The information on this page is considered to be appropriate for public disclosure pursuant to 10 CFR 2.790.

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
[redacted]
Region V

Report No. 50-243/79-02

Docket No. 50-243 License No. R-51 Safeguards Group II

Licensee: Oregon State University
Corvallis, Oregon 97331

Facility Name: Oregon State University Reactor Facility

Inspection at: Corvallis, Oregon

Inspection Conducted: October 16 and 17, 1979

Date of Last Physical Security Inspection Visit: May 14 and 15, 1979

Type of Inspection: Unannounced Physical Security

Inspectors: W. F. Mortensen, Physical Security Inspector — 11/8/79 Date Signed

D. W. Schaefer, Physical Security Inspector — 11/8/79 Date Signed

Date Signed

Approved by: L. R. Norderhaug, Chief, Safeguards Branch — 11/9/79 Date Signed

Inspection Summary:

Areas Inspected: Security Plan; Protection of SNM, Security Organization; Access Control; Alarm Systems; Keys, Locks and Combinations; Communications; Surveillance; Procedures; Security Program Review; and Protection Against Radiological Sabotage.

The inspection involved 15 inspector hours by two NRC inspectors. The inspection was conducted during normal duty hours.

Results: The licensee was found to be in compliance with NRC requirements within the eleven areas examined during the inspection.

[redacted]

[redacted]

DETAILS

1. Key Persons Contacted

*Dr. C. H. Wang, Reactor Administrator
*Arthur J. Johnson, Health Physicist
Robin Keen, Reactor Administration Secretary
Wayne Ross, Director of Campus Security
Derek Riley, Campus Locksmith

The inspectors also talked with members of the reactor facility clerical staff and members of the campus security organization.

*Denotes those attending exit interview.

2. Exit Interview

The inspectors met with licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on October 17, 1979. The inspectors summarized the scope and findings of the inspection. The licensee made no comments pertaining to the inspection.

3. MC 81405B Security Plan. No items of noncompliance were noted. The security plan and five revisions have been submitted to NRC, and were approved by the Division of Operating Reactors, NRR, on July 28, 1977, and constitute the approved security plan. No changes to the approved security plan have been submitted to NRC since the last inspection of the plan.

4. MC 81410B - Protection of SNM

No items of noncompliance were noted. The licensee has in their possession [redacted] The material is located as follows:

a. There was approximately [redacted]

b. There was [redacted]

The licensee has complied with their approved security plan in implementing procedures and installing hardware to protect the SNM [redacted]

The licensee has incorporated security checks into the checklists used daily by the reactor operators in the start up and shut down of the Triga Reactor. (Attachment #1)

[redacted]

5. MC 81415B - Security Organization

No items of noncompliance were noted. The inspectors determined that the licensee's security organization is as described in their physical security plan. Through interviews and review of procedures, it was determined that

The security force for the laboratory which was visited by the inspectors. operates on three shifts to provide coverage These officers are individually armed In their routine duties, conducts daily, periodic, random patrols

6. MC 81420B - Access Control

No items of noncompliance were noted. The results of the inspection were attained through:

a. A review of the licensee's procedures used to control access to the Nuclear Reactor Facility.

b. Observation of the ingress and egress of the staff, employees, students, and visitors to the facility during the period of the inspection.

c. Observation by the inspectors that access controls have been implemented as described in the security plan and procedures to control personnel and vehicle access to the essential equipment, security areas, and the facility.

d. Interviews with clerical staff and review of procedures that visitors are identified, authorized for access, and escorted at the facility.

e. A review of the visitor's register.

7. MC 81425B - Alarm Systems

No items of noncompliance were noted. The inspectors determined through interviews and observation that intrusion alarm devices are installed, maintained, tested and operated in accordance with their physical security plan.

During a visit to during this inspection, the inspectors confirmed by observation and interview the testing of the alarm system prior to activating the system for the evening. The inspectors also verified that the alarm Written procedures are available for

8. MC 81430B - Keys, Locks and Combinations

No items of noncompliance were identified. The procedures for keys, locks and combinations were reviewed and are in conformance with the physical security plan. The annual physical inventory of all security keys was conducted September 14, 1979. A random check of the locking hardware on the doors for proper operation was accomplished. All locks functioned as designed.

9. MC 81435B - Communications

No items of noncompliance were identified. The Nuclear reactor facility utilizes for communication on and off the campus which is the primary means of contact with The reactor console operator to the reactor and the control room.

