

September 19, 2006

Mr. Paul M. Whaley, Manager
KSU Nuclear Reactor Facility
Department of Mechanical and
Nuclear Engineering
112 Ward Hall
Kansas State University
Manhattan, KS 66506-5204

SUBJECT: NRC ROUTINE, ANNOUNCED INSPECTION REPORT NO. 50-188/2006-201

Dear Mr. Whaley:

This letter refers to the inspection conducted on June 27-29 and July 26, 2006 at your Nuclear 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 noncompliance with 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 made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

Should you have any questions concerning this inspection, please contact Mr. Kevin M. Witt at 301-415-4075.

Sincerely,

/RA/

Johnny Eads, Branch Chief
Research and Test Reactors Branch B
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Docket No. 50-188
License No. R-88

Enclosure: NRC Inspection Report No. 50-188/2006-201
cc w/enclosure: See next page

Kansas State University

Docket No. 50-188

cc:

Office of the Governor
State of Kansas
Topeka, KS 66612

Mayor of Manhattan
P.O. Box 748
Manhattan, KS 66502

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: 50-188

License No: R-88

Report No: 50-188/2006-201

Licensee: Kansas State University

Facility: TRIGA Mark II

Location: Manhattan, Kansas

Dates: June 27-29 and July 26, 2006

Inspector: Kevin M. Witt

Approved by: Johnny Eads, Branch Chief
Research and Test Reactors Branch B
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

EXECUTIVE SUMMARY

Kansas State University Nuclear Reactor Facility NRC Inspection Report No.: 50-188/2006-201

The primary focus of this routine, announced inspection was the on-site review of selected aspects and activities since the last NRC inspection of the licensee's Class II non-power reactor safety programs including: organization and staffing, procedures, experiments, radiation protection program, design changes, committees, audits and reviews, and fuel handling.

The licensee's programs were acceptably directed toward the protection of public health and safety, and in compliance with NRC requirements.

Organization and Staffing

- The organization and staffing were consistent with Technical Specification requirements.

Procedures

- Procedural control and implementation satisfied Technical Specification requirements.

Experiments

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

Radiation Protection Program

- Surveys were being completed and documented acceptably to permit evaluation of the radiation hazards present.
- Postings met the regulatory requirements specified in 10 CFR Parts 19 and 20.
- Personnel dosimetry was being worn as required and doses were well within the licensee's procedural action levels and NRC's regulatory limits.
- Radiation monitoring equipment was being maintained and calibrated as required.
- The Radiation Protection Program satisfied regulatory requirements.
- Effluent monitoring satisfied license and regulatory requirements and releases were within the specified regulatory and Technical Specification limits.

Design Changes

- Based on the records reviewed, the inspector determined that, in general, the licensee's design change program was being implemented as required. One Unresolved Item was issued for failure to conduct an evaluation of changes prior to implementation.

Committees, Audits and Reviews

- Review and oversight functions required by the Technical Specifications were acceptably completed by the Reactor Safety Committee.

Fuel Handling

- Fuel handling and control rod inspection activities were completed and documented as required by Technical Specification and facility procedures.

REPORT DETAILS

Summary of Plant Status

The licensee's 250 kilowatt (kW) Training Research Isotope Production General Atomics (TRIGA) Mark II research reactor has been operated in support of educational demonstrations, experiments, reactor operator training, and periodic equipment surveillances. During the inspection the reactor was operated at 250 kW in support of ongoing work and operator training. The licensee indicated that there has been no transportation of radioactive materials since the previous inspection.

1. Organization and Staffing

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

The inspector reviewed the following to verify compliance with the staffing requirements in Technical Specifications (TS) Sections 6.1 and 6.2:

- organization and staffing
- qualifications
- management responsibilities
- administrative controls
- TS for the Kansas State University (KSU) TRIGA Mark II Reactor, Amendment No. 13, dated November 16, 1999
- KSU TRIGA Mark II Reactor organizational structure and staffing
- management responsibilities and staff qualifications
- staffing requirements for the safe operation of the facility
- Reactor Logbooks covering operations from April 28, 2005 to August 3, 2005 and from December 27, 2005 to April 18, 2006
- KSU Reactor Management Orders (KSUMO) SOM 1, "Operational Limits and Special Administrative Controls," Revision 0, dated May 28, 2004

b. Observations and Findings

The KSU Nuclear Reactor Facility (NRF) organizational structure and the responsibilities of the reactor management and staff had not changed since the last inspection (see NRC Inspection Report No. 50-188/2004-201). Current licensed staff consisted of the Reactor Supervisor (RS) and several graduate and undergraduate students. The RS and two other students are qualified Senior Reactor Operators (SROs). The licensee also has eight student staff members, who are all qualified as Reactor Operators (ROs).

