UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

IOWA STATE UNIVERSITY

DOCKET NO. 50-116

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 11
License No. R-59

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment to Facility Operating License No. R-59 filed by the Iowa State University (the licensee), dated August 27, 1996, as supplemented on October 10, 1996, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the regulations of the Commission as set forth in 10 CFR Chapter 1;

   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 that (i) the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) such activities will be conducted in compliance with the regulations of the Commission;

   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 regulations of the Commission and all applicable requirements have been satisfied; and

   F. Prior notice of this amendment was not required by 10 CFR 2.105, and publication of notice for this amendment is not required by 10 CFR 2.106.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the enclosure to this license amendment, and paragraph 2.C.2. of Facility Operating License No. R-59 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 11, 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 issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Seymour H. Weiss

Seymour H. Weiss, Director
Non-Power Reactors and Decommissioning
Project Directorate
Division of Reactor Program Management
Office of Nuclear Reactor Regulation

Enclosure:
Appendix A Technical
Specifications Changes

Date of Issuance: December 13, 1996

ENCLOSURE TO LICENSE AMENDMENT NO. 11

FACILITY OPERATING LICENSE NO. R-59

DOCKET NO. 50-116

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain horizontal lines indicating the areas of change.

Remove	Insert
1-1	1-1
6-2	6-2
6-3	6-3
6-4	6-4
6-8	6-8
6-9	6-9

1.0 DEFINITIONS

The terms Safety Limit, Limiting Safety System Setting, and Limiting Condition for Operation are as defined in paragraph 50.36 of 10 CFR Part 50.

CHANNEL TEST - The introduction of a signal into the channel for verification that it is operable.

CHANNEL CALIBRATION - The adjustment of the channel such that its output corresponds with acceptable accuracy to known values of the parameter which the channel measures. Calibration shall encompass the entire channel, including equipment actuation, alarm, or trip and shall be deemed to include a Channel Test.

CHANNEL CHECK - A qualitative verification of acceptable performance by observation of channel behavior. This verification, where possible, shall include the comparison of the channel with other independent channels or systems measuring the same variable.

CONFINEMENT BOUNDARY - The surface surrounding the reactor facility defined by the interior partition walls of offices and laboratories on the north, east and south sides of the building and by the west interior wall which isolates the basement, first floor, and the west corridor of the second floor from the central bay.

CONFINEMENT SECURED - The confinement shall be considered secured when:

a. Doors 1-2, CC 102, 101, 114, 113-1, CX112, 112, 111-1, CX111, CS107, CE117-2, (items deleted) CC201B, 112A-4 are closed or are attended by a person with the ability to close the door in the event of an emergency, and

b. Windows on the north, south, east and west sides of the penthouse, on the west wall of room 112A, on the south wall of room 101, on the east wall above door CX112, (phrase deleted) on the south wall of corridor CC201, on the west wall of corridor CC212, on the north wall of corridor CC211 are unbroken and closed or are attended by a person with the ability to close the window in the event of an emergency, and

c. The interior partitioned walls of the first floor offices and laboratories on the north, south, and east sides of the building; and the west interior wall which isolates the basement (phrase deleted) and first floor offices on the west side of the building from the central bay area; and the second floor north, south, east and west interior walls which isolate the second floor from the central bay area are intact and capable of performing as a non-pressure tight boundary, and

d. The roof covering the central bay area (phrase deleted) is intact and capable of performing as a non-pressure tight boundary.

(3) Events requiring the presence of a health physics-qualified individual:

a. Fuel transfer operations.
b. Installation, changing locations, or removal of an experiment that involves removal of a shield plug or closure.
c. Any maintenance activity involving the reactor safety system that could cause an abnormal release of radioactive materials.

6.1.4 Selection and Training of Personnel

The selection, training and requalification of operations personnel shall meet or exceed the requirements of American National Standard for Selection and Training of Personnel for Research Reactors, ANSI/ANS-15.4-1988, or its successor, meet or exceed the requirements set forth in 10 CFR 55, and be in accordance with the Requalification Plan approved by the Nuclear Regulatory Commission.

6.2 Review and Audit

The Reactor Use Committee (RUC) shall perform the independent review and audit of the safety aspects of reactor facility operations.

6.2.1 Composition and Qualifications

The Reactor Use Committee shall be composed of the Reactor Manager and radiation health physicist, both ex officio (voting), and at least three other members having expertise in reactor technology. Committee members shall be appointed by the University Radiation Safety Committee. (The Radiation Safety Committee is composed of a representative from each of the colleges in the university in which research in the physical and life sciences and in engineering is conducted, plus three members with specific expertise in radiation protection. At least one of these members shall also represent university management. One of the three other members shall be the University Radiation Safety Officer (RSO). The chair of the committee shall be appointed by the Provost. The terms on the committee for the RSO and chair are indefinite. All others are for three years with reappointments being determined by the Provost.)

6.2.2 Charter and Rules

(1) The Reactor Use Committee shall meet at least semiannually and more frequently as circumstances warrant, consistent with effective monitoring of facility activities. Written records of its meetings shall be kept and copies forwarded, in a timely manner, to the University Radiation Safety Committee.

