

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION

Docket No: 50-83

License No: R-56

Report No: 50-83/98-202

Licensee: University of Florida

Facility: University of Florida Test Reactor

Location: University of Florida, Gainesville, FL

Dates: October 6-9, 1998

Inspector: Stephen W. Holmes, Reactor Inspector

Approved by: Seymour H. Weiss, Director
Non-Power Reactors and Decommissioning
Project Directorate

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EXECUTIVE SUMMARY

This routine, announced inspection consisted of the review of selected conditions and records since the last inspection, verification of corrective actions previously committed to by the licensee, and related discussions with licensee personnel. The inspection was conducted in accordance with the guidance of Nuclear Regulatory Commission (NRC) Inspection Manual.

The reactor health physics (HP) program, to include inspections, surveys, records, and reports was being maintained as required by the license and applicable regulations. All HP staff positions were acceptably filled in accordance with Technical Specification (TS) requirements. No safety concerns were noted. The security plan was being acceptably implemented.

Report Details

Summary of Plant Status

During the inspection the reactor was shut down with the core disassembled for inspection and maintenance. Fuel was stored in shielded underfloor storage vaults.

IV. Plant Support

R1 Radiological Protection and Chemistry Controls(RP&C)

R1.1 Radiation Protection Postings

a. Scope (Inspection Procedure 69001)

Radiological signs and postings were observed during accompanied tours and routine radiation surveys were reviewed.

b. Observations and Findings

Radiation and radioactive material postings were acceptable for the hazards involved. The facility and radioactive material storage were secured and properly posted. No unmarked or unsecured radioactive materials were evident. NRC Forms-3 were posted in appropriate areas in the facility as were current notices to workers required by 10 CFR Part 19.

c. Conclusions

Radiological postings satisfied applicable requirements.

R1.2 Effluent Monitoring and Release

a. Scope (Inspection Procedure 69001)

The inspector reviewed annual reports, release records, counting and analyses results, and interviewed staff.

b. Observations and Findings

Gaseous releases were calculated as outlined in the Final Safety Analysis Report (FSAR) and license, adequately documented, and well within 10 CFR Part 20 Appendix B concentrations and TS limits. The Environmental Protection Agency COMPLY code was also used to verify that gaseous releases met the annual dose constraint of 20.1101(d). Liquid releases were infrequent and largely consisted of non-radioactive water from sinks within the engineering building. Discharges to the sewer were approved by the Radiation Control Officer (RCO) after analyses

determined the release would meet regulatory release limits. Releases were general a small fraction of these limits.

c. Conclusions

Effluent monitoring satisfied license and regulatory requirements

R1.3 Radiation Protection Surveys

a. Scope (Inspection Procedure 69001)

The inspector reviewed HP and reactor surveillances/survey procedures, survey records, and interviewed staff.

b. Observations and Findings

Weekly, quarterly, and other periodic contamination or radiation surveys were performed by reactor and university staffs as required by TS and licensee procedures. Results were evaluated and corrective actions taken and documented when readings/results exceeded set action levels.

Survey results verified that contamination in the facility was infrequent, and both identified contamination and radiation levels were well below NRC and facility limits.

During the current operations on the core, additional radiation, contamination, and airborne surveys were performed. Review by the inspector confirmed that those were reasonable under the circumstances to evaluate the extent of radiation levels, contamination, airborne concentrations, and determine the potential radiological hazards.

c. Conclusions

Surveys were performed and documented in a manner sufficient to evaluate, as required by 10 CFR Part 20, the radiation hazards that might exist. TS and licensee requirements were met.

R1.4 Personnel Dosimetry

a. Scope (Inspection Procedure 69001)

The inspector reviewed dosimetry records, licensee procedures, observed issuance of dosimetry, and interviewed staff.

b. Observations and Findings

The licensee used a National Voluntary Laboratory Accreditation Program - accredited vendor to process personnel thermoluminescent dosimetry. The RCO maintained and reviewed both the exposure records of the reactor and campus staffs. An examination of records for the past year indicated that all exposures were within NRC limits, with most showing no exposure above background.

c. Conclusions

Doses were in conformance with licensee limits and 10 CFR Part 20. The dosimetry program was conducted in accordance with 10 CFR 20.1501, 20.1502, and licensee procedures.

