December 22, 2004

Dr. Sheldon Landsberger
Reactor Administrator
The University of Texas at Austin
Pickle Research Campus, Building 159
Mail Code R9000
Austin, TX 78712-1024

SUBJECT: NRC INSPECTION REPORT NO. 50-602/2004-204

Dear Dr. Landsberger:

This refers to the inspection conducted on December 13-14, 2004, at your University of Texas TRIGA Mark-II Reactor 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 2.390 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 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. 50-602/2004-204
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
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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:	50-602/2004-204
Licensee:	University of Texas
Facility:	University of Texas TRIGA Mark-II Reactor
Location:	Pickle Research Campus, Bldg. 159 10100 Burnet Road Austin, TX 78758
Dates:	December 13-14, 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

This routine, announced inspection included onsite review of the licensee's emergency preparedness program as it relates to the licensee's Class II research and test reactor and observation of the required annual emergency drill. The licensee's program was directed toward the protection of public health and safety and was in compliance with NRC requirements. No safety concerns or violations of regulatory requirements were identified.

<u>Emergency Preparedness</u>

- The NETL Emergency Plan was found to be acceptable after the last major revision in 1990.

- The Emergency Plan Implementing Procedures were being reviewed and updated as needed to effectively implement the provisions of the Emergency Plan.

- Emergency response facilities and equipment were being maintained as required.

- First responders were knowledgeable of the proper actions to take in case of an emergency at the research reactor facility.

- The licensee drill that was conducted on December 14, 2004, effectively demonstrated that the licensee and local support groups were equipped to deal with an adverse situation.

- Emergency preparedness training was being conducted for staff members as required and periodic familiarization tours of the facility were conducted for support personnel.

REPORT DETAILS

Summary of Plant Status

The licensee's 1.1 megawatt TRIGA Mark-II Research and Test Reactor (RTR) was being operated on a normal, routine schedule. A review of the applicable records indicated that the reactor was typically operated in support of education, laboratory experiments, service work, reactor surveillance, and operator training. During this inspection, the reactor was not operated so that an emergency drill could be conducted without interfering with any experiments or other ongoing activities.

1. Emergency Preparedness

a. Changes to the Emergency Plan

(1) Inspection Scope (Inspection Procedure [IP] 69001)

To determine compliance with the requirements of 10 CFR 50.54(q) and the licensee's Emergency Plan, the inspector reviewed:

- Nuclear Engineering Teaching Laboratory (NETL) Emergency Response Plan, Revision (Rev) 1, dated November 1990
- NETL Administrative Procedure, ADMIN-5, "Fire-Safety Protection Programs," Rev 0, dated September 1991
- NETL Emergency Procedure, PLAN-E, "Emergency Response," Version (Ver) 2.00, dated November 9, 2000
- NETL Emergency Procedure, PLAN-0, "Call and Notification," Ver 2.00, dated November 9, 2000
- applicable letters and documents concerning the Emergency Plan

(2) Observations and Findings

The Emergency Plan (E-Plan) in use at the reactor and emergency facilities was the same as the version most recently approved by the NRC. The licensee had submitted a revised Emergency Plan to the NRC in early 1990. The NRC reviewed the changes and found them to be in accordance with 10 CFR 50.54(q) in that they did not decrease the effectiveness of the Plan. The inspector noted that the E-Plan was reviewed biennially by the Nuclear Reactor Committee as required by the Technical Specifications (TS).

(3) Conclusions

The NETL Emergency Plan was found to be acceptable after the last major revision in 1990.

b. Emergency Plan Implementing Procedures

(1) Inspection Scope (IP 69001)

In order to verify the adequacy of the licensee's Emergency Procedures, the inspector reviewed:

- NETL Emergency Procedure, PLAN-E, "Emergency Response," Ver 2.00, dated November 9, 2000
- NETL Emergency Procedure, PLAN-E, Attachment entitled, "Emergency Equipment," last updated November 9, 2000
- NETL Emergency Procedure, PLAN-0, "Call and Notification," Version (Ver) 2.00, dated November 9, 2000
- NETL Emergency Procedure, PLAN-0, Attachment entitled, "Emergency Call List," last updated October 20, 2004
- NETL Emergency Procedure, PLAN-S, "Physical Security," Ver 4.00, dated September 16, 2003
- recent revisions and updates of the procedures

(2) Observations and Findings

The inspector verified that the implementing procedures were being audited and reviewed biennially as required and revised as needed. The last review was completed by a member of the campus Environmental Health and Safety group during November and December 2004. No major problems had been noted during the review. The procedures were acceptable to implement the provisions stipulated in the E-Plan.

