August 10, 2007

Mr. Glenn C. Winters, Director
Reactor Critical Facility
NES Building 1-10
Rensselaer Polytechnic Institute
110 8th Street
Troy, NY 12180-3590

SUBJECT: NRC ROUTINE INSPECTION REPORT NO. 50-225/2007-201

Dear Mr. Winters:

This letter refers to the inspection conducted on July 31 through August 2, 2007, of the Rensselaer Polytechnic Institute's L. David Walthousen Laboratory. The inspection included a review of activities authorized for your facility. 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 the facility and activities in progress. Based on the results of this inspection, no safety concerns or noncompliance with the U.S. Nuclear Regulatory Commission (NRC) requirements were identified. No response to this letter is required.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html.

Should you have any questions concerning this inspection, please contact Marcus H. Voth at 301-415-1210.

Sincerely,

/RA/
Johnny H. Eads, Jr., Branch Chief
Research and Test Reactors Branch B
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Docket No. 50-225
License No. CX-22

Enclosures: NRC Inspection Report No. 50-225/2007-201
cc w/encl: Please see next page

Rensselaer Polytechnic Institute Docket No. 50-225

cc:

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Schenectady, NY 12305

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Radiation Section Chief
New York State Department of Environmental Conservation
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Test, Research and Training Reactor Newsletter
Director of Nuclear Facilities
University of Florida
202 Nuclear Science Center
Gainesville, FL 32611-8300

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

Docket No: 50-225

License No: CX-22

Report No: 50-225/2007-201

Licensee: Rensselaer Polytechnic Institute

Facility: L. David Walthousen Laboratory

Location: Schenectady, NY

Dates: July 31 through August 2, 2007

Inspector: Marcus H. Voth

Approved by: Johnny H. Eads, Jr., Branch Chief
Research and Test Reactors Branch B
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

EXECUTIVE SUMMARY

Rensselaer Polytechnic Institute
Reactor Critical Facility
NRC Inspection Report No. 50-225/2007-201

The primary focus of this routine, announced inspection was the on-site review of selected aspects and activities since the last NRC inspection of the licensee's non-power reactor safety programs including: organization and staffing, operations logs and records, procedures, operator requalification, surveillance and limiting conditions for operations, experiments, health physics program, design changes, committees, audits and reviews, emergency preparedness, maintenance logs and records, fuel handling, and transportation. The inspector also performed a follow-up on previous open items.

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

Organization and Staffing

- The organization and staffing were consistent with Technical Specification requirements.

Operations Logs and Records

- Operational activities were consistent with applicable Technical Specification and procedural requirements but data logging and analysis practices required improvement.

Procedures

- Procedural control and implementation satisfied Technical Specification requirements.

Operator Requalification

- The Reactor Operator Requalification Program was implemented satisfactorily, the program was up-to-date, and plan requirements were met.

- Medical examination forms failed to document the fact that standard ANSI/ANS 15.4 was being used.

Surveillance and Limiting Conditions for Operations

- The licensee's program for completing surveillance inspections and Limiting Conditions for Operation confirmations satisfied Technical Specification and licensee administrative controls.

Experiments

- The approval and control of experiments met Technical Specification and applicable regulatory requirements.

Health Physics Program

- The inspector determined that the health physics and environmental monitoring program was being conducted in a manner that assured compliance with Technical Specifications and regulatory limits and As Low As Reasonably Achievable objectives.

Design Changes

- Based on the records reviewed, the inspector determined that the licensee's design change program was being implemented as required.

Committees, Audits and Reviews

- Nuclear Safety Review Board review and audit functions required by the Technical Specifications were being acceptably implemented but documentation will be reviewed in subsequent inspections.

Emergency Preparedness

- The emergency preparedness program was conducted in accordance with the requirements stipulated in the Emergency Plan.

Maintenance Logs and Records

- Maintenance logs, records, and performance satisfied Technical Specification and procedure requirements.

Fuel Handling

- Fuel handling activities were completed and documented as required by Technical Specification and facility procedures.

Transportation

- The licensee did not make any radioactive material shipments under the reactor license since the previous inspection.

Follow-up on Previous Open Items

- All open items identified in previous inspection reports were closed.

