January 17, 2012

Dr. Michael Gottfredson
Executive Vice Chancellor
University of California - Irvine
Irvine, CA 92697-2025

SUBJECT: UNIVERSITY OF CALIFORNIA – IRVINE, NRC ROUTINE INSPECTION REPORT NO. 50-326/2011-201 AND NOTICE OF VIOLATION

Dear Dr. Gottfredson:

On December 12-14, 2011, the U.S. Nuclear Regulatory Commission (NRC, the Commission) conducted an inspection at the University of California - Irvine Nuclear Reactor Facility (Inspection Report No. 50-326/2011-201). The enclosed report presents the results of that inspection.

This inspection was an examination of activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. 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, the NRC has determined that two Severity Level IV violations of NRC requirements have occurred. The violations were evaluated in accordance with the NRC Enforcement Policy included on the NRC's Web site at www.nrc.gov; select **What We Do, Enforcement,** then **Enforcement Policy**. The violations are cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding them are described in detail in the subject inspection report. The violations are being cited in the Notice because they constitute a failure to meet regulatory requirements that have more than minor safety significance, the licensee failed to identify the violations, and they were repetitive.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. The NRC will use your response in part, to determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) Section 2.390 "Public inspections, exemptions, requests for withholding," a copy of this letter 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 (Agencywide Document Access and Management System (ADAMS)). ADAMS is accessible from the NRC Web site at (the Public Electronic Reading Room) http://www.nrc.gov/reading-rm/adams.html.

Should you have any questions concerning this inspection, please contact Greg Schoenebeck at 301-415-6345.

Sincerely,

/RA/

Robert A. Nelson, Deputy Director
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Docket No. 50-326
License No. R-116

Enclosures:
1. Notice of Violation
2. NRC Inspection Report No. 50-326/2011-201

cc: w/encls: See next page

cc w/enclosures:

Dr. Donald Blake, Chair
Department of Chemistry
University of California, Irvine
Irvine, CA 92697-2025

Dr. George E. Miller
Department of Chemistry
University of California, Irvine
Irvine, CA 92697-2025

Test, Research and Training
Reactor Newsletter
202 Nuclear Sciences Center
University of Florida
Gainesville, FL 32611

Should you have any questions concerning this inspection, please contact Greg Schoenebeck at 301-415-6345.

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OFFICE	PROB:RI	PRTB:LA	PROB:BC	DPR:DD
NAME	GSchoenebeck	GLappert, CAR for	JEads	RNelson
DATE	1/11/2012	1/11/2012	1/11/2012	1/17/2012

OFFICIAL RECORD COPY

NOTICE OF VIOLATION

University of California-Irvine
Nuclear Reactor Facility

Docket No. 50-326
License No. R-116

During a U.S. Nuclear Regulatory Commission (NRC) inspection conducted December 12-14, 2011, two violations of NRC requirements were identified. In accordance with the NRC Enforcement Policy, the violations are listed below:

1. Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.54(k) states that an operator or senior operator licensed pursuant to part 55 of this chapter shall be present at the controls at all times during the operation of the facility.

   The NRC-approved Facility License states in part:

   > The license shall be deemed to contain and be subject to the conditions specified in Part 20, Section 30.34 of Part 30, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70 of the Commissioner's regulations; is subject to all applicable provisions of the Act and Rules, regulations and orders of the Commission now or hereafter in effect.

   Contrary to the above requirements, an operator or senior operator licensed pursuant to 10 CFR part 55 was not present at the controls at all times during the operation of the facility. On December 12, 2011, the inspectors observed that the reactor operator left the controls while the reactor was not secured. Once, while the reactor key was in the control panel during start-up, and another time while the reactor was in operation.

   This has been determined to be Severity Level IV violation (Supplement IV).

