

September 30, 2010

Dr. Howard D. Grimes
Vice President for Research
and Dean of the Graduate School
Washington State University
Pullman, WA 99164-1030

SUBJECT: WASHINGTON STATE UNIVERSITY – NRC ROUTINE INSPECTION REPORT
NO. 50-027/2010-201

Dear Dr. Grimes:

On August 16-19, 2010, the U.S. Nuclear Regulatory Commission (NRC, the Commission) completed an inspection at your Washington State University TRIGA research reactor located in the Nuclear Radiation Center (Inspection Report No. 50-027/2010-201). The enclosed report documents the inspection results, which were discussed on August 19, 2010, 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 inspector 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 Craig Bassett at 301-466-4495.

Sincerely,

/RA/

Johnny H. Eads, Jr., 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. 50-027/2010-201
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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Pullman, WA 99164 – 1300

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Washington State University
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Executive Policy Division
State Liaisons Officer
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Olympia, WA 98504-3113

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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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cc w/encl: See next page

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OFFICE	PROB:RI *	PRT:LA	PROB:BC
NAME	CBassett	GLappert	JEads
DATE	9/24/2010	9/30/2010	9/30/2010

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

Docket No: 50-027

License No: R-076

Report No: 50-027/2010-201

Licensee: Washington State University

Facility: Nuclear Radiation Center

Location: Pullman, WA

Dates: August 16-19, 2010

Inspector: Craig Bassett

Approved by: Johnny H. Eads, Jr., 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.: 50-027/2010-201

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) review and audit and design change functions; 3) procedures; 4) radiation protection; 5) environmental monitoring; and 6) 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.

Review and Audit and Design Change Functions

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

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 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 license and regulatory requirements.
- Releases were within the specified regulatory and Technical Specification limits.

Transportation of Radioactive Materials

- Shipments of radioactive materials were being made in accordance with the requirements of Department of Transportation regulations as required by 10 CFR 71.5(a).

REPORT DETAILS

Summary of Plant Status

Washington State University (WSU, the licensee) continued to operate the 1000 Kw TRIGA conversion 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 inspector 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), Amendment Number (No.) 20, dated September 30, 2008, were being met:

- Staff qualifications
- Management responsibilities
- WSU Nuclear Radiation Center organizational structure and staffing
- Annual Report for Washington State University Nuclear Radiation Center TRIGA Reactor for the Reporting Period of July1, 2007 to June 30, 2008, submitted August 22, 2008
- Annual Report for Washington State University Nuclear Radiation Center TRIGA Reactor for the Reporting Period of July1, 2008 to June 30, 2009, submitted August 28, 2009
- WSU Nuclear Radiation Center Administrative Procedure Number (No.) 1, "Responsibilities and Authority of Reactor Operating Staff," (not dated)
- ANSI/ANS Standard 15.4, "Selection and Training of Personnel for Research Reactors"

b. Observations and Findings

The inspector noted that the WSU Nuclear Radiation Center organizational structure and the responsibilities of the reactor staff had not changed since the last inspection. However, during the inspection it was noted that some staff changes had occurred since the last inspection. One individual who had held a reactor operating license had retired. As a result, the current licensed reactor staff consisted of the Facility Director, the Reactor Supervisor, and a Reactor Technician, as well as three student assistants. The Facility Director, the Reactor Supervisor, and the Reactor Technician were Senior Reactor Operators (SROs) while the students were Reactor Operators (ROs). It was also noted that one other student was currently in training to become an RO.

The organizational structure and staffing at the facility were as required by TS. Qualifications of the staff met TS and American National Standards Institute (ANSI/ANS) 15.4, "Standard for the Selection and Training of Personnel for

Research Reactors,” requirements. Review of records verified that management responsibilities were administered as required by TS and applicable procedures.

c. Conclusion

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

2. Review and Audit and Design Control Functions

a. Inspection Scope (IP 69001)

In order to verify that the licensee had established and conducted reviews and audits as required in TS Sections 6.5.4 and 6.5.5 and to verify compliance with Title 10 of the *Code of Federal Regulations* CFR 50.59 regarding design change control, the inspector reviewed selected aspects of:

- Recent facility design changes and/or modifications
- Safety review and audit records for the past two years
- Reactor Safeguards Committee (RSC) meeting minutes for 2008 to the present
- Annual Report for Washington State University Nuclear Radiation Center TRIGA Reactor for the Reporting Period of July1, 2007 to June 30, 2008, submitted August 22, 2008
- Annual Report for Washington State University Nuclear Radiation Center TRIGA Reactor for the Reporting Period of July1, 2008 to June 30, 2009, submitted August 28, 2009
- RSC Facility Records Quarterly Audits for 2008 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

(1) Review and Audit Functions

The inspector verified that RSC membership satisfied TS requirements and that the RSC and/or a subcommittee thereof had semiannual meetings as required. Review of the committee meeting minutes indicated that the RSC 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.

