

APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-192/89-02
50-602/89-04

License: R-92
Construction Permit: CPPR-123

Dockets: 50-192
50-602

Licensee: University of Texas (UT)
College of Engineering
Department of Mechanical Engineering
Nuclear Engineering Programs
Austin, Texas 78712

Facility Name: Docket 50-192: Nuclear Engineering Teaching Laboratory
Taylor Hall (TRIGA Mark I)
Docket 50-602: Nuclear Engineering Teaching Laboratory
Balcones Research Center (TRIGA Mark II)

Inspection At: Taylor Hall and Balcones Research Center, Austin,
Travis County, Texas

Inspection Conducted: May 31 through June 1, 1989

Inspectors: *H. D. Chaney*
H. D. Chaney, Senior Radiation Specialist
Facilities Radiological Protection Section

7/13/89
Date

Accompanied By: Blaine Murray, Chief, Reactor Programs Branch
Division of Radiation Safety and Safeguards

Approved: *R. Baer*
R. Baer, Chief, Facilities Radiological
Protection Section

7/13/89
Date

Inspection Summary

Inspection Conducted May 31 through June 1, 1989 (Reports 50-192/89-02;
50-602/89-04)

Areas Inspected: Routine, announced, preoperational inspection of the licensee's radiation protection (RP), physical security, and emergency preparedness programs; the installation and testing of radiological controls equipment at the Balcones Research Center TRIGA Mark II facility and the preparations being made for the defueling and transferring of the fuel and cobalt 60 irradiator from the Taylor Hall TRIGA Mark I facility to the Mark II facility.

Enclosure contains PROPRIETARY INFORMATION.
Decontrolled when separated from attachments.

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Results: Within the areas inspected, no violations or deviations were identified. Ten new open items were identified during this inspection. Significant work remains to be completed regarding the areas reviewed during this inspection. Radiation monitoring instrumentation was being installed, calibration procedures were being developed, emergency preparedness supplies and instrumentation were being procured, and physical security equipment was being installed and tested.

DETAILS1. Persons ContactedUT

- *D. Klein, Director, Nuclear Engineering Teaching Laboratory (NETL)
- *J. Howell, Chairman, Mechanical Engineering Department
- *H. Marcus, Chairman, Nuclear Reactor Committee
- *T. Bauer, Assistant Director, NETL
- *B. Bryant, Radiation Safety Officer

*Denotes attendance at exit interview on June 1, 1989.

2. Licensee Actions to Previous Inspection Findings

(Closed) Open Item (192/8802-01): Response Check of Pocket Dosimeters - This item was previously discussed in NRC Inspection Report 50-192/88-02, and involved the licensee's lack of a pocket dosimeter response check program that satisfied the guidance contained in NRC Regulatory Guide (RG) 8.4 concerning frequency of response checking. The NRC inspectors examined the licensee's draft pocket dosimeter response check procedure (SRV-14.4) and surveillance matrix, and determined that the licensee's response check program satisfied the guidance contained in NRC RG 8.4.

(Closed) Open Item (602/8802-02): TRIGA Mark II Biological Shield Survey/Test - This item was previously discussed in NRC Inspection Report 50-602/88-02 and involved the NRC's concern over the licensee's development of a biological shield survey that incorporated the guidance contained in NRC RG 2.1 and ANSI/ANS-6.3.1-1980 (formally ANSI N18.9-1972). The NRC inspector examined the licensee's operational Acceptance Tests, part 6.c, and found that the licensee had taken action to close this item.

