

July 27, 2017

Mr. Ryan C. Schow, Interim Director
Joseph Merrill Engineering Building
50 S. Central-Campus Drive, Room 1206
University of Utah
Salt Lake City, UT 84112

SUBJECT: UNIVERSITY OF UTAH – U.S. NUCLEAR REGULATORY COMMISSION
ROUTINE INSPECTION REPORT NO. 50-407/2017-201

Dear Mr. Schow:

From July 10-12, 2017, the U.S. Nuclear Regulatory Commission (NRC, the Commission) conducted an inspection at the University of Utah TRIGA Reactor facility. The enclosed report documents the inspection results, which were discussed on July 12, 2017, with you and Fred Monette, Director, Radiological Health Department and Radiation Safety Officer for the University of Utah.

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 representative records, interviewed personnel, and observed activities in progress. 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, 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).

R. Schow

- 2 -

If you have any questions concerning this inspection, please contact Craig Bassett at (240) 535-1842 or by electronic mail at Craig.Bassett@nrc.gov.

Sincerely,

/RA/

Anthony J. Mendiola, Chief
Research and Test Reactors Oversight Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Docket No. 50-407
License No. R-126

Enclosure:
As stated

cc: See next page

University of Utah

Docket No. 50-407

cc:

Mayor of Salt Lake City
451 South State
Room 306
Salt Lake City, UT 84111

Dr. Andrew S. Weyrich
Vice President for Research
201 S Presidents Circle, Room 210
University of Utah
Salt Lake City, UT 84112-9011

Frederick A. Monette
Interim Director and RSO
Radiological Health
75 S 2000 E, Room 322
University of Utah
Salt Lake City, UT 84112

Dr. Cynthia Furse
Associate Vice President for Research
201 President Circle, Room 210
University of Utah
Salt Lake City, UT 84112

Test, Research and Training
Reactor Newsletter
P.O. Box 118300
University of Florida
Gainesville, FL 32611

Director, Division of Radiation Control
Dept. of Environmental Quality
195 North 1950 West
P.O. Box 14485
Salt Lake City, UT 84114-4850

SUBJECT: UNIVERSITY OF UTAH – U.S. NUCLEAR REGULATORY COMMISSION
ROUTINE INSPECTION REPORT NO. 50-407/2017-201 DATED: July 27, 2017

DISTRIBUTION:

PUBLIC	RidsNrrDprPrta	RidsNrrDprPrtb	PROB R/F
MNorris, NSIR	MCompton, NRR	AAdams, NRR	XYin, NRR
CBassett, NRR	AMendiola, NRR	NParker, NRR	

Accession No.: ML17199T433; *concurred via e-mail NRC-002

OFFICE	NRR/DPR/PROB*	NRR/DPR/PROB*	NRR/DPR/PROB
NAME	CBassett	NParker	AMendiola
DATE	7/25/17	7/21/17	7/27/17

OFFICIAL RECORD COPY

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

Docket No: 50-407

License No: R-126

Report No: 50-407/2017-201

Licensee: University of Utah

Facility: TRIGA Mark-I Nuclear Reactor Facility

Location: Salt Lake City, UT

Dates: July 10-12, 2017

Inspector: Craig Bassett

Approved by: Anthony J. Mendiola, Chief
Research and Test Reactors Oversight Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

EXECUTIVE SUMMARY

University of Utah
TRIGA Mark-I Nuclear Reactor Facility
Report No. 50-407/2017-201

The primary focus of this routine, announced inspection included onsite review of selected aspects of the University of Utah (the licensee's) one hundred kilowatt Class II research reactor safety program, including: (1) organizational structure and staffing, (2) review and audit and design change control functions, (3) reactor operations, (4) operator requalification, (5) procedures, (6) fuel handling, (7) maintenance and surveillance, (8) experiments, and (9) emergency preparedness since the last U.S. Nuclear Regulatory Commission (NRC) inspection of these areas. The licensee's program was acceptably directed toward the protection of public health and safety and was in compliance with NRC requirements.