(2) Design Change Control

The inspector reviewed the records and observed the changes that had been made at the facility from 2008 to the present. Prior to implementing substantive changes, the licensee was required to submit them to the RSC where they were reviewed and, if determined to be acceptable, approved by the committee. The latest modifications initiated by the licensee involved upgrading and replacing the conductivity monitoring system, upgrading and replacing the Area Radiation Monitoring system, and installing a new transient rod in the reactor. The inspector noted that the facility modification procedure was followed and an evaluation of each system 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 TS. A review by the RSC was conducted and the changes were subsequently approved.

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 RSC. The review and audit program was being conducted acceptably by the RSC.

3. Procedures

a. Inspection Scope (IP 69001)

The inspector reviewed selected aspects of the following to verify that the licensee was complying with the requirements of TS Sections 6.5.4 and 6.8:

- 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)

The inspector also observed the use and implementation of procedures by licensee personnel.

b. Observations and Findings

Procedures were available for those tasks and activities specified in the TS. Written changes were reviewed and approved by the RSC as required. The Standard Operating Procedures (SOPs) were reviewed biennially as required by TS Section 6.5.4. It was noted that the latest review was still ongoing during the inspection. The most recent changes to the SOPs were changes to SOPs 1 through 6. These changes had been sent to each member of the RSC on

August 16 for review and approval. The RSC members were to respond by the end of August to meet the timeliness requirements for the biennial review.

Training of personnel on procedures and the applicable changes was acceptable. Through observation of reactor operations and the conduct of radiation surveys, the inspector verified that personnel conducted TS activities in accordance with applicable procedures. Records showed that procedures for potential malfunctions (e.g., radioactive releases, contaminations, and reactor equipment problems) had been developed and were implemented as required.

c. Conclusion

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

4. Radiation Protection Program

a. Inspection Scope (IP 69001)

The inspector reviewed the following to verify compliance with 10 CFR Parts 19 and 20, TS Sections 3.7, 5.4, and 6.8, and procedural requirements:

- Preventative Maintenance Checklists for 2009 and to date in 2010
- Radiation Monitor Calibration Schedule Forms for 2009 and to date in 2010
- Nuclear Radiation Center dosimetry records for 2008 through April of 2010
- Radiation and contamination survey records for 2009 through the present
- Calibration and periodic check records for radiation monitoring instruments documented on the applicable forms
- WSU Nuclear Radiation Center SOP No. 10, "Standard Procedure for Health Physics Surveys," last revised August 25, 2005
- WSU Nuclear Radiation Center SOP No. 16, "Standard Procedure for Checkout and Calibration of the Area Radiation Monitors," last revised December 3, 2008
- WSU Nuclear Radiation Center SOP No. 22, "Standard Procedure for Portable Survey Instrumentation Check and Calibration," last revised December 4, 2003
- WSU Nuclear Radiation Center Administrative Procedure, "Radiation Protection Program," latest revision dated December 2009, which also contained and outlined the ALARA Policy for the facility
- WSU Radiation Protection Program Manual dated March 15, 1994

The inspector also toured the facility to note any changes that may have been made and observed the use of dosimetry and radiation monitoring equipment. Licensee personnel were interviewed and radiological signs and postings were observed as well.

b. Observations and Findings

(1) Surveys

The inspector 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 2009 to the present. The surveys had been completed by licensee personnel as required by WSU Nuclear Radiation Center SOP 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 as 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 inspector 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 copies of current survey maps posted at the entrances to the areas indicated the radiation and 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 inspector 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 records showed that the highest annual whole body exposure received by a single individual for 2008 was 165 millirem (mr) deep dose equivalent (DDE). The highest annual extremity exposure for 2008 was 570 mr shallow dose equivalent (SDE) and the highest skin or other shallow dose was 191 mr SDE. The highest annual whole body exposure received by a single person for 2009 was 61 mr DDE. The highest annual extremity exposure for 2009 was 210 mr SDE and the highest skin or other shallow dose was 77 mr SDE. To date in 2010, the exposures were comparable to past years.