3. Open Items Identified During This Inspection

An open item is a matter that requires further review and evaluation by the NRC inspector. Open items are used to document, track, and ensure adequate follow-up on matters of concern to the NRC inspector. The following open items were identified:

<u>Open Item</u>	<u>Title</u>	<u>See Paragraph</u>
602/8904-01	Organization and Staffing	4
602/8904-02	Staff Qualifications and Training	5

602/8904-03	Procedures, Audits, Reports and Surveillances	6
602/8904-04	External and Internal Radiation Exposure Control	7
602/8904-05	Radioactive Material (RAM) and Contamination Control	8
602/8904-06	Radiation Protection Facilities	9
602/8904-07	Liquid and Gaseous Effluents	10
602/8904-08	Emergency Preparedness	11
602/8904-09	Physical Security and Safeguards	12
192/8904-10	Taylor Hall Defueling and Irradiator Transfer	13

4. Balcones TRIGA Mark II Facility Staffing and Organization

The NRC inspector examined the licensee's organizational structure for agreement with the guidance contained in RG 2.2 and industry standard ANSI/ANS-15.1-1982; and licensee's commitments contained in the September 1984, Safety Analysis Report (SAR) Sections 9.1 and 9.4.2, and Sections 11, 12, and 13 of NRC NUREG-1135, "Safety Evaluation Report (SER) related to the construction permit and operating license for the research reactor at The University of Texas;" and the draft Technical Specifications (TS) dated August 14, 1985.

The NRC inspector determined that the licensee had hired a new director for the Balcones NETL TRIGA Mark II facility (Balcones facility). The new director has previous research reactor management experience. The current two-man staff at the Balcones facility will be increased by adding an additional licensed operator, instrument technician, and a health physicist (HP). The licensee is experiencing difficulty in hiring a suitably experienced HP. The NRC inspector discussed, with the assistant director of the NETL, the NRC's concern over the reporting chain-of-command for the Balcones HP in relation to the University Radiation Safety Office. The NRC inspectors discussed, with the assistant director and the director of the NETL, the need to ensure that the HP's activities were not governed exclusively by operational/research pressures and goals.

The NRC inspector noted that several key RP programs and implementing procedures are awaiting completion due to the lack of a facility staff HP. Due to the large size and complexity of the Balcones facility, the lack of a full time HP available to or on the Balcones facility staff, will be considered an issue to be resolved prior to issuance of a facility operating license.

The NRC inspector also pointed out to licensee representatives, the confusion presented in the draft TS, SER, and the SAR concerning the title of the Balcones facility oversight group (four different titles given). The licensee stated that documents should reflect the Nuclear Reactor Committee for the title of the oversight group, which is also the TS referenced title.

This area is considered an open item (602/8904-01) pending the hiring of a full time staff HP for the Balcones Research Center.

No violations or deviations were identified.

5. Balcones Facility Staff Qualifications and Training

The NRC inspector examined the licensee's staff qualifications and staff training programs to determine agreement with the requirements contained in 10 CFR Parts 19.12 and 20.206, and the guidance contained in industry standard ANSI/ANS-15.4-1977, and Sections 8.2.5 and 10.1.5 of the SAR.

The NRC inspector determined that the licensee had not completed development of training programs for the Balcones facility staff other than licensed operators. The NRC inspector discussed, with the assistant director of the NETL, the requirements of 10 CFR Parts 19.12 and 20.206 concerning RP training of personnel authorized unescorted access to radiologically restricted areas of NRC licensed facilities.

This area is considered an open item (602/8904-02) pending licensee:

- ° Development of staff and facility user training that implements the requirements of 10 CFR Parts 19.12 and 20.206.

No violations or deviations were identified.

6. Procedures, Audits, Reports, and Surveillances

The NRC inspector examined the licensee's procedures and surveillance schedules for the Balcones facility to determine agreement with the requirements of the draft TS, and agreement with the commitments contained in Sections 8.3, 8.4, and 10 of the SAR and Sections 11, 12, and 13 of the SER. The licensee had finalized nearly all required implementing procedures needed to support the RP program as described in the SAR and SER. Attachment 2 to this report lists the procedures reviewed.

The licensee's procedures are contained in the Operations Manual which is comprised of two parts (Procedures and Information). The Procedures Section is comprised of six procedural areas: 1) Special Conditions (SPCL); 2) Administrative Activities (ADM); 3) Reactor Operations (OPR); 4) Surveillance Actions (SRV); 5) Experiments (EXP); and 6) Miscellaneous Laboratory Procedures and General Rule Summary (MISC). ADM-1.0 establishes control over procedure development, change, review, and approval.

