



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

50-131
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NRC PDR

December 7, 1978

Docket No. 50-131

Mr. T. T. Mullan
Hospital Director
Veterans Administration Hospital
4101 Woolworth Avenue
Omaha, Nebraska 68105

Dear Mr. Mullan:

The Operating License (No. R-57) for your TRIGA facility expires June 24, 1979. To renew your license, an application must be submitted that demonstrates that the reactor is capable of continued safe operation and the reactor components and systems can withstand prolonged use over the term of the renewed license.

General requirements are provided in Title 10 Code of Federal Regulations (10 CFR) Parts 50, 51, 55 and 73. Attached are specific items that will be reviewed during the renewal process.

You are reminded that 10 CFR 2.109 requires that your application be filed in a timely manner and at least 30 days prior to expiration of your current license.

The foregoing has been provided to assist you in the license renewal process. Please do not hesitate to contact Steve Ramos (301-492-7435) who has been assigned project manager for your facility.

Sincerely,

A handwritten signature in cursive script, appearing to read "Robert W. Reid".

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

Enclosure:
License Renewal Review Items

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LICENSE RENEWAL REVIEW ITEMS

A. Contents of Application

1. General Information (10 CFR 50.33)

Provide applicable information delineated in the referent regulation. The following 10 CFR 50.33 paragraphs obtain:

- (e) Include all NRC licenses issued for use at the hospital complex.
- (f) Financial Considerations - The review process to satisfy 10 CFR 50.33(f) requires information that will show that the licensee possesses the funds necessary to cover estimated operating costs or that there is reasonable assurance of obtaining the funds for the period of the license renewal plus the estimated costs of permanently shutting down the facility and maintaining it in a safe condition. To facilitate reviewing the financial aspects, it is requested that the following information be provided in three signed and notarized originals and six additional copies:
 - (1) The most recent published annual statement of the VA hospital. Indicate, or provide separately, that portion of the budget which clearly delineates the sources of funds to be utilized to cover costs of operation of your reactor facility.
 - (2) The estimated annual cost; to operate the reactor for the additional license renewal period and a certification that amounts designated in your application for renewal of the facility will be included in future budgets.
 - (3) The estimated costs of permanently shutting down the reactor, a listing of what is included in these costs, the assumptions made in estimating the costs, the type of shutdown contemplated, and the source of funds to cover these costs.
 - (4) An estimate of the annual cost to maintain the shutdown facilities in a safe condition. Indicate what is included in this estimate, assumptions made in determining the cost, any interest rates assumed, and the source of funds to cover this.

- a. The following is provided to assist in determining your estimated costs for permanently shutting down your reactor. Choose the option (see Regulatory Guide 1.86) you deem most appropriate. The following is an example for a TRIGA reactor using the mothballing option for decommissioning.

"It is assumed that dismantling of the core structure and other radioactive portions of the reactor system will be performed 3 to 5 years after complete removal of the fuel. The following provides estimated decommissioning costs (1976 \$ value):

a. Removal and disposal of fuel @ \$2000.00/fuel element		
Approx. 150 x \$2000.00	\$	300,000.00
b. Removal and disposal of core structure	\$	20,000.00
c. Removal and disposal of reactor tank, beamports, thermal column, etc.	\$	250,000.00
d. Removal and disposal of reactor exposure room and biological concrete shield	\$	250,000.00
e. Decontamination	\$	50,000.00
f. Dismantling of reactor bridge and cooling system	\$	10,000.00
g. Unexpected expenses	\$	<u>120,000.00</u>
	Total	\$1,000,000.00

Three to five (3-5) years cooling period after complete removal of the fuel is necessary before dismantling of the core structure and other radioactive portions of the reactor assembly. During this period the room housing the reactor structure will be maintained as a restricted area under a NRC possession-only license.

It is recommended by Nuclear Regulatory Commission that the same security level be maintained during this period as described in the _____ Research Reactor security plan. Minimum monitoring systems will be such as to insure that the health and safety of the public is not endangered. A facility radiation survey, an environmental survey and an

administrative procedure will be established for the notification and reporting of abnormal occurrences.

Estimated cost (1976 \$ value) to maintain the shutdown facility in a safe condition:

Personnel

- a. Radiological survey, maintenance and administration \$ 26,200.00/yr.
- b. Supervisory and to prepare and coordinate detailed plan for dismantling and disposal of structure \$ 20,000.00

Total amount for a maximum period of 5 years

(5 x \$26,200.00) + \$20,000.00 \$151,000.00"

The foregoing numbers, would of course, be different for your facility and also changed if you choose a different option. This has been provided because of requests from other licensees on what criteria should be considered.