The operates its own radio network on a 24-hour basis with radio equipped automobiles and portable radios carried by the individual security officers.

10. MC 81445B - Procedures

No items of noncompliance were identified. Through interviews and review of records, it was determined that the reactor facility had procedures regarding unauthorized intrusions, security violations, bomb threats, and acts of civil disorder.

11. MC 81450B - Security Program Review

No items of noncompliance were identified. The last change, Amendment #4, to the security plan was submitted to NRR by letter dated November 30, 1978; however, it was determined through interview with the Security Officer that review of the plan is a continual process with notes maintained in the Security Log which was reviewed. The licensee was presently in the process of evaluating their plan in view of the upgrading of security requirements for non-power reactors per 10CFR 73.41.

The licensee reviewed the physical security plan on June 19, 1979. A copy of the report of the review is enclosed as attachment #2.

12. MC 81445 B - Protection Against Radiological Sabotage

No items of noncompliance were identified. Protection against sabotage is of concern to the licensee and is primarily effected by the security consciousness of the reactor facility personnel and adherence to established procedures and policies.

13. Attachments

1. OSU Triga Startup and Shutdown checklists.

2. Annual review of Triga Physical Security Plan.

Radiation Center

Oregon State University

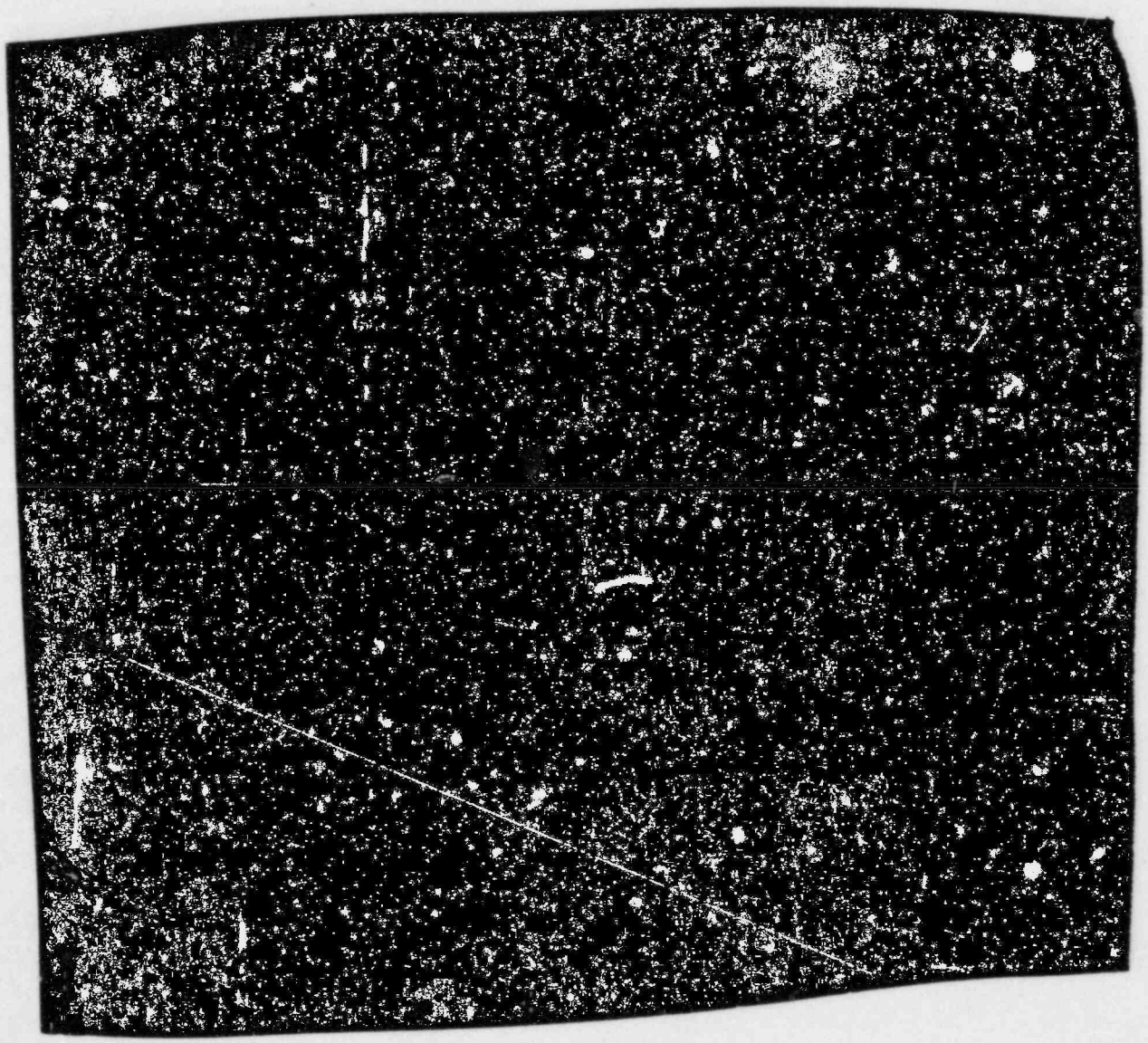
Corvallis, Oregon 97331 (503) 754-2241

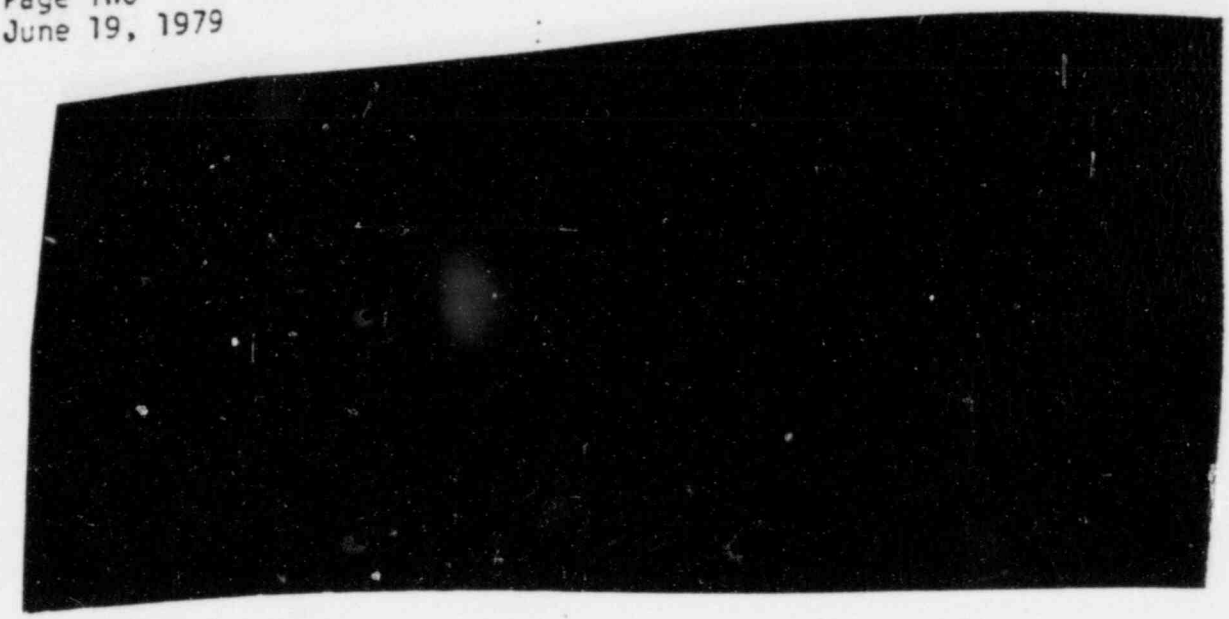
DATE: June 19, 1979

TO: C. H. Wang

FROM: J. C. Ringle
A. G. Johnson
T. V. Anderson

RE: Annual Review of TRIGA Physical Security Plan





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OSU TRIGA REACTOR STARTUP CHECKLIST NO. _____ DATE _____

DAY _____

ALL SECTIONS REVIEWED BY _____ CHECKED BY _____

CONTROL ROOM

AREA RADIATION MONITOR (ARM) SET POINTS

1		Ch 1 ____ mr/hr Ch 2 ____ mr/hr Ch 3 ____ mr/hr Ch 4 ____ mr/hr
2		Ch 5 ____ r/hr Ch 6 ____ mr/hr Ch 7 ____ mr/hr

STACK MONITOR

1		Pump Switch *(on)*..... _____ AM
2		Filter Feed Switch *(operate)*
3		Console Day Switch *(operate)*
4		Recorder Pens *(on)*
5		Recorder Charts *(on)*
6		Scaler NIM BIN Power Switch *(on)*
7		Air Particulate Activity..... _____ CPM*
8		Gaseous Activity..... _____ CPM*
9		Ratemeter Calibration Check..... _____ CPM
10		Calibration Check.....PART _____ CPM GAS _____ CPM
11		Source Check.....PART _____ CPM GAS _____ CPM
12		Alarm Set Point.....PART _____ CPM GAS _____ CPM
13		Ratemeter Background.....GAS _____ CPM
14		Air Particulate Activity @ 2 hr..... _____ CPM