The NRC inspector discussed with the licensee the need to include more details in the procedures that implement the RP program. The NRC inspector found that radiological instrument calibration procedures (licensee and vendors), for the most part, did not contain enough detailed instructions to ensure that instruments can detect radiation or radionuclides at the levels specified by the TS and/or committed to in the SAR and SER. None of the calibration procedures had been verified at the time of this inspection. Several OPR and SRV procedures (OPR-3.0, "Air Confinement System Operation;" OPR-9.0, "Movement of Fuel Elements or Control Followers;" SRV-1.0, "Facility Equipment;" SRV-4.0, "Fuel Inspection and Measurement;" SRV-13.0, "Air Confinement System Surveillance;" and SRV-14.0, "Radiation Monitoring Systems") did not include radiation exposure controls (SRV-4.0), definitive instructions as to what response range is acceptable for required RP instrumentation (OPR-9.1 and SRV-3.0), quality control requirements (SRV-1.0), or quantitative values for limits and tolerances (SRV-1.0, 13.0, and 14.0). Overall, many ADM, SRV, and OPR procedures did not contain sufficient detail to ensure that the user could complete the tasks in an acceptable manner.

The licensee had established a matrixed schedule of TS, Emergency Plan (E-Plan), and Physical Security Plan surveillances.

This is considered an open item (602/8904-03) pending:

- ° Completion of RP program implementing procedures.
- ° Providing more detailed guidance for procedures involving RP activities.

No violations or deviations were identified.

7. External and Internal Exposure Controls

The NRC inspector reviewed the licensee's program for administration and control of personnel exposure to external (whole body and extremity) and internal radiation to determine agreement with the requirements of 10 CFR Parts 20.101, 20.103, 20.202, and 20.203; and agreement with the commitments contained in Sections 8.5.1 and 10.3 of the SAR, and Section 12.5 of the SER, and the guidance contained in NRC Inspection and Enforcement Information Notices (IEIN) 81-26 and 83-59.

The NRC inspector examined the licensee's procedures for the administration of the Balcones facility dosimetry program (ADM-7.0 and SRV-14.1) and found them to lack enough specific information. The procedures need to be expanded to include more information. The licensee had not evaluated the suitability of their current personnel neutron dosimetry (film) for accurately measuring the expected neutron spectrum at the Balcones facility. This concern was previously discussed in NRC

Inspection Report 50-602/88-02 and is being tracked as Open Item 602/8802-01. Procedures were not available for review that specified the radiological controls and radiation exposure controls to be used during beam port experiments. None of the licensee's RP procedures address issuance and use of extremity dosimetry, or the evaluation and placement of multiple whole body dosimetry when personnel are in nonuniform gamma/neutron radiation fields.

The licensee's dosimetry program is accredited in accordance with the requirements of 10 CFR Part 20.202(c).

Procedure ADM-7.0, "Radiation Protection - Personnel," references the need to periodically review exposure records to insure agreement with good ALARA principles. Procedure ADM-7.0 appears to be an after-the-fact ALARA approach instead of reviewing planned work activities to ensure that ALARA practices are utilized to reduce personnel exposures.

The licensee does not expect any significant airborne radioactivity during normal operation of the facility. The licensee will be continuously monitoring the facility environs for particulate airborne radioactivity, and the exhaust ventilation/purge system effluent for Argon 41 gas (Sections 11.2.2 and 12.6.1 of the SER).

This area is considered an open item (602/8904-04) pending:

- Completion of personnel dosimetry program implementing procedures.
- Implementation of the guidance contained in NRC LEINs 81-26 and 83-59 into the personnel dosimetry and exposure control program.
- Resolving Open Item 602/8802-01 concerning personnel neutron dosimetry.
- Development of a proper ALARA program.

