December 3, 2012

Texas A&M University System
ATTN: Dr. Warren D. Reece, Director
Nuclear Science Center
Texas Engineering Experiment Station
1095 Nuclear Science Road, M/S 3575
College Station, Texas 77843

SUBJECT: TEXAS A&M UNIVERSITY, TEXAS ENGINEERING EXPERIMENT STATION – NRC ROUTINE INSPECTION REPORT NO. 50-128/2012-201

Dear Dr. Reece:

From November 6 to 8, 2012, the U.S. Nuclear Regulatory Commission (NRC) conducted an inspection at your Nuclear Science Center TRIGA Research Reactor Facility. The enclosed report documents the inspection results, which were discussed on November 8, 2012, with you 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.

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 made available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records component of 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.

Should you have any questions concerning this inspection, please contact Mr. G. Mike Morlang at (301) 415-4092 or by electronic mail at Gary.Morlang@nrc.gov.

Sincerely,

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

Docket No. 50-128
License No. R-83

Enclosure: NRC Inspection Report No. 50-128/2012-201
cc w/encl: Please see next page

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Governor's Budget and
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Test, Research and Training
Reactor Newsletter
202 Nuclear Sciences Building
University of Florida
Gainesville, FL 32611

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ACCESSION NO.: ML12332A086 **TEMPLATE #: NRC-002**

OFFICE	PROB:IR	PROB:LA	PROB:BC
NAME	GMorlang	GLappert	GBowman
DATE	11/21/2012	11/29/2012	12/3/2012

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

Docket No:	50-128
License No:	R-83
Report No:	50-128/2012-201
Licensee:	Texas A&M University
Facility:	Texas Engineering Experiment Station Nuclear Science Center Reactor
Location:	College Station, TX
Dates:	November 6–8, 2012
Inspector:	Mike Morlang
Approved by:	Gregory T. Bowman, Chief Research and Test Reactors Oversight Branch Division of Policy and Rulemaking Office of Nuclear Reactor Regulation

EXECUTIVE SUMMARY

Texas A&M University
Texas Engineering Experiment Station
Nuclear Science Center Reactor
Inspection Report No. 50-128/2012-201

The primary focus of this routine, announced inspection included onsite review of selected aspects of the Texas A&M University (the licensee's) Class II research and test reactor safety programs including: procedures, experiments, health physics, effluents and environmental monitoring, design changes, committees, audits and reviews, and transportation.

The licensee's programs were acceptably directed toward the protection of public health and safety, and in compliance with U.S. Nuclear Regulatory Commission (NRC) requirements.

Procedures

- Written procedures were being maintained in accordance with Technical Specifications.

Experiments

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

Health Physics

- Periodic surveys were completed and documented as required by procedure.
- Postings and signs met regulatory requirements.
- Personnel dosimetry was being worn as required and recorded doses were within the NRC's regulatory limits.
- Radiation survey and monitoring equipment was being maintained and calibrated as required.
- The Radiation Protection and As Low As Reasonably Achievable programs satisfied regulatory requirements.
- Radiation protection training was acceptable.

Effluents and Environmental Monitoring

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

Design Changes

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

Committees, Audits and Review

- The Reactor Safety Board completed the review, oversight, and audit functions required by Technical Specification 6.2.

Transportation

- Radioactive material was being shipped in accordance with the applicable regulations.

- The training of the staff members responsible for shipping the radioactive material met U.S. Department of Transportation requirements.

REPORT DETAILS

Summary of Plant Status

The Texas A&M University (the licensee's) TRIGA research reactor, licensed to operate at a maximum steady-state thermal power of one megawatt, continued to be operated in support of operator training, surveillance, research, and utilization involving neutron activation analysis. During the inspection the reactor was operated each day at full power to conduct sample irradiations.