Organizational Structure and Staffing

- The organizational structure at the facility met the requirements specified in technical specification (TS) Section 6.1.
- Shift staffing met the minimum requirements for reactor operations.

Review and Audit and Design Change Control Functions

- Review and audit functions required by TS Section 6.2 were acceptably completed by the Reactor Safety Committee or designated individuals.
- Records indicated that changes at the facility during the past two years were acceptably being reviewed and in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.59 and applicable licensee administrative controls.

Reactor Operations

- Reactor operational activities were consistent with applicable TSs and procedural requirements.

Operator Requalification

- Operator requalification was conducted as required by the Requalification Program and 10 CFR Part 55.

Procedures

- Facility procedures and document reviews satisfied TS Section 6.4 requirements.

Fuel Handling

- Reactor fuel movements and inspections were made and documented in accordance with procedure.
- Fuel elements were being inspected on a biennial basis as specified by TS Section 4.1.

Maintenance and Surveillance

- Maintenance activities ensured that equipment remained consistent with the safety analysis report and TS requirements.
- The surveillance program, including periodic checks, tests, and confirmations, was implemented in accordance with TS Sections 3.0 and 4.0.

Experiments

- The experiment authorization and control program satisfied regulatory requirements and license commitments.

Emergency Preparedness

- The emergency plan (E-Plan) and implementing procedures were being reviewed and updated as required and were acceptable.
- Emergency response equipment was being maintained as required.
- Annual drills were being conducted as required by the E-Plan.
- Emergency preparedness training for staff and offsite personnel was being completed as required.
- Offsite support was acceptable and communications capabilities were adequate.

REPORT DETAILS

Summary of Facility Status

The University of Utah (the licensee's) one hundred (100) kilowatt (kW) TRIGA Mark-I research and test reactor continued normal, routine operations. The reactor was typically operated in support of educational demonstrations, laboratory experiments, reactor system testing, sample irradiations, and operator training. During the inspection, the reactor was operated at a low power level for demonstration purposes. It was usually operated one or two days a week at various power levels up to 90 kW.

1. Organizational Structure and Staffing

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

The inspector reviewed the following to verify that the staffing requirements, personnel responsibilities, and organizational structure specified in Section 6.1 of the licensee's technical specification (TS), as implemented through Amendment Number (No.) 9 of the Renewed Facility Operating License No. R-126, dated December 12, 2011, were being met:

- TRIGA Console Logbook No. 40
- Organization and staffing for the facility
- Administrative controls and management responsibilities
- Utah Nuclear Engineering Program (UNEP) Procedure, P-001, "Description of Operations," Revision (Rev.) 1, (UNEP P-001R1), Section 1, approval dated December 12, 2013
- Start-up and Termination Procedures and Log containing Form UNEP-001R14, "Pre-Start/Operation/Termination Procedure"
- The University of Utah TRIGA Reactor (UUTR) Annual Operating Report for the period of July 1, 2014 through June 30, 2015, submitted to the U.S. Nuclear Regulatory Commission (NRC) July 27, 2015
- The UUTR Annual Operating Report for the period July 1, 2015 through June 30, 2016, submitted to the NRC on July 29, 2016

b. Observations and Findings

Through discussions with licensee representatives, the inspector determined that designated management responsibilities at the UUTR facility had not changed since the previous NRC inspection in August 2016 (see NRC Inspection Report No. 50-407/2016-202). The Utah Nuclear Engineering Facility (UNEF) Manager was also designated as the Director of the UNEP and was responsible for general reactor facility operation. The Reactor Supervisor (RS) was responsible for the day-to-day operation and maintenance of the facility as specified in the TSs. The RS reported to the Vice President for Research of the University of Utah through the UNEF Manager.