(2) A quorum shall be three members. Members of the operations staff shall not be a voting majority. Phone polling of members is allowed for final approval of items discussed at a meeting or for approval of other items deemed "routine" by the Reactor Manager or the committee chair. Any member can veto the use of the phone poll and request a meeting of the committee.

(3) Any action recommended by the Reactor Use Committee that may adversely affect the operations and/or safety of the University community shall be reported by the RUC chairman to the University Radiation Safety Committee which shall have veto power over such a recommendation.

(4) The Reactor Use Committee may appoint one or more qualified individuals to perform the audit function.

6.2.3 Review Function.

The following items shall be reviewed.

(1) Determinations that proposed changes in equipment, systems, tests, experiments, or procedures do not involve an unreviewed safety question.

(2) All new procedures and major revisions thereto have safety significance and proposed changes in reactor facility equipment, or systems having safety significance.

(3) All new experiments or classes of experiments that could affect reactivity or result in the release of radioactivity.

(4) Proposed changes in the Technical Specifications or the Operating License.

(5) Violations of the Technical Specifications or the Operating License. Violations of internal procedures or instructions having safety significance.

(6) Operating abnormalities having safety significance.

(7) Reportable occurrences listed in 6.6.2.

(8) Audit reports.

6.2.4 Audit Function

The audit function shall include selective (but comprehensive) examination of operating records, logs, and other documents. Discussions with cognizant personnel and observation of operations should also be used as appropriate. In no case shall the individual immediately responsible for the area, audit in that area. Deficiencies uncovered that affect reactor safety shall be reported immediately to the University Radiation Safety Committee. A written report of the findings of the audit shall be submitted to the Reactor Use Committee within 30 days after completion of the audit. The following items shall be audited.

(1) Facility operations for conformance to the Technical Specifications and applicable Operating License conditions, at least once per calendar year (interval between audits not to exceed 15 months).

(2) The retraining and requalification program for the operating staff, at least once every other calendar year (interval between audits not to exceed 30 months).

(3) The results of action taken to correct those deficiencies that may occur in the reactor facility equipment, systems, structures, or methods of operations that affect reactor safety, at least once per calendar year (interval between audits not to exceed 15 months).

(4) The reactor facility Emergency and Physical Security Plans and implementing procedures at least once every other calendar year (interval not to exceed 30 months).

6.6 Reports

6.6.1 Operating Reports

A routine operating report providing the following information shall be submitted to the Nuclear Regulatory Commission in accordance with the provisions of 10 CFR 50.59 at the end of each 12-month period:

(1) A narrative summary of reactor operating experience including the energy produced by the reactor.

(2) The unscheduled shutdowns including where applicable, corrective action taken to preclude recurrence.

(3) Tabulation of major preventive and corrective maintenance operations having safety significance.

(4) Tabulation of major changes in the reactor facility and procedures, and tabulation of new tests or experiments, or both, that are significantly different from those performed previously and are not described in the Safety Analysis Report, including conclusions that no unreviewed safety questions were involved.

(5) A summary of the nature and amount of radioactive effluents released or discharged to the environs beyond the effective control of the owner-operator as determined at or before the point of such release or discharge. The summary shall include to the extent practicable an estimate of individual radionuclides present in the effluent. (sentence deleted)

(6) A summarized result of any environmental surveys performed outside the facility.

(7) A summary of exposures received by facility personnel and visitors where such exposures are greater than 25 percent of that allowed or recommended.

6.6.2 Special Reports

(1) There shall be a report no later than the following working day by telephone to the appropriate NRC Regional Office and confirmed in writing by telegraph or similar conveyance to the Nuclear Regulatory Commission, in accordance with instructions in 10 CFR 50.4, to be followed by a written report that describes the circumstances of the event within 14 days of any of the following:

a. Violation of safety limits (see 6.5.1)
b. Release of radioactivity from the site above allowed limits (see 6.5.2).

c. Any of the following (see 6.5.2):

(i) Operation with actual safety system settings for required systems less conservative than the limiting safety system setting specified in the Technical Specifications.

(ii) Operation in violation of limiting conditions for operation established in the Technical Specifications unless prompt remedial action is taken.

(iii) A reactor safety systems component malfunction which renders or could render the system incapable of performing its intended safety function unless the malfunction or condition is discovered during maintenance tests or periods of reactor shutdown.

(iv) An unanticipated or uncontrolled change in reactivity greater than the licensed excess reactivity, or one dollar, whichever is smaller.

(v) Abnormal and significant degradation in reactor fuel, or cladding, or both, or coolant boundary which could result in exceeding prescribed radiation exposure limits of personnel or environment, or both.

(vi) An observed inadequacy in the implementation of administrative or procedural controls such that the inadequacy causes or could have caused the existence or development of an unsafe condition with regard to reactor operations.

(2) A written report within 30 days to the Nuclear Regulatory Commission in accordance with instructions in 10 CFR 50.4, concerning the following:

a. Permanent changes in the organization involving the Facility Director, Reactor Manager, or Radiation Safety Officer.

b. Significant changes in the transient or accident analysis as described in the Safety Analysis Report.