PDR-016

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

April 19, 1983

Mr. Charles Barnes
Box 1255
Lawrence, KS 66044

IN RESPONSE REFER
TO FOIA-83-126

Dear Mr. Barnes:

This is in further response to your letter dated March 8, 1983, in which you requested, pursuant to the Freedom of Information Act, three documents identified in your letter which related to the University of Kansas Research Reactor.

Please find enclosed the following document which is responsive to your request.

March 24, 1983 - Letter to Dr. David Kraft, University of Kansas from G. L. Madsen, NRC, attaching Notice of Violation and NRC Inspection Report 50-148/83-01

This completes NRC's action on your request.

Sincerely,

J. M. Felton, Director
Division of Rules and Records
Office of Administration

Enclosure: As stated

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March 8, 1983

Request is being made for AEC/NRC documents under the provisions of the Freedom of Information Act, 5 U.S.C. 552.

FREEDOM OF INFORMATION ACT REQUEST
FOIA-83-126
Rec'd 3-15-83

Freedom of Information Act Request

Mr. J.M. Felton
Director, Division of Rules and Records
Office of Administration
U.S. Nuclear Regulatory Commission

The NRC or Literature Research Company will be reimbursed $.05 per page for duplicating expenses in addition to postage costs.

Reference: Docket 50-148 Univ. of Kansas Research Reactor. License R-78.

Documents requested include:

N- — Ltr 12-06-73 fm Univ. of Kan. re AEC 11-6-73 ltr & trans following: Replies to a series of Ques. contained in a ltr to Dr. W.P. Smith, dtd 11-6-73. Date Docketed-Dec 10, 1973.

PDR — 8208020362 Submits annual operating report for July 1981-June 1982. Mesler, R.B. Kansas University of. 820723. 2pp 14150;130

N1 — January 1983 Inspection Report re Univ. of Kansas Research Reactor.

Sincerely,

Charles Barnes

Charles Barnes
Box 1255
Lawrence, Kansas 66044

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MAR 24 1983

In Reply Refer To:
Docket: 50-148/83-01

University of Kansas
ATTN: Dr. David Kraft, Dean
School of Engineering
Lawrence, Kansas 66044

Gentlemen:

This refers to the inspection conducted by Mr. G. L. Plumlee III of this office on February 28 - March 3, 1983, of activities authorized by NRC Operating License R-78 for the Bendix Pool Reactor at the University of Kansas and to the discussion of our findings held with Dr. Russell B. Mesler of your staff at the conclusion of the inspection.

Areas examined during the inspection and our findings are discussed in the enclosed inspection report. Within these areas, the inspection consisted of selective examination of procedures and representative records, interviews with personnel, and observations by the inspector.

During this inspection, it was found that certain of your activities were not conducted in full compliance with NRC requirements. Consequently, you are required to respond to this matter, in writing, in accordance with the provisions of Section 2.201 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations. Your response shall be based on the specifics contained in the Notice of Violation attached to this letter.

In accordance with 10 CFR 2.790 of the Commission's regulations, a copy of this letter and the enclosed inspection report will be placed in the NRC's Public Document Room. If this report contains any information that you believe to be exempt from disclosure under 10 CFR 9.5(a)(4), it is necessary that you (a) notify this office by telephone within 10 days from the date of this letter of your intention to file a request for withholding; and (b) submit within 25 days from the date of this letter a written application to this office to withhold such information. If your receipt of this letter has been delayed such that less than 7 days are available for your review, please notify this office promptly so that a new due date may be established. Consistent with Section 2.790(b)(1), any such application must be accompanied by an affidavit executed by the owner of the information which identifies the document or part sought to be withheld, and which contains a full statement of the reasons on the basis which it is claimed that the information should be withheld from public disclosure. This section further requires the statement

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to address with specificity the conderations listed in 10 CFR 2.790(b)(4). The information sought to be withheld shall be incorporated as far as possible into a separate part of the affidavit. If we do not hear from you in this regard within the specified periods noted above, the report will be placed in the Public Document Room.

