March 11, 2004

Dr. Sheldon Landsberger
Director, Nuclear Engineering Teaching Laboratory
The University of Texas at Austin
Pickle Research Campus, Building 159
Mail Code R9000
Austin, TX 78712-1024

SUBJECT: NRC INSPECTION REPORT NO. 50-602/2003-201

Dear Dr. Landsberger:

This letter refers to the inspection conducted on February 23-26, 2004, at your University of Texas Nuclear Engineering Teaching Laboratory facility. The inspection included a review of activities authorized for your facility. The enclosed report presents the results of that inspection.

Areas examined during the inspection are identified in the report. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations of activities in progress. Based on the results of this inspection, no safety concerns or noncompliances of NRC requirements were identified. No response to this letter is required.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at (the Public Electronic Reading Room) http://www.nrc.gov/reading-rm/adams.html.

Should you have any questions concerning this inspection, please contact Mr. Craig Bassett at (404) 562-4712.

Sincerely,

/RA/

Patrick M. Madden, Section Chief
Research and Test Reactors Section
New, Research and Test Reactors Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Docket No. 50-602
License No. R-129

Enclosure: NRC Inspection Report No. 50-602/2003-201
cc w/enclosure: Please see next page

cc:

Governor's Budget and
Planning Office
P.O. Box 13561
Austin, TX 78711

Bureau of Radiation Control
State of Texas
1100 West 49th Street
Austin, TX 78756

Mr. Roger Mulder
Office of the Governor
P.O. Box 12428
Austin, TX 78711

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

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

Docket No:	50-602
License No:	R-129
Report No:	50-602/2003-201
Licensee:	The University of Texas at Austin
Facility:	Nuclear Engineering Teaching Laboratory
Location:	Pickle Research Campus, Bldg. 159 10100 Burnet Road Austin, TX 78758
Dates:	February 23-26, 2004
Inspector:	Craig Bassett
Approved by:	Patrick M. Madden, Section Chief Research and Test Reactors Section New, Research and Test Reactors Program Division of Regulatory Improvement Programs Office of Nuclear Reactor Regulation

EXECUTIVE SUMMARY

The University of Texas
Report No.: 50-602/2003-201

The primary focus of this routine, announced inspection included onsite review of selected aspects of the licensee's Class II research and test reactor safety programs including: organizational structure and staffing, design change and review and audit functions, radiation protection, environmental protection, procedures, material control and accountability, security, and transportation of radioactive material since the last NRC inspection in these areas. The licensee's programs were acceptably directed toward the protection of public health and safety, and in compliance with NRC requirements.

Organizational Structure and Staffing

- The organizational structure, functions, and staffing were consistent with Technical Specification requirements.

Design Change and Review and Audit Functions

- The review and audit program satisfied Technical Specification requirements.

Radiation Protection

- Periodic surveys were completed and documented as required by 10 CFR Part 20, the Technical Specifications, and licensee procedures.
- Postings and signs met regulatory requirements.
- Personnel dosimetry was being worn as required and recorded doses were within the NRC's regulatory limits of 10 CFR Part 20.
- Portable survey meters, radiation monitoring equipment, and laboratory counting instruments were being calibrated and maintained according to TS and industry/equipment manufacturer standards and licensee procedures.
- The Radiation Protection and ALARA Programs satisfied the requirements of 10 CFR 19.12, 10 CFR 20.1101, and licensee procedures.
- Radiation protection training was acceptable.

Environmental Protection

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

Procedures

- Procedural control and implementation satisfied Technical Specification requirements.

Material Control and Accountability

- Special Nuclear Materials were acceptably tracked, controlled, and inventoried in accordance with the licensee's material control and accountability program.

- An Unresolved Item identified in a previous NRC Inspection Report concerning Special Nuclear Material possession limits was closed.

Security

- Security activities and systems satisfied Physical Security Plan requirements.

Transportation of Radioactive Materials

- Radioactive materials were being shipped in accordance with campus and licensee procedures and the applicable regulatory requirements.

REPORT DETAILS

Summary of Plant Status

The licensee's TRIGA Mark II research reactor continued to be operated in support of experiments, education, operator training, and surveillance. During the inspection, the reactor was operated on several occasions.

