

August 22, 2014

Dr. C. Keane
Vice President for Research
Washington State University
Pullman, WA 99164-6525

SUBJECT: WASHINGTON STATE UNIVERSITY – NRC ROUTINE INSPECTION REPORT
NO. 50-027/2014-201

Dear Dr. Keane:

On July 22-24, 2014, the U.S. Nuclear Regulatory Commission (NRC, the Commission) completed an inspection at your Washington State University Training, Research, Isotope Production, General, Atomics research reactor located in the Nuclear Radiation Center (Inspection Report No. 50-027/2012-201). The enclosed report documents the inspection results, which were discussed on July 24, 2014, with Dr. Donald Wall, Director of the Nuclear Radiation Center, and other members of your staff.

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. No response to this letter is required.

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 Mike Morlang at 301-415-4092 or by electronic mail at gmm3@nrc.gov.

Sincerely,

/RA by Ossy Font for/

Kevin Hsueh, Chief
Research and Test Reactors Oversight Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Docket No. 50-027
License No. R-076

Enclosure:
NRC Inspection Report No. 50-027/2014-201
cc w/encl: See next page

Washington State University

Docket No. 50-27

cc:

Chair, Reactor Safeguards Committee
Nuclear Radiation Center
Washington State University
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Washington State University
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Pullman, WA 99164-1300

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

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DATE	8/20/2014	8/22/2014

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

Docket No: 50-027

License No: R-076

Report No: 50-027/2014-201

Licensee: Washington State University

Facility: Nuclear Radiation Center

Location: Pullman, WA

Dates: July 22-24, 2014

Inspectors: Mike Morlang
Craig Bassett

Approved by: Kevin Hsueh, Chief
Research and Test Reactors Oversight Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

EXECUTIVE SUMMARY

Washington State University
Nuclear Radiation Center
Report No.: 50-027/2014-201

The primary focus of this routine, announced inspection was the onsite review of selected aspects of the Washington State University (the licensee's) 1000 Kilowatt (1000 Kw) Class II research reactor safety program including: 1) organizational structure and staffing; 2) operations logs and records; 3) procedures; 4) radiation protection; 5) environmental monitoring; 6) design changes; 7) committees, audits and review; and 8) transportation of radioactive materials since the last U. S. Nuclear Regulatory Commission (NRC) inspection of these areas. The licensee's safety program was acceptably directed toward the protection of public health and safety. No violations or deviations were identified.

Organizational Structure and Staffing

- The organizational structure and staff responsibilities were consistent with Technical Specification Section 6 requirements.

Operations Logs and Records

- Operational activities were consistent with applicable Technical Specifications and procedural requirements.

Procedures

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

Radiation Protection Program

- Surveys were being completed and documented acceptably to permit evaluation of the radiation hazards present.
- Postings met the regulatory requirements specified in Title 10 of the *Code of Federal Regulations* (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.
- Radiation monitoring equipment was being maintained and calibrated as required.
- Acceptable radiation protection training was being provided to staff personnel.
- The Radiation Protection Program being implemented by the licensee satisfied regulatory requirements.

Effluent and Environmental Monitoring

- Effluent monitoring satisfied licensee and regulatory requirements.
- Releases were within the specified regulatory and Technical Specification limits.

Design Change Functions

- The latest changes completed by the licensee were reviewed using the criteria specified in Title 10 of the *Code of Federal Regulations* (CFR) 50.59, determined to be acceptable, and approved by the Reactor Safeguards Committee.

Committees Audits and Review

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

Transportation of Radioactive Materials

- Shipments of radioactive materials were being made in accordance with the requirements of Department of Transportation regulations as required by Title 49 of the *Code of Federal Regulations* 71.5(a).

REPORT DETAILS

Summary of Plant Status

Washington State University (WSU, the licensee) continued to operate the 1000 Kw Training, Research, Isotope Production, General, Atomics (TRIGA) research and test reactor in support of irradiation work for various experiments and organizations, operator training, and surveillance. During the inspection, the reactor was started up, operated, and shut down as required and in accordance with applicable procedures to support these ongoing activities.