The responses directed by this letter and the accompanying Notice are not subject to the clearance procedures of the Office of Management and Budget as required by the paperwork Reduction Act of 1980, PL 96-511.

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

Sincerely,

"Original Signed by:
G. L. MADSEN"
G. L. Madsen, Chief
Project Reactor Branch 1

Enclosures:
1. Appendix A - Notice of Violation
2. Appendix B - NRC Inspection Report 50-148/83-01

APPENDIX A

NOTICE OF VIOLATION

University of Kansas

Docket: 50-148/83-01
License: R-78

Based on the results of an NRC inspection conducted during the period of February 28 - March 3, 1983, and in accordance with the NRC Enforcement Policy (10 CFR Part 2, Appendix C), 47 FR 9987, dated March 9, 1982, the following violation was identified:

Technical Specification J.4 states, in part, that, "The University of Kansas Committee on Radiation Sources . . . shall be composed as follows:

* * *

"c. a nuclear engineer, most reasonably the faculty reactor supervisor, ... "

Contrary to the above, on March 2, 1983, the NRC inspector determined that the Committee on Radiation Sources membership did not contain a nuclear engineer.

This is a Severity Level V Violation. (Supplement I.E.) (50-148/8301-01)

Pursuant to the provisions of 10 CFR Part 2.201, University of Kansas is hereby required to submit to this office within 30 days of the date of this Notice, a written statement or explanation in reply, including: (1) the corrective steps which have been taken and the results achieved; (2) corrective steps which will be taken to avoid further violations; and (3) the date when full compliance will be achieved. Consideration may be given to extending your response time for good cause shown.

Dated: MAR 24 1983

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APPENDIX B

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

Report: 50-148/83-01 License: R-78

Docket: 50-148 Category: 5

Licensee: University of Kansas
P. O. Box 2067
Lawrence, Kansas 66044

Facility Name: University of Kansas, Bendix Pool Reactor

Inspection at: Univeristy of Kansas, Lawrence, Kansas

Inspection Conducted: February 28 - March 3, 1983

Inspector: G. L. Plumlee III, Reactor Inspector — Date: 3-17-83

Approved: T. F. Westerman, Chief
Reactor Project Section A — Date: 3-21-83

Inspection Summary

Inspection on February 28 - March 3, 1983 (Report: 50-148/83-01)

Areas Inspected: Routine, unannounced inspection of Organization, Logs and Records; Review and Audit; Requalification Training; Surveillance; Experiments; Environmental Protection; Emergency Plan; Radiation Control; Licensee Action on Previous Inspection Findings; and Follow Up, IE Circular, and Information Bulletin. The inspection involved 27 inspector-hours onsite by one NRC inspector.

Results: Within the ten areas inspected, one violation was identified (Failure to adhere to Technical Specification, Appendix B, paragraph 3).

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DETAILS

1. Persons Contacted

B. Friesen, Radiation Safety Officer
M. Lemon, Radiation Safety Technician
*R. Mesler, Reactor Supervisor
H. F. Rosson, Senior Reactor Operator
H. Woody, Reactor Operator

* Denotes those present during the exit interview.

2. Licensee Action on Previous Inspection Findings

(Closed) Violation (8201-01): Calibration Procedure Not Approved by Nuclear Reactor Committee. The Nuclear Reactor Committee approved the report on the calibration of the Jordan Area Monitors.

(Closed) Violation (8201-02): Failure to Follow Procedures. The licensee reiterated access requirements to the housekeeping staff.

3. Organization, Logs on Records

The NRC inspector reviewed the following logs and records to verify compliance with Technical Specification requirements and identify any significant problems:

- Operations log and associated startup checksheets for the period January 12, 1982, to December 13, 1982 (last entry).