1. Organizational Structure and Staffing

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

The inspector reviewed the following regarding the licensee's organizational structure and functions to ensure that the requirements of Sections 6.1.1 through 6.1.3 of Technical Specifications (TS), Revision 1, Amendment No. 4, dated, May 10, 2001, were being met:

- The University of Texas (UT) Nuclear Engineering Teaching Laboratory (NETL) facility organizational structure and staffing
- qualifications of recently appointed personnel
- management responsibilities and administrative controls
- UT-NETL Annual Reports for 2001 and 2002
- administrative controls outlined in NETL Procedure Number (No.) ADMIN 3.0, "Personnel and Operator Qualifications," Revision (Rev) 0, dated September 1991

b. Observations and Findings

Through records review and interviews with licensee personnel, the inspector noted that the health physics (HP) organizational structure and staffing had changed since the last inspection in this area (see NRC Inspection Report Number (No.) 50-602/2002-201). Prior to January 2003, the reactor HP staff consisted of one full time health physicist and a half-time student position. The health physicist subsequently left the University and another person, already on staff at the NETL, was assigned those duties. The inspector verified that the person appointed to fill the reactor health physicist position (the NETL Laboratory Manager) was qualified to do so.

The campus HP staffing consisted of the Radiation Safety Officer (RSO) and three technical staff members. The RSO was also a member of the UT Nuclear Reactor Committee. Campus personnel provided support to the reactor HP staff, however, the reactor staff performed most HP functions at the reactor. Coordination of HP activities between the two groups was acceptable. Structure, responsibilities and staffing was as reported in the Annual Report and as required by TS Sections 6.1.1 through 6.1.3.

c. Conclusions

The organizational structure, functions, and staffing were consistent with TS requirements.

2. Design Change and Review and Audit Functions

a. Inspection Scope (IP 69001)

In order to ensure that the audits and reviews stipulated in the requirements of TS Section 6.2 were being completed, the inspector reviewed the following:

- UT Nuclear Reactor Committee (UT-NRC) meeting minutes and records
- UT-NRC safety review and audit records from April 2002 to the present
- responses to safety reviews and audits
- NETL Procedure No. ADMIN 2.0, “Design Features and Quality Assurance,” Rev 1, dated September 1991
- NETL Procedure No., CHRTR, “Nuclear Reactor Committee Charter,” Revision dated September 1, 2000
- ALARA Committee meeting minutes for 2002 and 2003

b. Observations and Findings

UT-NRC meeting minutes and records and ALARA Committee meeting minutes from April 2002 through the present were reviewed. The inspector verified that the UT-NRC and ALARA committee meetings and memberships satisfied TS Section 6.2 Review and Audit requirements and the ALARA Committee's procedural rules. The records showed that safety reviews and audits were conducted by various members of the UT-NRC or other designated persons as required and at the TS required frequency. Topics of these reviews were consistent with TS requirements to provide guidance, direction, and oversight, and to ensure acceptable use of the reactor and appropriate implementation of the radiation protection program. The inspector noted that the safety reviews and audits and the associated findings were acceptably detailed and that the licensee responded and took corrective actions as needed.

c. Conclusions

The review and audit program satisfied TS requirements.

3. Radiation Protection Program

a. Inspection Scope (IP 69001)

The inspector reviewed selected aspects of the following to verify compliance with 10 CFR Parts 19 and 20 and TS Sections 3.3.3, 4.3.3, and 6.6.1:

- radiological signs and posting in various areas of the facility
- routine periodic surveys and monitoring documented on the appropriate survey maps
- dosimetry/exposure records for 2001 through 2003
- maintenance and calibration records of selected portable survey meters, radiation monitoring equipment, and laboratory counting equipment
- As Low As Reasonably Achievable (ALARA) reviews

- ALARA Committee meeting minutes for 2002 and 2003
- UT-NETL Annual Reports for 2001 and 2002