1. Organizational Structure and Staffing

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

The inspectors reviewed the following regarding the licensee's organization and staffing to ensure that the requirements of Sections 6.1-6.3 of Technical Specifications (TS), dated September 30, 2011, were being met:

- Console logs for 2012, 2013, and 2014 to present
- Management responsibilities
- WSU Nuclear Radiation Center organizational structure and staffing
- Annual Report (Draft) for Washington State University Nuclear Radiation Center TRIGA Reactor for the Reporting Period of July1, 2013 to June 30, 2014
- Annual Report for Washington State University Nuclear Radiation Center TRIGA Reactor for the Reporting Period of July1, 2012 to June 30, 2013, dated August 20, 2013
- WSU Nuclear Radiation Center Administrative Procedure Number (No.) 1, "Responsibilities and Authority of Reactor Operating Staff," (not dated)
- WSU Nuclear Radiation Center Operations Log Sheets for 2013 and 2014 to date

b. Observations and Findings

The inspectors noted that the Vice President for Research had retired and a new Vice President had been appointed. The inspectors noted that the WSU Nuclear Radiation Center organizational structure and the responsibilities of the reactor staff had not changed since the last inspection. The current licensed reactor staff consisted of 3 Senior Reactor Operators and 9 Reactor Operators.

As required by Technical Specifications Section 6.2 a Senior Reactor Operator or Reactor Operator must be present in the control room during reactor operations. If the Senior Reactor Operator on duty is also the Reactor Operator on duty then a second person must be available at the facility. The licensee documented this by individual log entries.

c. Conclusion

The organizational structure and functions were consistent with the requirements specified in Technical Specification Section 6.

2. Operations Logs and Records

a. Inspection Scope (IP 69001)

The inspectors reviewed selected aspects of the following to verify compliance with Technical Specification Section 6.2 and the applicable procedures:

- WSUNRC Technical Specifications dated September 30, 2011
- Console Logs for 2012, 2013, and 2014 to present
- Observation of selected operations activities on July 23, 2014
- Scram Summary Log (S.1) entries for 2013 and 2014 to present
- Pulsing Summary Log (S.2) entries for 2012 and 2014 to present
- WSUNRC Maintenance Log (O.8) from January 2013 and 2014 to present
- Reactor Operating Log (O.1) sheets from January 2013 through July 2014, entitled "WSU Nuclear Radiation Center Reactor Log," NRC Form No. 22, latest form revision dated August 2012
- Selected entries on Reactor Start-Up Check-off (O.3) forms entitled WSU Nuclear Radiation Center Form No. 34, "WSU Reactor Start-Up Check-off," latest form revision dated October 4, 2010
- WSU Annual Report (Draft) entitled "Annual Report on the Operation of the Washington State University TRIGA Reactor" for the periods from July 1, 2013 through June 30, 2014
- WSU Annual Report entitled "Annual Report on the Operation of the Washington State University TRIGA Reactor" for the periods from July 1, 2012 through June 30, 2013, dated August 20, 2013
- WSUNRC Administrative Procedure, Section No. 1, entitled "Responsibilities and Authority of Reactor Operating Staff," (not dated)
- WSUNRC Standard Operating Procedure No. 1, "Standard Procedure for Use of the Reactor," dated October 4, 2010
- WSUNRC Standard Operating Procedure No. 2, "Standard Procedure Performing Irradiations with the Reactor," dated October 4, 2010
- WSUNRC SOP No. 4, "Standard Procedure for Startup, Operation, and Shutdown of the Reactor," dated October 4, 2010

b. Observations and Findings

Reactor operations were carried out following written procedures and in accordance with Technical Specification requirements. As noted above, shift staffing satisfied the minimum requirements for duty and on-call personnel. Quarterly audits were conducted by Reactor Safeguards Committee personnel. Accurate correlation between reactor logs, scram logs, pulse logs, and maintenance logs was noted. Equipment problems and events were well

documented and resolved, with Senior Reactor Operator approval if required for restart of the reactor.

c. Conclusion

The operational activities were found to be consistent with applicable Technical Specifications and procedural requirements.

