

October 2, 2012

Dr. Tatjana Jevremovic
Director, Utah Nuclear Engineering Program
122 S. Central Campus Drive, Room 104
University of Utah
Salt Lake City, UT 84112

SUBJECT: UNIVERSITY OF UTAH – NRC ROUTINE INSPECTION REPORT
NO. 50-407/2012-201

Dear Dr. Jevremovic:

From August 27 to September 6, 2012, the U.S. Nuclear Regulatory Commission (NRC or the Commission) conducted an inspection at your University of Utah TRIGA Reactor Facility. The enclosed report documents the inspection results, which were discussed on September 6, 2012, with you, other members of your staff, and Mario Bettolo, Health Physicist, Radiological Health Department.

The inspection examined 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. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel. Based on the results of this inspection, no findings of significance were identified.

In accordance with Title 10 of the *Code of Federal Regulations*, Section 2.390, "Public inspections, exemptions, and requests for withholding," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (Agencywide Documents Access and Management System (ADAMS)). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Should you have any questions concerning this inspection, please contact Craig Bassett at 301-466-4495.

Sincerely,

/RA/

Gregory T. Bowman, Chief
Research and Test Reactors Oversight Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Docket No. 50-407
License No. R-126

Enclosure: NRC Inspection Report No. 50-407/2012-201
cc w/encl: Please see next page

University of Utah Docket No. 50-407

cc:

Mayor of Salt Lake City
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Room 306
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Vice President for Research
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Reactor Supervisor
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Director, University of Utah Radiological Health
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Associate Vice President for Research
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Test, Research, and Training Reactor Newsletter
Universities of Florida
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Director, Division of Radiation Control
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ACCESSION NO.: ML12271A007

TEMPLATE #: NRC-002

OFFICE	PROB:RI *	PRPB:LA	PROB:BC
NAME	CBassett	GLappert	GBowman
DATE	9/28/2012	10/1/2012	10/2/2012

OFFICIAL RECORD COPY

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

Docket No: 50-407

License No: R-126

Report No: 50-407/2012-201

Licensee: University of Utah

Facility: Utah Nuclear Engineering Program TRIGA Reactor Facility

Location: Salt Lake City, Utah

Dates: August 27 – September 6, 2012

Inspectors: Craig Bassett
Taylor Lichatz

Approved by: Gregory T. Bowman, Chief
Research and Test Reactors Oversight Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

EXECUTIVE SUMMARY

University of Utah
Utah Nuclear Engineering Program TRIGA Research Reactor
Report No. 50-407/2012-201

The primary focus of this routine, announced inspection was the onsite review of selected aspects of the University of Utah (the licensee's) 100 kilowatt Class II research reactor safety program, including: 1) organizational structure and staff responsibilities, 2) review and audit and design change functions, 3) procedures, 4) radiation protection, 5) environmental monitoring, and 6) transportation of radioactive material since the last NRC inspection of these areas. The licensee's program was acceptably directed toward the protection of public health and safety, and in compliance with the U.S. Nuclear Regulatory Commission (NRC) requirements. No violations of significance were identified.

Organization and Staff Responsibilities

- The licensee's organizational structure and staff responsibilities were in compliance with requirements specified in the Technical Specifications (TS).

Review and Audit Functions

- Audits and reviews were being conducted by designated individuals and reviewed by the Reactor Safety Committee in accordance with the requirements specified in TS Section 6.2.
- Design change reviews were generally being conducted in accordance with the requirements in Title 10 of the *Code of Federal Regulations* Section 50.59. One minor violation was identified associated with review of a design change to the facility. This issue will be further evaluated during a future NRC inspection.

Procedures

- Facility procedural review, revision, control, and implementation satisfied TS requirements.

Radiation Protection Program

- Surveys were being completed and documented acceptably to permit evaluation of the radiation hazards present.
- Postings met regulatory requirements.
- Personnel dosimetry was being worn as required and doses were well within the licensee's procedural action levels and NRC regulatory limits.
- Radiation monitoring equipment was being maintained and calibrated as required.
- The radiation protection and As Low As Reasonably Achievable programs satisfied regulatory requirements.
- Training was being provided to staff members in the area of radiation protection in accordance with regulatory requirements.

Effluent and Environmental Monitoring

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

Transportation of Radioactive Materials

- The licensee transferred radioactive waste material to the campus Radiological Health Department for disposal as required.
- None of the licensee personnel had the current training required to ship radioactive material from the facility.