The inspector verified that NRC Form-5 reports had been completed and provided to each employee who had received exposure at the facility during 2008 and 2009.

(4) Radiation Monitoring Equipment

The inspector noted that the calibration of portable survey meters, friskers, fixed radiation detectors, and air monitoring instruments was typically completed by the WSU Radiation Safety Office (RSO). The records of selected portable survey meters, friskers, fixed radiation detectors, and air monitoring equipment in use at the facility were reviewed. The inspector verified that appropriate calibration records were being maintained by the RSO and the licensee as required. Calibrations were completed according to procedure using NIST traceable calibration sources. Calibration frequency met the requirements established in the applicable manuals and records were being maintained as required.

(5) Radiation Protection Program

The licensee's Radiation Protection Program was established in the WSU Nuclear Radiation Center Administrative Procedure of the same name which was dated December 2009. The program was further explained in a WSU campus document entitled, "WSU Radiation Protection Program Manual," dated March 15, 1994. 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. As noted previously, the program was being reviewed annually as required.

(6) ALARA Policy

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

The inspector reviewed documentation of the radiation protection training given to new employees by the WSU Radiation Safety Office entitled, "Radiation Safety Training Course." The content of the course given 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 inspector verified that licensee personnel had received the training as required.

(8) Facility Tours

The inspector 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 inspector 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.

5. Effluent and Environmental Monitoring

a. Inspection Scope (IP 69001)

The inspector reviewed the following to verify compliance with the requirements of 10 CFR Part 20 and TS Sections 3.7-3.9, 3.12, 5.6, and 6.10:

- Continuous Air Monitor System Maintenance Log
- Equipment Maintenance Record for the Argon Monitoring System
- Preventative Maintenance Checklists for 2009 and to date in 2010
- Radiation Monitor Calibration Schedule Forms for 2009 and to date in 2010
- WSU Monthly Console Auxiliary Equipment Maintenance Checklist for 2010
- WSU Monthly Reactor Auxiliary Equipment Maintenance Checklist for 2010
- Annual Report for Washington State University Nuclear Radiation Center TRIGA Reactor for the Reporting Period of July1, 2007 to June 30, 2008, submitted August 22, 2008
- Annual Report for Washington State University Nuclear Radiation Center TRIGA Reactor for the Reporting Period of July1, 2008 to June 30, 2009,

- submitted August 28, 2009
- Airborne release records documented in the Average Monthly Concentration of Ar-41 Released section of the Reactor Operations Summary Log for the period from 2008 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 2008 to the present
- WSU Nuclear Radiation Center SOP No. 11, "Standard Procedure for Analysis of Liquid Waste Samples," last revised November 29, 2006
- WSU Nuclear Radiation Center SOP No. 17, "Standard Procedure for Ar-41 Monitor Checkout and Calibration," last revised February 9, 2006
- WSU Nuclear Radiation Center SOP No. 20, "Standard Procedure for Environmental Monitoring," last revised December 4, 2003
- WSU Nuclear Radiation Center SOP No. 21, "Standard Procedure for TLD Environmental Monitoring Program," last revised December 4, 2003
- 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 inspector 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 setpoint verification, alarm check, and operability records for the monitoring equipment were also reviewed. Corrective actions, including recalibration, were completed if the setpoint values were exceeded.

The inspector also reviewed the records documenting liquid and airborne releases to the environment for the past two years. The inspector 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 4.9 E-3 millirem per year (mr/yr) for the period from July 2008 through June 2009 and 2.9 E-4 mr/yr for the period from July 2009 through June 2010. These doses were well below the 10 mr/yr limit set in 10 CFR 20.1101(d).

Liquid release activity was calculated as required and releases were approved by the Reactor Supervisor or an SRO after analysis indicated that they met regulatory requirements for discharge into the sanitary sewer. Through observation of the facility, the inspector 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 above were acceptably reported in the Reactor Operations Annual Report for 2007-2008 and 2008-2009.