1. Procedures

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

The inspector reviewed the following to ensure that the requirements of Technical Specifications (TS) 6.3, "Operating Procedures," were being met concerning written procedures:

- TS for the Texas A&M TRIGA reactor, dated March 1983
- Standard Operating Procedure (SOP) Section I, Procedure B, "Purpose and Scope of the Review Mechanism," Rev. 0, dated February 1, 1985
- SOP Section I, Procedure C, "Administration," Rev. 0, dated August 25, 1994
- SOP Section I, Procedure F, "Review and Approval," Rev. 1, dated February 25, 2002
- SOP Section III, Procedure G, "Reactor Pulse Power Surveillance," Rev. 1, dated February 9, 2000
- SOP Section III, Procedure I, "Scram Circuit Surveillance," Rev. 2, dated February 9, 2000
- Reactor Safety Board (RSB) Meeting Minutes #165, dated September 25, 2010
- RSB Meeting Minutes #166, dated May 13, 2011
- NSC Reactor Operations Log Books Numbers 213–221, from November 29, 2010, to present

b. Observations and Findings

Oversight and review of procedure implementation was provided by licensee management and the RSB. All procedures are current. Procedure changes are done by a Procedure Change Notice (PCN). The PCN lists the procedure steps affected, the current wording, the new wording and the reason for change. All changes are approved by the RSB.

The inspector observed the licensee perform a reactor startup to full power and several sample transfers from irradiation fixtures to shipping casks. In all evolutions procedures were available and followed by licensee personnel.

c. Conclusion

Procedure administrative review, revision, adherence to, and implementation satisfied TS requirements.

2. Experiments

a. Inspection Scope (IP 69001)

The inspector reviewed selected aspects of the following in order to verify that experiments were being conducted consistent with TSs 3.6 and 6.4:

- Nuclear Science Center Reactor (NSCR) Operations Log Books 213–221, from November 29, 2010, to present
- Experiment authorization review forms, most recent Number EA-28, dated June 7, 2003
- SOP Section IV, Procedure A, "Experiment Review and Approval," latest revision dated January 25, 2002
- SOP Section IV, Procedure B, "Sample Handling Procedures," latest revision dated July 14, 1988
- SOP Section IV, Procedure C, "Pneumatic System Operation," latest revision dated February 8, 1991
- SOP Section IV, Procedure D, "Beam Port Experiments," latest revision dated September 3, 1999
- SOP Section IV, Procedure E, "Irradiation Cell Experiments," latest revision dated March 2, 2001
- SOP Section IV, Procedure F, "Neutron Radiography Beam Port #4," latest revision dated March 22, 1990
- SOP Section IV, Procedure G, "In-Pool Irradiations," latest revision dated May 2, 1984
- SOP Section IV, Procedure H, "Thermal Column Film Irradiations," latest revision dated February 14, 1996
- Various Request for Service forms completed for in-pool and irradiation cell irradiations and experiments
- Annual Report for the Texas A&M University Nuclear Science Center for 2010, dated March 30, 2011
- Annual Report for the Texas A&M University Nuclear Science Center for 2011, dated March 30, 2012
- Modification Authorizations 1–60

b. Observations and Findings

The inspector reviewed the various experiments that had been approved for the reactor facility. All had been approved and signed as required. No new experiments had been initiated, reviewed, or approved since the last inspection.

The inspector observed an in-pool irradiation experiment which was approved and authorized by the NSCR Director and the Chairman of the RSB in accordance with TS 6.4(a) and SOP Section IV, Procedure A. The in-pool irradiation experiment had been reviewed and approved by the health physicist (HP) and senior reactor operator on duty as required and was conducted under the cognizance of the Reactor Supervisor as noted in the NSCR Operations Log. The licensee estimated the reactivity worth of the experiment and recorded it on the appropriate sheet. The inspector observed that the experiment was positioned and constrained as required. The results of the experiments were documented on the NSC Reactor Operations Log Book sheets and on the irradiation request forms.

