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Docket No. 50-123 *P*

Dr. Ray Edwards
 Director
 University of Missouri-Rolla
 Nuclear Reactor
 Rolla, Missouri 65401

Dear Dr. Edwards:

Your License No. R-79 for your pool-type nuclear reactor will expire November 20, 1979. Renewal of your license requires submission of an application that demonstrates the reactor can continue to be operated safely and that the reactor components and systems will be capable of withstanding prolonged use over the term of the renewal. General requirements are provided in Title 10 Code of Federal Regulations (10 CFR), Parts 50, 51, 55 and 73. Enclosed are specific items that will be reviewed prior to renewal of your license.

You are reminded that if you are planning to renew your license, 10 CFR 2.109 requires a timely filing (at least 30 days prior to expiration of your current license term) of your application. You are further advised to review 10 CFR 50.51 to assist you in determining the period of the renewal.

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,

Original signed by
 Robert W. Reid

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

Enclosure:
 License Renewal Review Items

Copy into [unclear] folder that will be transferred to me Steve

OFFICE	<i>RRéid</i>	<i>ORB#4</i>			
SURNAME	GZwetzig:acr	<i>RRéid</i>	<i>SK Ramos</i>		
DATE	11/13/78	11/15/78	11/13/78		

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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 licenses issued for use on the campus 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 operations of the University. 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 costs 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 in perpetuity.

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 28, 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 the attached 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, therefore, sufficient information must be submitted to 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)(6) - Applicable portions

The following pertains to specific items:

(v) Emergency Planning

The plan should contain, but not be limited to, the elements listed in Section IV of Appendix E to 10 CFR Part 50. Attached are draft copies of ANS 15.16, "Standard for Emergency Planning for Research Reactors", and Regulatory Guide 2.XX, "Emergency Planning for Research Reactors". Although in final draft form, they are being used by staff reviewers to ensure compliance with Appendix E. You are therefore requested to use ~~these documents 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 the University of Michigan's T.S. and a draft copy of ANS 15.18, "Standard for Administrative Controls for Research Reactors". Although there are considerable differences between you facility and UM's, the basic outline and format is that desired for T.S. In the course of license renewal, it is appropriate to upgrade T.S. and to make them as uniform as physical and operational constraints permit. You are, therefore, requested to use the attached T.S. and ANS as guides to revise your T.S. The following was the subject of previous correspondence and is provided herein as a reminder for items that should be included.

- (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) Also attached is one set of Regulatory Guides (2.1-2.5) that pertain to research reactors that should also be used in revising 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 (PSP) will be reviewed in accordance with guidance provided in 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 renewal license, it is further requested that the plan be reconciled into a single document. To facilitate future revisions made in accordance with 10 CFR 50.54(p) and amendments submitted for approval, it is requested that the PSP be submitted in loose-leaf format.

B. Standards and Regulatory Guides

For your information, concomitant to the review of items in A above, all documents will include a perusal 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 dated January 28, 1974
 2. Draft Copy ANS 15.16 - Emergency Planning
 3. Draft Copy Reg. Guide 2.XX - Emergency Planning
 4. University of Michigan T.S.
 5. Regulatory Guides 2.1-2.5
 6. Draft Copy ANS 15.18, "Standard For Administrative Controls for Research Reactors"
 7. Physical Security Plan Guidance.