REPORT DETAILS

Summary of Plant Status

The licensee's Class II research reactor, licensed to operate at a maximum steady-state thermal power of 100 Watts (100 W), continued to be operated in support of operator training, surveillance, and minor utilization. During the inspection the reactor was shut down, reactor fuel was in the storage vault, and control rods were removed to allow preparatory work for a new experiment. Major cleanup and painting of the reactor high bay area were planned before returning to operation.

1. Organization and Staffing

a. Inspection Scope (Inspection Procedure (IP) 69001)

The inspector reviewed the following regarding the licensee's organization and staffing to ensure that the requirements of Section 6.1 of the Technical Specifications (TS), Amendment No. 11, dated September 7, 2004, were being met:

- Reactor Critical Facility (RCF) Logbook, April 27, 2005 to present
- Rensselaer Polytechnic Institute (RPI) organizational structure and staffing
- RCF Procedure: Facility Administration, Version 2.1, September 2006
- [Annual] Operations Reports for the RPI RCF, dated March 22, 2006 and March 1, 2007

b. Observations and Findings

The RPI RCF staff consisted of a part time Facility Director (FD), a part time Operations Supervisor (OS), and student operators. The FD is a recent retiree from the nearby Knolls Atomic Power Laboratory (KAPL). The OS is a recent RPI graduate who is currently employed full time at KAPL. Both the FD and the OS held NRC Senior Reactor Operator (SRO) licenses. The licensee generally maintains three or four licensed student SROs but at the time of the inspection one was being examined, another had just graduated, and others were preparing for examinations. This level of staffing proved adequate to support the amount of time the reactor was operated.

The RCF staff's qualifications satisfied the training and experience requirements stipulated in the TS. The reactor logbook confirmed that shift staffing met the minimum requirements for duty personnel. Review of records verified that management responsibilities were administered as required by TS and applicable procedures.

The 2005 and 2006 annual reports summarized the required information and were issued at the frequency specified in TS Section 6.5.1. No special reports were submitted pursuant to TS Section 6.5.2.

c. Conclusions

The organization and staffing were consistent with TS requirements.

2. Operations Logs and Records

a. Inspection Scope (IP 69001)

The inspector reviewed the following to ensure that selected records were maintained as required by TS Section 6.6:

- RCF Procedure: Pre-Startup Procedure, Rev. 6.1, September 2006
- RCF Procedure: Pre-Startup Checklist, Version 2.2, September 2006
- RCF Procedure: Reactor Secured Checklist, Version 2.1, September 2006
- RCF Procedure: Facility Administration, Version 2.1, September 2006
- RCF Logbook, April 27, 2005 to present
- Completed Pre-Startup Checklist forms, dated from January 2006 to present
- Completed Reactor Secured Checklist forms, dated from January 2006 to present

b. Observations and Findings

Reactor operations were carried out following written procedures and TS requirements. The inspector verified that reactor operating characteristics were logged in the operating log in accordance with TS and procedural requirements. A review of the logs and records indicated that TS operational limits had not been exceeded. The inspector determined that reactor operations were carried out following written procedures.

In reviewing the startup checklists and associated logbook entries, however, the inspector found information documentation and analysis practices in need of attention. As part of the checkout procedure for the startup channels the anode voltage was raised and lowered 100 V about the normal operating level of 1300 VDC to verify operation on the plateau for that device. Likewise the bias voltage was adjusted up and down 1 V from the nominal 3.5 V setting to verify proper response of the pulse height discriminator.

On at least two occasions between January 2006 and the inspection, Startup Channel A showed unexpected behavior. At no time did the inspector find a logbook entry declaring it to be inoperable. Discussion with operators indicated that investigations may have occurred but were generally not entered in the logbook. Specifically, the practice of checking the discriminator response was questioned and whether a swing of 0.1 V would be more appropriate than 1.0 V. Also, the logbook documented an investigation on January 2, 2007 which resulted in an adjustment of the operating anode voltage from 1300 to 1500 VDC for Channel A. However, the pre-printed checklist continued to show 1300 V and

1.0V. While on occasion the pre-printed numbers were corrected by pen, in most cases they were not, leaving data sets that were inconsistent. The logbook did not indicate that operators compared the startup data they were recording to data from previous startups to verify consistency or investigate differences. This matter will be treated as an Inspector Follow-up Item (IFI) to improve logging and analysis of information, specifically the pre-start checkout of startup channels, demonstrating a questioning attitude and attention to detail (IFI 50-225/2007-201-01).

c. Conclusions

Operational activities were consistent with applicable TS and procedural requirements but data logging and analysis practices required improvement.