No violations or deviations were identified.

8. Radioactive Material and Contamination Control and Monitoring

The NRC inspector examined the licensee's inventory of RP instruments, operating procedures; held discussions with the facility assistant director to determine the status of RAM and contamination control programs and RP instrument procurement and calibration; and examined the methods to be routinely employed to monitor the facility, support systems, and miscellaneous equipment for radiation and contamination. SAR Sections 6.3.1 and 10 and SER Section 12 contain licensee commitments concerning the above noted programs.

The licensee's task matrix indicated that radiological surveys will be periodically performed on either a quarterly or semiannual basis, but no

detailed procedures or survey maps were available. The licensee's surveys included alpha and beta/gamma contamination surveys and area beta/gamma radiation surveys.

Portable dose rate measurement and counting room equipment were not available for examination during this inspection. The NRC inspector noted that the licensee's inventory does not include a portable high range (5-50 rem/hour) ion chamber type dose rate instrument. The NRC inspector discussed with the licensee the need to ensure that the RP instrument inventory at the Balcones facility does not include instruments that are also utilized to meet the E-Plan instrument inventory for the Taylor Hall facility.

The NRC inspector discussed with the facility assistant director the methods to be employed to monitor for contamination on personnel exiting the reactor/experimentation areas and the methods to be used to analyze smear and airborne samples. The NRC inspector expressed concern 1) over the licensee's proposal to utilize a hand held beta/gamma radiation instrument to perform personnel contamination surveys and 2) that swipes and air samples would be analyzed utilizing beta liquid scintillation methods. The NRC inspector discussed with the licensee the advantages of using automated personnel friskers and high efficiency automated alpha/beta proportional laboratory counters for swipe and air sample analysis.

The NRC inspector determined that the licensee's calibration procedures for portable, fixed, and laboratory instruments were in draft form and did contain sufficient instructions to meet the criteria in ANSI N323-1978 concerning portable instrument calibration source selection and identification, before and after checks, establishment of a periodic response check value, and documentation of results. Current procedures do not provide for the establishment of alarm setpoints and the periodic verification of these set points. Procedure SRV-14 (draft) indicates that semiannual calibrations can span as much as 15 months between calibrations which is not in agreement with industry practices. This same procedure ~~referenced~~ a vendor operating manual for use in calibrating the airborne Argon-41 radioactivity monitor. The above procedure did not provided for the verification that the monitor would detect a minimum detectable concentration of 2×10^{-8} microcuries per milliliter of Argon-41 airborne gaseous radioactivity as referenced in vendor literature.

The NRC inspector noted that certain fixed area radiation monitors, especially those adjacent to the beam ports, were not located in a good position to provide accurate information concerning radiation levels from the beam ports. The facility assistant director stated that the positioning of several monitors would be reevaluated when beam port work/experiments were undertaken and, if necessary, detector cables would be extended to allow better positioning of the detectors so that gamma dose rates attributable to the beam port would be better known by experimenters and control room personnel. The NRC inspector noted that

the TRIGA Mark II reactor Data Acquisition and Control unit allows for additional reactor shutdown signals to be inputted, such as from beam port shield position indicators or area radiation monitor setpoints. The NRC inspector discussed the need to ensure that operational and experimental procedures (especially beam port experiments) reference the deficiencies in area radiation detector positioning. The licensee had not completed operational or calibration procedures for the airborne radioactive particulate monitor installed on the upper level of the reactor bay.

This area is considered an open item (602/8904-05) pending:

- ° Completion of RP instrument procurement, including portable high range dose rate monitoring instrument.
- ° Completion of instrument operating and calibration procedures.
- ° Incorporation into procedures, warnings concerning limitations of the fixed position area radiation monitoring system.
- ° Evaluation of current practices for surveying of personnel for contamination and the qualitative and quantitative analysis of swipes and air samples.

No violations or deviations were identified.

