

ATTACHMENT TO LICENSE AMENDMENT NO. 7

FACILITY LICENSE NO. R-80

DOCKET NO. 50-157

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1. DEFINITIONS

The following frequently used terms are defined to aid in the uniform interpretation of these specifications.

1.1 Reportable Occurrences. A reportable occurrence is any of the following:

- (1) any actual safety system setting less conservative than specified in 2.2, Limiting Safety Settings
- (2) operation in violation of a Limiting Condition for Operation (Section 3)
- (3) incidents or conditions which prevented or could have prevented the performance of the intended safety functions of an engineered safety feature or the reactor safety system
- (4) release of fission products from the fuel
- (5) an uncontrolled or unanticipated change in reactivity greater than ± 0.50
- (6) an observed inadequacy in the implementation of either administrative or procedural controls, such that the inadequacy has caused the existence or development of an unsafe condition in connection with the operation of the reactor
- (7) an uncontrolled or unanticipated release of radioactivity

1.2 Channel Calibration. A channel calibration is an adjustment of the channel such that its output responds, with acceptable range and accuracy, to known values at the parameter which the channel measures.

1.3 Channel Check. A channel check is a qualitative verification of acceptable performance by observation of channel behavior. This verification shall include comparison of the channel with expected values, or other independent channels or methods of measuring the same variable.

1.4 Channel Test. A channel test is the introduction of an input signal into the channel to verify that it is operable.

1.5 Control Rod, Standard. A standard control rod is one having rack and pinion, electric motor drive, and scram capability.

1.6 Control Rod, Transient. A transient rod is one that is pneumatically operated and has scram capability.

1.7 Engineered Safety Features. Features of a unit, other than reactor trip or those used only for normal operation, that are provided to prevent, limit or mitigate the release of radioactive material.

1.8 Experiment. An experiment is:

- (1) Any apparatus, device or material placed in the reactor core region, in an experimental facility, or in-line with a beam of radiation emanating from the reactor.

4.6 Reactor Pool Water

Applicability

This specification applies to the water contained in the Cornell TRIGA reactor pool.

Objective

The objective is to provide surveillance of reactor pool level and temperature.

Specifications

- a. The water level in the reactor pool shall be checked daily during periods when the reactor is in operation.
- b. The temperature of the reactor pool water shall be checked daily during periods when the reactor is in operation.

Bases

Surveillance of the reactor pool will assure that the water level is adequate prior to reactor operation. Water temperature must be checked to assure that the limit of the Deionizer will not be exceeded.

4.7 Special Nuclear Materials

Applicability

This specification applies to the surveillance requirements for the sealed plutonium source material.

Objective

The objective is to assure that leakage from sealed plutonium sources does not exceed allowable limits.

Specifications

- a. Each plutonium source shall be tested for leakage at intervals not to exceed six (6) months. In the absence of a certificate from a transferor indicating that a test has been made within six (6) months prior to the transfer, the sealed source shall not be put into use until tested.
- b. The test shall be capable of detecting the presence of 0.005 microcurie of alpha contamination on the test sample. The test sample shall be taken from the source or from appropriate accessible surfaces of the device in which the sealed source is permanently or semipermanently mounted or stored. Records of leak test results shall be kept in units of microcuries and maintained for inspection by the Commission.

- c. If the test reveals the presence of 0.005 microcurie or more of removable alpha contamination, the licensee shall immediately withdraw the sealed source from use and shall cause it to be decontaminated and repaired by a person appropriately licensed to make such repairs or to be disposed of in accordance with Commission regulations. Within five (5) days after determining that any source has leaked, the licensee shall file a report with the Director of the Office of Inspection and Enforcement, NRC, describing the source, the test results, the extent of contamination, the apparent or suspected cause of source failure, and the corrective action taken. A copy of the report shall be sent to the Director of the nearest NRC Regional Inspection and Enforcement Office listed in Appendix D of Title 10, Code of Federal Regulations, Part 20.
- d. The periodic leak test required by this condition ~~does~~ not apply to sealed sources that are stored and not being used. The sources excepted from this test shall be tested for leakage prior to any use or transfer to another person unless they have been leak tested within six (6) months prior to the date of use or transfer.

Bases

Surveillance of the sealed plutonium source material will ensure that the total body or individual organ irradiation does not exceed allowable limits in the event of ingestion or inhalation of the probable leakage from the source material.