The KSU staff's qualifications satisfied the training and experience requirements stipulated in the TS. The operations log and associated records confirmed that shift staffing met the minimum requirements for duty personnel. Review of records verified that management responsibilities were administered as required by TS and applicable procedures.

c. Conclusion

The organization and staffing were consistent with TS requirements.

2. Procedures

a. Inspection Scope (IP 69001)

The inspector reviewed the following to ensure that the requirements of TS Section H.1 were being met concerning written procedures:

- Reactor Safeguards Committee (RSC) meeting minutes documenting procedure change reviews and approvals
- Semi-Annual RSC Review Minutes, dated January 13, 2006
- KSU Operation, Test, and Maintenance Procedure (KSUOTMP) #24, "Sump Water Discharge System," dated June 22, 2006
- Implementation and Test Plan for KSU Reactor Power Upgrade, revision 0, dated September 20, 2005
- administrative controls
- procedural implementation
- selected administrative and operations procedures
- records of changes and temporary deviations to procedures

b. Observations and Findings

The inspector determined that written procedures were available for the activities delineated in TS Section H.1 and were approved by the RSC before they were implemented. The clarity and detail in the procedures was acceptable.

Temporary procedures which do not change the intent of previously approved procedures and which do not involve any unreviewed safety question may be employed upon approval by the RS. KSU NRF staff conducted TS activities in accordance with applicable procedures. The licensee stated in the RSC meeting minutes that there are going to be new procedures for implementing a proposed power increase that is currently being reviewed by the NRC. The licensee stated that the new procedures will be completed before the reactor control system is tested.

Review of procedures indicated that an existing procedure regarding the sump water discharge system had been approved by the RSC and the RS. The inspector noted that the revision to the procedure lays out an effective method of ensuring compliance with effluent concentration limits as defined in the NRC regulations.

c. Conclusions

Procedural control and implementation satisfied TS requirements.

3. Experiments

a. Inspection Scope (IP 69001)

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

- experimental administrative controls and precautions
- approved reactor experiments documentation
- review and approval process for experiments
- experimental program requirements
- KSU TRIGA Mark II (KSUTMII) approved reactor experiment documentation, Experiment Nos. 2 to 47
- KSU NRF Experiment 1, "Isotope Production," dated June 1991
- Form KSUTMII-2, "Request for KSU TMII Operation," dated October 1991
- Form KSUTMII-4, "Byproduct Log," dated October 1989
- KSUMO SOM2, "Routine Approval and Communications for Operations," revision 1, dated August 12, 2004
- Completed Form KSUTMII-2's, dated from January 2004 to present
- Completed Form KSUTMII-4's, dated from January 2004 to present
- Reactor Logbooks covering operations from April 28, 2005 to August 3, 2005 and from December 27, 2005 to April 18, 2006
- Semi-Annual RSC Review Minutes, dated January 13, 2006, May 26, 2005, September 10 and March 4, 2004

b. Observations and Findings

There have been several experiments conducted at the KSU NRF since the previous inspection. The most frequently used experimental facility is the rotary specimen rack, although the central thimble facility and the rabbit pneumatic device are commonly used as well. The reactor is also used for general purpose demonstrations as well as nuclear engineering laboratory experiments, which are explained in the experimental procedures. A wide variety of samples have been irradiated at the KSU NRF as indicated in the requests for operations. The inspector verified that all of the samples that are irradiated are evaluated for isotope concentration prior to irradiation to ensure compliance with regulatory limits. Only the RS can approve samples to be irradiated in the reactor in accordance with the TS limitations.