REPORT DETAILS

Summary of Plant Status

The University of Utah (the licensee) continued to operate the 100 kilowatt TRIGA Mark I research reactor as needed in support of sample irradiation, reactor operator training, educational demonstrations, preventive maintenance, and operational surveillance testing required by the Technical Specifications (TS). While the reactor was not operated during this inspection, it is typically operated one or two days a week at various power levels up to 90 kilowatts.

1. Organizational Structure and Staff Responsibilities

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

The inspectors reviewed the following regarding the licensee's organization and staff responsibilities to ensure that the requirements of Section 6.1 of the TS were being met:

- Organizational structure and management responsibilities
- Organizational guidance contained in the facility Description of Operations, Section II, entitled "Organization and Responsibilities," undated
- Amendment Number (No.) 9 to Facility Operating License No. R-126, dated December 12, 2011, which amended the TS

b. Observations and Findings

Through discussions with licensee representatives, the inspectors determined that management responsibilities and the organizational structure at the facility had been updated since the last NRC inspection in the area of radiation protection conducted in June 2010 (NRC Inspection Report No. 50-407/2010-201). This was due to the issuance of a renewed facility operating license dated December 12, 2011.

Through review of records and logs, and through discussions with licensee personnel, the inspectors determined that the organizational structure and staff responsibilities observed at the Utah Nuclear Engineering Program (UNEP) TRIGA Reactor Facility met the requirements stated in Section 6.1 of the TS.

c. Conclusion

The organizational structure and staffing were consistent with TS requirements.

2. Review and Audit and Design Change Functions

a. Inspection Scope (IP 69001)

The inspectors reviewed the following to verify compliance with Title 10 of the *Code of Federal Regulation* (10 CFR) Section 50.59 and to ensure that the

review and audit requirements in TS Section 6.2 were being met:

- Reactor Safety Committee (RSC) meeting minutes from March 2011 to the present
- Radiation Safety and As Low As Reasonably Achievable (ALARA) Audits completed during the past 2 years and licensee responses to the safety reviews and audits
- Guidance contained in Description of Operations, Section II, entitled "Organization and Responsibilities," undated
- Form UNEP-035 R3, "Audit and Review Program Checklist," RSC approval dated March 3, 2011, which documented the audits that had been completed
- "University of Utah UNEP Audit and Review Plan for NRC License R-126: TRIGA Nuclear Reactor (Docket No. 50-407)," Revision 1, dated February 28, 1996
- The University of Utah TRIGA Reactor Annual Operating Report for the period July 1, 2010, through June 30, 2011, submitted to the NRC on July 26, 2008
- The University of Utah TRIGA Reactor Annual Operating Report for the period July 1, 2011, through June 30, 2012, submitted to the NRC on July 26, 2012

b. Observations and Findings

(1) Review and Audit

The inspectors verified that the RSC met at least annually as required and that a subcommittee (or the full committee) held quarterly meetings. The inspectors also reviewed the RSC meeting minutes since March 2011. It was noted that the minutes contained, among other documents, quarterly or monthly reports from the Reactor Director, the Reactor Supervisor, and the university Radiation Safety Officer (RSO). Review of the committee meeting minutes indicated that the RSC provided appropriate guidance and direction for reactor operations, and ensured acceptable use and oversight of the reactor.

Since the last inspection, all required audits of reactor facility activities and reviews of programs, procedures, equipment, and proposed tests or experiments had been completed and documented as required. The audits were completed by designated individuals and reviewed by the RSC. The inspectors noted that the safety reviews and audits and the associated findings were acceptably detailed and that the licensee responded and took corrective actions as needed. Additionally, the annual review of the Radiation Protection Program and the biennial reviews of the emergency and security plans had been conducted and acceptably documented.

(2) Design Change Functions

The inspectors noted that some equipment had been replaced and some facility renovation had occurred since the last inspection.

10 CFR 50.59(c)(1) states that:

A licensee may make changes in the facility as described in the final safety analysis report (as updated), make changes in the procedures as described in the final safety analysis report (as updated), and conduct tests or experiments not described in the final safety analysis report (as updated) without obtaining a license amendment pursuant to § 50.90 only if: (i) A change to the technical specifications incorporated in the license is not required, and (ii) The change, test, or experiment does not meet any of the criteria in paragraph (c)(2) of this section.