3. Procedures

a. Inspection Scope (IP 69001)

The inspector audited the following to ensure that the requirements of TS Section 6.2 were being met concerning written procedures:

- list of current versions of approved procedures and written procedures
- RCF Procedure: Operating Procedures, Version 2.1, September 2006
- RCF Procedure: Facility Administration, Version 2.1, September 2006
- RCF Procedure: Pre-Startup Procedure, Version 6.1, September 2006
- RCF Procedure: RCF Power Calibration Surveillance Test, Version 2.1, September 2006

b. Observations and Findings

The inspector determined that written procedures were available for the activities delineated in TS Section 6.2 and were approved by the Nuclear Safety Review Board (NSRB) before they were implemented. The clarity and detail in the procedures were acceptable. Temporary changes to the procedures that do not change their original intent could be authorized by the OS and were required to be subsequently reviewed by the NSRB. RCF staff members conducted TS activities in accordance with applicable procedures.

In response to the previous inspection the licensee had created a list of the current procedures, indicting the currently approved version and the current draft version. See Section 14 of this report for additional details.

c. Conclusions

Procedural control and implementation satisfied TS requirements.

4. Operator Requalification

a. Inspection Scope (IP 69001)

The inspector reviewed the following to verify compliance with the requirements in 10 CFR Part 55:

- status of operator licenses
- operator training and examination records
- operator physical examination records
- Reactor Operator Requalification Program (RORP), undated
- Schedule of Periodic Surveillance Requirements

b. Observations and Findings

The licensee's requalification program was described in the program submitted to the NRC. The inspector reviewed the requalification records of the currently licensed RCF operators. The OS was responsible for implementation of the RORP and administered all tests. The inspector verified that all of the operators' licenses were current. Records showed that operators were given written examinations biennially and annual operations tests as required. RORP deadlines for the individual operators were being tracked along with other surveillance requirements on the Schedule of Periodic Surveillance Requirements form for the period of January 2007 to May 2008.

The inspector verified that physical examinations of the operators were conducted biennially as required. While all medical examinations were performed on a timely basis, the inspector noted that the examining physician failed to indicate the basis for making a determination of adequate physical fitness to serve as a reactor operator. The licensee indicated that Section 7, Medical Certification and Monitoring of Certified Personnel, of standard ANSI/ANS 15.4, Selection and Training of Personnel for Research Reactors, was discussed with the physician while contracting for his services. The licensee agreed to work with the physician such that he checks the ANSI/ANS 15.4 – 1988 (Non-Power) box on NRC Form 396 in the future. This will be tracked as an inspector follow-up item (IFI 50-225/2007-201-02).

c. Conclusions

The Reactor Operator Requalification Program was implemented satisfactorily, the program was up-to-date, and plan requirements were met. Medical examination forms failed to document the fact that standard ANSI/ANS 15.4 was being used.

5. Surveillance and Limiting Conditions for Operation

a. Inspection Scope (IP 69001)

The inspector reviewed the following to ensure that the surveillance requirements and limiting conditions for operations (LCO) specified in TS Section 4.0 were being met:

- surveillance, calibration, and test data sheets and records
- Schedule of Periodic Surveillance Requirements
- RCF Logbook, April 27, 2005 to present
- RCF Procedure: Operating Procedures, Version 2.1, September 2006
- RCF Procedure: Facility Administration, Version 2.1, September 2006
- RCF Procedure: Pre-Startup Procedure, Version 6.1, September 2006
- RCF Procedure: RCF Power Calibration Surveillance Test, Version 2.1, September 2006

b. Observations and Findings

The inspector noted that selected daily, monthly, semiannual, and annual checks, tests, and/or calibrations for TS-required surveillance and LCO verifications were completed as required. The LCO verifications were completed on schedule and in accordance with licensee procedures. All of the recorded results were within the TS and procedurally prescribed parameters. The records and logs were noted to be complete and were being maintained as required. The licensee tracked all of the completed surveillances on a spreadsheet which was reviewed quarterly by the Radiation Safety Officer (RSO) to provide effective oversight of facility operations. The procedures for each of the surveillances provided clear and concise direction and control of reactor operational tests and surveillances.

c. Conclusions

The licensee's program for completing surveillance inspections and LCO confirmations satisfied TS and licensee administrative controls.