The inspector observed that one experiment involving the testing of micro pocket fission detectors was being delayed due to incompatibility with the experimental facilities. The licensee wanted to irradiate these detectors in the flux mapping hole of the reactor grid plate, but was unable to fit the device inside of the mapping hole. To fix the problem, the licensee tried to use an air hose to clean corrosion products that have built around the lip of the opening. The licensee was unable to successfully complete this operation due to instability of the device and the potential for inadvertently modifying other parts of the upper grid plate. The inspector verified that the licensee was continuing to evaluate the situation and will thoroughly review any potential solutions before implementation.

The inspector noted that no new experiments had been initiated, reviewed, or approved since the previous inspection at the facility. If any new experiments were to be initiated, they would be reviewed and approved by the RSC. The inspector confirmed that all of the experiments conducted were in accordance with TS limits and procedural requirements.

c. Conclusions

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

4. Radiation Protection Program

a. Inspection Scope (IP 69001)

The inspector reviewed the following to verify compliance with 10 CFR Part 19 and Part 20 and the applicable TS requirements:

- radiological signs and posting in various areas of the facility
- facility and equipment during tours
- organization and staffing
- radiation protection training records
- instrument calibration records
- waste transfer and liquid discharge records from 2004 to present
- facility monthly, annual, and other periodic contamination and area radiation surveys from 2005 to present
- monthly dosimetry records for staff and students for 2004 through present
- calibration records for the Radiation Area Monitors and the Continuous Air Monitor from 2004 to present
- KSU Nuclear Reactor Radiation Protection Program (RPP), May 7, 2002
- KSU Radiation Safety Manual (RSM), dated February 2006
- Radiation Protection Program Review from December 2005 to present
- Radiation survey procedure "12.4, Experiment 3 - Radiation Survey of Reactor," dated February 12, 1969
- KSUMO SOR 1, "Dosimeter Logs," Revision 0, dated May 28, 2004
- KSUMO SOR 3, "Reactor Bay Sump Discharge," Revision 1, dated May 10, 2004
- KSUMO SOR 4, "Radiation Detector Calibration," Revision 0, dated June 16, 2004
- KSUOTMP No. 3-2, "Annual Remote Area Monitor Calibration, RMS II," dated October 3, 1990
- KSUOTMP No. 8, "Calibration of Continuous Air Monitor," dated June 1999
- KSUOTMP No. 13, "Portable Radiation Survey Meter Calibration," dated December 1986
- KSUOTMP No. 20, "Liquid Scintillation Assay Methods", dated January 19, 1987
- KSUOTMP No. 21, "Alpha Particle Assay of Reactor Liquids", dated

- August 3, 1989
KSUOTMP No. 24, "Sump Water Discharge System," dated June 22, 2006

b. Observations and Findings

(1) Surveys

The inspector reviewed semiannual radiation and contamination surveys of the licensee's controlled areas while the reactor is at power. The inspector also reviewed the licensee's monthly radiation wipe surveys of the reactor facility. The results were documented on the appropriate forms, evaluated as required, and corrective actions taken when readings or results exceeded set action levels. The number and location of survey points was adequate to characterize the radiological conditions. Surveys by the reactor staff were conducted in accordance with the appropriate procedure and logged on the appropriate forms. Some elevated readings were discovered around areas where experiments are handled and prompt cleaning was initiated after the readings were obtained. Subsequent sampling indicated that all removable contamination was removed.

(2) Postings and Notices

The inspector reviewed the postings required by 10 CFR Part 19 at the entrances to various controlled areas including the Reactor Bay, and radioactive material storage areas. The postings were acceptable and indicated the radiation and contamination hazards present. The facility's radioactive material storage areas were noted to be properly posted. No unmarked radioactive material was found in the facility.

(3) Dosimetry

The licensee used a National Voluntary Laboratory Accreditation Program-accredited vendor, to process personnel dosimetry. Through direct observation, the inspector determined that dosimetry was used in an acceptable manner by facility personnel. For visitors to the facility, a direct read pocket dosimeter is issued to individuals for general tours. Records indicate that no abnormal readings were obtained.