R2 Status of RP&C Facilities and Equipment

R2.1 Calibration

a. Scope (Inspection Procedure 69001)

The inspector reviewed calibration, periodic checks, quality control, and test source certification records for radiation monitoring and counting lab instruments and interviewed HP staff.

b. Observations and Findings

The calibration of the portable survey meters, with a few exceptions, was performed in-house by the licensee. Items not calibrated in-house were done using certified vendors. Calibration frequency met TS and licensee directives. Calibration procedures were consistent with American National Standards Institute (ANSI) or the manufacturers' recommendations. Calibration and check sources were traceable to the National Institutes of Standards and Technology. Radiation monitoring and counting lab instruments were also calibrated as recommended by ANSI or the manufacturer. All instruments checked were in calibration. Calibration records were in order.

The licensee had recently upgraded their multi-channel analyzer. At the time of the inspection the unit was inoperative due to an error in the vendors' software. New software was being sent by the vendor to correct the difficulty.

c. Conclusions

Survey, radiation monitoring and counting lab equipment was being maintained and calibrated according to industry or equipment manufacturer standards. Calibration satisfied TS requirements.

R2.2 YEAR 2000

a. Scope (Inspection Procedure 69001)

The inspector reviewed Radiation Control Committee (RCC) and Reactor Safety Review Subcommittee (RSRS) minutes, interviewed the RCO, reactor director, and staff.

b. Observations and Findings

The reactor is an older facility using an analog console and control systems. The reactor director stated that they had performed a preliminary evaluation on the system and had determined that there was no direct concern as to the year 2000 (Y2K) problem. The RCO stated that they had contacted the manufactures of their counting equipment to ensure that no Y2K problems would occur.

In discussion with the inspector the staffs were made aware that they were expected to determine any Y2K conflict with the reactor and support systems and correct them.

c. Conclusions

The facility was active in following the Y2K concerns.

R3 **RP&C Procedures and Documentation**

a. Scope (Inspection Procedure 69001)

The inspector reviewed Radiation Protection Program (RPP) documentation and various HP procedures and interviewed HP and reactor staffs.

b. Observations and Findings

The formal radiation protection program (RPP) is provided by the university staff. While the reactor staff performs some reoccurring surveys and limited job coverage, Radiation Control technicians were under the supervision of the RCO.

HP procedures were available for those tasks and items required by the TS, license, and facility directives. Changes were reviewed and approved as required. The RCO had performed the annual audit/reviews of the RPP as required.

c. Conclusions

The RPP satisfied the requirements of 10 CFR 20.1101 and was reviewed annually as required. Oversight and review was provided by the reactor and university staffs as required by TS and licensee procedures. HP procedures met TS.

R5 Staff Training and Qualification in RP&C

a. Scope (Inspection Procedure 69001)

The inspector reviewed training records, campus training records, training program content, licensee procedures and interviewed staff.

b. Observations and Findings

Training was provided to visitors or workers by individual lectures and/or formal classes with exams. Specific training is given based on the workers access needs. Review of the training records of a new HP staff member confirmed that the required "short course" training had been provided.

Reoccurring HP training to the reactor staff was acceptable provided by the requalification training program.

c. Conclusions

Radiation worker training met license requirements, conformed to licensee procedures, and satisfied 10 CFR 19.12 for instruction to workers.

R6. RP&C Organization and Administration

a. Scope (Inspection Procedure 69001)

The inspector reviewed RPP documentation, the FSAR and the TS and interviewed staff.

b. Observations and Findings

The university radiation safety staff consisted of the RCO, the assistant RCO, and a number of HP technicians. Their training and experience, met the qualifications required by TS. The university staff provided independent surveys, on-call support surveys, required safety oversight surveys and specialized training to the reactor staff. No lapse in coordination between the HP and reactor staffs was noted.

c. Conclusions

HP staffing met regulatory requirements and licensee commitments.

R7 Quality Assurance in RP&C Activities

a. Inspection Scope (Inspection Procedure 69001)

The inspector reviewed RCC's and RSRS's minutes and licensee procedures.

b. Observations and Findings

The RSRS provides both direct reactor operations and radiation safety oversight to the facility. A status report is provided to the campus RCC at their periodic meetings for information and review.

The committees' meeting schedules and membership satisfied licensee requirements. Examination of records confirmed that the committees were reviewing HP operation as required. The committees provided appropriate guidance, direction and oversight to the radiation safety program.

In discussion with the inspector the chairman of the RCC stated that the reports and communication from the RSRS was sufficient to ensure adequate radiological oversight to the reactor operations.

The RCO was a member of the RCC and the RSRS.

c. Conclusions

Oversight of the radiation safety program by the RCC and RSRS satisfied licensee requirements.