2. Regulation 10 CFR 71.5(a) requires that a licensee who transports licensed material outside of the site of usage, as specified in the NRC license, or where transport is on public highways, or who delivers licensed material to a carrier for transport, comply with the applicable requirements of the regulations appropriate to the mode of transport of the Department of Transportation (DOT) in 49 CFR Parts 107, 171-180, and 390-397. Specifically, 10 CFR 71.5(a)(1)(vi) identifies the need for hazardous material employee training. Regulation 49 CFR Part 172: subpart H identifies the need for recurrent hazardous material training every three years.

   Contrary to the above requirements, on several occasions beginning September 25, 2010 and throughout 2011, an NRC licensee "shipper" shipped licensed material outside the site of usage without receiving recurrent hazardous material training every three years. It was determined during the course of the inspection that the NRC licensee performing the shipping had exceeded the recurrent training requirement for shipping hazardous material. The expiration date for training was on September 25, 2010. This has been determined to be a Severity Level IV violation (Supplement VIII).

Pursuant to the provisions of 10 CFR 2.201, the University of California-Irvine is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555-0001 with a copy to the responsible inspector, within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation" and should include: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken to avoid further violations, and (4) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an order or Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001.

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of the NRC's Agencywide Documents Access and Management System (ADAMS), to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. ADAMS is accessible from the NRC Web site at (the Public Electronic Reading Room) http://www.nrc.gov/reading-rm/adams.html. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information). If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days.

Dated this 17th day of January 2012

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

Docket No:	50-326
License No:	R-116
Report No:	50-326/2011-201
Licensee:	The Regents of the University of California
Facility:	University of California - Irvine Nuclear Reactor Facility
Location:	Department of Chemistry University of California, Irvine Irvine, CA
Dates:	December 12-14, 2011
Inspectors:	Greg Schoenebeck Taylor Lichatz, Trainee Osvaldo Font, Trainee
Approved by:	Johnny H. Eads, Branch Chief Research and Test Reactors Oversight Branch Division of Policy and Rulemaking Office of Nuclear Reactor Regulation

EXECUTIVE SUMMARY

University of California - Irvine
Nuclear Reactor Facility
NRC Inspection Report No. 50-326/2011-201

The primary focus of this routine, announced inspection was the onsite review of selected aspects of the University of California - Irvine Class II research reactor facility safety programs including: procedures; experiments; radiation protection program; effluent and environmental monitoring; design changes; committees, audits and reviews; transportation; and follow-up on previously identified items since the last NRC inspection of these areas. The licensee's programs were acceptably directed toward the protection of public health and safety, and generally in compliance with NRC requirements.

Procedures

- Facility procedural review, revision, and implementation generally satisfied Technical Specification requirements. However, one Severity Level IV Violation was identified.

Experiments

- Experiments were being reviewed and performed in accordance with Technical Specification requirements and the licensee's written procedures.

Radiation Protection Program

- Surveys were being completed and documented acceptably to permit evaluation of the radiation hazards present.

- Postings and Notices met the regulatory requirements specified in 10 CFR Parts 19 and 20.

- Personnel dosimetry was being worn as required, and doses were well within the licensee's procedural action levels and NRC's regulatory limits.

- The Radiation Protection Program being implemented by the licensee satisfied regulatory requirements.

Effluent and Environmental Monitoring

- Effluent monitoring satisfied license and regulatory requirements and airborne releases were within the specified regulatory and Technical Specification limits.

Design Changes

- Inspectors reviewed three design changes in accordance with 10 CFR Part 50.59.

- The changes were reviewed and approved by the Reactor Operations Committee or the Radiation Safety Committee as required.

Committees, Audits and Reviews Functions

- The Reactor Operations Committee provided the oversight required by the Technical Specifications.

- Annual audits of facility programs were being completed as required.

Transportation

- The licensee's program for transportation of radioactive material including preparing packages for shipment and completing shipping papers was generally acceptable. However, one Severity Level IV Violation was identified.

REPORT DETAILS

Summary of Facility Status

The University of California - Irvine (UCI) Nuclear Reactor Facility (NRF) 250 kilowatt TRIGA Mark-I research reactor continued to be operated in support of graduate and undergraduate research and laboratory instruction. During the inspection, the reactor operated at full power to support the inspection effort.