WATER MONITORS

1		Radioactive Waste Holdup Tank Level..... _____
2		Audible Alarm Switch for Holdup Tank *(operate)*
3		Reactor Bulk Water Temperature and Set Point... _____ °C _____ °C
4		Demin. Inlet Conductivity..... _____ µMho/cm
5		Demin. Outlet Conductivity..... _____ µMho/cm
6		Water Activity..... _____ ma

ANNUNCIATOR PANEL

1		Annunciator Light Test
2		Annunciators OK that are illuminated at time of startup _____

_____

VENTILATION FANS

1		Reactor Supply Fan Light *on*
2		Reactor Exhaust Fan Light *on*
3		Argon Vent Fan Light *on*

GENERAL

1		Cam Console Recorder..... _____
2		Reactor Status Board up-to-date... _____
3		Motion Detector *on* -- TV's *on*
4		Weather Recorder *on*
5		FETC Checks: #1 ____ °C #2 ____ °C #3 ____ °C

*Pump off (or shortly after pump on)

REACTOR TOP

GENERAL

1 _____ Reactor Tank Water Level

2 _____ Visual Inspection of Rod Position, Rod Drive Mechanisms, and Reactor Components

3 _____ Lazy Susan Loading Chute..... _____

CONSTANT AIR MONITOR (CAM)

1 _____ Pump *on* _____ AM

2 _____ Air Particulate Activity..... _____ GCPM*

3 _____ Air Flow (5.0 CFM)..... _____ CFM

4 _____ Set Points..... _____ CALIB. _____ ALARM

5 _____ Read at Reactor Startup..... _____ CPM _____ AM

SECOND LEVEL

1 _____ Bulkshield Tank Level

2 _____ Transient Air Supply Valve *(open)*

3 _____ Blow Down Air Strainer

4 _____ Transient Rod Air Pressure _____ PSIG

5 _____ DV1 and DV16 Valved for Reactor Tank Circulation

MECHANICAL EQUIPMENT ROOM

MAKE-UP WATER SYSTEM

1 _____ Valves MV1, MV2, and MV3 *(open)*

GENERAL

1 _____ Reactor Supply Fan *(on)*

2 _____ Reactor Supply Damper *(open)*

3 _____ Rabbit System Supply Air Damper *(open)*

4 _____ Check Rabbit System Hose Connections

HEAT EXCHANGER ROOM

COOLING WATER SYSTEM

1 _____ Demineralizer Water Pump..... _____

2 _____ Demineralizer Flow Rate (10 GPM, Max)..... _____ GPM

3 _____ Demineralizer Water Filter Inlet Pressure..... _____ PSIG

4 _____ Demineralizer Water Filter Outlet Pressure..... _____ PSIG

5 _____ Demineralizer Water Filter Differential Pressure... _____ PSIG

6 _____ Primary Water Pump..... _____

7 _____ Secondary Water System Ready for Operation

8 _____ Demineralizer Bypass..... _____

GENERATOR

1 _____ Running Hours..... _____ HOURS

2 _____ Inverter Lights *on*..LOAD _____ LINE _____ CHARGE _____

3 _____ Inverter Readings: LOAD VOLTAGE... _____ VAC
BATTERY VOLTAGE _____ VAC
CHARGING AMPS.. _____ AMPSDC