2. Filing of Applications

Provide applicable information as delineated in 10 CFR 50.30 as follows:

(e) Exempt

(f) Environmental Considerations

Attached is a memorandum, "Environmental Considerations Regarding the Licensing of Research Reactors and Critical Facilities" dated January 23, 1974, from D. Muller to D. Skovholt, that provides the general environmental impact of research reactors and may be used as a reference in developing an Environmental Impact Appraisal (EIA). As a result of this memorandum, it was determined that an Environmental Impact Statement (EIS) is not required for research reactors authorized to operate at 2 MW(t) and less. However, an EIA is required and sufficient information must be provided to support and develop the EIA.

3. Technical Information (10 CFR 50.34)

(a) FSAR - (applicable portions) of 10 CFR 50.34(b)

A complete review of your Safety Hazards Report (SAR) will be conducted to ensure no significant safety hazard exists. Data should be included to update the SAR with regard to natural and unnatural phenomena. This information must use current analysis techniques and information. Further, a description and analysis of the structures, systems and components of the facility, with emphasis on the operational performance and the ability to function properly and safely for the term of the license. This is particularly important because the original license was evaluated for a specific term. As some parts have obviously worn and there is some deterioration of the structure, the ability of the facility to operate safely for the requested term is a safety question.

(b) 10 CFR 50.34(b)(5) - Applicable portions

The following pertains to specific items:

(v) Emergency Planning

The requirements for your emergency plan are in Section IV of Appendix E to 10 CFR Part 50. Attached are draft copies of ACRS 15.16 "Standard for Emergency Planning for Research Reactors," and Regulatory Guide 2.22, "Emergency Planning for Research Reactors."

Although in draft form they are being used by Staff reviewers to ensure compliance with Appendix E. You are requested to use these documents as guides in preparing the emergency plan portion of your application.

- (vi) Proposed Technical Specifications (T.S.) in accordance with 10 CFR 50.36)

Attached is a copy of a sample TRIGA Technical Specification, a guidance for administrative controls and a draft copy of ANS 15.18, "Standard for Administrative Controls for Research Reactors." A review of your license and T.S. reveals that it does not conform in content or format to that prescribed in the regulations and that items such as "Records" and "Reports" that are in your present license would be more applicable in the T.S. There are obvious differences in the sample T.S. and your facility. However, the ANS 15.18, the administrative control guidance and the sample T.S. should assist you in developing your T.S.

We are utilizing the license renewal as the appropriate time to upgrade T.S. and to make them as common in format and content as physical and operational constraints permit. You are, therefore requested to submit new T.S. using the attachments as guides. Further, the following was the subject of previous correspondence and is provided herein as a reminder.

- (a) ALARA consideration should be included in the T.S., as delineated in 10 CFR 50.36a.
- (b) Provision regarding the insertion and irradiation of explosives must be included in the T.S. or not be handled at all. All research reactors licensees were advised of this requirement June 1971. Previous concerns are reiterated in the following:

"An increasing number of programs being performed at research and testing reactor facilities involve the radiography of explosives. The presence and irradiation of explosives in a reactor facility must be evaluated carefully because of the potential for damage to the reactor. The use of explosives within a reactor facility is considered to be an unreviewed safety question pursuant to Section 50.59 of 10 CFR Part 50 unless such usage has been reviewed and approved by the Commission. If you presently receive, or have plans to receive and handle explosives, an evaluation of the consequences of accidental explosions should be made and submitted to the Commission's Division

of Reactor Licensing. Proposed operating restrictions that provide for safe usage of explosive materials should be submitted for inclusion in your Technical Specifications. In this context, "explosives" include all materials that would constitute Class A, Class B and Class C explosives as described in Title 49, Parts 172 and 173 of the Code of Federal Regulations, regarding transportation of explosives and other dangerous materials.

The Technical Specifications should contain sufficient information to establish operating restrictions; should indicate the maximum quantity of explosives (in pounds of equivalent TNT) allowed in the facility, the form of the explosives, the controls exercised when handling and storing explosives, the cumulative radiation exposure limits for explosives, the utilization of explosives within the facility, and the maximum quantity of explosives that could be involved in postulated accidents; and should include an assessment of the probability and the potential consequences of an explosion occurring."