An examination of the records for the inspection period showed that all exposures were well within NRC limits and within licensee action levels. 14 individuals are currently monitored at the facility. All of the students and staff associated with the facility wear Optically Stimulated Luminescence Dosimeter (OSLD) badges and received an annual deep dose exposure less than 54 millirem (mrem) for 2005. The licensee investigates any dosimetry readings that indicate a monthly exposure above typical levels for a reactor staff member. The ALARA goal specified in the RPP is to keep deep dose exposures to less than 500

mrem per year. The inspector noted that there were several occasions where the RSO has investigated above normal readings, although all readings were less than 100 mrem.

(4) Radiation Monitoring Equipment

The calibration verification of portable survey meters and friskers was completed by the reactor staff. The fixed area radiation meters were calibrated using a Cs-137 source. The calibration records of portable survey meters and fixed radiation detectors in use at the facility were reviewed. The licensee ensures that all of the meters are measuring within 10% of the calculated readings and if it is out of range, the licensee sends the meters to a repair facility. The inspector noted that the records of the continuous air monitor calibrations are not detailed and basically indicate that an individual completed the procedure. Calibration frequency met the requirements established in the procedures while records were being maintained as required. The inspector observed that proper precautions are always used to maintain doses for calibrations as low as reasonably achievable (ALARA).

(5) Radiation Protection Program

The licensee has created a RPP for the reactor facility that implements the principles of the KSU RSM. The KSU RSM specifies radiation protection standards throughout the campus. The inspector verified that the RPP was being reviewed annually by the RSC. No issues related to the radiation protection program at KSU were identified in the review of the program.

The radiation procedures require that all personnel who work with radioactive materials receive training in radiation protection, policies, procedures, requirements, and the facilities prior to having unescorted access at the facility. The RS is responsible for conducting the training and all of the training is typically completed online. A test is administered at the end of the training to verify that the individuals understood the material presented. Refresher training is required for all personnel on an annual basis. The training covered the topics required to be taught in 10 CFR Part 19 and the review of training materials and tests indicated that the staff were instructed on the appropriate subjects.

(6) Facility Tours

The inspector toured the reactor facility and the accompanying facilities. Control of radioactive material and control of access to radiation and high radiation areas were acceptable. The postings and signs for these areas were appropriate. The inspector also determined that there were no measurable releases of gaseous or liquid radioactive material from the research reactor facility.

(7) Environmental Monitoring

Records for surveys around the interior of the building show that dose rates are generally minimal. The licensee has indicated that there is no measurable dose rate when the reactor is shut down and integrating the amount of time the reactor is operating shows that the maximum dose an individual member of the public can receive is less than 100 mrem.

Licensee calculations in Section A.2.4 of the Safety Analysis Report showed that the offsite dose to the public would be 2.8 millirem per year from airborne effluent for operation at 500 KW twice the currently authorized reactor power level. This satisfies the annual 10 millirem dose constraints of 10 CFR 20.1101(d), Appendix B concentrations, and TS limits. Observation of the facility by the inspector found no new potential release paths. The licensee also maintains a Continuous Air Monitor (the AMS-II Air Monitor), which will automatically shut off the exhaust fan if a high reading is measured.

There were several instances of liquid releases from the facility during the inspection period, which were shown to be within the regulatory limits. The program for the monitoring, storage, or transferring of radioactive liquid was consistent with applicable regulatory requirements. Potentially contaminated liquid waste, which consisted of condensate from the air conditioners, was sampled and discharged to the sanitary sewer. In-line mechanical filters were used to ensure that the solubility requirements in 10 CFR 20.2003 were met. The inspector verified that the licensee compares the concentration of the release against applicable limits established in 10 CFR 20 Appendix B.

c. Conclusions

The inspector determined that: (1) surveys were being completed and documented acceptably to permit evaluation of the radiation hazards present, (2) postings met the regulatory requirements specified in 10 CFR Parts 19 and 20, (3) personnel dosimetry was being worn as required and doses were well within the licensee's procedural action levels and NRC's regulatory limits, (4) radiation monitoring equipment was being maintained and calibrated as required, (5) the RPP satisfied regulatory requirements, and (6) effluent monitoring satisfied license and regulatory requirements and releases were within the specified regulatory and TS limits

5. Design Changes

a. Inspection Scope (IP 69001)