Additionally, 10 CFR 50.59(d)(1) states:

The licensee shall maintain records of changes in the facility, of changes in procedures, and of tests and experiments made pursuant to paragraph (c) of this section. These records must include a written evaluation which provides the bases for the determination that the change, test, or experiment does not require a license amendment pursuant to paragraph (c)(2) of this section.

The inspectors reviewed maintenance documents and a document entitled "10 CFR 50-59 Review: Replacement of two moving bridges on the top of the reactor pool, installation of grating on top of the reactor pool, replacement of security grating for storage puts, and installation of window grating on West side of the reactor wall." It was noted that the documents did not contain an adequate written evaluation required by 10 CFR 50.59(d)(1) for the installation of grating and plexiglass on top of the reactor pool. Through interviews with the licensee, it was determined that the licensee typically holds meetings, which include the reactor operators and senior reactor operators, prior to implementing any change and discusses the safety significance of each change. Additionally, changes are discussed during periodic Reactor Safety Committee meetings. However, in the case of the change discussed above, the licensee did not fully document their evaluation to demonstrate that the specific criteria in 10 CFR 50.59(c)(1) were not met.

Although the inspectors found that the evaluation of this change was not fully documented, the inspectors determined that there was not a reasonable likelihood that this change would have required NRC review and approval prior to implementation. As a result, the licensee was informed that this issue would be treated as a violation of minor significance in accordance with Section 2 of the NRC Enforcement Policy.

In order to track and follow-up on review and documentation of facility changes and evaluate compliance with 10 CFR 50.59, the inspectors opened inspector follow-up item (IFI) 50-407/2012-201-01.

c. Conclusion

Audits and reviews were being conducted as required and reviewed by the RSC in accordance with the requirements specified in TS Section 6.2. One IFI was identified to evaluate compliance with 10 CFR 50.59 during a future inspection.

3. 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 TS Sections 6.2.3 and 6.4:

- Records of procedure changes
- Selected administrative and health physics procedures
- RSC meeting minutes from March 2011 to the present
- Related logs and records documenting procedure implementation
- Administrative controls as outlined in Description of Operations, Section III, entitled "Documentation," undated
- Form UNEP-035 R3, "Audit and Review Program Checklist," RSC approval dated March 3, 2011, which documented the audits that had been completed

b. Observations and Findings

The inspectors noted that the licensee typically used checklists or forms in place of specific procedures to conduct operations at the facility. These forms were available for those tasks and items required by the TS. Written changes were reviewed and approved by the RSC as required. The facility forms or checklists were reviewed as needed with the last review being completed in March 2011. Training of personnel on procedures and the applicable changes was acceptable.

In the area of radiation protection, the licensee did not have facility-specific procedures, but rather used those contained in the Radiation Safety Policy Manual of the university. Those procedures were reviewed and revised as needed. The latest update to the Radiation Safety Policy Manual was issued June 1996, and was reviewed and approved by the university's Radiation Safety Committee.

c. Conclusion

Procedural review, revision, control, and implementation satisfied TS requirements.

4. Radiation Protection Program

a. Inspection Scope (IP 69001)

To verify compliance with 10 CFR Parts 19 and 20 and TS Sections 3.7, 4.7, and 6.3, the inspectors reviewed selected aspects of:

- Radiological signs and postings at the facility
- Dosimetry records for 2010, 2011, and to date in 2012
- Routine surveys and monitoring documented on Form UNEP-020
- ALARA reviews for the past two years
- Maintenance and calibration of radiation monitoring equipment documented on Form UNEP-023
- University of Utah Radiation Procedures and Records (RPR) No. 1, "Radiation User Personal Data," dated September 2008
- RPR No. 12, "Bioassays for Internal Radioactivity," dated June 2006
- RPR No. 44, "Radiation User's Safety Training," dated March 2007
- RPR No. 45, "Radiological Emergency Notification and Responses," dated June 2010
- RPR No. 46, "Personnel Exposure Investigation and Reporting," dated June 2006
- RPR No. 50, "Radioisotope Laboratory Evaluations," dated December 2003 and associated forms
- RPR No. 52, "Portable Radiation Survey Instruments Use and Calibration," dated September 2009
- Form UNEP-020 R12, "Monthly Inspection Checklist," RSC approval dated March 2011
- Form UNEP-023 R5, "Annual Maintenance and Calibration of the Area Radiation Monitors (ARMS) and Continuous Air Monitor (CAM)," RSC approval dated March 2011
- Form RPR 50A, "Laboratory Evaluation Checklist," form dated December 2003
- Form RPR 50B, "Total Contamination Survey," form dated December 2003
- Form RPR 50C, "Removable Contamination Survey," form dated December 2003
- Form RPR 50D, "Exposure Rate Survey," form dated December 2003
- Form RPR 50E, "Radioisotope Laboratory Evaluation Report" form dated December 2003
- Form RPR 52A, "Exposure Rate Meter Calibration Record," form dated December 2009
- Form RPR 52B, "Contamination Survey Meter Efficiency Calibration Record," form dated December 2009
- The University of Utah TRIGA Reactor Annual Operating Report for the period July 1, 2010, through June 30, 2011, submitted to the NRC on July 26, 2008
- The University of Utah TRIGA Reactor Annual Operating Report for the period July 1, 2011, through June 30, 2012, submitted to the NRC on July 26, 2012