1. Procedures

a. Inspection Scope (IP 69001)

The inspectors reviewed selected aspects of the following to verify that the licensee was complying with the requirements of Technical Specifications (TS) Sections 6.2, 6.3, and 6.7:

- Records of procedure changes
- Observation of procedure implementation
- Administrative controls as outlined in UCI NRF Standard Operating Procedure (SOP) No. 1, "Introduction," Rev 3.2, approval dated January 2010
- UCI NRF SOP Section 4.1, "Reactor Operations"
- UCI NRF SOP Section 4.2, "Reactor Log"
- UCI NRF SOP Section 4.3, "Reactor Power Calibration"
- UCI NRF SOP Section 4.4, "Reactor Control Logs and Drive Surveillances"
- UCI NRF SOP No. 5, "Radiological Safety Program," Rev 3.2, approval dated December 2009
- Technical Specifications (TS) for the UC Irvine TRIGA Mark I Nuclear Reactor, Revised 1998

b. Observations and Findings

The inspectors reviewed the licensee's written procedures and revisions to procedures. The SOP manual was organized to address the full scope of activities conducted at the UCI NRF.

On December 12, 2011, a reactor startup and shutdown was performed to observe adherence to procedures. During the startup, it was observed that the Senior Reactor Operator (SRO) left the console to go to the reactor bay area in an attempt to see why the rods were not responding as expected. It was later determined that the console needed to be reset. Once the reactor was at power, the SRO left the console a second time to show the inspectors the reactor pool in the adjacent reactor bay while at power. The Facility license specifies that 10 CFR Section 50.54 applies in which "an operator or senior operator licensed pursuant to part 55 of this chapter shall be present at the controls at all times during the operation of this facility." This has been identified as a Severity Level IV violation of more than minor safety significance (VIO 50-326/2011-201-01). The startup and shutdown was generally performed in accordance with procedures and protocol.

The inspectors noted that the procedures are being updated to reflect the new TS as part of the relicensing effort. As a result, Inspector Follow-Up Item (IFI) 50-326/2009-

201-01 will be kept open to follow-up on licensee commitment for addressing and updating the procedures consistent with the license renewal.

c. Conclusions

The inspectors determined that appropriate procedures were in effect, generally being followed, and were generally being updated as necessary. However, one Severity Level IV Violation was identified.

2. Experiments

a. Inspection Scope (IP 69001)

The inspectors reviewed the following to verify compliance with TS 3.8, Limitations on Experiments:

- TS for the UC Irvine TRIGA Mark I Nuclear Reactor, Revised 1998
- UCI NRF SOP Section 2, Experiments, Rev. 3, Approved 2000
- Experiment Performance File, November 16, 2005 to November 6, 2007
- Select UCI Irradiation Requests for 2010 and 2011
- UCI Nuclear Reactor Facility Experiment Review Report- January 2010

b. Observations and Findings

The UCI NRF has two experimental procedures approved for a broad class of applications. The mission of the UCI NRF is primarily to provide irradiation services to researchers and educational laboratory instruction; new experiments are uncommon. A new approved experimental procedure was created specifically for classroom applications. The goal is to separate laboratory activities from classroom activities. The experimental procedures are typically reviewed by the Reactor Operations Committee (ROC).

No experiments were performed during the inspection because of the campus-wide winter break. Instead of direct observation, Dr. Miller gave the inspectors a tour to demonstrate how experiments are performed in order to verify compliance with the TS and procedures. Additionally, from a random sampling of forms for experiments performed since the previous inspection, the inspectors found that experiments were generally being reviewed and performed in accordance with TS requirements and the licensee's written procedures.

c. Conclusions

Experiments were generally being reviewed and performed in accordance with Technical Specification requirements and the licensee's written procedures.