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 Technical Specifications Section 6.8:

- Required Reading Notebook (O.15)
- Selected administrative and standard operating procedures
- Related logs and records documenting procedure implementation
- Records documenting procedure changes and temporary changes
- Administrative controls as outlined in WSU Nuclear Radiation Center Administrative Procedure No. 2, "Approval, Revision, and Review of Standard Operating Procedures," (not dated)

b. Observations and Findings

Procedures were available for those tasks and activities specified in the Technical Specifications. Records showed that procedures for potential malfunctions (e.g., radioactive releases, contaminations, and reactor equipment problems) had been developed and were being implemented as required. If procedure changes were needed, they were reviewed and approved by the Reactor Safeguards Committee as required. The Standard Operating Procedures were reviewed biennially as required by Technical Specifications Section 6.8. It was noted that all the operating procedures at the facility had been revised and updated to more fully reflect current operational activities. These procedures were in the process of being reviewed for approval by the Reactor Safeguards Committee.

Training of personnel on procedures and the applicable changes was acceptable. The licensee maintained a notebook entitled, "Required Reading," that was used to keep staff members of current issues at the facility including changes to procedures. The inspectors verified that licensee personnel were reading the material in the notebook and signing off to document that they had completed their required review. The inspectors also verified that, once the newly revised procedures were approved by the Reactor Safeguards Committee, all operations staff members would be required to read them and sign off signifying that they had completed the task and understood the changes made.

Through observation of reactor operations and the conduct of radiation surveys, the inspectors also verified that personnel conducted Technical Specifications

activities in accordance with applicable procedures.

c. Conclusion

Procedural review, revision, control, and implementation satisfied Technical Specification requirements.

4. Radiation Protection Program

a. Inspection Scope (IP 69001)

The inspectors reviewed the following to verify compliance with 10 CFR Parts 19 and 20, Technical Specification Sections 3.5, 4.5, and procedural requirements:

- Preventative Maintenance Checklists for 2013 and to date in 2014
- Radiation Monitor Calibration Schedule Forms for 2013 and to date in 2014
- Nuclear Radiation Center dosimetry records for 2012 through April of 2014
- Radiation and contamination survey records for 2013 through the present
- Calibration and periodic check records for radiation monitoring instruments documented on the applicable forms
- Various WSU Nuclear Radiation Center SOPs including: No. 10, "Standard Procedure for Health Physics Surveys," No. 16, "Standard Procedure for Checkout and Calibration of the Area Radiation Monitors," and No. 22, "Standard Procedure for Portable Survey Instrumentation Check and Calibration"
- WSU Nuclear Radiation Center Administrative Procedure, "Radiation Protection Program," latest revision dated March 20, 2012, which outlined the program and also contained and explained the As Low As Reasonably Achievable (ALARA) Policy for the facility
- WSU Radiation Protection Program Manual which contained and outlined the Campus practices and ALARA Policy

b. Observations and Findings

(1) Surveys

The inspectors reviewed selected weekly general area radiation and contamination surveys and semiannual neutron surveys of the Pool Room, the Beam Room, and other associated laboratories and support areas from 2013 to the present. The surveys had been completed by licensee personnel as required by WSU Nuclear Radiation Center Standard Operating Procedure No. 10. The results were documented on the appropriate forms and evaluated as required, and corrective actions were taken when readings or results exceeded set action levels.

During the inspection, the inspector observed while a licensee representative conducted radiation and contamination surveys in various areas of the facility.

The inspector also conducted a radiation survey of these areas and compared the readings detected with those found by the licensee. The results were comparable and no anomalies were noted.

(2) Postings and Notices

The inspectors reviewed the postings at the entrances to various controlled areas including the Control Room, the Pool Room, the Beam Room, and various laboratories in the Nuclear Radiation Center. The postings were acceptable and typically indicated the radiation and/or contamination 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. No unmarked radioactive material was detected in the facility. Copies of current notices to workers required by 10 CFR Part 19 were posted on various bulletin boards throughout the facility including in the stairway leading to the Control Room, in the Reactor Shop area, and in the Conference Room as well.