9. Radiation Protection Facilities at the Balcones Facility

The NRC inspector examined the licensee's Balcones facility for agreement with the description, construction, and equipment placement as described in Sections 3.4.9.4, 5.2, 6.2, 6.2.2, 6.3.1, 6.4.2, 6.4.3, 10.1.4, and 10.2.1 of the SAR, and Sections 3.0, 5.1, 5.3, 6.2, 9.3, 9.6, 10.3, 11.2.2, and 12.6 of the SER.

Due to the size and complexity of the Balcones facility, the licensee's program for control of byproduct and RAM was examined to determine agreement with the criteria contained in NRC Inspection Manual Part 9900: "10 CFR Part 50, By-product Material Produced in Non-Power Reactors," dated August 23, 1988; NRC Memorandum, D. Crutchfield to NRC Regional Offices, Subject: Regulatory Responsibilities for By-Product Materials in Non-Power Reactors," dated March 8, 1988; and NRC Inspection and Enforcement Manual Chapter 2882, "Transfer of NRC License Files to Agreement State(s)," dated December 5, 1983.

The licensee indicated that the boundary for byproduct and reactor associated RAM would be the reactor bay on the first and second floors of the Balcones facility, and the reactor control room and associate rooms on the third floor, adjacent to the reactor bay. Facility room numbers had not been assigned as of this inspection. The remainder of the facility

(west of the east stairway alcove on the third floor, and all areas other than the reactor bay on the remaining floors) would come under the Texas State Bureau of Radiation Health jurisdiction (10 CFR Part 150 Agreement State).

The reactor coolant purification and cooling system was evaluated to determine agreement with the guidance contained in NRC Bulletin 80-10, "Contamination of Nonradioactive System and Resulting Potential for Unmonitored, Uncontrolled Release of Radioactivity to Environment." The NRC inspector examined the procedure (OPR-2.0) and engineered features (valve isolation and differential pressure) designed to prevent cross-contamination of the closed loop chilled water supply (this is also isolated from facility potable water). The NRC inspector discussed with the licensee the need to ensure that the makeup water hookup is procedurally controlled and periodic verifications are performed to verify that the system is properly isolated or disconnected when not required for makeup purposes. "Primary coolant" to secondary coolant (chilled water) cross-contamination via the heat exchanger will be adequately controlled by differential pressure (greater than one pound per-square-inch more pressure on clean side than "primary" side), pressure alarms, and procedural controls. The licensee stated that the reactor coolant and purification system drawings in Figure 5.1 of the SER will be revised to depict as built conditions.

The licensee's filtered exhaust ventilation system installation and preoperational testing was examined for agreement with the guidance in NRC RG 1.52, "Design, Testing, and Maintenance Criteria for Post Accident Engineered-Safety-Feature Atmosphere Cleanup System Air Filtration and Adsorption Units of Light-Water-Cooled Nuclear Power Plants." Although RG 1.52 does not address research reactor ventilation systems, it can be used for general guidance in assuring that the Balcones facility's high efficiency filtration (HEPA) system is satisfactorily installed. The Balcones facility filtered ventilation system and argon purge system are designated engineered-safety-systems in Section 6 of the SER. Current licensee startup testing schedule includes isolation signal and valve testing, and balancing of exhaust and supply ventilation systems for contamination and airborne radioactivity control in various facility areas, but does not include in-place inspection and testing of the HEPA filter system. The NRC inspector discussed with the licensee the need to provide suitable assurance that the filtration system is properly installed and will filter particulates as intended, and that the guidance concerning the design, construction, and testing of filter units as contained in industry standards ANSI/ASME N509-1975 and N510-1975 (referenced by RGs 1.52 and 1.140) should be utilized. The licensee stated that the ventilation system diagrams in Figures 6-7 and 6-8 of the SAR will be revised to depict changes and as-built conditions.

The NRC inspector discussed with the licensee the methods to be utilized in communicating between the reactor control room and experimental areas within the reactor bay. Section 9.3 of the SER references an intercom

system, but the licensee has not decided on whether portable radios or a hard wired intercom system will be used. Currently, only a one way (control room and administrative office initiated) phone paging system is available.