The inspector observed the licensee personnel transfer numerous irradiated samples from the irradiation fixtures to shipping casks.

c. Conclusion

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

3. Health Physics

a. Inspection Scope (IP 69001)

The inspector reviewed selected aspects of the following to verify compliance with Title 10 of the *Code of Federal Regulations* (10 CFR) Parts 19 and 20 and TSs 3.5, 4.5, 5.4, and 6.6:

- Personnel dosimetry records for 2011 to 2012
- RSB meeting minutes from 2010 through the present
- RSB completed audits and reviews from 2010 through the present
- NSCR Form 844, “Radiation Work Permit (RWP),” Rev. 0, dated April 30, 2010, for 2011 and 2012
- NSCR Form 848, “RWP Signature Sheet,” Rev. 0, dated December 10, 2011, for 2011 and 2012
- NSCR Form 845, “RWP Sign In/Out Lab Sheet,” Rev. 3, dated November 17, 2009, for 2011 and 2012
- Annual Report for the Texas A&M University Nuclear Science Center for 2010, dated March 23, 2011
- Annual Report for the Texas A&M University Nuclear Science Center for 2011, dated March 30, 2012
- SOP Section VII, Procedure A-1, “Radiation Protection Program,” Rev. 3, dated December 4, 1997
- SOP Section VII, Procedure A-2, “Record Retention,” Rev. 3, dated December 4, 1997
- SOP Section VII, Procedure A-3, “Reporting Requirements,” Rev. 4, dated September 14, 2007

- SOP Section VII, Procedure A-4, “Health Physics Administration,” Rev. 2, dated December 19, 1997
- SOP Section VII, Procedure A-6, “ALARA,” Rev. 0, dated December 12, 2002
- SOP Section VII, Procedure B-4, “Daily Facility Air Monitoring Check,” Rev. 5, dated September 14, 2007
- SOP Section VII, Procedure B-6, “Monthly Facility Air Monitoring Test,” Rev. 4, dated September 14, 2007
- SOP Section VII, Procedure B-7, “Area Radiation Monitor,” Rev. 3, dated September 14, 2007
- SOP Section VII, Procedure B-8, “Stack Particulate Monitor,” Rev. 4, dated December 14, 2004
- SOP Section VII, Procedure B-13, “Portable Survey Instrument Calibration and Operability Check,” Rev. 4, dated September 3, 1999
- SOP Section VII, Procedure C-11, “Site Survey,” Rev. 2, dated September 3, 1999
- SOP Section VII, Procedure C-12, “Facility Radiation Survey,” Rev. 4, dated December 14, 2004
- SOP Section VII, Procedure C-14, “Facility Contamination Surveys,” Rev. 4, dated December 14, 2004
- SOP Section VII, Procedure D-1, “Health Physics Training,” Rev. 1, dated October 3, 1990
- SOP Section VII, Procedure E-1, “Personnel Dosimetry,” Rev. 0, April 13, 1995
- SOP Section VII, Procedure F-1, “Facility Air Monitor Configurations,” Rev. 0, dated May 10, 2000

b. Observations and Findings

The inspector reviewed selected monthly and other contamination and radiation surveys from 2010 through the present. The surveys had been completed by HP staff members as required and were documented as required by procedures. The inspector accompanied a licensee representative during the conduct of radiation and contamination surveys of the office and laboratory section of the facility. The radiation levels noted were comparable to those detected during previous surveys in the area and no anomalies were noted.

During tours of the facility, the inspector observed that caution signs, postings, and controls in the controlled areas were acceptable for the hazards involving radiation, high radiation, and contaminated areas and were posted as required by 10 CFR Part 20, Subpart J. Through observations of and interviews with licensee staff, the inspector 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 including the bulletin board in the hallway by each entrance to the facility, in the

hallway of the Upper Research Level in the Reactor Building, and in the Lower Research Level of the Reactor Building. 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. Caution signs, postings, and controls for radiation areas were as required in 10 CFR Part 20.

The inspector determined that the licensee used optically-stimulated luminescent (OSL) dosimeters for whole body monitoring of beta and gamma radiation exposure with an additional component to measure fast/thermal neutron radiation. The licensee used thermoluminescent dosimeter (TLD) finger rings for extremity monitoring. The inspector confirmed that dosimetry was being issued to staff and visitors as required by NSC SOP Section VII, Procedure E, "Personnel Dosimetry." The dosimetry was supplied and processed by a National Voluntary Laboratory Accreditation Program accredited vendor.

An examination of the OSL and TLD results indicating exposures to radiation at the facility for the past 2 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 2010 was 951 millirem (mr) deep dose equivalent (DDE) and the highest annual whole body exposure received by a single individual for 2011 was 1454 mr DDE.