Through review of records and logs, and through discussions with licensee personnel, the inspector determined that the organizational structure observed at the UUTR facility met the requirements stated in Section 6.1 of the TSs. At the time of the inspection there were three licensed Senior Reactor Operators (SROs) and three licensed Reactor Operator who maintained their licenses current at the facility. The inspector noted that shift staffing during reactor operations met the minimum requirements specified in the TSs.

c. Conclusion

The organizational structure at the facility met the requirements specified in TS Section 6.1. Shift staffing met the minimum requirements for reactor operations.

2. Review and Audit and Design Change Control Functions

a. Inspection Scope (IP 69001)

In order to verify that the licensee had conducted reviews and audits as required by TS Section 6.2 and to determine whether modifications to the facility were consistent with Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.59 and TS Section 6.2, the inspector reviewed:

- Reactor Safety Committee (RSC) meeting minutes for 2015, 2016, and to date in 2017
- Audits completed by the RSC or an RSC designee for 2015, 2016, and to date in 2017
- UNEP P-001R1, Section 1.3.1.3, approval dated December 12, 2013
- UNEP Maintenance Procedures and Log (ML), which included various 10 CFR 50.59 screenings
- UNEP Administrative Procedure 001, Rev. 1 (AP-001R1), "Guidelines for 10 CFR 50.59 Evaluations," approval dated August 9, 2013
- Form UNEP-035R4, "Audit and Review Program," RSC approval dated March 3, 2011
- Various UNEP Job-Aids including: 002R1, "10 CFR 50.59 Screening," 003R1, "10 CFR 50.59 Evaluation," and 004R1, "10 CFR 50.59 Screener/Evaluator Designation"
- The two most recent UUTR Annual Operating Reports

b. Observations and Findings

(1) Reviews and Audits

The inspector reviewed the RSC meeting minutes from May 2015 to the present. These meeting minutes showed that the RSC had met more frequently than required by the TSs and had considered the types of topics outlined by therein. Review of the committee meeting minutes also indicated that the RSC provided guidance and direction for safe reactor operations and ensured suitable use and oversight of the reactor.

The inspector noted that the RSC, or individuals specifically designated by the committee, completed audits of the facility operations, programs, and procedures. Since the last NRC inspection, audits had been completed in those areas outlined in the TSs. The audits were structured so that the various aspects of the licensee's operations and radiation safety programs were reviewed at least annually. Most facility documents and plans, including the facility procedures, were reviewed annually. The Security Plan and the Description of Operations Procedure Manual were reviewed biennially. The inspector noted that the reviews and audits were thorough and the resulting findings were meaningful. The licensee responded and took corrective actions as needed.

(2) Design Change Functions

The inspector reviewed several changes to the facility during the past two years. The licensee had created a new procedure which was noted as being detailed and had easy-to-follow job-aids as a supplement. The changes made to the facility, since the last inspection, were well documented, thorough screenings were completed, and evaluations were conducted if required.

c. Conclusion

Review and oversight functions required by TS Section 6.5 were acceptably completed by the RSC. Records indicated that changes at the facility during the past two years were acceptably being reviewed and in accordance with 10 CFR 50.59 and applicable licensee administrative controls.

3. Reactor Operations

a. Inspection Scope (IP 69001)

The inspector reviewed selected aspects of the following to ensure that the operations program was being implemented as required in TS Sections 3, 4, and 6:

- TRIGA Console Logbook No. 40
- UNEP ML
- UNEP Startup and Termination Procedures and Log (STL)
- Selected surveillance data sheets, records, and tests
- UNEP P-001R1, Section 2, approval dated December 12, 2013
- Form UNEP-001R14, "Pre-Start/Operation/Termination Procedure," approval dated July 31, 2014
- The two most recent UUTR Annual Operating Reports

b. Observations and Findings

During the inspection, the inspector observed routine activities and reviewed the UUTR console log books, monthly and daily surveillance check sheets, and operating record forms. The inspector verified that the reactor operating

characteristics, and other procedurally required entries, were logged appropriately and that the checklists were completed. A review of the licensee's logs and records also indicated that the TS operational limits had not been exceeded and that, as noted previously, shift staffing met the minimum requirements.