The control room, instrument and electronic maintenance room, auxiliary support system room, filtered ventilation room, coolant purification room, radiological counting room, radioactive waste collection room, administrative offices, class rooms, and sanitary facilities were examined.

This area is considered an open item (602/8804-06) pending:

- Inplace inspection and testing of the HEPA filtration unit.
- Addressing of positive reactor coolant makeup source isolation in operational procedures.
- Development of a byproduct/RAM control and inventory program.
- Installation of suitable two way communications between the reactor control room and the lower level of the reactor bay.

No violations or deviations were identified.

10. Solid Radioactive Waste, Liquid, and Gaseous Effluents

The NRC inspector examined the licensee's radioactive waste and effluent control programs to determine compliance with the requirements of the draft TS and 10 CFR Parts 20.106, 20.301, and 20.303; and agreement with the commitments contained in Section 6.3.1 of the SAR.

Liquid and gaseous effluent controls were reviewed. The reactor will not routinely generate any liquid effluents other than accidental spills of reactor coolant. These liquids will be disposed of in accordance with 10 CFR Parts 20.301 and 20.303 requirements. All other effluents will be generated from byproduct sample preparation and analysis areas and will be collected in a specially designed liquid waste system located on the first level of the facility (Section 6.3.1 of the SAR). The liquid radioactive waste system will be under Agreement State jurisdiction. Gaseous effluents due to reactor operation are extensively discussed in Sections 6.3.1 and 6.5 of the SAR, and Section 11.2.3 of the SER and are expected to be significantly below 10 CFR Parts 20.103 and 20.106 limits for restricted and unrestricted areas. Quarterly calculations of Argon-41 and particulate radioactivity releases will be performed by the licensee to verify conformance with TS requirements on gaseous release limits.

Neither of the continuous airborne monitors (CAMs) for particulate or Argon-41 are installed and operational (Sections 6.2 of the SAR and SER).

The particulate CAM is instrumental in initiating a reactor bay ventilation isolation signal, but current draft procedures do not address setting of signal alarm setpoints or how to derive them.

Radioactive waste disposal and shipments will be handled by the UT Radiation Safety Office under the Agreement State license.

This area is considered an open item (602/8804-07) pending:

- Installation and calibration of the particulate and Argon-41 CAMs.

No violations or deviations were identified.

11. Emergency Preparedness

The licensee's emergency preparedness program was examined to determine compliance with 10 CFR Parts 50.54(q) and (r), and the Emergency Plan (E-Plan) dated September 1984 (submitted to the NRC on November 9, 1984).

Currently, the licensee's E-Plan is being carried as an open item in Section 1.5 of the SER due to lack of implementing procedures and letters of agreement.

The licensee had not initiated familiarization training of personnel expected to respond to emergencies at the Balcones facility (police, medical/rescue, and fire).

The NRC inspector determined that the licensee had developed and issued E-Plan implementing procedures (SPCL-1.0 and 2.0) that provide for a emergency recall list, organizational development, and emergency response to reactor accidents at the Balcones facility.

The NRC inspector discussed with the licensee the need to conduct a full scale exercise (scenario to involve police, fire, medical, and UT Radiation Safety Office personnel) of the Balcones facility E-Plan prior to bringing spent fuel to the facility. At the exit meeting, the licensee agreed to performing a full scale exercise of the Balcones facility E-Plan.

The licensee had not completed procurement and stocking of E-kits at the Balcones facility at the time of this inspection. The equipment list in Procedure SPCL-2.2 appeared to included instruments currently being used to satisfy Taylor Hall (TRIGA Mark I facility) emergency preparedness requirements. See paragraph 8 of this report concerning RP instruments. The licensee had not completed procurement and stocking of E-Kits for the Balcones facility.