- (c) Many of the research reactors still use abnormal occurrences (AO) as previously used in Regulatory Guide 1.16. It was used to designate any unscheduled or unanticipated operational event reported to the Commission. Included in these reported events were (1) events that would or did have significance from the standpoint of public health or safety and (2) events reported to NRC for performance evaluation and trend determinations. In Section 208 of the Energy Reorganization Act of 1974 (Pub. L. 93-438), an "abnormal occurrence" is defined for the purposes of the reporting requirements of the Act as an unscheduled incident or event which the Commission determines is significant from the standpoint of public health or safety. In order to be consistent with this definition, the events previously designated as "abnormal occurrences" are now designated "reportable occurrences." The decision to change the designation to "abnormal occurrence" rests with the Commission.
- (d) Also attached is one set of Regulatory Guides (2.1-2.5) that pertain to research reactors that should be used in developing your T.S.

- (c) Operator Licenses and Requalification Training Program (10 CFR Part 55)

(10 CFR 50.34 (b)(7) and (8).

- (d) Physical Security Plan (10 CFR 50.34(c))

Your physical security plan will be reviewed in accordance with guidance provided June 1974 (copy attached) and 10 CFR Part 73 changes published since then. If required, submit six copies of your revised physical security plan (PSP) with your renewal application. As your PSP will become part of the license and referenced as such in the renewed license documentation, it is further requested that the plan be reconciled into a single document. To facilitate further revisions made in accordance with 10 CFR 50.54(p) and amendments submitted for approval, it is requested that the PSP be in loose-leaf format. The following is an example of a license amendment making the PSP part of the license:

"The licensee shall maintain in effect and fully implement all provisions of the NRC Staff-approved physical security plan, including amendments and changes made pursuant to the authority of 10 CFR 50.54(p). The approved security plan consists of documents withheld from public disclosure pursuant to 10 CFR 2.790, collectively titled, "Veterans Administration Hospital, Omaha, Nebraska, Security Plan," as follows:

Original, submitted with letter dated May 31, 1973
Revision 1, submitted with letter dated November 26, 1973
Revision 2, submitted with letter dated January 14, 1974
Revision 3, submitted with letter dated March 11, 1974"

This, of course, is only an example and does not reflect your actual PSP.

Attached is a copy of proposed Regulatory Guide 5.XX. It contains a format to ensure compliance with the regulations. Although not yet issued, it does provide the essential format and guidance to be followed; therefore, it is requested you use this guide in developing your license renewal application.

DOE and State Department have instituted a program to implement the Nonproliferation Act of March 10, 1978, by reducing the enrichment of fuels in nonpower reactors. Concomitant to this, the proposed Regulation § 73.47 is designed to implement the US/IAEA Agreement when approved by the Senate. Both of these actions are keyed to the enrichment of fuel and other SNM; therefore, your license, which authorizes certain possession limits of SNM will be changed to reflect the percent enrichment of U²³⁵, the total amount of SNM exempt and how exempt (i.e., 10 CFR 73.6(b)), the total amount of SNM (including Plutonium and U²³⁵) authorized. Whatever maximum amount in the foregoing categories you select as non exempt will establish the level of protection of your physical security plan.

In September 1975, a letter was sent to all licensees authorized to possess SNM in excess of 10 CFR 73.1(b) quantities requesting that they review their requirements and provide justification for the "lowest acceptable quantity" necessary to sustain current operations and those projected for the ensuing twelve months. There are still a number of licensees that are authorized to possess quantities in excess of 73.1(b) quantities.

In view of the foregoing, you are requested to review your requirements of maximum SNM possession limits and what level of protection you intend for your physical security plan. Include in your application the maximum amounts of SNM, enrichments, and maximum amounts exempt and nonexempt you need to be included in your license.

B. Standards and Regulatory Guides

For your information, concomitant to the review of items in A above, all documents will include a persual to ensure you have included references and use of applicable ANS/ANSI standards and NRC Regulatory Guides (2.1-2.5) for research reactors.

*Note: 1. All items from referenced 10 CFR articles not listed above are self-explanatory.

2. Above subparagraphs are keyed to 10 CFR paragraphs.

Attachments: 1. Muller/Skovholt Memo dtd. 1/28/74
2. Draft Copy ANS 15.16 - Emergency Planning
3. Draft Copy Reg. Guide 2.XX - Emergency Planning
4. Sample TRIGA T.S.
5. NRC Regulatory Guides 2.1-2.5
6. Draft Copy ANS 15.18
7. Physical Security Plan Guidance
8. NRC Guidance for Administrative Controls
9. Draft Regulatory Guide 5.XX - Physical Security Plan