The inspector observed reactor operations on the second day of the inspection for demonstration purposes. The operations involved a routine start-up, reactor operation, and a shutdown. All operations were conducted in accordance with procedure. No problems were noted.

c. Conclusion

Operational activities were consistent with applicable TSs and procedural requirements.

4. Operator Requalification

a. Inspection Scope (IP 69001)

To verify that the operator requalification activities and training were conducted in accordance with the NRC-approved Operator Requalification Program contained in the safety analysis report (SAR) and other regulatory requirements, the inspector reviewed selected aspects of:

- TRIGA Console Logbook No. 40
- SAR Chapter 12 Section 9, "Operator Training and Requalification"
- Requalification Training Records for the past three years
- Medical examination records for the past three years
- UUTR Operator Termination Records for the past two years
- Form UNEP-017R3, "Familiarization Checksheet"
- Form UNEP-025R3, "Requalification Program Progress Checklist"

b. Observations and Findings

As of the date of the inspection, NRC-licensed staff at the facility consisted of seven SROs and five ROs. However, only three SROs and three ROs had current licenses. And, of those with current licenses, two SROs and all three ROs had just recently completed their training and passed their NRC license examinations. The other operators' licenses were suspended because the individuals had not had the time to operate the reactor for the required number of hours per quarter or complete the required training because they were graduate students and had just graduated. Other individuals with suspended licenses were working or completing internships elsewhere. The licensee planned to send in notification to the NRC that these individuals no longer required a license.

Besides the newly qualified personnel, the only other licensed operator not in suspension was the RS. He was maintaining the proper qualifications and was successfully completing the facility's NRC-approved requalification and training

program. The inspector verified that he had completed the minimum required hours of operating the reactor per quarter. The operator had also completed annual operating tests and biennial written examinations as required. The inspector verified that the tests and examinations were administered at the specified frequency and that the level of difficulty was comparable to that of NRC-administered tests and examinations. The inspector confirmed that the requalification program was being administered in a manner that would sufficiently maintain the qualifications and proficiency of the licensed operators currently working at the facility. The inspector also noted that the operator had also received the appropriate biennial medical examination as required.

c. Conclusion

Operator requalification was conducted as required by the licensee's Operator Requalification Program and 10 CFR Part 55.

5. Procedures

a. Inspection Scope (IP 69001)

To verify that facility procedures were being reviewed, revised, and implemented as required by TS Section 6.4, the inspector reviewed various aspects of:

- Selected forms and checklists
- UNEP P-001R1, Section 1.4, approval dated December 12, 2013
- Procedural reviews and updates documented in the RSC meeting minutes for the past two years
- UNEP-001R14, "Prestart/Operation/Termination Procedure," Rev. 14, RSC approval dated April 22, 2016
- UNEP-002R4, "Biennial Fuel/Tank/Control Rod/Reflector Element Inspections," Rev. 4, RSC approval dated October 27, 2015
- UNEP-016R4, "Agreement for Off-Hours Access," Rev. 4, RSC approval dated July 29, 2015

b. Observations and Findings

The inspector noted that the licensee used procedures to conduct operations at the facility. The procedures were typically comprised of checklists or forms to assist staff members in completing required work in a systematic, step-by-step manner. However, some job aides were also available for use. These procedures were available for those tasks and items required by the TS. Substantive changes to the procedures were reviewed and approved by the RSC as required. There was no TSs requirement to review facility procedures on a specific periodic basis. However, the facility procedures were reviewed, as needed, with the last review being completed in May 2017. Training of personnel on procedures and the applicable changes was acceptable.

c. Conclusion

Facility procedures and document reviews satisfied TS Section 6.4 requirements.

