

May 30, 2012

Mr. Ralph Butler, Director
Research Reactor Center
University of Missouri-Columbia
Research Park
Columbia, MO 65211

SUBJECT: UNIVERSITY OF MISSOURI – COLUMBIA – ANTICIPATED BASIS FOR
EXEMPTION FROM TESTING FACILITY CLASSIFICATION

Dear Mr. Butler:

This is in response to your letter dated February 17, 2012, discussing an anticipated basis for an exemption from the definitions of testing facility, testing reactor and research reactor related to your potential conversion from high-enriched uranium (HEU) to low-enriched uranium (LEU) fuel. Your letter states that it is not an exemption request but is intended to permit the U.S. Nuclear Regulatory Commission (NRC) to identify areas of regulatory concern, if any, for the University of Missouri to address in its formal request for the University of Missouri-Columbia Research Reactor (MURR).

We understand that conversion feasibility studies have shown that to maintain neutron flux levels in key experimental facilities the reactor power level will need to be increased from 10 MW(t) to 12 MW(t). This reduction in the neutron flux levels with conversion from HEU to LEU fuel is consistent with the conversions performed to date.

While it is your responsibility to develop the application for exemption including the technical justification for the request, the NRC staff has several comments on your discussion in the letter. Any exemption application needs to meet the regulatory requirements in Title 10 of the *Code of Federal Regulations* (10 CFR) 50.12.

Your letter contains a discussion of why an exemption would not present an undue risk to public health and safety. The application should contain a complete discussion of the difference, if any, in radiological risk from routine operation and accident conditions, and margins of safety between the HEU and LEU fueled reactor. The application should clearly discuss and justify why these differences would not present an undue risk to public health and safety. Because of the detailed technical information needed to support this finding, unless a complete conversion safety analysis report is available sooner, the NRC staff believes that the exemption application should be submitted as part of the application for conversion which would contain the complete technical justification to support conversion.

Your discussion of undue hardships associated with becoming a testing facility refers to increased costs and burdens to MURR. These costs and burdens should be quantified to the extent possible in your application. You refer to increased review fees. The University of Missouri-Columbia is currently exempt from fees in accordance with 10 CFR 170.11(a)(4) and

R. Butler

-2-

10 CFR 171.11(a)(1) because it is a non-profit educational institution. Your bases for MURR being assessed fees if it is classified as a testing facility should be clearly explained in your exemption application.

If you have any questions regarding this response, please contact Alexander Adams at (301) 415-1127.

Sincerely,

/RA/

Jessie F. Quichocho, Chief
Research and Test Reactors Licensing Branch
Division of Policy and Rulemaking
Office of Nuclear Reactor Regulation

Docket No. 50-186

Enclosure:
As stated

cc w/encl: See next page

University of Missouri-Columbia

Docket No. 50-186

cc:

John Ernst, Associate Director
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Jefferson City, MO 65101

Test, Research, and Training
Reactor Newsletter
University of Florida
202 Nuclear Sciences Center
Gainesville, FL 32611

R. Butler

-2-

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