In order to verify that any modifications to the facility were consistent with 10 CFR 50.59, the inspector reviewed selected aspects of:

- facility design changes and records

- facility configuration and associated records
- KSU NRF Annual 50.59 Report, dated November 7, 2005
- Semi-Annual RSC Review Minutes, dated January 13, 2006
- RSC meeting minutes description of the new fuel element temperature indications
- RSC review of the linear channel indications
- KSUMO SOM 5, "Configuration Management," Revision 0, dated July 6, 2006

b. Observations and Findings

Through review of applicable records and interviews with licensee personnel, the inspector determined that several changes had been initiated and/or completed at the facility since the last NRC inspection. One of the changes reviewed involves the replacement of the fuel temperature indicators. The fuel temperature indicators are safety significant instrumentation due to their function of ensuring that the safety limit defined in the TSs is not exceeded. The licensee submitted a report to the NRC detailing the change and summarized the safety significance of the change. The fuel temperature indicator on the control console was changed from analog indication to digital indication, however the process circuitry remained steady state. The licensee has stated that prior NRC approval was not needed for this change in accordance with 10 CFR 50.59. The RS stated that RSC approval was not obtained for this change due to the RSC backup chairmans determination that the change was classified as maintenance in accordance with TS Section H.3. The RS informed the RSC after the change was made and no objections were made.

Another change that was reviewed by the inspector involved the modification of the linear power multi range channel to connect an output to a computer system for independent utilization. The TS required scram for high power level derives a signal from this power channel. The circuitry for the channel was modified to allow an independent connection to a computer. One of the former SROs at the facility had made arrangements with the RS to install an external circuit to the power channel in a specific manner. When the individual made the change to the circuitry, the new circuitry was different than what had been discussed with the RS and had not been analyzed for any unexpected interactions with the reactor safety system. When the RS found what had been done to the channel, operation of the reactor was immediately suspended until further investigation could be completed.

Due to the abbreviated period of time after the discovery of the change, the RS was unable to prevent operation of the reactor after the change was made. The reactor was operated prior to the completion of a review required by 10 CFR 50.59. 10 CFR 50.59(c)(1) states, "A licensee may make changes in the facility as described in the final safety analysis report (as updated), make changes in the procedures as described in the final safety analysis report (as updated), and conduct tests or experiments not described in the final safety analysis report (as updated) without obtaining a license amendment pursuant to Sec. 50.90 only if" the conditions in 10 CFR 50.59(c)(2) are met. The licensee must evaluate these

conditions before the change is made and must be recorded as required by 10 CFR 50.59(d)(1). Contrary to this requirement, the licensee did not conduct an assessment of whether prior NRC approval was needed for this change before the change was implemented.

Subsequent to the discovery of the change, the RS consulted with the RSC on the issue and removed the modification. The RS immediately resumed operations after changing the linear power channel back to its original configuration. After more investigation and safety analysis of the modification, the RS communicated the information to the RSC, which immediately approved the changes. The licensee determined that prior NRC approval was not necessary for this change. Post installation verification testing of the systems was performed. In response to this incident, the licensee issued a management order to all of the licensed staff at the NRF, which requires a thorough review before implementation of all modifications or changes to systems at the facility. The inspector could not determine the effectiveness of this management order due to the short period of time it has been in place. The licensee was informed that failure to conduct an evaluation of changes prior to implementation was identified as an Unresolved Item¹ (URI) pending the evaluation of corrective actions and implementation of controls to prevent recurrence. This issue will be reviewed during a future inspection (URI 50-188/2006-201-01).

c. Conclusions

Based on the records reviewed, the inspector determined that, in general, the licensee's design change program was being implemented as required. One URI was issued for failure to conduct an evaluation of changes prior to implementation.

6. Committees, Audits, and Reviews

a. Inspection Scope (IP 69001)

The inspector reviewed the following to ensure that the audits and reviews stipulated in TS Section H.2 were being completed by the Reactor Safeguards Committee:

- Semi-Annual RSC Review Minutes, dated January 13, 2006, May 26, 2005, September 10 and March 4, 2004
- RSC Semi-Annual Checklists, dated January 13, 2006, May 26, 2005, September 10 and March 4, 2004
- TS duties specified for the RSC including audit and review functions

b. Observations and Findings

¹An Unresolved Item is a matter about which more information is required to determine whether the issue in question is an acceptable item, a deviation, a nonconformance, or a violation.