This area is considered an open item (602/8904-08) pending:

- Familiarization training for E-Plan support agencies.
- Procuring and stocking the Balcones facility E-Kits.
- Conducting a full scale E-Plan exercise.
- Completion of all letters of agreement with supporting agencies.

No violations and deviations were identified.

12. Physical Security

The NRC inspector reviewed the licensee's Balcones facility for agreement with the NRC approved Physical Security Plan (PSP) for the Balcones facility dated August 14, 1989. The material discussed in this paragraph is considered Proprietary Information and is reported in Attachment 1 to this report.

No violations or deviations were identified.

13. Taylor Hall Fuel and Cobalt 60 Irradiator Movement

The NRC inspector discussed with the facility assistant director, the preparations for defueling, fuel transfer, and cobalt 60 irradiator transfer to the Balcones facility from the Taylor Hall.

The NRC inspector toured the Taylor Hall facility and observed reactor and associated equipment status. The NRC inspector noted that the handling tool for the cobalt 60 irradiator sources (Section 6.4.3 of the SAR) was broken. The NRC inspector discussed with the licensee the need to ensure that the cobalt 60 source handling tool would adequately hold on to sources as they are removed from the reactor and placed into suitable shielding.

The NRC inspector also discussed with the licensee the preparations being made for removal and transfer of the TRIGA Mark I fuel elements to the Balcones facility. The procedures for this work are in early draft form and will be reviewed by the NRC at a later date prior to start of the defueling.

This area is considered an open item (192/8804-10) pending:

- Development of TRIGA Mark I defueling and transfer procedures.
- Development of TRIGA Mark I facility Cobalt 60 irradiator transfer procedure and repair of handling tool.
- Conducting training for all personnel involved in fuel and source handling/transfer.

No violations or deviations were identified.

14. Exit Interview

The NRC inspector met with the licensee representatives identified in paragraph 1 of this report at the conclusion of the inspection on May 1, 1989. The NRC inspector summarized the inspection findings. The licensee committed to the following:

- Conducting a full scale exercise of the Emergency Plan with scenario development to include police, fire, medical, and RP agencies.
- Conducting a full lockdown of the Balcones facility to verify the ability to control access to physical security areas.

ATTACHMENT 2
 TO
 NRC INSPECTION REPORTS
 50-192/89-02
 50-602/89-04

DOCUMENTS REVIEWED

<u>TITLE</u>	<u>REVISION</u>	<u>DATE</u>
NUREG-1135, Safety Evaluation Report	00	05-85
Safety Analysis Report, University of Texas	00	09-84
Technical Specifications	DRAFT	11-84
Emergency Plan	DRAFT	09-84
Physical Security Plan	00	08-14-85
Special Nuclear License (SNM) 180	01	05-08-89
Balcones Research Center, TRIGA Mark II Operations Manual	00	04-88
<u>Special Section</u>		
SPCL-1.0, Emergency Call List	00	10-87
SPCL-1.1, Telephone Threat	00	10-87
SPCL-1.2, Facility Access List	00	04-88
SPCL-2.0, Emergency Response	00	05-87
SPCL-2.1, Emergency Classification	00	04-88
SPCL-2.2, Emergency Equipment & Supplies	00	04-88
SPCL-3.0, Physical Security	00	05-87
SPCL-3.1, Security Classification	00	10-87
SPCL-3.2, SNM Inventory Estimate	00	04-88
<u>Administrative Procedures</u>		
ADM-1.0, NETL Procedure Outline and Control	00	04-88
ADM-4.0, Personnel Qualifications	00	04-88
ADM-5.0, Experiment Authorization	00	07-88
ADM-7.0, Radiation Protection - Personnel	00	10-88
ADM-8.0, Radiation Protection - Material	00	10-88
ADM-10.0, Emergency Response	00	10-88
ADM-11.0, Physical Security	00	10-88
<u>Operation Procedures</u>		
OPR-1.0, Operation Support Systems	00	04-88
OPR-2.0, Pool Water System Operation	00	10-88
OPR-3.0, Air Confinement System Operation	00	10-88
OPR-3.1, Reactor Room HVAC System Operation	00	10-88
OPR-3.2, Argon Purge System Operation	00	10-88

Enclosure contains PROPRIETARY INFORMATION.
 Declassified when separated from attachments.