6. Experiments

a. Inspection Scope (IP 69001)

The inspector reviewed selected aspects of the following to verify compliance with TS Section 2.3:

- experimental program requirements
- experimental administrative controls and precautions
- RCF Logbook, April 27, 2005 to present
- inspection of components for zirconium reflector experiment

b. Observations and Findings

There were no new experiments approved during the interval since the last inspection. Most of the utilization consisted of classroom training and performing previously approved experiments.

At the time of the inspection, preparatory work was in progress for a new experiment that had been discussed with the NSRB but not yet been reviewed and approved. The reactor was shut down with fuel removed from the reactor core and stored in the vault. The new experiment will involve reactivity measurements with large slabs of zirconium on opposite sides of the core and also small pieces of zirconium in a tube on the vertical center-line of the reactor. A removable section in the center of the upper grid plate, approximately four inches square, had been fabricated to allow insertion of a tube filled with long, narrow zirconium specimens. The objective of the experiment is to benchmark neutronic properties of zirconium, an important measurement for which this unique critical facility is well-suited.

c. Conclusions

The approval and control of experiments met TS and applicable regulatory requirements.

7. Health Physics Program

a. Inspection Scope (IP 69001)

The inspector reviewed the following to verify compliance with 10 CFR Part 19 and Part 20 and TS Sections 3.3 and 5.5:

- [Annual] Operations Reports for the RPI RCF, dated March 22, 2006 and March 1, 2007
- Air Emission Compliance for 2005, by P. Caracappa, dated April 20, 2006
- Air Emission Compliance for 2006, by P. Caracappa, dated March 30, 2007
- Calibration files for radiation detectors housed at the RCF, 2002 to present
- ICN Dosimetry Quarterly Exposure Reports, quarters 2, 3 and 4 of 2006 and quarter 1 of 2007
- [Quarterly] Radiation Safety Audit Checklists, Radioactive Materials Lab for the RCF, dated January 17, 2006 to May 9, 2007
- [Quarterly] RCF Checks, dated January 17, 2006 to May 9, 2007
- [Quarterly] Sealed Source Inventory and Survey, dated January 17, 2006 to May 9, 2007
- Radiation Safety Regulations and Procedures, Rev. 8.1, September 2003

b. Observations and Findings

The RSO applied the radiation protection program uniformly to the two licensed activities on campus, the New York State issued broad scope license and the NRC issued reactor license. The licensee's program for radiological health and safety related to the reactor license was evaluated during this inspection.

The inspector reviewed quarterly radiation and contamination surveys of the licensee's controlled areas as well as radiation wipe surveys completed by the RSO. The surveys had been completed in accordance with the applicable procedure. The results were documented on the appropriate forms, evaluated as required, and corrective actions taken when readings or results exceeded set action levels. The survey also included a checklist of items to be verified such as the adequacy of warning signs and postings in the area. The number and location of survey points were adequate to characterize the radiological conditions. Surveys by the RSO were conducted in accordance with the appropriate procedure and logged on the appropriate forms.

The inspector reviewed the postings at the entrances to various controlled areas, including the Reactor Bay and radioactive material storage areas. The postings were acceptable and indicated the radiation and contamination hazards present. The facility's radioactive material storage areas were noted to be properly posted. No unmarked radioactive material was found in the facility. A copy of current notices to workers required by 10 CFR Part 19 was posted at the RCF entrance.

The inspector reviewed the personnel dosimetry records and verified that the appropriate staff members were monitored and that doses received were well within NRC limits and within licensee action levels. For visitors to the facility, a whole body film badge dosimeter was issued to each individual except in the case of groups where a single dosimeter was representative of the groups' radiation exposure. The licensee investigated any dosimetry readings that indicated an exposure above background levels. Records indicated that no abnormal readings were obtained.