- The University of Texas at Austin "Radiation Safety Manual," effective date April 2001, approved by the Texas Department of Health
- Radiation Work Permits Nos. 02-001, 02-004, 02-009, 2003-05, 2003-10, 2003-13
- NETL Procedure No. ADMIN-4, "Radiation Protection Program," Rev 0, dated September 1991
- NETL Procedure No. HP00-1, "Radiation Monitoring - Personnel," Rev 2, dated November 8, 2000
- NETL Procedure No. HP00-2, "Radiation Monitoring Facility," Rev 2, dated November 8, 2000
- NETL Procedure No. HP00-3, "NETL ALARA Program," Rev 2, dated November 8, 2000
- NETL Procedure No. HP00-4, "Radiation Protection Training," Rev 2, dated November 9, 2000
- NETL Procedure No. HP00-5, "Radiation Monitoring Equipment," Rev 2, dated April 24, 2001
- NETL Procedure No. HP00-6, "Radioactive Material Control," Rev 2, dated November 9, 2000
- NETL Procedure No. HP00-7, "Radiation Work Permits (RWPs)," Rev 2, dated April 19, 2001
- NETL Procedure No. MAIN-4, "Area Radiation Monitor Systems," Rev 3, dated May 30, 2000
- NETL HP1 Form-A, "Daily Exposure Logsheet"
- NETL HP1 Form-B, "Visitor Dosimeter Record"
- NETL Staff and Personnel Training Record forms
- NETL Area Monitors Weekly response check forms
- NETL Form A Eberline RMS II calibration forms
- NETL Form B Ludlum 333-2 calibration forms
- NETL HP00-5 Attachment A, "Bicron Frisk-Tech Calibration" forms
- NETL HP00-5 Attachment B, "Bicron Micro-Rem Calibration" forms
- NETL HP00-5 Attachment C, "Eberline RO-2A Calibration" forms
- NETL HP00-5 Attachment D, "Eberline RM-14S Calibration" forms
- NETL HP00-5 Attachment E, "Pocket Dosimeter Calibration" forms
- NETL HP00-5 Attachment P, "Generic Frisker Calibration" forms
- NETL HP00-5 Attachment O, "Generic Ratemeter Calibration" forms

b. Observations and Findings

(1) Surveys

Selected weekly, monthly, quarterly, and other periodic radiation and/or contamination surveys for 2002 and 2003 were reviewed by the inspector. It was noted that various surveys were missing for 2002. This had been noted by the licensee during records reviews in February and August of 2003. The problem was apparently the result of inattention to detail by the previous health physicist. The problem was corrected when the former health physicist left the facility and the newly appointed reactor health physicist assumed control of the program. The

inspector verified that the surveys for 2003 had been completed by HP staff members as required. All surveys were annotated on a detailed map with additional information indicating the time, date, and person performing the survey. Results were evaluated and corrective actions taken and documented when readings/results exceeded established action levels, prior to exceeding regulatory limits.

During the inspection the inspector conducted a radiation survey along side a licensee representative. Areas surveyed at the facility included the Reactor Bay and associated support rooms/areas. The radiation levels noted by the inspector were comparable to those found by the licensee and no anomalies were noted.

(2) Postings and Notices

Copies of current notices to workers were posted in appropriate areas in the facility. Radiological signs and survey maps were typically posted at the entrances to controlled areas. Other postings also showed the industrial hygiene hazards that were present in the areas as well. The copies of NRC Form-3, "Notice to Employees," noted at the facility were the latest issue and were posted in various areas throughout the facility. These locations included the bulletin board in the hallway by the front office and in the corridor leading to the Reactor Control Room.

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

(3) Dosimetry

The 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 neutron radiation. The licensee used thermoluminescent dosimeter (TLD) finger rings for extremity monitoring. Dosimetry was issued to staff and visitors as outlined in licensee procedures. The issuing criteria met or exceeded the requirements of 10 CFR 20.1502 for individual monitoring. The dosimetry was supplied and processed by a National Voluntary Laboratory Accreditation Program (NVLAP) accredited vendor. 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 facility employee for 2003 was 58 millirem (mrem) deep dose equivalent. The highest annual extremity exposure for the past year was 660 mrem shallow dose equivalent.

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

(4) Radiation Monitoring Equipment

Examination of selected radiation monitoring equipment in service at the facility indicated that the instruments had the acceptable up-to-date calibration sticker attached. The instrument calibration records reviewed by the inspector indicated calibration of portable survey meters was typically completed by licensee staff personnel. However, some instruments were shipped to vendors for calibration. Calibration frequency met procedural requirements and records were maintained as required. Area Radiation Monitors, Constant Air Monitors, and stack monitors were also being calibrated as required. These monitors were also typically calibrated by licensee staff personnel.

(5) Radiation Protection Program

The licensee's Radiation Protection and ALARA programs were established and described in the NETL Procedure Nos. ADMIN-4 and HP00-3, as well as through The University of Texas at Austin Radiation Safety Manual. The programs contained instructions concerning organization, training, monitoring, personnel responsibilities, audits, record keeping, and reports. The programs, as established, appeared to be acceptable. The ALARA program provided guidance for keeping doses as low as reasonably achievable, which was consistent with the guidance in 10 CFR Part 20.