3. Radiation Protection Program

a. Inspection Scope (IP 69001)

The inspectors reviewed the following to verify compliance with 10 CFR Parts 19 and 20 and TS Sections 3.3 and 4.5 requirements:

- Radiation and contamination surveys completed by reactor staff personnel
- Radiation and contamination surveys completed by Environmental Health and Safety (EHS) personnel
- UCI Nuclear Reactor Facility dosimetry records for 2010 through the present
- UCI NRF SOP No. 5, "Radiological Safety Program," including the following:
  - Section 5.1, "Personnel Responsibilities and Actions," Rev. 3, approval dated March 2000
  - Section 5.2, "Radiation Monitoring Program," Rev 3.2, approval dated December 2009
  - Section 5.3, "Radiation Levels Associated with Handling of Radioactive Materials," Rev. 3, approval dated March 2000
  - Section 5.4, "Alert Levels," Rev. 3, approval dated March 2000
  - Section 5.5, "Surveillance and Calibration of Monitoring Instrumentation," Rev. 3.2, approval dated July 2007

The inspectors interviewed licensee personnel, and radiological signs and postings were observed.

b. Observations and Findings

(1) Surveys

The inspectors reviewed monthly radiation and contamination surveys of the licensee controlled areas conducted by the licensee staff and quarterly radiation and wipe surveys completed by campus Office of Environmental Health and Safety HP personnel. The results of the licensee staff surveys were documented on the forms and entered into a Reactor Health Physics notebook. The results of EHS surveys were documented on survey maps and forms, reviewed as required, and forwarded to the licensee for information.

(1) Postings and Notices

The inspectors reviewed the postings at the entrances to the facility controlled areas including the Control Room, the Reactor Room, and the two laboratories in the NRF. The postings were acceptable and indicated the radiation hazards present. Other postings also showed the industrial hygiene hazards present in the areas. The facility's radioactive material storage areas were noted to be properly posted.

Copies of notices to workers required by 10 CFR Part 19 were posted as required. Other postings also showed the industrial hygiene hazards that were present in the

areas. Copies of NRC Form-3, “Notice to Employees,” facility were posted in various areas throughout the facility. These locations included the bulletin board in the Outer Office/Counting Room leading to the Control Room and in the Control Room.

Caution signs, postings, and controls for radiation areas were as required in 10 CFR Part 20, Subpart J. Licensee personnel observed the precautions for access to radiation and other controlled areas.

(3) Dosimetry

The licensee used thermoluminescent dosimeters (TLDs) for whole body monitoring of beta and gamma radiation exposure with an additional component to measure neutron radiation. The licensee used TLD finger rings for extremity monitoring. Dosimetry was issued to staff and visitors as outlined in licensee procedures. The issuing criteria met or exceeded the requirements of 10 CFR 20.1502 for individual monitoring. The dosimetry was supplied and processed by a National Voluntary Laboratory Accreditation Program (NVLAP) accredited vendor, Miron Technologies. Through direct observation, the inspectors determined that dosimetry was acceptably used by facility personnel and exit frisking practices were in accordance with facility radiation protection requirements.

An examination of the TLD monitoring results indicating radiological exposures at the facility for the past two years through the present showed that the highest occupational doses, as well as doses to the public, were well within 10 CFR Part 20 limitations. The records showed that the highest annual whole body exposure received by a single facility employee for 2009 was 126 mrem DDE. The highest annual skin dose for a single individual for 2009 was 251 mrem SDE. The highest annual extremity exposure for 2009 was 317 mrem SDE. The highest annual whole body exposure received by a facility employee for 2010 was 35 mrem DDE; the highest annual skin dose for a single individual for this period was 35 mrem SDE; and, the highest annual extremity exposure was 408 mrem SDE. The highest annual whole body exposure received by a facility employee through September 2011 was 161 mrem DDE and the highest annual extremity exposure was 245 mrem SDE.

(4) Radiation Protection Program

The licensee’s Radiation Protection Program was established in the UCI Nuclear Reactor Facility SOP No. 5, “Radiological Safety Program.” The program was further explained in the campus document entitled, “UCI Radiation Safety Manual,” latest revision dated January 2009. The program required that all personnel who had unescorted access to work in a radiation area or with radioactive material receive training in radiation protection, policies, procedures, requirements, and facilities prior to entry. The inspectors verified that licensee staff had received the required radiation protection (“rad worker”) training given by the UCI Office of Environmental Health and Safety.