The calibration of portable survey meters and friskers was typically completed by a company that specializes in calibrations while fixed radiation detectors were calibrated at the facility using a portable source. The calibration records of portable survey meters and fixed radiation detectors in use at the facility were reviewed. Calibration frequency met the requirements established in the applicable procedures while records were being maintained as required. The inspector observed that proper precautions were always used to maintain doses for calibrations as low as reasonably achievable (ALARA).

The licensee ensured compliance with NRC regulations for environmental monitoring by ensuring that all doses at the site boundary were less than the dose limits specified in 10 CFR 20.1301. Several Thermal Luminescent Dosimeters (TLDs) were strategically placed in several locations around the perimeter of the RCF. Records for 2006 indicated that doses were well below the applicable requirements and typically measured at background levels. In addition to the measurements at the site boundary, radiation surveys of the reactor facility showed that doses were less then the regulatory limit for environmental exposure rates.

Records showed that projected gaseous emissions from the reactor are generally minimal. The licensee used a calculation provided in the Safety

Evaluation Report from the RCF license renewal in 1983 to project a maximum annual release from the RCF and reduced the value by the ratio of actual versus projected usage of the reactor. The licensee used this value as input to the Environmental Protection Agency computational code COMPLY, which showed that the licensee is in compliance with 10 CFR 20.1301(a)(1). The licensee occasionally released primary coolant, after monitoring, directly into the Mohawk River on a limited basis. The inspector reviewed measurements of the most recent release which indicated that there was no measurable amount of radiation in the water released to the river.

c. Conclusions

The inspector determined that the health physics and environmental monitoring program was being conducted in a manner that assured compliance with TS and regulatory limits and ALARA objectives.

8. Design Changes

a. Inspection Scope (IP 69001)

In order to verify that any modifications to the facility were consistent with 10 CFR 50.59, the inspector reviewed selected aspects of:

- facility design changes and records for the past two years
- RCF Logbook, April 27, 2005 to present
- [Annual] Operations Reports for the RPI RCF, dated March 22, 2006 and March 1, 2007
- RCF Procedures

b. Observations and Findings

Through review of applicable records and interviews with licensee personnel, the inspector determined that no significant changes had been completed at the facility since the last inspection. The inspector verified that administrative controls were in place that required the appropriate review and approval of all changes prior to implementation and that previous changes had been performed in accordance with regulatory requirements.

At the time of the inspection the licensee was preparing for a change that would allow measurement of the reflector worth of zirconium. This is discussed in Section 6, Experiments, of this report. The NSRB had been briefed on this experiment as indicated in past meeting minutes. However, the full 10 CFR 50.59 analysis and safety evaluation of the change had not been prepared and submitted for NSRB consideration.

c. Conclusions

Based on the records reviewed, the inspector determined that the licensee's design change program was being implemented as required.

9. Committees, Audits, and Reviews

a. Inspection Scope (IP 69001)

The inspector reviewed the following to ensure that the audits and reviews stipulated in TS Section 6.1.5 and 10 CFR 50.59 were being completed by the NSRB:

- [Quarterly] RCF Checks, dated January 17, 2006 to May 9, 2007
- RPI NSRB Minutes of Meeting April 20, 2006
- RPI NSRB Minutes of Meeting November 10, 2006
- RPI NSRB Minutes of Meeting May 9, 2007

b. Observations and Findings

The TS for the RPI RCF required a NSRB to review and audit reactor operations and advise the FD. The TSs proceeded to briefly stipulate the NSRB composition, a brief set of rules, and descriptions of the review and audit functions. The review function included new tests and experiments of a significant difference, reportable occurrences and TS changes. The annual audit function included reactor operations and records, procedures and equipment performance. NSRB minutes indicated that meetings were held at the required frequency, were well attended, and consisted of substantial exchange of ideas regarding reactor safety. The inspector noted that while the SRO performed quarterly reviews at the RCF, the minutes did not indicate that the NSRB had significant involvement in or oversight of the required audit function, an observation that was also made in the previous inspection.