The inspector determined that the licensee had completed an annual review of the radiation protection program in accordance with 10 CFR 20.1101(c) for 2002 and 2003 as required. This was accomplished through the annual ALARA Committee Meetings. No program deficiencies were identified but various suggestions were made for program improvement.

The licensee did not require or have a respiratory protection program or planned special exposure program.

(6) Radiation Work Permits (RWPs)

The inspector reviewed selected RWPs that had been written and used during 2002 and 2003 as stipulated in NETL Procedure No. HP00-7. It was noted that the controls specified in the RWPs were acceptable and applicable for the type of work being done. The RWPs had been initiated, reviewed, and approved as indicated on the forms. The RWP program was acceptable.

(7) Radiation Protection Training

The inspector reviewed the radiation worker (rad worker) training given to NETL facility faculty and staff members and to students and student assistants. The licensee indicated that initial rad worker training was given when an individual first arrived at the facility and refresher training was given every two years thereafter. Training records showed that personnel were acceptably trained in radiation protection practices. The inspector verified that the training received was in compliance with 10 CFR Part 19. The training program was acceptable.

(8) Facility Tours

The inspector toured the Reactor Bay, the Coolant Treatment room, the Auxiliary Equipment room, and selected support laboratories with licensee representatives. The inspector noted that facility radioactive material storage areas were properly posted. No unmarked radioactive material was noted.

c. Conclusions

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; 5) the Radiation Protection and ALARA Programs satisfied regulatory requirements; and, 6) the radiation protection training program was acceptable.

4. Environmental Protection Program

a. Inspection Scope (IP 69001)

To determine that the licensee was complying with the requirement of the 10 CFR Part 20 regulations and TS Sections 3.3.3, 4.3.3, and 6.6.1, the inspector reviewed selected aspects of:

- NETL environmental monitoring program
- UT-NETL Annual Reports for 2001 and 2002
- environmental monitoring release records
- NETL Procedure No. HP00-2, "Radiation Monitoring Facility," Rev 2, dated November 8, 2000
- NETL Procedure No. HP00-3, "NETL ALARA Program," Rev 2, dated November 8, 2000
- NETL Procedure No. MAIN-4, "Area Radiation Monitor Systems," Rev 3, dated May 30, 2000
- NETL Procedure No. NETL-2, "Liquid Radioactive Waste System," Rev 0, dated September 1991
- NETL Air Monitors Wk-Mnth response check forms
- NETL Form C PRM AR1000 calibration forms
- NETL Form D PRM AR1000 (gas) calibration forms

b. Observations and Findings

The program for the monitoring, storage, and release of radioactive liquid and gases was consistent with 10 CFR Part 20. Gaseous releases were monitored and calculated using the Environmental Protection Agency COMPLY code. Records were acceptable and showed gaseous releases well within the annual dose constraint of 10 CFR 20.1101(d) and 10 CFR Part 20, Appendix B concentrations as well as TS 3.3.3 limits.

Radioactive liquid releases were infrequent and were monitored and released when below 10 CFR Part 20, Appendix B limits. Records reviewed through January 2004, confirmed that releases had been made in 2002 or 2003. ALARA principles were acceptably implemented to minimize radioactive releases. Monitoring equipment was acceptably maintained and calibrated.

The environmental monitoring program consisted of six TLD dosimeters placed at selected locations adjacent to the NETL building and read quarterly. Dosimetry results since the last inspection were typically near or below the vendors minimum reportable levels for x- and gamma rays and energetic beta particles. One anomaly occurred during the first two quarters of 2003. A facility TLD monitoring the exterior of the building near a radioactive material storage area recorded a dose of about 100 mrem for the quarter. The licensee investigated the problem and found that neutron sources had been moved from the Neutron Generator Room and stored in the Reactor Bay. The sources were subsequently moved into the fuel storage pits and the problem was eliminated. An evaluation of the dose to the public indicated that the area was inaccessible to a member of the public and, based on a realistic occupancy factor, no one could have received a dose in excess of that allowable by 10 CFR Part 20.

c. Conclusions

Based on the records reviewed, the effluent monitoring and release program satisfied NRC requirements.

5. Procedures

a. Inspection Scope (IP 69001)

The inspector reviewed selected aspects of the following to verify compliance with TS Section 6.3 requirements:

- administrative controls documented in NETL Procedure No. ADMIN-1, “NETL Procedure Outline and Control,” Rev. 2, dated April 19, 2000
- records of changes to NETL procedures
- procedural implementation
- records of UT-NRC review and approval

b. Observations and Findings

HP procedures were available for those tasks and items required by TS Section 6.3. The licensee controlled changes and temporary changes to procedures, and associated review and approval processes, by use of administrative procedures.