OSU TRIGA REACTOR SHUTDOWN CHECKLIST LIST NO. _____

DAY _____ DATE _____

REVIEWED BY _____ CHECKED BY _____

CONTROL ROOM

1		ROD CARRIER READINGS: TRANS_____ SAFETY_____ SHIM_____ REG_____
2		REACTOR BULK WATER TEMPERATURE....._____°C
3		DEMIN. INLET CONDUCTIVITY....._____µMho/cm
4		DEMIN. OUTLET CONDUCTIVITY....._____µMho/cm
5		WATER ACTIVITY....._____ma
6		A.R.M. READING CHECKED AGAINST STARTUP READINGS
7		RADIOACTIVE WASTE HOLDUP TANK LEVEL.. _____lights
8		CAM CONSOLE RECORDER *off*
9		STACK MONITOR PUMP SWITCH *off*
10		STACK MONITOR FILTER FEED SWITCH *off*
11		STACK MONITOR RECORDER PENS *off*
12		STACK MONITOR RECORDERS CHART DRIVES *off*
13		CONSOLE NIGHT SWITCH
14		RECORD SCALER READING AND TURN POWER *off*
15		ARGON EXHAUST FAN *off*
16		WEATHER RECORDER *off*
17		REACTOR CONTROL PANEL KEYS *removed*
18		POOL LIGHTS *out*
19		SECONDARY WATER PUMP AND BOTH COOLING TOWER FANS *off*
20		REACTOR CONTROL PANEL POWER *off*
21		LAZY SUSAN CONTENT: IR#_____
22		OTHER EXPERIMENTS: IR#_____
23		TV CAMERA *off* (1st FLOOR)

REACTOR BAY

1		REACTOR TANK WATER LEVEL
2		VISUAL INSPECTION OF ROD POSITION, ROD DRIVE MECHANISMS, AND REACTOR COMPONENTS
3		LAZY SUSAN CHUTE, CENTRAL THIMBLE, AND TOP COVERS *locked*
4		C.A.M. *off* AND FILTER *changed*
5		VISUAL INSPECTION OF REACTOR AND FLOOR AREA

EQUIPMENT ROOMS

1		DEMINERALIZER WATER PUMP..._____
2		PRIMARY WATER PUMP....._____
3		MV3 *closed*
4		MAKE-UP LINE *drained*....._____

SECURITY ITEMS

1		KEY LOG CHECK MADE *(keys returned to cabinet & key box locked)*
2		SECURITY CHECK MADE
3		MOTION DETECTOR *on*
4		CHECK INTRUSION ALARM WITH SECURITY HEADQUARTERS: _____TIME

Docket File

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION V
1990 N. CALIFORNIA BOULEVARD
SUITE 202, WALNUT CREEK PLAZA
WALNUT CREEK, CALIFORNIA 94596

December 12, 1979

Docket Nos. 50-70
50-73

General Electric Company
Vallecitos Nuclear Center
Pleasanton, California 94566

Attention: R. W. Darmitzel, Manager
Irradiation Processing Operation

Gentlemen:

Subject: NRC Inspection of GETR and NTR

This letter refers to the inspection of your activities authorized under NRC License Nos. TR-1 and R-33 conducted by Mr. W. P. Mortensen of this office on November 7-9, 1979. It also refers to the discussion of our inspection findings held by the inspector with Mr. R. Moschner and members of his staff on November 9, 1979.

The inspection included examination of activities related to physical protection against industrial sabotage and against theft of special nuclear material in accordance with applicable requirements of Title 10, Code of Federal Regulations, Part 73, "Physical Protection of Plants and Materials," your security plan, and license conditions pertaining to physical protection as described in the enclosed inspection report. Within these areas, the inspection consisted of selective examinations of procedures and records, interviews with facility personnel and observations by the inspector.

Within the scope of this inspection, no items of noncompliance were observed.

During this inspection, it was found that one of your activities appeared to deviate from Regulatory Guide 5.12, "General Use of Locks in the Protection and Control of Facilities and Special Nuclear Materials," as set forth in the Notice of Deviation, enclosed herewith as Appendix A. Please submit to this office within 20 days of your receipt of this notice a written reply, and include your comments concerning this item, a description of any steps that have been or will be taken to prevent recurrence, and the date all corrective actions or preventive measures were or will be completed.

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In accordance with Section 2.790(d) of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, documentation of findings of your control and accounting procedures for safeguarding special nuclear materials and your facility security procedures are exempt from disclosure; therefore, Appendix A, the inspection report, and your response to the item listed in Appendix A will not be placed in the Public Document Room and will receive limited distribution.

Should you have any questions concerning this letter, we will be glad to discuss them with you.

Sincerely,

L. R. Norderhaug, Chief
Safeguards Branch

Enclosures:
1. Appendix A - Notice of Deviation
2. Inspection Report
   Nos. 50-70/79-03 (IE-V-351)
   50-73/79-02