6. Fuel Handling

a. Inspection Scope (IP 69001)

The inspector reviewed selected aspects of the following in order to verify adherence to fuel handling and inspection requirements specified in TS Sections 3.1, 4.1, 5.3, and 5.4 and the applicable procedures:

- UNEP Core Log (CL)
- TRIGA Console Logbook No. 40
- Heavy Water Element Inspection Forms
- UNEP Fuel Procedures and Log (FL) - Aluminum
- UNEP FL - Stainless Steel
- UNEP P-001R1, Section 2.6, approval dated December 12, 2013
- UUTR Core (element location sheet), Core Configuration 24B, last updated February 28, 2017
- Various UNEP Forms including: UNEP-002R4, "Biennial Fuel/Tank/Control Rod/Reflector Element Inspection;" UNEP-005R5 Core Change and Critical Fuel Loading;" and, UNEP-018, "Fuel Element Inventory Sheet"
- The two most recent UUTR Annual Operating Reports

b. Observations and Findings

The inspector determined that the licensee was maintaining the required records of the various fuel movements that had been completed and verified that the movements conducted and recorded were in compliance with the procedure. The latest core reconfiguration was completed in December 2003 and the resulting University of Utah TRIGA core and fuel positioning was designated as Core Configuration 24B. The core has remained in that configuration since and was last verified, as indicated in UNEP CL, on February 28, 2017. Core loading procedures provided a specific method to move and handle fuel consistent with the requirements and provisions of the TS Section 3.1.4 and the licensee safety analyses. Fuel movement and fuel examination records showed that the fuel of the current core was moved in accordance with procedures and examined biennially as required. The inspector also reviewed the records of movement and examination of various heavy water and graphite elements. The various elements were also last inspected in April 2016. It was also noted that fuel handling tools were controlled and secured when not in use. The procedures and the controls specified for these operations were acceptable.

c. Conclusion

Reactor fuel movements and inspections were completed and documented in accordance with applicable procedures and the fuel was being inspected biennially as specified by TS Section 4.1.

7. Maintenance and Surveillance

a. Inspection Scope (IP 69001)

To verify that the licensee had conducted the facility surveillance program in accordance with TS requirements, the inspector reviewed:

- TRIGA Console Logbook No. 40
- UNEP STL
- UNEP ML
- UNEP P-001R1, Section 3, approval dated December 12, 2013
- UNEP Job-Aid 001R1a, "Reactor Supervisor Periodic Calendar," dated August 22, 2013
- Various UNEP Forms including: UNEP-001R14, "TRIGA Pre-Start Checklist;" UNEP-002R4, "Biennial Fuel/Tank/Control Rod/Reflector Element Inspection;" UNEP-003R8, "Semi-Annual Control Rod Calibration;" UNEP-011R3, "Calibration of Temperature Monitoring Channels;" UNEP-012R4, "Semi-Annual Thermal Power Calibration;" UNEP-020R13, "Monthly Inspection Checklist;" UNEP-022R4, "Maintenance Log;" and, UNEP-036, "Calibration of pH Meter"
- Various UNEP Equipment Repair/Maintenance Reports including: "Reactor Control Console," dated July 8, 2015; "Percent and Log Power Ion-Chambers," dated August 27, 2015; and, "Log and Period Power Electronics Control Card," dated August 5, 2015, including the related 10 CFR 50.59 Screening Forms
- The two most recent UUTR Annual Operating Reports

b. Observations and Findings

(1) Maintenance

The inspector reviewed the maintenance records for the period from 2015 through 2017. These included scheduled and unscheduled preventive and corrective maintenance activities. Various items of equipment required maintenance, many apparently due to the age of the reactor and the associated equipment.

Routine and preventive maintenance was well controlled and documented in a tracking system called DevonWay. A review of the UUTR ML indicated that all maintenance activities were being documented and completed in a timely manner in order to maintain the equipment operational. After all maintenance items were completed, system operational checks were performed to ensure the affected systems were operable before returning them to service. It was noted that when more extensive repairs were needed, these projects were reviewed using the 10 CFR 50.59 screening process. None of the items reviewed had "screened in" (i.e., required an evaluation) to date.