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

- Records of radioactive material shipments for January 2009 and to the present
- WSU Nuclear Radiation Center SOP No. 30, "Standard Procedure for Off-Site Shipment of Radioactive Material," last revised November 17, 1997
- WSU Nuclear Radiation Center SOP No. 32, "Standard Procedure for Receiving and Opening Packages Containing Licensed Materials," last revised December 4, 2003
- WSU Nuclear Radiation Center SOP No. 33, "Standard Procedure for Handling Iridium Irradiations/Shipment," last revised September 29, 2005

b. Observations and Findings

Through records review and discussions with licensee personnel, the inspector 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. All radioactive material shipment records reviewed by the inspector had been completed in accordance with Department of Transportation (DOT) and NRC requirements.

c. Conclusion

Shipments of radioactive material were being made in accordance with the requirements of DOT regulations as required by 10 CFR 71.5(a).

7. Follow-up on Previously Identified Issues

a. Inspection Scope

The inspector reviewed the actions taken by the licensee following identification of a violation (VIO) during an inspection in July 2008, and documented in NRC

Inspection Report No. 50-027/2008-201, dated August 29, 2008.

b. Observations and Findings

VIO 50-027/2008-201-01 - Failure to ship radioactive material in accordance with DOT regulations as required by 10 CFR 71.5(a) with several examples.

(1) Inaccurate or Incomplete Licensee Shipping Papers

In reviewing the shipping papers prepared by the licensee for the period from January 2007 to the August 2008, the inspector noted certain discrepancies with the shipping papers prepared for various shipments of packaged radioactive material. On a package shipped in March 2007, the proper Transport Index (TI) was not listed in accordance with Title 49 of the *Code of Federal Regulations* (CFR) 172.203(d)(5). On two occasions during the period noted above, none of the staff members who were trained as certified shippers had signed the shipping papers in accordance with 49 CFR 172.204(d)(1). On two occasions, the proper labels apparently were not attached to shipping drums in accordance with 49 CFR 172.403(b).

(2) Shipments Inaccurately Designated As Limited Quantity

During the period from January 2007 to August 2008, the inspector noted that the licensee made several shipments of lexan samples to Battelle Northwest. These samples were generally shipped as limited quantity. However, in reviewing the paperwork prepared by the licensee, the inspector noted problems with four of those shipments. The licensee had shipped packages of radioactive material with external surface radiation levels in excess of 0.5 mrem/hr as limited quantity which was not in accordance with the requirements of 49 CFR 173.421(a)(2).

The inspector reviewed the corrective actions the licensee had taken to address these issues. The licensee had developed a checklist or reference guide to be used when making a shipment. The licensee had also developed a program and an algorithm to be used when completing shipping papers which specified the type of labels required for a shipment based on the TI and the radiation levels of the package. In addition, the licensee had limited the number of people involved in the process such that only two people were trained to ship radioactive material and allowed to complete the shipping papers. In reviewing the shipping paperwork since 2008, no such errors were noted. This VIO is considered closed.

c. Conclusion

The licensee had taken adequate corrective actions and the previously identified violation was closed.

7. Exit Interview

The inspection scope and results were summarized on August 19, 2010, with members of licensee management. The inspector 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/Reactor Operator
D. Wall	Director, Nuclear Radiation Center

Other Personnel

J. Cloran	WSU Radiation Safety Officer
K. Nash	Chair, Reactor Safeguards Committee

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

50-027/2008-201-01	VIO	Failure to ship radioactive material in accordance with DOT regulations as required by 10 CFR 71.5(a).
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PARTIAL LIST OF ACRONYMS USED

10 CFR	Title 10 of the <i>Code of Federal Regulations</i>
49 CFR	Title 49 of the <i>Code of Federal Regulations</i>
ALARA	As Low As Reasonably Achievable
DDE	Deep dose equivalent
IP	Inspection Procedure
mrem/hr	millirem per hour
NRC	Nuclear Regulatory Commission
OSL	Optically stimulated luminescent (dosimeter)
RO	Reactor Operator
RSC	Reactor Safeguards Committee
RSO	Radiation Safety Office
SDE	Shallow dose equivalent
SOP	Standard Operating Procedure
SRO	Senior Reactor Operator
TI	Transport Index
TLD	Thermoluminescent dosimeter
TS	Technical Specifications
VIO	Violation
WSU	Washington State University