(3) Conclusions

The Emergency Plan implementing procedures were being reviewed and updated as required and were adequate to implement the provisions of the E-Plan.

c. Emergency Preparedness Program Implementation (IP 69001)

(1) Inspection Scope (IP 69001)

To determine the adequacy of the licensee's Emergency Preparedness Program, the inspector reviewed:

- emergency response facilities, supplies, equipment, and instrumentation
- inventories of emergency response supplies, equipment, and instrumentation
- NETL Emergency Procedure, PLAN-E, "Emergency Response," Ver 2.00, dated November 9, 2000
- NETL Emergency Procedure, PLAN-E, Attachment entitled, "Emergency Equipment," last updated November 9, 2000
- NETL Emergency Procedure, PLAN-0, "Call and Notification," Ver 2.00, dated November 9, 2000

- NETL Emergency Procedure, PLAN-0, Attachment entitled, “Emergency Call List,” last updated October 20, 2004

(2) Observations and Findings

During the drill conducted by the licensee on December 14, 2004, the inspector noted that the equipment and supplies that were required to be located in the Emergency Lockers in the NETL building were available for use. This demonstrated that the facilities and equipment set aside for emergency response were being maintained as required in the E-Plan. Communications capabilities were acceptable and were used appropriately during the drill to communicate emergency information as stipulated in the E-Plan.

(3) Conclusions

The emergency response facilities and equipment were being maintained as required.

d. Offsite Support

(1) Inspection Scope (IP 69001)

To verify the adequacy of the offsite support that would be provided to the licensee in case of an emergency, the inspector reviewed:

- Letters of Agreement with support organizations including the City of Austin Emergency Medical Services (EMS), City of Austin Fire Department, and the Brackenridge Hospital (a member of the Seton Healthcare Network)
- NETL Emergency Procedure, PLAN-E, “Emergency Response,” Ver 2.00, dated November 9, 2000
- NETL Emergency Procedure, PLAN-E, Attachment entitled, “Emergency Equipment,” last updated November 9, 2000
- NETL Emergency Procedure, PLAN-0, “Call and Notification,” Ver 2.00, dated November 9, 2000
- NETL Emergency Procedure, PLAN-0, Attachment entitled, “Emergency Call List,” last updated October 20, 2004

(2) Observations and Findings

The licensee was required to maintain Letters of Agreement with various support agencies to document that proper aid would be rendered if needed during an emergency situation of the RTR facility. The inspector reviewed the Letters of Agreement on file at the facility and verified that they were being maintained and updated biennially as required.

During a previous inspection, the inspector visited the Austin Fire Department, Station No. 21, and spoke with members of the Special Operations/Hazardous Material unit that would respond to the NETL during an emergency if needed.

The inspector noted that fire department personnel were well equipped to handle such emergencies and that there was a good working relationship between the personnel at the fire station and the licensee staff. The inspector had also visited Seton Northwest (NW) Hospital near the NETL. Members of the Emergency Room group who would handle medical emergencies during a problem at the facility indicated that their equipment and onsite facilities at the hospital had been upgraded and that they were prepared to assist in case of a problem. Again the inspector noted that there was a good working relationship between the hospital staff and licensee personnel.

Through observation of emergency responders during the drill on December 14, the inspector determined that they were knowledgeable of their duties and the proper actions to take in case of an emergency.

(3) Conclusions

First responders were knowledgeable of proper actions to take in case of an emergency and were capable and willing to offer assistance as needed.

e. Emergency Preparedness Exercises and Drills

(1) Inspection Scope (IP 69001)

To determine that the licensee was conducting the exercises and drills as specified in the Emergency Plan, the inspector reviewed:

- drill scenarios and time lines used in drills during 2003 and 2004
- the critiques of drill performance by emergency responders and controllers
- the drill scenario for the drill conducted on December 14, 2004
- the critique of drill performance by emergency responders and controllers

The inspector also observed the licensee emergency preparedness drill conducted on December 14, 2004, and the critique of drill performance by reactor staff, emergency responders, and controllers following the drill.

(2) Observations and Findings

The inspector noted that, in the past, drills had been conducted annually as required by the Emergency Plan. Critiques were held following the drills to discuss the positive and negative aspects of the exercise, to develop recommendations of ways to improve personnel performance, and to suggest possible solutions to problems identified. Corrective actions were taken to resolve problems noted, as deemed appropriate by the licensee.

As noted above, the licensee conducted an emergency drill on December 14, 2004. The scenario consisted of two injured workers in a simulated radiation and contamination area. One of the injured was transported to Seton NW Hospital via privately owned automobile while the other had to be extricated from the scene by the Austin Fire Department (AFD) and transported to the Brackenridge Hospital via Emergency Medical Services (EMS) personnel in an ambulance. Participants in the drill included personnel from the NETL reactor staff, AFD, Austin Police Department (APD), Austin/Travis County (A/TC) EMS, University of Texas (UT) Environmental Health and Safety (EHS) Radiation Safety Office, University of Texas Police Department (UTPD), Seton Hospital system (Northwest and Brackenridge) Emergency Rooms, and State of Texas Department of State Health Services (DSHS).