(3) Dosimetry

The inspectors determined that the licensee was provided optically stimulated luminescent (OSL) dosimeters for whole body monitoring of beta and gamma radiation exposure (with an additional component to measure neutron radiation). The licensee was also provided thermoluminescent dosimeter (TLD) finger rings for extremity monitoring. The dosimetry was supplied by the campus Radiation Safety Office and processed by a National Voluntary Laboratory Accreditation Program (NVLAP) accredited vendor (Landauer).

An examination of the OSL and TLD results indicating radiological exposures at the facility for the past two years showed that the highest occupational doses, as well as doses to the public, were within 10 CFR Part 20 limitations.

The inspectors verified that NRC Form-5 reports had been completed and provided to each employee who had received exposure at the facility during 2012 and 2013.

(4) Radiation Monitoring Equipment

The records of selected meters, detectors, and air monitoring equipment in use at the facility were reviewed. The inspectors noted that the calibration of portable survey meters, friskers, and fixed radiation detectors was typically completed by a contractor (Ludlum Measurements, Inc.). The inspectors verified that calibrations were completed and that appropriate calibration records were being maintained by the licensee as required. Calibration frequency met the requirements established in the applicable manuals.

(5) Radiation Protection Training

The inspectors reviewed documentation of the radiation protection training

given to new employees by the WSU Radiation Safety Office entitled, "Radiation Safety Training Course." The course was offered online to provide greater access to all personnel. The content of the course given, along with various additional modules, was found to be acceptable and the training program satisfied the requirements in 10 CFR 19.12. Through a review of selected training records, the inspectors verified that newly hired licensee personnel had received the training as required. Annual refresher training was also being provided to the staff who had been at the facility for over a year.

(6) ALARA Policy

The ALARA Policy was also outlined and established in the WSU Nuclear Radiation Center Administrative Procedure, "Radiation Protection Program," as well as in the campus "WSU Radiation Protection Program 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.

(7) Radiation Protection Program

The licensee's Radiation Protection Program was established in the WSU Nuclear Radiation Center Administrative Procedure of the same name with the latest revision dated March 20, 2012. The campus program was outlined and explained in a WSU campus document entitled, "WSU Radiation Protection Program Manual." The inspectors noted that the licensee's program outlined personal dose limits; surveys, monitoring, and records; reports and audits; as well as the ALARA program. It also required that all personnel receive training in radiation protection, policies, procedures, requirements, and facilities prior to entering a radiation area or working with radioactive material. The program was being reviewed annually as required.

(8) Facility Tours

The inspectors toured the Control Room, Pool Room, Beam 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

The inspectors 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) acceptable radiation protection training was being provided to facility personnel.

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 Technical Specification Sections 3.5, 4.5 and 6.10:

- Continuous Air Monitor System Maintenance Log
- Equipment Maintenance Record for the Argon Monitoring System
- Preventative Maintenance Checklists for 2013 and to date in 2014
- Continuous Air Monitor Channel Test forms for 2013 and to date in 2014
- Exhaust Gas Monitor Channel Test forms for 2013 and to date in 2014
- WSU Monthly Console Auxiliary Equipment Maintenance Checklists and WSU Monthly Reactor Auxiliary Equipment Maintenance Checklists for 2013 and to date in 2014
- Annual Report for Washington State University Nuclear Radiation Center TRIGA Reactor for the Reporting Period of July 1, 2011 to June 30, 2012, submitted August 24, 2012
- Annual Report for Washington State University Nuclear Radiation Center TRIGA Reactor for the Reporting Period of July 1, 2012 to June 30, 2013, submitted August 20, 2013
- Airborne release records documented in the Average Monthly Concentration of Ar-41 Released section of the Reactor Operations Summary Log for the period from 2013 to the present
- Liquid release records documented in the Reactor Operations Summary Log and calculated on the appropriate forms in the Liquid Waste Tank Release Data Log for the period from 2013 to the present
- Various WSU Nuclear Radiation Center SOPs including: No. 11, "Standard Procedure for Analysis of Liquid Waste Samples," No. 17, "Standard Procedure for Ar-41 Monitor Checkout and Calibration," No. 20, "Standard Procedure for Environmental Monitoring," No. 21, "Standard Procedure for Thermoluminescent dosimeter (TLD) Environmental Monitoring Program," No. 25, "Standard Procedure for Continuous Air Monitor Check and Calibration," and No. 27, "Standard Procedure for CAM (Continuous Air Monitor) Filter Analysis"