The RSC is defined in the TSs and the inspector verified that the committee is following all aspects of the requirements. The RSC had semiannual meetings and a quorum was always present as required. Review of the minutes indicated the RSC provided guidance, direction and oversight, and ensured suitable use of the reactor. The minutes provided an acceptable record of RSC review functions and of RSC safety oversight of reactor operations.

The RSC conducted reviews of all facility operations during the meetings. Minor issues that were not safety related were noted in the meeting minutes and the inspector observed that any safety related items were properly controlled. The inspector noted that there were no significant issues discovered and that the licensee took appropriate corrective actions in response to the review findings. The inspector noted that the reviews, and the associated findings, were acceptably detailed and that the licensee responded and took corrective actions as needed. The inspector verified that the RSC maintains a semiannual checklist of items to be reviewed during the meetings.

c. Conclusions

Review and oversight functions required by the TSs were acceptably completed by the RSC.

7. Fuel Handling

a. Inspection Scope (IP 69001)

To verify that TS and procedural requirements were being met, the inspector reviewed selected aspects of:

- Reactor Logbooks covering operations from April 28, 2005 to August 3, 2005 and from December 27, 2005 to April 18, 2006
- KSU Fuel Element Inspection Data Log, latest data dated January 4, 2004
- KSUOTMP No. 26, "Fuel-handling Procedure," dated January 31, 2001
- fuel handling equipment and instrumentation
- fuel movement and inspection records

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 were conducted and recorded in compliance with procedure. All fuel movements were noted in the Reactor Log Book. Some recent movements of fuel included moving fuel to conduct experimental preparation work on the grid plates. The reactor logbooks also showed that fuel was moved for visual inspections on a staggered schedule such that there were inspections of 10 to 20 elements at each time. TS Section D.6 specifies that each fuel element shall be visually inspected after 100 pulses greater than \$1.00 in magnitude. The inspector verified that the representative fuel rods were being inspected as

required by the TSs. The procedures and the controls specified for these operations were acceptable.

c. Conclusions

Fuel handling and control rod inspection activities were completed and documented as required by TS and facility procedures.

8. Exit Meeting

The inspector presented the inspection results to licensee management at the conclusion of the inspection on June 29, 2006. The inspector discussed the observations for each area reviewed. A subsequent telephone conversation was held on July 26, 2006 to further discuss the findings from the inspection. 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

R. Bridges	Campus Radiation Safety Officer
A. Cebula	Reactor Operator
K. Shultis	Reactor Safeguards Committee Backup Chairman
R. Thuma	Assistant Radiation Safety Officer
P. Whaley	Reactor Supervisor

INSPECTION PROCEDURES USED

IP 69001	CLASS II NON-POWER REACTORS
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ITEMS OPENED, CLOSED, AND DISCUSSED

OPENED:

50-188/2006-201-01	URI	Failure to conduct a 10 CFR 50.59 review on a change to the linear power channel prior to implementation and operations.
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CLOSED:

None

DISCUSSED:

None

LIST OF ACRONYMS USED

ADAMS	Agencywide Document Access and Management System
ALARA	As Low As Reasonably Achievable
CFR	Code of Federal Regulations
IP	Inspection Procedure
KSU	Kansas State University
KSUMO	Kansas State University Management Order
KSUOTMP	Kansas State University Operation, Test, and Maintenance Procedure
KSUTMII	KSU TRIGA Mark II
kW	KiloWatts
MREM	Millirem
NRC	Nuclear Regulatory Commission
NRF	Nuclear Reactor Facility
OSLD	Optically Stimulated Luminescence Dosimeter
RO	Reactor Operator
RPP	Radiation Protection Program
RS	Reactor Supervisor
RSC	Reactor Safeguards Committee
RSM	Radiation Safety Manual
SRO	Senior Reactor Operator
TS	Technical Specifications
TRIGA	Training Research Isotope Production General Atomics
URI	Unresolved Item