- Maintenance logs for the period January 12, 1982, to February 23, 1983 (last entry).

- Annual Report dated July 23, 1982, for the period July 1, 1981, to June 30, 1982.

The logs and the annual report appear to be complete and to represent an accurate history of the facility's operation. Reactor startups were conducted for requalification training, absorber material irradiations, demonstrations, and testing/calibrations.

During a verification of the facilities operating organization on March 2, 1983, the NRC inspector determined that the licensee's Committee on Radiation Sources was not composed of the required membership. Technical Specification, Section J.4, states, in part, that, " . . . The Committee shall be composed as follows:

"a. a scientist with training and experience with the chemical manipulation of radioactive materials,

"b. a scientist with training and experience in nuclear physics and in the use of generators of high energy radiation (other than nuclear reactors),

"c. a nuclear engineer, most reasonably the faculty reactor supervisor,

"d. a scientist with training and experience in the radiation effects and tracer metabolism in biological organisms,

"e. a Radiation Safety Officer or health physicist, who is a member of the Radiation Safety Service,

"f. a representative of the Student Health Service, unless the Radiation Safety Officer is also an official representative of the Student Health Service."

However, the licensee's procedure, "Policies and Procedures Governing the use of Radiation Sources," approved January 1, 1980, stated that the Committee on Radiation Sources shall consist of:

"1) Two scientists with training and experience with the chemical manipulation of radioactive material.

"2) A scientist with training and experience in nuclear or radiation physics and in the use of generators of high energy radiation.

"3) A scientist with training and experience in the radiation effects and tracer metabolism in biological organisms.

"4) A Radiation Safety Officer who is a member of the Radiation Safety Service.

"5) A representative of the Student Health Services, unless the Radiation Safety Officer is also an official representative of the Student Health Service."

The committee membership was confirmed by discussions with the licensee verifying that Professor Benjamin S. Friesen is the radiation safety officer on the committee and from the review of a letter dated January 18, 1983, to the Kansas State Department of Health and Environment from Professor Friesen stating that the membership for the Committee on Radiations Sources has been changed to the following:

"Professor Francis Prosser, Chairman
(Scientist with training and experience in nuclear or radiation physics)
Professor Donald Robertson, Microbiology
Professor Robert Sanders, Biochemistry
Professor Peter Hierl, Chemistry
(Three scientists with experience in chemical manipulations, radiation effects, and tracer metabolism), and
Dr. Dennis Dahl, M.D.
(a representative of the Student Health Service)"

The licensee was informed that the failure to have a nuclear engineer as a member of the Committee on Radiation Sources is a violation (8301-01) of Technical Specification requirements.

The NRC inspector had no further questions in this area.

4. Review and Audit

The NRC inspector reviewed the Nuclear Reactor Committee minutes for March 4, 1982, May 4, 1982, September 28, 1982, and December 7, 1982; and the facility annual audit dated June 16, 1982. It appears that the Nuclear Reactor Committee met quarterly with a quorum present as required by the Technical Specifications.

The NRC inspector did determine that the annual audit dated June 16, 1982, was performed utilizing the March 1980, Technical Specification to verify conformance of facility operations to the Technical Specification and applicable license or charter conditions. This Technical Specification was submitted to the NRC on March 4, 1980, as part of the licensee's application for licensee renewal. It should be noted that this licensee renewal has not been reviewed/approved by the NRC as of this date.

This was discussed with the licensee who is very concerned over the apparent delay in the NRC's research reactor licensee renewal process. The licensee also insured the NRC inspector that the appropriate Technical Specification would be utilized until approval of the March 1980, submittal by the Office of Nuclear Reactor Regulation.

No violations or deviations were identified.