Training of personnel on procedures and subsequent changes to procedures was acceptable. The inspector observed personnel conducting radiation surveys, issuing dosimetry, and conducting experiments in accordance with applicable procedures.

c. Conclusions

Based on the procedures and records reviewed and observations of staff during the inspection, the procedural control and implementation program satisfied TS requirements.

6. Material Control and Accountability

a. Inspection Scope (IP 85102)

The inspector reviewed selected aspects of the licensee's material control and accountability program including:

- nuclear material control and accountability forms (DOE/NRC Forms 741, 742, and 742C) for the past 24 months
- fuel storage records
- physical inventory of selected spent and unirradiated fuel elements

b. Observations and Findings

(1) Program Review

The inspector verified that the licensee's material control and accountability program tracked locations and content of fuel, fission detectors, and other special nuclear material (SNM) maintained under the R-106 license. Possession and use of SNM was limited to those purposes authorized by the license. The appropriate material control and accountability forms (DOE/NRC Forms 741 and 742) were being prepared and submitted in the time frame required by the regulations. The inspector also verified that the licensee was conducting annual inventories of the SNM at the facility as required.

During the inspection, the inspector toured the facility, observed the SNM and fuel storage areas, and verified that the licensee was using and storing SNM in the designated areas. The inspector also verified that the licensee maintained an unirradiated instrumented fuel element and various irradiated fuel elements in the appropriate storage locations as indicated on licensee records. This demonstrated that the fuel and SNM were in the locations specified and that records documenting the storage and transfers were accurate.

(2) Event Review

By letter dated March 6, 2001, the licensee reported that, through an internal audit, they had identified a violation of their R-129 license possession limit for plutonium.

License R-129 (Amendment No. 3) allowed possession of one gram of plutonium-239 (Pu-239) in the form of reference materials. Their previous license, (License R-92, Amendment 6 issued in 1970 for a separate reactor) allowed possession of up to 150 grams of Pu-239 in sealed "pins." The three subject "pins" were received from Argonne National Laboratory in 1971. With the decommissioning of the old reactor and the building and licensing of the present reactor, all fuel and special nuclear material was transferred to the new location and new license. The "pins" were physically transferred appropriately and had been stored, inventoried, leak tested, and reported on semiannual materials balance reports as required by 10 CFR Parts 70, 73, and 75, TS Section 5.3.3-Configuration, and licensee SNM

procedures. However, the licensee's investigation concluded that the necessary amount and form of plutonium was inadvertently left off the application for the new reactor license (License R-129).

The licensee immediately notified the NRC as required and subsequently requested a license amendment to increase the possession limits of Pu-239 to cover the inventory of the pins. This licensee-identified issue was identified as an Unresolved Item (URI 50-602/2001-201-01) in NRC Inspection Report No. 50-602/2001-201 pending the outcome of the license amendment. By letter dated March 26, 2002, the NRC issued a license amendment (Amendment No. 5) which allowed the licensee to possess up to 150 grams of Pu-239 in sealed pins. This issue is considered closed.

c. Conclusions

Special Nuclear Materials were acceptably tracked, controlled, and inventoried under the licensee's material control and accountability program.

A previous Unresolved Item concerning SNM possession limits was closed.

7. Security

a. Inspection Scope (IPs 81401, 81402, 81403, 81431, and 81810)

To verify compliance with the licensee's NRC-approved Physical Security Plan (PSP) and to assure that changes, if any, to the plan had not reduced its overall effectiveness, the inspector reviewed:

- NETL Physical Security Plan for the UT TRIGA Mark II Reactor Facility, Revision No. 1, dated August 1990
- security logs, records, and reports
- Computer based key and access control information and key accountability records
- security systems and equipment checks
- NETL Procedure Number ADMIN-5, "Protection Programs," Rev. 0, dated September 1991
- NETL Procedure Number PLAN-0, "Call and Notification," Rev. 2, dated November 9, 2000
- NETL Procedure Number PLAN-S, "Physical Security," Rev. 4, dated September 16, 2003
- UT Police Department Standard Operating Procedure No. 50, "Nuclear Engineering Teaching Laboratory," Revised December 1, 2002

b. Observations and Findings

The PSP in use at the facility was the same as the latest revision approved by the NRC. The security-related NETL procedures were consistent with, and adequately implemented, the PSP. The inspector verified that the PSP was being reviewed

biennially as required. It was also noted that the licensee was properly controlling and protecting the PSP and other safeguards information as required by the regulations.