b. Observations and Findings

(1) Surveys

The inspectors reviewed monthly radiation and contamination surveys of licensee controlled areas conducted by campus Radiological Health Department staff personnel over the past 2 years. The inspectors also reviewed monthly general area radiation surveys of the Reactor Room and support areas completed by licensee personnel from 2010 to present. These latter surveys had been completed as required by Form UNEP-020, "Monthly Inspection Checklist." The results of all the surveys were documented and evaluated as required and corrective actions were taken when readings or results exceeded set action levels.

During the inspection, the inspectors conducted a radiation survey of the Reactor Room and adjacent laboratory and Radioactive Material Storage areas. The readings detected during this survey were compared with those recorded on survey maps which had been completed by a campus Radiological Analyst. The survey results noted by the inspectors were comparable to those found by the Radiological Analyst and no anomalies were noted.

(2) Postings and Notices

During tours of the facility, the inspectors observed that caution signs and postings in place and controls established for the controlled areas were acceptable for the hazards involving radiation, high radiation, and contamination, and were posted as required by 10 CFR Part 20, Subpart J. Through observations and interviews with licensee staff, the inspectors confirmed that personnel complied with the signs, postings, and controls. The facility's radioactive material storage areas were noted to be properly posted. No unmarked radioactive material was detected in the facility.

Copies of current notices to workers were posted in various areas in the facility. Radiological signs were typically posted at the entrances to controlled areas. Other postings also characterized the industrial hygiene hazards that were present in the areas as well. During a facility tour, the inspectors noted that the copies of NRC Form 3, "Notice to Employees," that were posted at the facility as required by 10 CFR 19.11 were the current version. The copies were posted on the Bulletin Board by the main entrance to the Reactor Bay and at other locations in the facility. Notices, caution signs, postings, and controls for radiation areas were as required in 10 CFR Parts 19 and 20.

(3) Dosimetry

The licensee used a National Voluntary Laboratory Accreditation Program accredited vendor (Landauer) to process personnel dosimetry. Through direct observation, the inspectors determined that dosimetry was acceptably used by facility personnel.

An examination of the records for the past 2 years and through May 2012 showed that all exposures were within NRC limits. The inspectors determined that the licensee used optically-stimulated luminescent dosimeters (OSL) for whole body monitoring of beta and gamma radiation exposure. The licensee used thermoluminescent dosimeter (TLD) finger rings for extremity monitoring as needed. An examination of the OSL and TLD results for the past 2 years showed that the highest annual whole body exposure received by a single individual for 2010 was 18 millirem (mrem) deep dose equivalent (DDE). The highest annual extremity exposure for 2010 was 50 mrem shallow dose equivalent (SDE) and the highest skin or other shallow dose was 17 mrem SDE. The highest annual whole body exposure received by a single person for 2011 was 22 mrem DDE. The highest annual extremity exposure for 2011 was 0 mrem SDE and the highest skin or other shallow dose was 26 mrem SDE.

(4) Radiation Monitoring Equipment

The use and calibration of radiation monitoring equipment was reviewed by the inspectors. Portable survey meters and friskers were calibrated by Radiological Health Department personnel. Fixed radiation detectors and the continuous air monitor were typically calibrated by licensee staff personnel. The calibration records showed that calibration frequency met the requirements established in the applicable surveillance procedures and records were being maintained as required. Through observation the inspectors determined that the equipment was being used and maintained acceptably. It was noted that instruments awaiting repair and/or calibration, or those that were in storage and not calibrated, were labeled with a red tag to preclude inadvertent use.