Through direct observation the inspector determined that dosimetry was acceptably used by facility personnel. Also, exit frisking practices were in accordance with facility radiation protection requirements.

The calibration and periodic checks of the portable survey meters and radiation monitoring instruments were performed by the licensee's staff, Texas A&M calibration facilities, or certified contractors. The inspector confirmed that the licensee's calibration procedures and frequencies satisfied TS 4.3 and 10 CFR 20.1501(b) requirements.

The inspector reviewed selected NSC instrument calibrations done during 2011 and to date in 2012, and confirmed that the calibration of the portable survey meters in use had been completed as required. All instruments checked had current calibrations appropriate for the types and energies of radiation they were used to detect and/or measure. Calibrations of the permanently installed radiation area monitors and the facility air monitors were completed in accordance with requirements specified in TS 4.5 and the applicable procedures.

The licensees Radiation Protection and As Low As Reasonably Achievable (ALARA) programs were established in SOP Section VII, Procedure A-1, "Radiation Protection Program;" SOP Section VII, Procedure A-6, "ALARA;" and through various related HP procedures. The programs had been reviewed and approved as required. The Radiation Protection and ALARA programs contained instructions concerning organization, training, monitoring, personnel

responsibilities, audits, record keeping, and reports. The ALARA program provided objectives for keeping doses as low as reasonably achievable which was consistent with the guidance in 10 CFR Part 20. The programs, as established, appeared to be acceptable.

It appeared that the programs had not appreciably changed since the last NRC inspection. The licensee reviewed the programs at least annually, as required by 10 CFR 20.1101(c). Review and oversight was provided by the Radiation Safety Officer with the assistance of the RSB. It was also noted that the HP procedures were reviewed annually, as required by procedure.

The inspector reviewed selected RWPs that had been written, used, and closed out during 2011–2012. It was noted that the controls specified in the RWPs were generally acceptable and applicable for the type of work being done. The RWPs had been initiated, reviewed, and approved as required.

c. Conclusion

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

4. Environmental Monitoring

a. Inspection Scope (IP 69001)

The inspector reviewed the following to verify compliance with the requirements of 10 CFR Part 20 and TSs 3.5, 3.7, 4.5, 5.4, and 6.6:

- Effluent monitoring program results for 2011 and 2012
- Various gamma spectrum analyses for 2011 and 2012
- Counting and analysis records associated with airborne releases
- Annual Report for the Texas A&M University Nuclear Science Center for 2010 and 2011, including the effluent monitoring program results for that period
- SOP Section VII, Procedure B-8, "Stack Particulate Monitor," Rev. 4, dated December 14, 2004
- SOP Section VII, Procedure B-9, "Stack Gas (Ar-41) Monitor," Rev. 4, dated December 14, 2004
- SOP Section VII, Procedure B-9A, "Stack Gas (Xe-125) Monitor," Rev. 1, dated December 14, 2004

- SOP Section VII, Procedure B-10, “Reactor Building Particulate Monitor,” Rev. 6, dated December 14, 2004
- SOP Section VII, Procedure B-11, “Reactor Building Gas Monitor,” Rev. 5, dated December 14, 2004
- SOP Section VII, Procedure B-12, “Fission Product Monitor,” Rev. 4, dated September 14, 2007
- SOP Section VII, Procedure B-18, “Environmental Surveillance Program,” Rev. 2, dated September 14, 2007
- SOP Section VII, Procedure C-8, “Radioactive Liquid Waste System,” Rev. 3, dated May 10, 2000
- SOP Section VII, Procedure C-9, “Radioactive Liquid Waste Disposal,” Rev. 4, dated May June 11, 2011
- HP Form 819b, “Radioactive Liquid Waste Sewer Disposal Record,” latest form revision dated September 8, 2008

b. Observation and Findings

On-site and off-site gamma radiation monitoring was completed using the reactor facility stack effluent monitor and area monitors, and various environmental monitoring TLDs.