5. Research Reactor Requalification Training

The NRC inspector determined that all currently licensed operators are satisfactorily participating in the requalification program. The biannual written examination was administered, as required, by H. O. Woody on December 15, 1981. Annual evaluations for all operators were documented on December 13, 1982, and the annual review of the emergency procedure was conducted and documented, as required, The NRC inspector also verified license renewal applications for operator license with expiration dates of January 1983 and September 1982 for R. B. Mesler and H. F. Rosson, respectively.

No violations or deviations were identified.

6. Procedures

The NRC inspector reviewed the Technical Specification, operating procedures and administrative guidance to verify the following:

- The responsibilities of operators and senior operators regarding adherence to procedures are clearly established in writing.
- Methods of changing or deviating from procedures, both temporary and permanent, including approvals and levels of subsequent review, are clearly established.
- The level of review and approval of new and substantially changed procedures is clearly established.
- Operating procedures are technically adequate and meet Technical Specification requirements.
- Procedures in use have been approved as required.

From this review, the NRC inspector determined that there appeared to be sufficient procedures to meet the license requirements and that they were adequate considering the level of use of this facility.

No violations or deviations were identified.

7. Surveillance

The NRC inspector verified that all surveillance activities were conducted at the required frequency and provided acceptable results. All Technical Specification design criteria, limiting conditions for operation, and

limiting safety system settings appear to have been met. The following procedures were selected for technical review:

- Log Count Rate Meter with Period Amplifier Test
- Safety Amplifier Test
- Log N Amplifier Test
- Rod Drop Test

The NRC inspector witnessed performance of the rod drop test for Control Rod Drive #2. The NRC inspector verified that the drop time stored on the licensee's Type 564 Storage Oscilloscope was approximately 560 milliseconds (limit is 1 second maximum).

During a walk through of the log count rate meter (LCRM) calibration and/or test as required by the Technical Specification, the licensee informed the NRC inspector that this test consisted of manually adjusting the discriminator and gain of this instrumentation to obtain a greater than two counts per second signal thus, allowing rod withdrawal for startups. From a review of the manufacturer's manual titled, "Ortec 452 Spectroscopy Amplifier," the NRC inspector determined that the manual provided procedures for a pulser test and a calibration of the test pulser.

The NRC inspector's findings and concerns were discussed with the licensee. The licensee was informed of the NRC inspector's concern as to whether or not the licensee's present method of testing the LCRM was appropriate to ensure that the LCRM was indeed measuring an accurate output from a startup source.

The licensee was informed that this is considered an unresolved item (8301-02) pending the licensee's verification from the manufacturer and/or vendor of the appropriate calibration and/or testing to be performed as required by Technical Specifications for the LCRM at least semiannually.

The NRC inspector had no further questions in this area.

8. Experiments

The NRC inspector reviewed the irradiation record and order forms from December 29, 1981, to December 13, 1982 (last entry). Irradiations were performed on cobalt and indium foils, polyethylene vials of NaH_3PO_4, NH_4CL, H_2O and blood serium, and an aluminum container of Na_2CO_3. Each irradiation was reviewed and approved according to the facility's experiments control procedure.

The NRC inspector verified that these experiments were performed utilizing the facility's pneumatic beam port negating any reactivity effect.

No violations or deviations were identified.

9. Environmental Protection

The NRC inspector verified that the licensee's methods of effluent monitoring are adequately measured and that records required by Technical Specifications are complete and adequate. The following records were reviewed for the period July 1981 to February 1983:

. Annual Report Dated July 23, 1982

. Water Sampling Data Sheets

. Air Sampling Data Sheets

The NRC inspector also verified that all potential radioactive liquid discharge paths contained a locked shut discharge valve, thus minimizing the possibility of an unmonitored/unauthorized release of radioactive material.

During the above record review, the NRC inspector determined that the amounts of activity released to both the sanitary sewer system and to the atmosphere reported for the period of July 1, 1981, to June 30, 1982, in the licensee's annual report, did not agree with the amounts calculated by the NRC inspector from the licensee's records. The NRC inspector also determined that the report submitted to the reactor supervisor from the Radiation Safety Service dated August 9, 1982, providing the nature and amounts of radioactive material released to the environs during the report period did not agree with what the licensee submitted.