During the inspection the inspectors also visited the calibration range operated by Radiological Health Department personnel. This range was used to calibrate survey meters assigned for use at the licensee's TRIGA reactor facility. The inspectors concluded that the calibrations of instruments at the facility were completed using the appropriate techniques. Proper precautions were in place to maintain doses ALARA.

(5) Radiation Protection Program and ALARA Policy

The licensee's Radiation Protection Program was established in various University of Utah campus documents including, "Radiation Safety Policy Manual," latest revision dated June 1996; "The University of Utah Radiation Protection Program," undated; and "Radiation Procedures and

Records," last updated March 2012. The program stated that all personnel who had unescorted access to work in a radiation area or who worked with radioactive material were required to receive training in radiation protection policies, principles, procedures, and requirements prior to starting work. The inspectors also confirmed that the campus radiation protection program was being reviewed annually as required.

The ALARA Policy was also outlined and established in the aforementioned Radiation Safety Policy Manual. 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) Radiation Worker Training

As noted above, university personnel who handled radioactive material, including licensee staff, were required to receive training in radiation protection. This was accomplished by staff members completing a web-based course, entitled "General Radiation Safety Training," and then taking a quiz on the material covered. The trainees then attended a class and were required to successfully pass a written examination. The class, entitled "Radioactive Materials Safety Class," was an interactive/practical session consisting of lecture, demonstration, and practical applications. Those who successfully completed the course were given a certificate. Completion of this training was verified by Radiological Health Department personnel, as well as by the Reactor Administrator and/or the Reactor Supervisor. Upon completion of the course, the workers were then issued a dosimeter and allowed to work with a Responsible User.

The inspectors reviewed documentation of the training provided to licensee staff members, including the certificates of completion. The documents indicated that all current staff members had received the required training. It was also noted that staff members who were also reactor operators received further continuing radiation protection training through the licensee's Operator Requalification Program. The inspectors determined that the personnel training program satisfied requirements in 10 CFR 19.12. The training materials appeared to be beneficial in helping people understand the various concepts of radiation protection. The content and periodicity of training were acceptable.

(7) Facility Tours

The inspectors toured the Control Room, Reactor Room, and selected support laboratories and offices. Control of radioactive material and control of access to radiation and high radiation areas were acceptable. As noted earlier, the postings and signs for these areas were appropriate.

c. Conclusion

Based on the observations made and the records reviewed, it was determined that, the Radiation Protection Program being implemented by the licensee satisfied regulatory requirements because: 1) surveys were being completed and documented acceptably, 2) postings met regulatory requirements, 3) personnel dosimetry was being worn as required and doses were well within the NRC's regulatory limits, 4) radiation monitoring equipment was being maintained and calibrated as required, and 5) training was being conducted as required.

5. 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 3.4, 3.7, 4.3.3, 4.3.4, 5.4, 5.6, and 6.10:

- Environmental dosimetry records for 2010, 2011, and to date in 2012
- RSC meeting minutes for the past two years which included a quarterly report from the university RSO containing:
 - Data Summary forms indicating the environmental TLD results
 - UNEP Area Environmental Monitor Results indicating other environmental TLD results
- Maintenance and calibration of radiation monitoring equipment documented on Form UNEP-023 R5, "Annual Maintenance and Calibration of the ARMS and Continuous Air Monitor (CAM)," RSC approval dated March 3, 2011
- Form UNEP-032, "Liquid Effluent Discharge Authorization," RSC approval dated March 3, 2011
- The University of Utah TRIGA Reactor Annual Operating Report for the period July 1, 2010, through June 30, 2011, submitted to the NRC on July 26, 2008
- The University of Utah TRIGA Reactor Annual Operating Report for the period July 1, 2011, through June 30, 2012, submitted to the NRC on July 26, 2012

b. Observation and Findings

The inspectors reviewed the area radiation monitor and continuous air monitor calibration records. These systems had been calibrated annually in accordance with procedures. The monthly setpoint and high radiation warning verification records for the monitoring equipment were also reviewed. Corrective actions, including recalibration, were completed if the setpoint values were exceeded.

The inspectors determined that gaseous releases continued to be monitored as required, calculated according to established protocol, and acceptably documented in the annual reports. Airborne concentrations of gaseous releases were well within the concentrations stipulated in 10 CFR Part 20, Appendix B, Table 2, and TS limits. The dose rate to the public, as a result of the gaseous

releases, was well below the dose constraint specified in 10 CFR 20.1101(d) of 10 mrem per year.

