducted an independent survey using a calibrated NRC instrument (Eberline E-120, serial 3173), which corroborated the licensee's results (Contamination, general area and pool top values were verified).

The inspector had no further questions in this area at this time.

- b. The licensee has made one recent liquid release from the facility hold tank. The fluid is attributable to condensation collected inside the containment.

The release was made on June 28, 1976, and consisted of 8645.2 gallons of water with the following activity:

Beta	3.92×10^{-7} mci/ml	Total release: 12.8 mci
Alpha	3.6×10^{-8} mci/ml	Total release: 1.18 mci

The inspector had no further questions in this area at this time.

- c. The previous inspection* identified a failure to post documents required by 10 CFR 19.11.

The inspector's review of corrective action identified no further questions in this area.

To preclude physical loss of these items or loss of applicability by revision, the licensee indicated that a notice would be posted directing interested individuals to the location of current copies of the documents.

*NRC:I Inspection Report 50-47/75-01 dated December 12, 1975.