The inspectors determined that the UCI EHS office had completed an annual review of the radiation protection program in accordance with 10 CFR 20.1101(c) for 2010

and 2011 as required. This was accomplished by the campus Radiation Safety Officer.

(5) As Low As Reasonably Achievable (ALARA) Policy

The ALARA Policy was also outlined and established in the UCI Nuclear Reactor Facility SOP No. 5, "Radiological Safety Program," and in other campus documents. The ALARA program provided guidance for keeping doses as low as reasonably achievable and was consistent with the guidance in 10 CFR Part 20.

(6) Facility Tours

The inspectors toured the Control Room, the Reactor Room, the Pneumatic Tube Laboratory and the Preparation Laboratory within the NRF. Control of radioactive material and control of access to radiation and high radiation areas were acceptable. The postings and signs for these areas were appropriate.

c. Conclusions

The inspectors determined that the Radiation Protection and ALARA Programs, as implemented by the licensee, satisfied regulatory requirements because: 1) surveys were completed and documented acceptably to permit evaluation of the radiation hazards present; 2) postings met regulatory requirements; 3) personnel dosimetry was being worn as required and recorded doses were within the NRC's regulatory limits; 4) radiation survey and monitoring equipment was being maintained and calibrated as required; 5) the Radiation Protection and ALARA Programs satisfied regulatory requirements; and, 6) the radiation protection training program was acceptable.

4. Effluent and Environmental Monitoring

a. Inspection Scope (IP 69001)

The inspectors reviewed the following to verify compliance with the requirements of 10 CFR Part 20 and TS Sections 3.3 and 3.5:

- Facility radioactive effluent releases and liquid and solid waste disposal documented in the UCI Nuclear Reactor Facility Annual Report for the period from July 1, 2009 through and June 30, 2010, and submitted to the NRC on August 2, 2010
- Facility radioactive effluent releases and liquid and solid waste disposal documented in the UCI Nuclear Reactor Facility Annual Report for the period from July 1, 2010 through and June 30, 2011
- Reactor pool water sample analyses documented on the applicable NRF forms
- UCI NRF SOP No. 5, "Radiological Safety Program," Section 5.6, "Radioactive Effluent Release Assessment," Rev 3, approval dated March 2000
- UCI NRF SOP No. 5, "Radiological Safety Program," Section 5.7, "Radioactive Waste Procedure," Rev 3, approval dated March 2000

b. Observation and Findings

Gaseous releases were monitored as required by TS, calculated as prescribed by procedure, and acceptably documented. The results indicated that the releases were well within Appendix B, Table 2 concentrations, and TS limits. To demonstrate compliance with the annual dose constraints of 10 CFR 20.1101(d), the licensee used the computational method specified in UCI NRF SOP No. 5, Section 5.6.

The licensee had released liquid from the facility, but only by transferring it to the Campus EHS Office under the State of California Radioactive Material License. Solid radioactive waste was also transferred to the Campus EHS Office. The liquid and solid waste was then stored, handled, and/or disposed of in accordance with the State license requirements.

c. Conclusion

Effluent monitoring satisfied license and regulatory requirements and airborne releases were within the specified regulatory and TS limits.

5. Committees, Audits, and Reviews

a. Inspection Scope (IP 69001)

The inspectors reviewed the following to ensure that the review and audit functions stipulated in the TS, as well as the 50.59 review functions, were being met:

- Safety review and audit records for the past two years
- ROC meeting minutes from January 2010 to the present
- UCI NRF SOP No. 1, “Introduction,” Rev 3.2, approval dated January 2010
- UCI Nuclear Reactor Facility Annual Report for the period from July 1, 2010 through and June 30, 2011

b. Observations and Findings

The ROC membership satisfied TS requirements and the licensee's procedural rules. The ROC had semiannual meetings as required with a quorum being present at those meetings. Review of the committee meeting minutes indicated the ROC provided appropriate guidance and direction for reactor operations, and ensured suitable use and oversight of the reactor.