- WSU Nuclear Radiation Center SOP No. 25, "Standard Procedure for Continuous Air Monitor Check and Calibration," last revised December 4, 2003
- WSU Nuclear Radiation Center SOP No. 27, "Standard Procedure for CAM (Continuous Air Monitor) Filter Analysis," last revised September 29, 2005

b. Observation and Findings

The inspectors reviewed the calibration records of the area radiation monitoring system, the exhaust gas or stack monitoring system, and the continuous air monitoring system. These systems had been calibrated annually according to procedure. The monthly set-point verification, alarm check, and operability records for the monitoring equipment were also reviewed. Corrective actions, including recalibration, were completed if the set-point values were exceeded.

The inspectors also reviewed the records documenting liquid and airborne releases to the environment for the past two years. The inspectors determined that gaseous release activity continued to be calculated as required by procedure and the results were adequately documented. The releases were determined to be within the 10 CFR Part 20 Appendix B concentrations and TS limits. To demonstrate compliance with the annual dose constraints of 10 CFR 20.1101(d), the licensee used the COMPLY computer code. The highest calculated dose that could be received by a member of the public as a result of gaseous emissions from reactor operations was determined to be 4.4 E-4 millirem per year (mr/yr) for the period from July 2011 through June 2012 and 5.0 E-4 mr/yr for the period from July 2012 through June 2013. These doses were well below the 10 mr/yr limit stipulated in 10 CFR 20.1101(d).

The activity of liquid waste to be discharged from the facility was calculated as required and releases were approved by the Reactor Supervisor or a Senior Reactor Operator after analysis indicated that they met regulatory requirements for discharge into the sanitary sewer. Through observation of the facility, the inspectors did not identify any new potential release paths.

On-site and off-site environmental gamma radiation monitoring was conducted using TLDs in accordance with the applicable procedures. The data indicated that there were no measurable doses above any regulatory limits. These results and those outlined above were acceptably reported in the WSU Reactor Operations Annual Reports for 2011-2012 and 2012-2013.

From a review of the various environmental monitoring records and documents, the inspectors determined that the licensee was apparently complying with all the requirements specified in TS Sections 3.5 and 4.5.

c. Conclusion

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

licensee was complying with all the requirements specified in Technical Specification Sections 3.5 and 4.5.

6. Design Changes

a. Inspection Scope (IP 69001)

The inspectors reviewed the following to verify compliance with Title 10 of the *Code of Federal Regulations* CFR 50.59 regarding design change control:

- Console Logs for 2012, 2013 and 2014 to present
- Safety review and audit records for the past two years
- Reactor Safeguards Committee meeting minutes for 2012 to the present
- Annual Report (Draft) for Washington State University Nuclear Radiation Center TRIGA Reactor for the Reporting Period of July1, 2013 to June 30, 2014
- Annual Report for Washington State University Nuclear Radiation Center TRIGA Reactor for the Reporting Period of July1, 2012 to June 30, 2013 dated August 20, 2013
- Reactor Safeguards Committee Facility Records Quarterly Audits for 2012 to the present documenting reviews of operations records, summary records, and administrative records
- WSU Nuclear Radiation Center Administrative Procedure No. 3, "Approval and Review of Facility Modifications and Special Tests or Experiments," (not dated)

b. Observations and Findings

The inspectors reviewed the records and observed the changes that had been made at the facility from 2012 to the present. Prior to implementing substantive changes, the licensee was required to submit them to the Reactor Safeguards Committee where they were reviewed and, if determined to be acceptable, approved by the committee. The inspectors noted that the facility modification procedure was followed and an evaluation was completed as required. The licensee considered the criteria included in 10 CFR 50.59 and concluded that the changes were acceptable under the regulations. None of the changes constituted a safety question or required a change to the Technical Specifications.

c. Conclusion

The latest changes completed by the licensee were reviewed using the criteria specified in 10 CFR 50.59, determined to be acceptable, and approved by the Reactor Safeguards Committee.