(2) Surveillance

Daily, monthly, and other periodic checks, tests, and verifications required by the TSs were being completed as required. The inspector reviewed selected UUTR required surveillances and verified all of the recorded results were within the TSs and procedurally prescribed parameters. The records and logs were noted to be complete and were being maintained as required.

c. Conclusion

Maintenance activities ensured that equipment remained consistent with the SAR and TS requirements. The program for surveillance, including periodic checks, tests, and confirmations, was implemented in accordance with TS Sections 3.0 and 4.0 requirements.

8. Experiments

a. Inspection Scope (IP 69001)

The inspector reviewed selected aspects of the following in order to verify that experiments were being conducted within the controls specified in TS Sections 3.8, 4.8, and 6.5, and approved guidelines:

- TRIGA Console Logbook No. 40
- Survey and control of irradiated items
- UNEP, Experimental Procedures and Log
- Selected TRIGA Reactor Irradiation Request and Performance forms documented on Form UNEP-027R6, "TRIGA Reactor Irradiation Request and Performance"
- The one current authorized experiment documented on UUTR Experiment Authorization (EA) Form, RSC approval dated December 12, 2013, latest Authorization Number 12-10-2014
- UNEP P-001R1, Section 4, approval dated December 12, 2013
- The two most recent UUTR Annual Operating Reports

b. Observations and Findings

In the past, there were various experiments that had been approved to be conducted at the facility. During this inspection, the inspector noted that no new experiments had been initiated, reviewed, or approved since the last inspection. The inspector also noted that currently there was only one authorized and approved experiment classified as a Routine (historically known as a Class I) experiment. The inspector verified that the experiment was being reviewed annually and a new EA form for the experiment was being completed and approved every year as required. The experiment was very broad in scope and included irradiation of: (1) biological samples and materials, tailings, plastics, and metals for Neutron Activation Analysis, (2) Fission Track Analysis standards and materials, (3) isotopes for the production of medical tracers, and 4) electronics and materials (to include dosimeters).

The irradiations completed under the approved experiment were conducted under the cognizance of the RS and an SRO as required. The results of the irradiations were documented in the TRIGA Operations Logbook and on the appropriate irradiation request and performance forms. The inspector noted that experiments were conducted in accordance with procedural and EA guidelines and that materials produced were controlled as required by the radiation protection program.

c. Conclusion

The license's program for conducting experiments and controlling irradiated products satisfied regulatory requirements and license commitments.

9. Emergency Preparedness

a. Inspection Scope (IP 69001)

To verify that the licensee was implementing and complying with the "University of Utah, Utah Nuclear Engineering Program (UNEP) Emergency Plan for NRC License R-126: TRIGA Nuclear Reactor," Rev. 8, dated July 20, 2011, the inspector reviewed selected aspects of:

- Training records for staff and offsite support personnel
- Documentation of emergency drills for 2015, 2016, and 2017
- Emergency response supplies, equipment, and instrumentation
- Selected Emergency (Implementing) Procedures
- UNEP Annual Emergency Training Attendance Record forms for 2015, 2016, and to date in 2017
- Various UNEP Forms including: UNEP-015R4, "Emergency Kit Check," UNEP-021R28, "UNEP Emergency Call List," and, UNEP-037, "Radiological Emergency Classification Checklist"
- Letter of Agreement with Gold Cross Ambulance, dated October 9, 2014

b. Observations and Findings

The emergency plan (E-Plan) in use at the reactor and emergency facilities was the same as the version most recently reviewed by the NRC. The E-Plan was being audited annually and was last audited/reviewed May 11, 2017. Implementing procedures were reviewed and revised as needed. The E-Plan was being reviewed and approved biennially by the RSC as required.

