

March 9, 2001

Colonel Robert R. Eng, Director
Armed Forces Radiobiology
Research Institute
National Naval Medical Center
8901 Wisconsin Ave.
Bethesda, MD 20889-5603

SUBJECT: NRC ROUTINE, ANNOUNCED INSPECTION REPORT NO. 50-170/2001-201

Dear Colonel Eng:

This letter refers to the inspection conducted on February 7-9, 2001, at the Armed Forces Radiobiology Research Institute research reactor. The enclosed report presents the results of that inspection.

Areas examined during the inspection are identified in the report. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations of activities in progress.

Based on the results of this inspection, no safety concern or noncompliance to NRC requirements was identified. No response to this letter is required.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at (the Public Electronic Reading Room) <http://www.nrc.gov/NRC/ADAMS/index.html>. Should you have any questions concerning this inspection, please contact Mr. Thomas Dragoun at (610) 337-5373.

Sincerely,

/RA/

Ledyard B. Marsh, Chief
Events Assessment, Generic Communications
and Non-Power Reactors Branch
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Docket No. 50-170
License No. R-84

Enclosure: NRC Inspection Report No.50-170/2001-201

cc w/enclosure: Please see next page

Armed Forces Radiobiology Research

Docket No. 50-170

cc:

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U. S. NUCLEAR REGULATORY COMMISSION

Docket No: 50-170

License No: R-84

Report No: 50-170/2001-201

Licensee: Armed Forces Radiobiology Research Institute

Facility: AFRRRI TRIGA reactor

Location: Bethesda, Maryland

Dates: February 7-9, 2001

Inspector: Thomas F. Dragoun

Approved by: Ledyard B. Marsh, Director
Events Assessment, Generic Communications and
Non-Power Reactors Branch
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

EXECUTIVE SUMMARY

This routine, announced inspection included onsite review of selected aspects of the operations program, organizational structure and functions program, design control program, review and audit program, operator requalification program, surveillance program, procedural control program, safeguards program, security program since the last NRC inspection.

The licensee's programs were acceptably directed toward the protection of public health and safety, and in compliance with NRC requirements.

ORGANIZATIONAL STRUCTURE AND FUNCTIONS

The organizational structure and functions were consistent with Technical Specification requirements.

OPERATIONS

The operations program satisfied Technical Specification requirements.

DESIGN CONTROL

The design change program satisfied NRC requirements.

REVIEW AND AUDIT

The review and audit program satisfied Technical Specification requirements.

OPERATOR REQUALIFICATION

Operator requalification was conducted as required by the Requalification Program.

SURVEILLANCE

The surveillance program satisfied Technical Specification requirements.

PROCEDURES

The procedures program satisfied Technical Specification requirements.

SAFEGUARDS

Special Nuclear Materials were acceptably controlled and inventoried.

SECURITY

The NRC-approved security program was acceptably implemented.

Report Details

Summary of Plant Status

The reactor remained shut down for radiological decay prior to allowing divers to enter the pool to replace the lower support bearings on the shield doors. A new cancer task force consisting of Uniformed Services University of the Health Sciences (USUHS) staff is reviewing therapeutic uses of the reactor.

1. ORGANIZATIONAL STRUCTURE AND FUNCTIONS

a. Scope (IP 69001)

The inspector reviewed selected aspects of:

- organization and staffing
- qualifications
- management responsibilities
- administrative controls

b. Observations and Findings

The organizational structure had not changed since the last inspection. Routine rotation of military reactor operators occurred. Replacement military personnel were in operator training. The Reactor Operations Supervisor was promoted to another department in the building but was available for turnover. His replacement was in operator training and brings knowledge of electronics to the position. The organizational structure and staffing at the facility were as required by TS. Qualifications of the staff met TS requirements. Review of records verified that management responsibilities were administered as required by TS and applicable procedures.

c. Conclusions

The organizational structure and functions were consistent with Technical Specification requirements.

2. OPERATIONS

a. Scope (IP 69001)

The inspector reviewed selected aspects of:

- operational logs and records
- staffing for operations

b. Observations and Findings

The operating logs and records were clear and provided an indication of operational activities. The logs and records indicated that shift staffing including on-call personnel was as required by TS 6.1.3.2. However, console log entries for the fourth person required by TS 6.1.3.2 (a)(4) listed the building access security guard. Interviews with two on-duty guards indicated a good understanding of emergency responsibilities but mixed understanding of additional responsibilities related to reactor operations. A review of annual training material provided to security guards confirmed this emphasis on emergency response, but did not have information on fulfilling the requirements of TS 6.1.3.2(a)(4). The Reactor Facility Director stated that this situation would be corrected. Prior to the inspector leaving the site, the Reactor Facility Director initiated action to provide instructions to the guards via the security organization management chain. Action on this matter will be reviewed during a future inspection (Inspector Follow up Item 50-170/2001-201-01)

Logs and records also showed that operational conditions and parameters were consistent with license and TS requirements.

c. Conclusions

The operations program satisfied Technical Specification requirements.