With respect to the drill, the inspector noted that the licensee's emergency response organization, including an Emergency Director, an Emergency Response Team Commander, and an Emergency Response Team, was as organized and functioned as stipulated in the E-Plan. The event was properly classified and the proper notifications were initiated in a timely manner. Coordination with offsite response groups was effective. An Emergency Command Post was established and the Drill Commander controlled the drill as it developed. Response to the drill scenario by licensee personnel and by offsite response groups was appropriate and timely. Emergency equipment was readily available and properly used as needed. First aid and medical assistance was used effectively. Communications within the organization and among the support groups appeared to be appropriate. Proper medical support was rendered at the respective hospitals as required. Following termination of the drill, a critique was held to identify strengths and weaknesses noted during the drill. Drill participants or representatives of the various groups attended the critique. Some problems were noted in the areas of communication and command and control but most were due to drill simulation.

(3) Conclusions

The December 14, 2004 drill was an effective test and demonstration of the capabilities of the licensee and support groups to deal with a challenging emergency situation.

f. Emergency Preparedness Training

(1) Inspection Scope (IP 69001)

In order to verify the adequacy of the licensee's emergency training, the inspector reviewed:

- training requirements specified for staff and off-site personnel
- training provided to Reactor staff and offsite emergency responders

(2) Observations and Findings

The inspector noted that coordination of the drill with offsite personnel began in October 2004 and continued through the date of the drill. Training had been conducted for Reactor staff on December 9 and 13, 2004. A briefing for drill controllers and evaluators was held one hour before the drill was initiated to ensure safety and proper control of the developing situations. The drill coordination and training was acceptable.

It was also noted that tours of the facility were conducted for AFD, APD, and UTPD personnel when new people were assigned to the support group crews. These groups indicated that the licensee was always willing to sponsor a tour and provide training concerning the facility when needed.

(3) Conclusions

Emergency preparedness training was being conducted and documented for staff.

2. Exit Interview

The inspection scope and results were reviewed with the licensee on December 14, 2004. The inspector discussed the findings for each area reviewed. The licensee acknowledged the findings 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

J. Braisted	Research Associate and Mobil Victim
B. Hurst	Research Associate and Victim Assistant
M. Krause	Reactor Supervisor and Emergency Director
S. Landsberger	Director, NETL
D. O'Kelly	Research Associate, Reactor Health Physicist, and Emergency Response Team Commander
S. O'Kelly	Associate Director, NETL and alternate Emergency Director
G. Sayre	Graduate Student and Immobile Victim
L. Welch	Reactor Operator and Emergency Response Team member
A. Wharton	Senior Reactor Operator and Emergency Response Team member
J. Wiley	Administrative Associate and Emergency Response Team member

Other Personnel

D. Cronk	Radiation Safety Specialist, UT EHS and Observer
M. Elliott	A/TC EMS and Controller/Evaluator
D. Fehrenkamp	Environmental Specialist III, DSHS and Controller/Evaluator Seton NW Hospital
P. Freasier	Captain, Austin Fire Department, Station No. 21
C. Freeman	Environmental Specialist III, DSHS and Controller/Evaluator Seton NW Hospital
J. Gabriel	Lieutenant, UTPD
R. Gastelum	Charge Register Nurse, Brackenridge Hospital
K. Grear	Environmental Specialist III, DSHS and Controller/Evaluator Brackenridge Hospital
T. Hill	Battalion 6, AFD
R. Kraatz	Environmental Specialist III, DSHS and Controller/Evaluator Brackenridge Hospital
T. Mobly	Battalion 3, AFD
S. Pennington	Radiation Safety Officer, University of Texas at Austin
S. Winter	Ladder 8 Company, AFD

INSPECTION PROCEDURE USED

IP 69001 Class II Research and Test Reactors

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

None

PARTIAL LIST OF ACRONYMS USED

AFD	Austin Fire Department
APD	Austin Police Department
A/TC	Austin/Travis County
DSHS	Department of State Health Services
EHS	Environmental Health and Safety
EMS	Emergency Medical Services
E-Plan	Emergency Plan
IP	Inspection Procedure
NETL	Nuclear Engineering Teaching Laboratory
No.	Number
NRC	Nuclear Regulatory Commission
NW	Northwest
Rev.	Revision
RTR	Research and Test Reactor
TS	Technical Specifications
UT	University of Texas
UTPD	University of Texas Police Department
Ver.	Version