The Texas Department of Health Services provided environmental results of the continuous radiation monitors in the unrestricted areas surrounding the Nuclear Science Center. Data indicated that there were no measurable doses above regulatory limits.

The inspector determined that gaseous releases continued to be monitored as required, were calculated according to established protocol, and were acceptably documented in the annual reports. The airborne concentrations of the gaseous releases were well within the annual dose constraints of 10 CFR 20.1101(d), Appendix B concentrations, and TS limits. COMPLY code calculations indicated an effective dose equivalent to the public of 0.2 mr/year for 2010 and 0.1 mr/year for 2011.

The Radiological Safety Officer reviewed and approved the releases after analysis proved that the releases met regulatory requirements for discharge. The inspector reviewed radioactive liquid effluent sewer release data which indicated that the total activity released was below regulatory limits. The 2010 annual dose calculated from liquid effluent was 2.33 mr and 3.35 mr for 2011. The principles of ALARA were acceptably implemented to minimize radioactive releases. Monitoring equipment was acceptably maintained and calibrated.

c. Conclusion

Effluent monitoring satisfied TS and regulatory requirements and releases were within the specified regulatory limits. The environmental monitoring program was acceptable.

5. Design Change Functions

a. Inspection Scope (IP 69001)

To determine whether modifications to the facility, if any, were consistent with 10 CFR 50.59, the inspector reviewed:

- RSB meeting minutes from 2010 through the present (RSB meeting numbers 165–166)
- Annual Report for the Texas A&M University Nuclear Science Center for 2010, dated March 30, 2011
- Annual Report for the Texas A&M University Nuclear Science Center for 2011, dated March 30, 2012
- SOP, Section I, Procedure H, "Reactor Safety Board," dated August 19, 2003
- Modification authorizations numbered 1–60

b. Observations and Findings

The inspector determined that design changes at the NSCR facility required a facility staff review followed by an RSB review and subsequent approval. No design changes had been processed during the past 2 years. The inspector reviewed the records of three previous changes, including the related modification authorizations, and determined that the staff reviews had been performed as required and the proposed modifications had been reviewed and approved by the RSB. The primary cooling system had recently been modified by the replacement of the pump and cooling towers and the addition of new valves. The review and approval process had been followed for these changes, but the final package had not been placed in the modification authorization file. The licensee committed to correcting this oversight and was in the process of adding the package to the file. The systems affected were checked out prior to resumption of reactor operations. From the inspector's review, it was also determined that 10 CFR 50.59 reviews and approvals were focused on safety and met licensee program requirements. No safety significant issues were noted during the review and the modifications completed by the licensee did not involve a change to the TS.

c. Conclusion

The licensee's design change program was being implemented as required.

6. Committee Audit and Review

a. Inspection Scope (IP 69001)

To verify that the licensee had established and conducted reviews and audits as required in TS 6.2, the inspector reviewed:

- Completed audits and reviews from 2010 thru 2012 to date
- RSB meeting minutes from 2010 through the present (RSB meeting numbers 165–166)
- Annual Operator Requalification Program Audit dated August 5, 2011 and October 30, 2012
- NSC HP Review and ALARA Audit, dated June 15, 2011, and April 19, 2012
- Emergency Plan Audit, dated July 4, 2011
- Annual Report for the Texas A&M University Nuclear Science Center for 2010, dated March 30, 2011
- Annual Report for the Texas A&M University Nuclear Science Center for 2011, dated March 30, 2012
- SOP, Section I, Procedure H, "Reactor Safety Board," dated August 19, 2003
- Reactor Operations Audit, dated August 5, 2011, and April 16, 2012

b. Observations and Findings

The inspector reviewed minutes of the last two RSB meetings. The minutes showed that the committee met once per calendar year as required by TS 6.2.2.a and that a quorum was present for each meeting. The topics considered during the meetings were appropriate and as stipulated in TS 6.2.3. The RSB had not had a meeting to date for calendar year 2012.