3. DESIGN CONTROL

a. Scope (IP 69001)

The inspector reviewed selected aspects of:

- facility design changes and records
- facility configuration

b. Observations and Findings

Records and observations showed that changes at the facility were acceptably reviewed in accordance with 10 CFR 50.59 and applicable administrative controls. None of the changes constituted an unreviewed safety question or required a change to the TS.

c. Conclusions

The design change program satisfied NRC requirements.

4. REVIEW AND AUDIT

a. Scope (IP 69001)

The inspector reviewed selected aspects of:

- safety review records
- audit records
- responses to safety reviews and audits
- review and audit personnel qualifications

b. Observations and Findings

Records showed that safety reviews were conducted by the Reactor and Radiation Facility Safety Committee at the required frequency. Topics of these reviews were consistent with TS 6.2.4 requirements to provide guidance, direction, and oversight, and to ensure acceptable use of the reactor. Reviews were thorough and each member submitted a signed ballot to record his agreement or disagreement with each committee decision.

The records showed that audits had been completed in those areas outlined in the TS 6.2.5 and at the required frequency.

The inspector noted that the safety audit conducted for 1999 was very detailed and that the licensee responded and took corrective actions as needed.

The qualifications of safety review and audit personnel and replacement personnel satisfied TS 6.2.1.2 requirements.

c. Conclusions

The review and audit program satisfied Technical Specification requirements.

5. OPERATOR REQUALIFICATION

a. Scope (IP 69001)

The inspector reviewed selected aspects of:

- the Requalification Program
- operator licenses
- operator training records
- operator physical examination records
- operator examination records
- operator active duty status

b. Observations and Findings

The Requalification Program was maintained up to date. Operator licenses were also current. Records showed that operator training, physical examinations, written and operating examinations, and reactivity manipulations were completed as required.

c. Conclusions

Operator requalification was conducted as required by the Requalification Program.

6. SURVEILLANCE

a. Scope (IP 69001)

The inspector reviewed selected aspects of:

- surveillance and calibration procedures,
- surveillance, calibration and test data sheets and records

b. Observations and Findings

Surveillance, test, and calibrations were completed on schedule and in accordance with licensee procedures. All the recorded results were within the TS and procedurally prescribed parameters. The records and logs reviewed were complete and were being maintained as required.

c. Conclusions

The surveillance program satisfied Technical Specification requirements.

7. PROCEDURES

a. Scope (IP 69001)

The inspector reviewed selected aspects of:

- administrative controls
- records for changes and temporary changes

b. Observations and Findings

Administrative controls of changes and temporary changes to procedures, and associated review and approval processes were as required. Training of personnel on procedures and changes was acceptable.

c. Conclusions

The procedures program satisfied Technical Specification requirements.

8. SAFEGUARDS

a. Scope (IP 85102)

The inspector reviewed selected aspects of:

- nuclear material inventory and locations
- accountability records

b. Observations and Findings

Records indicated that the licensee accurately accounted for all nuclear material. The licensee had no receipts and made no shipments during the past two years. All Material Balance Reports (DOE/NRC Form-742 and 742c) submitted by the licensee for this period satisfied the requirements specified in 10 CFR 70.53.

All SNM was stored and used in designated areas.

Physical inventories were conducted annually as required by 10 CFR 70.51(d). The americium beryllium reactor startup source was accounted for as byproduct material.

c. Conclusions

Special Nuclear Materials were acceptably controlled and inventoried.

9. SECURITY

a. Scope (IP 81431)

The inspector reviewed:

- records and reports
- key control
- detection aids
- physical barriers
- provisions for contingencies

b. Observations and Findings

The reactor staff periodically tests the security system as required. The inspector tested and verified selected intrusion alarms. Facility keys were properly controlled.

The licensee's physical protection program was found to conform to NRC requirements and the licensee's implementing procedures.

c. Conclusions

The NRC-approved security program was acceptably implemented.

5. EXIT INTERVIEW

The inspector presented the inspection results to members of licensee management at the conclusion of the inspection on February 9, 2001. The licensee acknowledged the findings presented.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

R. Eng, COL, MS, USA, Director, AFRRRI
J. Malinoski, CAPT, MSC, USN, Head, Radiation Sources Department
D. McKown, Assistant RSO
S. Miller, Reactor Facility Director
J. Nguyen, Senior Reactor Operator
S. Osborne, SFC, USA, Senior Reactor Operator
H. Spence, Reactor Operations Supervisor

INSPECTION PROCEDURES USED

IP 69001 CLASS II NON-POWER REACTORS
IP 81431 FIXED SITE PROTECTION OF SPECIAL NUCLEAR MATERIAL OF LOW STRATEGIC SIGNIFICANCE
IP 85102 MATERIAL CONTROL AND ACCOUNTING - REACTORS

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-170/2001-201-01 IFI Ensure that security guards are aware of reactor operations responsibilities.

Closed

None

LIST OF ACRONYMS USED

CFR Code of Federal Regulations
IFI Inspector Follow up Item
IP Inspection Procedure
NRC Nuclear Regulatory Commission
SNM Special Nuclear Material
TS Technical Specifications
USUHS Uniformed Services University of the Health Sciences