Through records review and interviews with licensee personnel, the inspector verified that there had been no safeguards events at the facility since the last inspection. Also, although no new fuel had been received by the licensee recently, the PSP and other related procedures contained provisions to establish and maintain protection of such fuel and other SNM.

Physical protection systems (barriers, alarms, and equipment) were reviewed and observed by the inspector and were determined to be in accordance with the PSP. The inspector also verified that the physical protection systems were being maintained and tested in accordance with the PSP. Access control was being implemented as stipulated in the PSP and NETL Procedure Number PLAN-S. Acceptable security response and training of the staff were demonstrated through alarm response and drill participation in accordance with other procedures. Annual security training was being provided to the staff, as well as NETL security personnel, as required.

The inspector visited the UT Police Department and interviewed UT Police personnel. The department provided periodic patrols and initial response to events at the facility. The inspector interviewed one supervisor and a communications operator and determined that they were knowledgeable of the reactor facility and their responsibilities regarding security at the facility. The inspector determined that a current response roster was being maintained at the police dispatch office as required.

The inspector also visited the campus Key Shop. The inspector interviewed the supervisor there and determined that proper control was being maintained over the keys, the key making process, and over card keys issued to facility staff.

c. Conclusions

Security activities and systems satisfied Physical Security Plan requirements.

8. Transportation of Radioactive Material

a. Inspection Scope (IP 86740)

To verify compliance with regulatory and procedural requirements for the transfer or shipment of licensed radioactive material, the inspector reviewed the following:

- selected records of various types of radioactive material shipments
- training records of staff members responsible for shipping licensed radioactive material
- Radioactive Material Storage Log forms
- Radioactive Material Transfer Record forms
- NETL Procedure No. HP00-6, “Radioactive Material Control,” Rev 2, dated November 9, 2000

b. Observations and Findings

The transport of radioactive material was reviewed. 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. The records also indicated that the shipping containers were appropriate and had been labeled as required. All radioactive material shipment records reviewed by the inspector had been completed in accordance with Department of Transportation and NRC regulatory requirements.

The inspector verified 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. Conclusions

Radioactive material was shipped in accordance with the applicable regulations and licensee procedures.

9. Exit Meeting

The inspector presented the inspection results to members of licensee management at the conclusion of the inspection on February 26, 2004. The licensee acknowledged the findings presented. The Physical Security Plan was the only material provided to or reviewed by the inspector during the inspection that was identified as proprietary

PARTIAL LIST OF PERSONS CONTACTED

Licensee

M. Krause	Reactor Supervisor
S. Landsberger	Director, NETL
D. O'Kelly	Reactor Health Physicist and Laboratory Manager
S. O'Kelly	Associate Director, NETL

Other Personnel

J. Brett	ITS Staff, UT
K. Chapa	Communications Operator, UT Police Department (PD)
R. Stalder	Operations Commander, UT PD
L. Worley	Lock and Key Services Supervisor, UT

INSPECTION PROCEDURE (IP) USED

IP 69001	Class II Non-Power Reactors
IP 81401	Plans, Procedures, and Reviews
IP 81402	Reports of Safeguards Events
IP 81403	Receipt of New Fuel at Reactor Facilities
IP 81431	Fixed Site Physical Protection of Special Nuclear Material of Low Strategic Significance
IP 81810	Protection of Safeguards Information
IP 85102	Material Control and Accounting
IP 86740	Inspection of Transportation Activities

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

URI 50-602/2001-201-01	The licensee possessed plutonium-239 in a form and amount in excess of its license limits.

PARTIAL LIST OF ACRONYMS USED

ALARA	As Low As Reasonably Achievable
CFR	Code of Federal Regulations
E-Plan	Emergency Plan
HP	Health Physics
NETL	Nuclear Engineering Teaching Laboratory
NRC	Nuclear Regulatory Commission
OSL	Optically stimulated luminescent (dosimeter)
PSP	Physical Security Plan
RSO	Radiation Safety Officer
RPP	Radiation Protection Program
RWP	Radiation Work Permit
SNM	Special Nuclear Material
TLD	Thermoluminescent dosimeter
TS	Technical Specifications
URI	Unresolved Item
UT	University of Texas
UT-NRC	University of Texas Nuclear Reactor Committee