TS 6.2.4 requires that the RSB or a subcommittee thereof shall audit reactor operations and the radiation protection programs at least quarterly, but at intervals not to exceed 4 months. Audits shall include, but are not limited to, the following:

- Facility operations, including radiation protection, for conformance to the TS, applicable license conditions, and SOPs at least once per calendar year (interval between audits not to exceed 15 months)
- The retraining and requalification program for the operating staff at least once per calendar year (interval between audits not to exceed 15 months)
- The facility security plan and records at least once per calendar year (interval between audits not to exceed 15 months)
- The reactor facility emergency plan and implementing procedures at least once per calendar year (interval between audits not to exceed 15 months)

The inspector reviewed the documentation and results of the audits that had been conducted by the RSB from 2010 through the present. The licensee had identified, and the inspector confirmed, that an audit of the facility operations including the radiation protection program, the facility emergency plan and the security plan had been conducted per TS requirements.

c. Conclusion

The RSB acceptably completed review and oversight functions required by TS 6.2.

6. Transportation

a. Inspection Scope (IP 86740)

The inspector interviewed licensee personnel and reviewed the following records to verify compliance with regulatory and procedural requirements for shipping licensed radioactive material:

- Licenses of shipment recipients
- Training records of those qualified to ship radioactive material
- Selected records of various types of radioactive material shipments documented on various forms, including NSC Form 514, 852, and 854
- SOP Section VII, Procedure C-1, "HP Maintenance and Surveillance," Rev. 3, dated September 3, 1999
- SOP Section VII, Procedure C-2, "Radioactive Materials Control," Rev. 3, dated December 14, 2004
- SOP Section VII, Procedure C-3, "Radioactive Materials Released From the NSC License," Rev. 2, dated December 12, 1997
- SOP Section VII, Procedure C-5, "Radioactive Material Received," Rev. 3, dated December 19, 1997
- SOP Section VII, Procedure C-10, "Radioactive Material Handling," Rev. 2, dated December 19, 1997
- SOP Section VII, Procedure C-7, "Radioactive Solid Waste Sorting," Rev. 4, dated December 14, 2004

b. Observations and Findings

The inspector witnessed the shipment of radioactive antimony from removal from the irradiation fixture to the actual placement of the drums on the shipping vehicle.

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. A review of the records of selected shipments 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 the applicable U.S. Department of Transportation (DOT) and NRC regulations.

The inspector verified that the licensee maintained copies of shipment recipients' licenses to possess radioactive material as required and that the licenses were verified to be current prior to initiating a shipment. The licensee maintained files of the Certificate of Compliance for shipping containers provided by outside companies. The training of the staff members responsible for shipping the material was also reviewed. The inspector verified that the shippers' training met DOT requirements. The training program appeared to be extensive and conducted properly.

It is of note that the licensee had made more than 525 shipments to date for 2012.

c. Conclusion

Radioactive material was being shipped in accordance with the applicable regulations. The training of the staff members responsible for shipping the radioactive material met DOT requirements.

8. Exit Interview

The inspector presented the inspection results to licensee management and staff at the conclusion of the inspection on November 8, 2012. The inspector described the areas inspected and discussed in detail the inspection observations. The licensee acknowledged the findings presented and did not identify as proprietary any of the material provided to or reviewed by the inspector during the inspection.

PARTIAL LIST OF PERSONS CONTACTED

Licensee Personnel

D. Reece	Director, Nuclear Science Center
J. Remlinger	Associate Director
A. Booth	Radiation Safety Officer
J. Newhouse	Reactor Supervisor

INSPECTION PROCEDURES USED

IP 69001	Class II Non-Power Reactors
IP 86740	Transportation

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

None

LIST OF ACRONYMS USED

10 CFR	Title 10 of the *Code of Federal Regulations*
ALARA	As Low As Reasonably Achievable
DDE	Deep Dose Equivalent
DOT	Department of Transportation
HP	Health Physics
IP	Inspection Procedure
mr	Millirem
NSC	Nuclear Science Center
NSCR	Nuclear Science Center Reactor
NRC	U.S. Nuclear Regulatory Commission
OSL	Optically-Stimulated Luminscent
PCN	Procedure Change Notice
RSB	Reactor Safety Board
RWP	Radiation Work Permit
SOP	Standard Operating Procedure
TLD	Thermoluminescent Dosimeter
TS	Technical Specifications