The inspectors verified that there had been no liquid releases from the facility to the sanitary sewer within the past 2 years. It was noted that the last liquid release occurred in 2000. It was also noted that no solid waste had been transferred from the facility to the campus Radiological Health Department during the past 2 years.

On-site and off-site gamma radiation monitoring was completed using environmental TLDs in accordance with the applicable procedures. The data indicated that there were no measurable doses above any regulatory limits. These results were also acceptably reported in the Reactor Operations Annual Report for 2010 to 2011 and 2011 to 2012. Through observation of the facility, the inspectors did not identify any new potential release paths.

c. Conclusion

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

6. Transportation

a. Inspection Scope (IP 86740)

The inspectors reviewed selected aspects of:

- Radioactive material transfers documented on Form UNEP-027
- RPR No. 13, "Radioisotope Acquisition and Disposition," dated December 2011
- RPR No. 14, "Shipment of Limited Quantity of Radioisotopes," dated December 2004
- RPR No. 55, "Transportation of Radioactive Materials," dated December 2004
- Form UNEP-027 R6, "TRIGA Reactor Irradiation Request and Performance," RSC approval dated March 3, 2011
- Form RPR 13A, "Radioisotope Package Arrival Report," form dated December 2010
- Form RPR 13B, "Radioisotope Receipt and Verification," form dated December 2010, documenting receipt of radioactive material
- Form RPR 13C, "Radioisotope Disposition Record," form dated December 2010, documenting disposal/disposition of radioactive material
- Form RPR 13E, "Radioactive Waste Tag," form dated March 2003

b. Observations and Findings

Records indicated that radioactive waste designated for disposal was typically transferred from the reactor facility to the University of Utah's broad scope license, Utah Department of Environmental Quality, License Number 1800001,

Amendment No. 55, effective until May 31, 2014, in accordance with Radiological Health Department requirements. The last materials that were produced in the facility and transferred from the UNEP to the broad scope license were five containers of resin. That transfer occurred several years ago.

The inspectors also reviewed the documentation of transfers of radioactive sources completed between the reactor facility and the Radiological Health Department. The records indicated that the shipping containers were properly packaged and surveyed and the applicable labels were filled out with the required information and attached to the shipping containers. The inspectors noted that none of the licensee personnel had the current training required to ship radioactive material as required by the Department of Transportation. In the instances involving the transfer of radioactive sources, this was not a problem since the paperwork and shipments were completed by qualified personnel in the Radiological Health Department.

c. Conclusion

The licensee transferred radioactive waste material to the campus Radiological Health Department as required. None of the licensee personnel had the current training required to ship radioactive material from the facility.

7. Exit Meeting Summary

The inspection scope and results were summarized on September 6, 2012, with licensee representatives. The inspectors discussed the findings for each area reviewed. The licensee identified some of the material provided to or reviewed by the inspectors during this inspection as proprietary. However, this report does not contain any proprietary material.

ATTACHMENT

PARTIAL LIST OF PERSONS CONTACTED

Licensee

D. Choe	Reactor Supervisor and Senior Reactor Operator
A. Cutic	Senior Reactor Operator
T. Jevremovic	Reactor Administrator
H. Yang	Senior Reactor Operator

Campus Radiation Safety Office Personnel

M. Bettolo	Health Physicist, Radiological Health Department, University of Utah
K. Langley	Director, Radiological Health Department and Radiation Safety Officer, and Campus Radiation Safety Officer, University of Utah

INSPECTION PROCEDURE (IP) USED

IP 69001:	Class II Non-Power Reactors
IP 86740:	Inspection of Transportation Activities

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-407/2012-201-01	IFI	Follow-up on the appropriate implementation of 10 CFR 50.59 for facility design changes
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Closed

None.

PARTIAL LIST OF ACRONYMS USED

10 CFR	Title 10 of the <i>Code of Federal Regulations</i>
ADAMS	Agencywide Documents Access and Management System
ALARA	As Low As Reasonably Achievable
DDE	Deep dose equivalent
mrem	millirem
No.	Number
NRC	U.S. Nuclear Regulatory Commission
OSL	Optically stimulated luminescent (dosimeter)
RPR	Radiation Procedures and Records
RSC	Reactor Safety Committee
RSO	Radiation Safety Officer
SDE	Shallow dose equivalent
TLD	Thermoluminescent dosimeter
TS	Technical Specifications
UNEP	Utah Nuclear Engineering Program