<u>TITLE</u>	<u>REVISION</u>	<u>DATE</u>
OPR-3.3, Abnormal Conditions	00	10-88
OPR-9.0, Movement of Fuel Elements	00	10-88
OPR-10.0, Movement of Experiment Facility	00	10-88

Surveillance Procedures

SRV-1.0, Facility Equipment	DRAFT	
SRV-2.0, Rod Drive Inspection, Maintenance	00	10-88
SRV-3.0, Control Rod Inspection, Maintenance	00	10-88
SRV-4.0, Fuel Inspection and Measurement	00	10-88
SRV-12.0, Pool Water System Surveillance	00	10-88
SRV-13.0, Air Confinement System Surveillance	00	10-88
SRV-14.0, Radiation Monitoring System	DRAFT	
SRV-14.1, Personnel	DRAFT	
SRV-14.2, Area	DRAFT	
SRV-14.3, Particulate	DRAFT	
SRV-14.4, Argon-41	DRAFT	
SRV-14.5, Survey Meters	DRAFT	

Miscellaneous Laboratory Procedures

MISC-1.0, Alpha/Beta Proportional Counter	DRAFT
MISC-2.0, Ge Gamma Spectroscopy	DRAFT

July 13, 1989

In Reply Refer to:
Dockets: 50-192/89-02
50-602/89-04

University of Texas
College of Engineering
Department of Mechanical Engineering
Nuclear Engineering Program
ATTN: Bernard W. Wehring, Director
Nuclear Engineering Teaching Laboratory
Austin, Texas 78712

Gentlemen:

This refers to the inspection conducted by Mr. H. D. Chaney of this office during the period May 31 through June 1, 1989, of activities authorized by NRC Facility License R-92 and Construction Permit CPPR-123 for the University of Texas facilities located at Taylor Hall and the Balcones Research Center, and to the discussion of our findings with you and other members of the University staff at the conclusion of the inspection.

Areas examined during the inspection included the radiation protection, physical security, and emergency preparedness programs; and associated equipment installation and testing. We also reviewed your preparations for defueling, fuel transfer, and the cobalt 60 irradiator transfer from the Taylor Hall to the Balcones facility. Within these areas, the inspection consisted of selective examination of representative records, interviews with personnel, and observations by the NRC inspector. The inspection findings are documented in the enclosed inspection report.

In accordance with 10 CFR Part 2.790(d), the documentation enclosed concerning your Physical Security Plan (Attachment 1) is exempt from public disclosure. Therefore, Attachment 1 will not be placed in the Public Document Room.

Within the scope of the inspection, no violations or deviations were identified.

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PDR ADOCK 05000192
Q FDC

RIV:FRPS	C:FRPS	C:RPB	D:DRSS	C:TPS	D:DRP
*HDChaney/hdc	*REBaer	*BMurray	*ABBeach	*WCSeidle	*JLMilhoan
/ /89	/ /89	/ /89	/ /89	/ /89	/ /89

*Previously Concurred

Enclosure contains PROPRIETARY INFORMATION.
Declassified when separated from attachments.

TEO1

University of Texas

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Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

Original signed by:
P. Gwynn, for:

James L. Milhoan, Director
Division of Reactor Projects

Enclosures:

1. Appendix - NRC Inspection Report
50-192/89-02
50-602/89-04
2. Attachment 1 - Proprietary Information
3. Attachment 2 - Documents Reviewed

cc w/all enclosures:

University of Texas
College of Engineering
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cc w/enclosures 1 and 3:

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*DRP
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B. Beach
B. Murray
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RPB/DRSS
RIV File

*w/766

Enclosure contains PROPRIETARY INFORMATION.
Decontrolled when separated from attachments.