This was discussed with the licensee and the licensee assured the NRC inspector that the incorrect information reported to the NRC was not done so intentionally. From discussions with the reactor supervisor, who submitted the annual report, no determination could be made as to where the values that were submitted came from.

The NRC inspector advised the licensee as to the necessity of submitting accurate reports and the consequences of submitting falsified records. The licensee stated that an amendment to the annual report dated July 23, 1982, would be forwarded to the Division of Reactor Licensing incorporating the correct amounts of radioactive material released to the environs during the report period.

The NRC inspector had no further questions in this area.

10. Emergency Plan

The NRC inspector reviewed the licensee's new emergency plan that was submitted November 3, 1982, as required by 10 CFR 50, and is presently under review by the Office of Nuclear Reactor Regulation (NRR). This plan currently has only been partially implemented. The licensee stated that they are actively working towards full implementation capability by the end of June 1983.

The NRC inspector's evaluation of this emergency plan indicated the following:

- A general lack of knowledge exists amoung the facility personnel as to the plans content.
- The licensee does not presently have the capability to implement this plan completely.
- The licensee utilized NUREG 0849 and ANSI/ANS-15.16 - 1982 as guidance in an attempt to comply with 10 CFR Part 50, Appendix E requirements.

The NRC inspector did determine that the licensee had documented and evaluated as satisfactory an unanounced emergency building evacuation that occurred on October 11, 1982, at 8:33 a.m. CST, and was accomplished in 30 seconds.

The NRC inspector has recommended to NRC Region IV that a followup inspection in this area should be scheduled for performance after the licensee's incorporation of NRR's review comments into the emergency plan and the licensee's full implementation of the plan.

No violations or deviations were identified.

11. Radiation Control

The NRC inspector reviewed the facility's procedures, posting requirements, radiation area markings, personal monitoring devices, and reviewed the following records from February 1982 to February 1983:

(a) Air Sampling Data Sheets

(b) Water Sampling Data Sheets

(c) Reactor Demineralizer Check

(d) Calibrations (Instruments)

(e) Area Surveys (Form HP-9)

(f) Records of External Radiation Exposure

(g) Reactor Bay Ventilation Filter Change Log

All recorded levels of contamination, radiation levels, and radiation dose rates appear to be within the 10 CFR 20 limits. The sample data sheets were completed and the radiation instrument calibrations had been completed during this year.

The NRC inspector reviewed a memorandum dated September 30, 1982, from the radiation safety officer to the University of Kansas project directors. This memo provided guidelines and instructions that were approved by the Committee on Radiation Sources for the training and documentation of radiation worker training and training of nonradiation workers in laboratories containing radioactive materials. The NRC inspector noted that the reactor supervisor and those personnel working in the research reactor area were not aware of the new requirements. The reactor supervisor assured the NRC inspector that he would followup on this and insure that his department complies with the new training requirements.

No violations or deviations were identified.

12. Followup, IE Information Type Bulletin

The NRC inspector verified that the licensee had received and reviewed the following information notices:

. 80-32 Revision 1 dated February 12, 1982

. 82-42 dated November 5, 1982

. 82-46 dated November 26, 1982

. 82-47 dated November 30, 1982

The licensee had not received the following information notices from which the NRC subsequently provided the licensee with a copy:

. 82-38 dated September 22, 1982

. 82-49 dated December 16, 1982

13. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether or not the items are acceptable, violations or deviations. The following unresolved item was discussed in the report:

Paragraph	Item No.	Subject
7	8301-02	Instrument Calibration/Test

14. Exit Interview

An exit interview was held with the reactor supervisor at the conclusion of this inspection. The findings noted above were identified by the inspector and acknowledged by the reactor supervisor.