The inspector also investigated the process for appointing members to the NSRB, the appointed term of service, and the level in the licensee's organization to which the board reported. These details were neither part of the TSs nor other written implementation instructions that the licensee presented. However, the licensee reported that a charter for the NSRB was being developed specifically for this purpose. The inspector noted that documentation of the implementation of TS requirements of the NSRB would be revisited in a subsequent inspection and until then, tracked as an inspector follow-up item (IFI 50-225/2007-201-03).

c. Conclusions

NSRB review and audit functions required by the TSs were being acceptably implemented but documentation will be reviewed in subsequent inspections.

10. Emergency Preparedness

a. Scope (IP 69001)

The inspector reviewed selected aspects of:

- Emergency Plan (E-Plan) for the RPI Critical Experiment Facility, dated August 2004
- RCF Procedure: Emergency Procedures, Version 3.0, May 2006
- RCF Procedure: Emergency Procedures, Table 2. Emergency Notification List, Version 3.0, November 13, 2006
- RCF Logbook, April 27, 2005 to present

b. Observations and Findings

The inspector reviewed the E-Plan in use at the RCF and verified that the E-Plan was being properly implemented at the facility. The RCF logbook indicated that on November 13, 2006, the annual evacuation drill was performed, the emergency scenario being described as a broken sight glass in the control room resulting in water draining into the room. The reactor was secured and appropriate contacts made in accordance with the E-Plan and implementing procedures.

In the previous inspection an IFI was raised concerning the letter of agreement with the Ellis Hospital. This IFI was closed out as discussed in Section 14 of this report.

c. Conclusions

The emergency preparedness program was conducted in accordance with the requirements stipulated in the Emergency Plan.

11. Maintenance Logs and Records

a. Inspection Scope (IP 69001)

To verify that the licensee was complying with the applicable regulations, the inspector reviewed selected aspects of:

- RCF Logbook, April 27, 2005 to present
- [Annual] Operations Reports for the RPI RCF, dated March 22, 2006 and March 1, 2007

b. Observations and Findings

The licensee did not maintain a separate maintenance log but rather used the reactor logbook which he considered more appropriate for the small size of the facility. The inspector reviewed the maintenance records related to 2006 and

2007 scheduled, preventive, and corrective maintenance activities. This review indicated that all maintenance activities were controlled and documented in the RCF logbook consistent with the requirements in 10 CFR 50.59.

All maintenance of reactor systems was reviewed by the FD or OS. Implementation of changes to equipment, systems, tests or experiments are generally done by any of the staff at the facility. After all maintenance items were completed, system operational checks were performed to ensure that the affected systems functioned before returning them to service. No missing or malfunctioning equipment was noted.

Instrumentation and mechanical equipment, and the facility in general, appeared to be well maintained. Through relatively modest grant funding the licensee had been able to replace a major portion of the electronic equipment, electrical switchgear, wiring, pumps and valves.

c. Conclusions

Maintenance logs, records, and performance satisfied TS and procedure requirements.

12. Fuel Handling

a. Inspection Scope (IP 69001)

To verify that TS and procedural requirements were being met, the inspector reviewed selected aspects of:

- RCF Procedure: Operating Procedures, Section G. Fuel Handling, Version 2.1, September 2006
- RCF Logbook, April 27, 2005 to present

b. Observations and Findings

The inspector reviewed the above procedure for fuel handling and found that it met the requirements of TS 6.2.2, Procedures, and TS 5.6, Fuel Storage and Transfer. Since the RCF core experienced negligible fission energy production, depletion of the uranium was not dependent on fuel element location in the reactor. Fuel movement was recorded in the reactor logbook by simply stating the total number of fuel elements moved between the reactor tank and the fuel vault. At the time of the inspection all fuel elements had been moved into the vault; the reactor logbook correctly documented the move.

c. Conclusions

Fuel handling activities were completed and documented as required by TS and facility procedures.

13. Transportation

a. Inspection Scope (IP 86740)

To verify that the licensee was complying with applicable requirements, the inspector discussed the shipping requirements with licensee personnel.

b. Observations and Findings

The licensee stated that they generally transfer radioactive material from the reactor license to the broad scope campus license for use by experimenters on campus or for processing as waste along with other campus radioactive waste. As a result, shipments under the reactor license are unusual and infrequent. The licensee reported that there had been no radioactive material shipments under the reactor license for at least the past two years.

c. Conclusions

The licensee did not make any radioactive material shipments under the reactor license since the previous inspection.