The inspector verified that semiannual inventories of the various first aid kits and other equipment were being conducted as required as specified in the E-Plan. Supplies, instrumentation, and equipment were being maintained as required in the E-Plan. Training for reactor staff and support personnel was acceptable and was conducted and generally documented as required. It was noted that the UNEP Emergency Call List was last updated June 1, 2017.

Emergency drills were being conducted annually as required. Critiques were required to be held following each drill but there was no documentation of the meetings. Critiques were held and any commitments made for improving the program were recorded and documented in the licensee's tracking system, DevonWay. However, as noted above, no formal documentation of the critiques existed. The inspector informed the licensee that documentation of the critiques following the emergency drills was a requirement of the E-Plan. Initiation and maintenance of formal documentation of the emergency drill critique meetings would be considered an Inspector Follow-up Item (IFI) and would be reviewed during a subsequent inspection (IFI 50-407/2017-201-01).

According to the licensee, agreements with various offsite response organizations, such as the fire department and the hospital, were being maintained between those entities and upper level management at the University. Therefore, the reactor facility did not need or maintain separate agreements with these groups in addition to those already established by the University. An agreement with an offsite entity to provide transportation services for a person injured at the facility was being maintained. It was also noted that communications capabilities with the various support groups were acceptable and were tested periodically.

As part of the inspection, the inspector and the RS visited the Salt Lake City Fire Department (SLCFD) fire station that would respond to the facility in case of emergency. The inspector interviewed SLCFD personnel at Station No. 10 and observed the supplies and equipment at the support site that would be available in the event of a problem at the UUTR. The equipment and training of the SLCFD were appropriate and more than adequate for responding to an emergency at the licensee's facility. There appeared to be a good working relationship between the licensee and this support organization.

c. Conclusion

The emergency preparedness program was being implemented adequately as evidenced by the following: (1) the E-Plan and Implementing Procedures were being reviewed and updated as required and were acceptable, (2) emergency response equipment was being maintained as required, (3) annual drills were being conducted as required by the E-Plan, (4) emergency preparedness training for staff and offsite personnel was being completed as required, and (5) offsite support was acceptable and communications capabilities were adequate.

10. Exit Interview

The inspection scope and results were summarized on July 12, 2017, with licensee representatives. 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 Personnel

M. Barber	Academic Interim Director for UNEP, University of Utah
A. Foley	Reactor Operator
C. Furse	Associate Vice-President for Research, University of Utah
D. Kim	Senior Reactor Operator
R. Schow	Director of the Utah Nuclear Engineering Program and Reactor Supervisor
A. Weyrich	Vice President for Research, University of Utah

Other Personnel

F. Monette	Director, Radiological Health Department and Radiation Safety Officer for the University of Utah
W. Rockwood	Captain, Hazardous Materials Team, Station No. 10-A, Salt Lake City Fire Department

INSPECTION PROCEDURE USED

IP 69001	Class II Research and Test Reactors
----------	-------------------------------------

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-407/2017-201-01	IFI	Follow-up on the licensee's actions to ensure that the critiques following the emergency drills are properly documented as required by the Emergency Plan.
--------------------	-----	--

Closed

None

LIST OF ACRONYMS USED

CFR	<i>Code of Federal Regulations</i>
CL	Core Log
E-Plan	Emergency Plan
EA	Experiment Authorization
FL	Fuel Procedures and Log
IFI	Inspector Follow-up Item
IP	Inspection Procedure
kW	Kilowatt
ML	Maintenance Procedures and Log
No.	Number
NRC	U.S. Nuclear Regulatory Commission

Rev.	Revision
RS	Reactor Supervisor
RSC	Reactor Safety Committee
SAR	Safety Analysis Report
SLCFD	Salt Lake City Fire Department
SRO	Senior Reactor Operator
STL	Startup and Termination Procedures and Log
TSs	Technical Specifications
UNEF	Utah Nuclear Engineering Facility
UNEP	Utah Nuclear Engineering Program
UUTR	University of Utah TRIGA Reactor