The review and audit function of the ROC stipulated in TS Section 6.2 was fulfilled by EHS personnel as they conducted their surveys and walk-through tours of the facility. This was reported to the ROC through the EHS Report given during the semiannual ROC meetings. Since the last inspection all required audits of reactor facility activities and reviews of programs, procedures, and facility operations had been completed and documented.

c. Conclusions

The review and audit program was being conducted acceptably by the Reactor Operations Committee.

6. Design Change Functions

a. Inspection Scope (IP 69001)

The inspectors reviewed the following to verify compliance with the regulatory requirements of 10 CFR Part 50.59:

- UCI Nuclear Reactor Facility Annual Report for the period from July 1, 2010 through and June 30, 2011
- UCI NRF Standard Operating Procedures, Rev. 3, approved March 2000.

b. Observations and Findings

Facility changes or modifications were reviewed by the ROC and documented in the committee's meeting minutes. Changes were controlled by requiring a staff evaluation and an ROC review. It was noted that SOP 1 had been revised to outline the change initiation and approval process. Completion of the changes or modifications was documented on forms that had been developed for that purpose and recorded in the Reactor Operations Logbook, which was also used to document maintenance activities at the facility. The inspectors noted that various changes or modifications had been initiated by the licensee and subsequently approved by the ROC as required. The documentation and information concerning these changes and modifications were acceptable. Through this review, the inspectors verified that the design change process at the facility was functioning as required and was acceptable for the current operation and staffing of the facility.

c. Conclusions

The licensee's design change protocol was in place and was being implemented as required.

7. Transportation

a. Inspection Scope (IP 86740)

The inspectors reviewed the following to verify compliance with regulatory requirements for shipping licensed material:

- Records of radioactive material shipments for 2010 through the date of this inspection

- UCI NRF SOP No. 5, "Radiological Safety Program," Section 5.10, "Transportation of Radioactive Material," Rev 3.1, approval dated May 2005

The inspectors also interviewed licensee and EHS personnel.

b. Observations and Findings

The transportation of radioactive material was reviewed. Through records review and discussions with licensee personnel, the inspectors determined that the licensee had made various shipments of radioactive material since the previous inspection in this area. The records indicated that the radioisotope types and quantities were calculated and dose rates measured as required. The records also indicated that the shipping containers used were appropriate and had the appropriate markings as required. All radioactive material shipment records reviewed by the inspectors had been completed in accordance with Department of Transportation and NRC regulatory requirements.

During the inspection it was noted that people designated as "shippers" had been properly trained to do so. However, the designated "shipper" at the NRF had been trained on September 25, 2007 and was, therefore, due for recurrent training every three years in accordance with the Department of Transportation regulations which is identified in part in 10 CFR 71. The NRF "shipper" made several shipments of radioactive material subsequent to not receiving the recurrent training requirement (i.e., 10 CFR Part 71.5(a) (1) (vi). This was identified as a Severity Level IV violation of more than minor safety significance (VIO 50-326/2011-201-02).

c. Conclusions

Radioactive material was generally shipped in accordance with licensee procedures and the applicable regulations. Staff personnel assigned to ship radioactive material had received the proper training as required but recurrent training was not performed as required.

7. Follow-up

a. Inspection Scope (IP 92701)

The inspectors followed-up on the following items to verify compliance with regulatory requirements:

- IFI 50-326/2009-201-03 (NRC Inspection Report No.50-326/2009-201, ADAMS Accession No. ML093080495) regarding the status of licensee's commitment for a permanent resolution to the subsurface water ingress to Rowland Hall and the associated NRF.
- URI 50-326/2010-201-01 (NRC Inspection Report No. 50-326/2010-201, ADAMS Accession No. ML110030011) regarding the determination of written documentation to relax the constraints of 10 CFR 55.59.
- VIO 50-326/2010-201-01 (NRC Inspection Report No. 50-326/2010-201-04, ADAMS Accession No. ML110030011) regarding the failure to conduct an annual onsite drill.

b. Observations and Findings

The inspectors discussed IFI 50-326/2009-201-03 with the licensee. The facility has committed to installing a permanent pumping system and has incorporated it as a part of the Safety Analysis Report that supports the relicensing effort. Therefore, IFI 50-326/2009-201-03 is considered closed.