14. Follow-up on Previous Open Items

a. Inspection Scope (IP 92701)

The inspector reviewed the actions taken by the licensee following identification of IFIs during the previous inspection.

b. Observations and Findings

(1) IFI 50-225/2006-201-01 - Follow-up to verify that the licensee creates a procedure tracking system in order to ensure that all staff are using the most current and up-to-date procedures

NRC Inspection Report No. 50-225/2006-201, dated April 4, 2006, discussed the background and details of this item. In the previous inspection the inspector found two seemingly identical revisions of a procedure, raising questions about the effective revision of each procedure in use.

During the current inspection the inspector observed a list of procedures prominently posted where reactor operators could verify both the most current approved version and the latest draft version of each procedure. The inspector considered this to fully address the concern raised in the previous inspection.

(2) IFI 50-225/2006-201-02 - Follow-up to verify that the licensee arranges a meeting with the Ellis Hospital officials to discuss emergency procedures

NRC Inspection Report No. 50-225/2006-201, dated April 4, 2006, discussed the background and details of this item. During that inspection, the letter of agreement between Ellis Hospital and RPI could not be located. However, the parties involved assumed that one existed and stated that in an emergency they would respond accordingly.

During the current inspection, the licensee reported that representatives of RPI and the hospital had met. The inspector reviewed a newly executed letter of agreement dated December 8, 2006, on Ellis Hospital letterhead signed by P. Segovis, Ellis Hospital Director of Materials, C. Powell, RPI Vice President of Human Resources, and P. Collopy, RPI Director of Environmental Health and Safety. The letter states that the hospital will receive and treat victims from the RCF using their existing emergency plan and procedures.

c. Conclusions

All open items identified in the previous inspection report were closed.

15. Exit Meeting

The inspector presented the inspection results to licensee management at the conclusion of the inspection on August 2, 2007. The licensee acknowledged the preliminary findings presented.

PARTIAL LIST OF PERSONS CONTACTED

P. Caracappa, Radiation Safety Officer
P. Collopy, Director, Environmental Health and Safety
M. Del-Vecchio, Sgt., Department of Public Safety
M. Podowski, Moderator, NSRB
T. Trumbull, Operations Supervisor
G. Winters, Facility Director

INSPECTION PROCEDURES USED

IP 69001	CLASS II NON-POWER REACTORS
IP 86740	TRANSPORTATION
IP 92701	FOLLOW-UP

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-225/2007-201-01 IFI	Improve logging and analysis of information, specifically the pre-start checkout of startup channels, demonstrating a questioning attitude and attention to detail
50-225/2007-201-02 IFI	Indicate the standard used as the basis for certifying medical fitness as a reactor operator on NRC Form 396
50-225/2007-201-03 IFI	Review documentation of how TS requirements of the NSRB are being implemented

Closed

50-225/2006-201-01 IFI	Follow-up to verify that the licensee creates a procedure tracking system in order to ensure that all staff are using the most current and up-to-date procedures
50-225/2006-201-02 IFI	Follow-up to verify that the licensee arranges a meeting with the Ellis Hospital officials to discuss emergency procedures

Discussed

None

LIST OF ACRONYMS USED

ADAMS	Agencywide Document Access and Management System
ALARA	As Low As Reasonably Achievable
ANSI/ANS	American National Standards Institute/American Nuclear Society

CFR	Code of Federal Regulations
E-Plan	Emergency Plan
FD	Facility Director
IFI	Inspector Follow-up Item
IP	Inspection Procedure
KAPL	Knolls Atomic Power Laboratory
LCO	Limiting Condition for Operation
NSRB	Nuclear Safety Review Board
NRC	Nuclear Regulatory Commission
OS	Operations Supervision
RCF	Reactor Critical Facility
Rev.	Revision
RPI	Rensselaer Polytechnic Institute
RSO	Radiation Safety Officer
RORP	Reactor Operator Requalification Program
SRO	Senior Reactor Operator
TLD	Thermal Luminescent Dosimeter
TS	Technical Specification
V	Volt
VDC	Volt Direct Current
W	Watt