- b. An immediate report of the occurrence shall be made to the Chairman of the Reactor Laboratory Safety Committee, and reports shall be made to the NRC in accordance with Section 6.11 of these specifications.
- c. A report shall be made which shall include an analysis of the causes and extent of possible resultant damage, efficacy of corrective action, and recommendations for measures to prevent or reduce the probability of recurrence. This report shall be submitted to the Laboratory Safety Committee for review, and a suitable similar report submitted to the NRC when authorization to resume operation of the reactor is sought.

6.9 Action to be Taken in the Event of a Reportable Occurrence

In the event of a **reportable occurrence**, as defined in Section 1.1 of the specifications, the following action shall be taken:

- a. The reactor shall be shut down at once. The Reactor Supervisor shall be notified and corrective action taken prior to resumption of operations; the decision to resume shall require approval in the manner stated in Section 6.3c.
- b. A report shall be made which shall include an analysis of the cause of the occurrence, efficacy of corrective action and recommendations for measures to prevent or reduce the probability of recurrence.

This report shall be submitted to the Laboratory Safety Committee for review.

- c. A report shall be submitted to the NRC in accordance with Section 6.11 of these specifications.

6.10 Plant Operating Records

- a. In addition to the requirements of applicable regulations, in 10 CFR 20 and 10 CFR 50, records and logs shall be prepared and retained for a period of at least 5 years for the following items as a minimum:
 1. Normal plant operation, including power levels;
 2. Principal maintenance activities;
 3. **Reportable occurrences;**
 4. Equipment and component surveillance activities;
 5. Experiments performed with the reactor;
 6. All emergency reactor scrams, including reasons for emergency shutdowns.

- b. The following records shall be maintained for the life of the facility:
1. Gaseous and liquid radioactive effluents released to the environs;
 2. Off-site environmental monitoring surveys;
 3. Fuel inventories and transfers;
 4. Facility radiation and contamination surveys;
 5. Radiation exposures for all personnel.
 6. Updated, corrected and as-built drawings of the facility

6.11 Reporting Requirements

In addition to the requirements of applicable regulations, and in no way substituting therefore, reports shall be made to the NRC as follows:

- a. A report within 24 hours by telephone and telegraph to the NRC, Office of Inspection and Enforcement (OIE), Region I:
1. Any accidental release of radioactivity above permissible limits in unrestricted areas, whether or not the release resulted in property damage, personal injury, or exposure;
 2. Any violation of a safety limit; and
 3. Any reportable occurrences as defined in Section 1.1 of these specifications.
- b. A report within 10 days in writing to the NRC, OIE, Region I of:
1. Any accidental release of radioactivity above permissible limits in unrestricted areas, whether or not the release resulted in property damage, personal injury or exposure; the written report (and, to the extent possible, the preliminary telephone and telegraph report) shall describe, analyze and evaluate safety implications, and outline the corrective measures taken or planned to prevent recurrence of the event;
 2. Any violation of a safety limit; and
 3. Any reportable occurrence as defined in Section 1.1 of these specifications.
- c. A report within 30 days in writing to the Director, Division of Operating Reactors, NRC, Washington, D.C., 20555, of:



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 7 TO LICENSE NO. R-80

CORNELL UNIVERSITY

CORNELL UNIVERSITY TRIGA REACTOR

DOCKET NO. 50-157

Introduction

By letter dated December 9, 1977, Cornell University requested that the special nuclear materials presently being carried on Nuclear Regulatory Commission License No. SNM-187 be transferred to Facility Operating License No. R-80 for the Cornell University TRIGA Reactor. This action is to be completed by amendment to License No. R-80 and changes to the Technical Specifications.

Discussion and Evaluation

Cornell University is presently licensed to own and operate the TRIGA facility under Facility License No. R-80. Included in this license are provisions to receive, possess, and use up to 5.4 kilograms of special nuclear materials in the form of contained Uranium 235 in connection with operation of the reactor. Cornell is also licensed to receive, possess and use various special nuclear materials under Special Nuclear Material License No. SNM-187. The proposed amendment would transfer those materials licensed under SNM-187 to Facility License No. R-80. All rules, regulations, and conditions presently governing the use and disposition of the special nuclear materials under License No. SNM-187 will continue to apply. Based on these considerations, we find the proposed change acceptable.

Environmental Consideration

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: October 24, 1978