



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

THE UNIVERSITY OF KANSAS
DOCKET NO. 50-148
AMENDMENT TO FACILITY LICENSE

Amendment No. 12
License No. R-78

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by The University of Kansas (the licensee) dated March 24, 1978, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public;
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied; and
 - F. Publication of notice of this amendment is not required since it does not involve a significant hazards consideration nor amendment of a license of the type described in 10 CFR Section 2.106 (a) (2).

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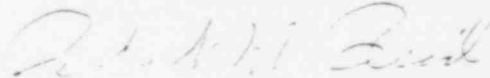
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility License No. R-78 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A issued with License Amendment No. 7, dated January 29, 1969, as revised through Amendment No. 12, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert W. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance:
November 16, 1978

ATTACHMENT TO LICENSE AMENDMENT NO. 12

FACILITY LICENSE NO. R-78

DOCKET NO. 50-148

Replace pages 5 and 5a of the Appendix A Technical Specifications with the attached revised pages. Changes on the revised pages are indicated by marginal lines.

9. Following maintenance or modification of the control or safety systems, a channel test or calibration of the associated system shall be performed before the affected system may be considered operable.
10. The following instruments and components shall be calibrated and/or tested at least semi-annually:
 - a. Log N Amplifier.
 - b. Log Count Rate Meter with Period Amplifier.
 - c. Sigma Amplifier.
 - d. Micro-microamplifier.
 - e. Linear Power Supply.
 - f. Period Amplifier.
 - g. Log N Power Supply.
 - h. Safety Amplifier.
 - i. Magnet Switch Transistors.
11. The reactor power level shall be verified quarterly by irradiation of Co-60 foils, and determining the flux by comparison with past foil irradiations. The linear power channel shall be calibrated by the pool calorimetric method if the foils method suggests such action. A channel calibration will be made on the log power and safety channels if they disagree with the linear power channel.
12. The start-up channel shall be operating prior to reactor start-up.
13. The scram level of the safety channel shall be functionally tested by monitoring the output of the sigma amplifier while temporarily lowering the safety chamber below its normal position. This test shall be performed semi-annually.

14. If a testing, calibration or surveillance requirement of Specification F3, F4, F8, F10, F11, F12 or F14 becomes due while the reactor is shutdown, the requirement may be suspended. Each of the suspended requirements shall be fulfilled prior to startup or in the first critical configuration, as is appropriate in each case.

G. Radiation Monitoring

1. During reactor operation and handling of highly radioactive materials, the reactor bay shall be monitored by at least two of the four area monitors whose locations are listed below:
 - a. East wall
 - b. South wall
 - c. West wall near demineralizer
 - d. Above the reactor tank

For the reactor to be operated above 10 kW, only the monitor on either the east or south wall may be out of service. The monitors shall provide a readout and a signal which activates the annunciator and "Radiation Level" warning light on the console.

In the event that fewer than two of the four area monitors are in service, reactor operation at power levels no greater than 10 kW may continue using portable gamma sensitive monitoring devices with the following restrictions:

- a. The monitoring devices used must be verified to be operable just prior to first use of the day using a check source.
- b. At least two of the areas listed in a. to d. above shall be monitored by the installed and/or the portable monitoring equipment. The portable gamma sensitive detectors shall be monitored continuously during reactor operation and during sample removal.
- c. Radiation levels and locations shall be recorded in the log book.