7. Committees, Audits and Reviews

a. Inspection Scope (IP 69001)

In order to verify that the licensee had established and conducted reviews and audits as required in Technical Specification Sections 6.5.4 and 6.5.5, the inspectors reviewed selected aspects of:

- Console Logs for 2012, 2013 and 2014 to present
- Safety review and audit records for the past two years
- Reactor Safeguards Committee meeting minutes for 2012 to the present
- Annual Report (Draft) for Washington State University Nuclear Radiation Center TRIGA Reactor for the Reporting Period of July1, 2013 to June 30, 2014
- Annual Report for Washington State University Nuclear Radiation Center TRIGA Reactor for the Reporting Period of July1, 2012 to June 30, 2013 dated August 20, 2013
- RSC Facility Records Quarterly Audits for 2012 to the present documenting reviews of operations records, summary records, and administrative records
- WSU Nuclear Radiation Center Administrative Procedure No. 3, "Approval and Review of Facility Modifications and Special Tests or Experiments," (not dated)

b. Observations and Findings

The inspectors verified that Reactor Safeguards Committee membership satisfied Technical Specification requirements and that the Reactor Safeguards Committee and/or a subcommittee thereof had semiannual meetings as required. Review of the committee meeting minutes indicated that the Reactor Safeguards Committee provided appropriate guidance and direction for reactor operations, and ensured suitable use and oversight of the reactor.

Since the last inspection all required semiannual audits of reactor facility activities and the annual and/or biennial reviews of programs, procedures, equipment changes, and proposed tests or experiments had been completed and documented.

c. Conclusion

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

8. Transportation

a. Inspection Scope (IP 86740)

The inspectors reviewed the following to verify compliance with procedural requirements for transferring licensed material:

- Records of radioactive material shipments for January 2013 and to the present
- Training records of the individuals who were designated as “shippers” at the facility
- Various records of the recipients’ licenses to possess the radioactive material which the licensee had shipped to them
- Various WSU Nuclear Radiation Center SOPs including: No. 30, “Standard Procedure for Off-Site Shipment of Radioactive Material,” No. 32, “Standard Procedure for Receiving and Opening Packages Containing Licensed Materials,” and No. 33, “Standard Procedure for Handling Iridium Irradiations/Shipment”

b. Observations and Findings

Through records review and discussions with licensee personnel, the inspectors determined that the licensee had shipped various types 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. In general, all radioactive material shipment records reviewed by the inspectors had been completed in accordance with Department of Transportation and NRC requirements.

The inspectors noted that two staff members had received the required training for shipping radioactive material and/or “Dangerous Goods.” The most recent training was completed on November 26, 2012. The inspectors also determined that the licensee maintained copies of the recipients’ licenses to possess radioactive material as required and that the licenses were verified to be current prior to initiating a shipment.

c. Conclusion

Shipments of radioactive material were being made in accordance with the requirements of Department of Transportation regulations as required by Title 49 of the *Code of Federal Regulations* 71.5(a).

7. Exit Interview

The inspection scope and results were summarized on July 24, 2014, 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 Personnel

C. Hines	Reactor Supervisor
M. King	Reactor Technician I/Senior Reactor Operator
D. Wall	Director, Nuclear Radiation Center
K. Restis	Reactor Operator

INSPECTION PROCEDURES USED

IP 69001	Class II Research and Test Reactors
IP 86740	Inspection of Transportation Activities

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

None

PARTIAL LIST OF ACRONYMS USED

10 CFR	Title 10 of the <i>Code of Federal Regulations</i>
ALARA	As Low As Reasonably Achievable
NRC	Nuclear Regulatory Commission
TLD	Thermoluminescent dosimeter
WSU	Washington State University