The inspectors discussed URI 50-326/2010-201-01with the licensee. During the subsequent investigation it was determined that at the time when there was one NRC licensed personnel at the facility performing licensed activities to present day, formal, written documentation was never issued to the NRC to relax the requalification program constraints as stipulated in 10 CFR Part 55.59. The inspectors learned from the licensee that a verbal agreement was made with the UCI NRF Project Manager. The Project Manager at the time has long since retired, and there is no historical evidence which supports the verbal agreement. Presently, the facility has increased the number of NRC licensed staff at the facility and the licensee indicated that those present are enrolled and actively participating in a requalification program. At this time URI 50-326/2010-201-01 is considered closed and the inspectors will follow-up on the commitment of the newly qualified operators completing a requalification program in accordance with 10 CFR 50.54 (i)(1) during the next inspection. This is an open IFI 50-326/2010-201-02 from NRC Inspection Report No. 50-326/2010-201 (ADAMS Accession No. ML110030011).

The inspectors reviewed records that pertained to the annual emergency drills and determined that they were being conducted as required by the NRC approved Emergency Plan and applicable regulations. VIO 50-326/2010-201-01 is considered closed.

c. Conclusions

The IFI 50-326/2009-201-03 is considered closed.

The URI 50-326/2010-201-01 is considered closed and the status of the requalification program IFI 50-326/2010-201-01 will be followed-up during the next inspection

VIO 50-326/2010-201-01 is considered closed.

8. Exit Interview

The inspection scope and results were summarized on December 14, 2011, with members of licensee management. The inspectors described the areas inspected and discussed in detail the inspection findings. No dissenting comments were received from the licensee.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

G. Miller	Reactor Supervisor
A.J. Shaka	Senior Reactor Operator

Other Personnel

R. Dendo	UCI Health Physicist
R. Mannix	UCI Radiation Safety Officer

INSPECTION PROCEDURES USED

IP 69001	Class II Research and Test Reactors
IP 86740	Transportation
IP 92701	Follow-up

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-326/2011-201-01	VIO	Failure to remain at the controls while the reactor was not secured.
50-326/2011-201-02	VIO	Failure to complete the required Hazardous Material Employee Training per 10 CFR §71.5(a)(1)(vi).

Closed

50-326/2009-201-03	IFI	Follow-up on the commitment for a permanent resolution to the subsurface water ingress to Rowland Hall and the associated NRF
50-326/2010-201-01	VIO	Failure to conduct an annual onsite drill.
50-326/2010-201-01	URI	Determination of written documentation to relax the constraints of 10 CFR 55.59 for the requalification program.

Discussed

50-326/2009-201-01	IFI	Verify the licensee commitment for addressing and updating the procedures consistent with the license renewal
50-326/2009-201-02	IFI	Track the licensee commitment for developing a process for periodic radiation protection surveillance completion
50-326/2010-201-02	IFI	Enrollment of newly qualified operators into a requalification program in accordance with 10 CFR 50.54 (i-1).

PARTIAL LIST OF ACRONYMS USED

ALARA	As Low As Reasonably Achievable
CFR	Code of Federal Regulations
EHS	(Office of) Environmental Health and Safety
EP	Emergency Plan
IFI	Inspector Follow-up Item
IP	Inspection Procedure
LCO	Limiting Conditions for Operation
NRC	Nuclear Regulatory Commission
NRF	Nuclear Reactor Facility
PARS	Publicly Available Records
SOP	Standard Operating Procedure
SRO	Senior Reactor Operator
TLD	Thermoluminescent Dosimeter
TS	Technical Specifications
VIO	Violation
UCI	University of California - Irvine
UCI NRF	University of California - Irvine Nuclear Reactor Facility
URI	Unresolved Item