R8 Radioactive Material Transfer/Disposal

a. Inspection Scope (Inspection Procedure 69001)

The inspector reviewed transfer checklists, shipping and disposal records, and interviewed staff

b. Observations and Findings

Production of radioactive waste at the facility was minimal. The small amount produced was held until a direct shipment to an authorized waste repository could be made. All transfers were recorded on the appropriate forms. Transfer documentation was kept on file as required and was acceptable.

Radioactive materials produced by the reactor for use by the university staff or outside organizations were tracked as required. The reactor or HP staff properly surveyed, and released materials to on-campus investigators, and to entities outside the university. Transfer documentation was kept on file as required. Transfer documentation was acceptable.

c. Conclusions

Radioactive material was generally transferred and disposed of in accordance with licensee procedures, TS, 10 CFR Part 49 and 10 CFR Part 20 requirements.

S1 Conduct of Security and Safeguards Activities

a. Inspection Scope (Inspection Procedures 81401 and 69001)

The inspector reviewed the NRC-approved security plan, toured the facility, reviewed security logs, reports, and security related documents, and interviewed reactor and security staffs.

b. Observations and Findings

The reactor control room and the adjoining laboratory areas were secured with only those persons authorized by the plan having keys to the individual areas. University police provided security as required by the plan. The inspector verified that security checks were performed, tracked, and corrective actions taken when required. Communication between the reactor staff and the University Police was ongoing and kept each informed of current activities. Reactor test/verification of the security systems were performed as required. Related key control activities also satisfied plan requirements.

c. Conclusions

Conduct of security activities satisfied the NRC approved plan.

S2 Status of Security Facilities, Equipment, and, Procedures.

a. Inspection Scope (Inspection Procedures 81401 and 69001)

The inspector reviewed the NRC approved security plan, toured the facility, reviewed security logs, reports, and security related documents, and interviewed reactor and security staffs.

b. Observations and Findings

The inspector verified that the security system was as described in the NRC approved plan. The system provided detection and assessment of unauthorized access or removal of special nuclear material from the facility. The inspector verified that the alarms, devices, and procedures were adequate to allow the university police to detect and respond to unauthorized activities. Response rosters and emergency phone lists were current and posted.

c. Conclusions

Security facilities, equipment, and, procedures satisfied plan requirements.

S3 Security and Safeguards Procedures and Documentation

a. Inspection Scope (Inspection Procedures 81401 and 69001)

The inspector reviewed the NRC approved security plan, toured the facility, reviewed security logs, reports, and security related documents, and interviewed reactor and security staffs

b. Observations and Findings

The security plan was properly secured against release to unauthorized individuals. The plan had been reviewed and properly updated as required. Changes to the plan had been forwarded to the NRC within the required time frame. Although not required, the implementing procedures were incorporated within the plan itself. The licensee acknowledged that they could be removed from the plan and filed with their other procedures.

The inspector verified that the records required by the security plan to be retained on file were being maintained.

c. Conclusions

Security procedure documentation satisfied plan requirements.

S5 Security and Safeguards Staff Training and Qualification

a. Inspection Scope (Inspection Procedures 81401 and 69001)

The inspector reviewed the NRC approved security plan, toured the facility, reviewed security logs, reports, training records and security related documents, and interviewed reactor and security staffs

b. Observations and Findings

Security training was provided to the reactor staff as part of the requalification program. Additional training was provided to the staffs and university police as required by the plan.

c. Conclusions

Security procedure documentation satisfied plan requirements.

V. Management Meetings

X1 **Exit Meeting Summary**

The inspector presented the inspection results to members of licensee management at the conclusion of the inspection on October 9, 1998. The licensee acknowledged the findings presented.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

*G. Macdonald	Reactor Trainee
*D. Munro	Radiation Safety Officer
J. Parker	Radiological Technician
*J. Powers	Acting Reactor Manager
*R. Salazar	Reactor Trainee
*J. Tulenko	Chairman Nuclear and Radiological Engineering Department
*W. Vernetson	Director of Nuclear Facilities
J. Wolf	Senior Reactor Operator

* Attended out briefing October 1998.

INSPECTION PROCEDURE (IP) USED

IP 69001: CLASS II NON-POWER REACTORS

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

none

Closed

none

PARTIAL LIST OF ACRONYMS USED

FSAR	Final Safety Analysis Report
HP	Health Physics
NRC	Nuclear Regulatory Commission
RCO	Radiation Control Officer
RP&C	Radiological Protection and Chemistry Controls
RPP	Radiation Protection Program
RSRS	Reactor Safety Review Subcommittee
TS	Technical Specifications
Y2K	Year 2000