



UNIVERSITY OF MISSOURI-COLUMBIA

Research Reactor Center

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February 7, 1995

Director of Nuclear Reactor Regulation
ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Mail Station P1-37
Washington, DC 20555

REFERENCE: Docket 50-186
University of Missouri Research Reactor
License R-103

SUBJECT: Requested Change to University of Missouri Research Reactor Facility
License No. R-103

The University of Missouri Research Reactor (MURR) requests approval of an amendment to make the following revision to Facility Operating License Number R-103:

2.B.(2) Pursuant to the Act, 10 CFR Part 70, "Domestic Licensing of Special Nuclear Material," and the Commission Order dated September 27, 1985, to receive, possess, and use up to **60** kilograms of contained uranium-235 of any enrichment, providing that less than 5 kilograms of this amount be unirradiated; up to 80 grams of plutonium-beryllium neutron source; up to 20 grams of plutonium-239 in the form of sheets enclosed in aluminum for use in connection with operation of the reactor; up to 40 grams of plutonium enriched to 90% plutonium-242 in the form of a rod sealed in a stainless steel can for use in connection with operation of the reactor; and to possess, but not separate, such special nuclear material as may be produced by the operation of the facility subject to the following:

- (a) The limit for possession, receipt, and use of contained uranium-235 of any enrichment is temporarily increased, **until May 31, 1997, to 75 kilograms**, providing that less than 5 kilograms of this amount be unirradiated, for the purpose of maintaining uninterrupted reactor operation pending the establishment of a capability for off-site shipment of spent fuel and the actual shipment of the spent fuel accumulated prior to the establishment of that capability.
- (b) The licensee shall, as part of its annual reporting requirements, report the status of the establishment of shipping capability and other activities relevant to the use of this temporary increase in the possession limit.



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Two changes in the present license as amended are requested.

1. The first requested change is to increase the stable uranium-235 possession limit from 45 kilograms to 60 kilograms.

Until five years ago, spent fuel shipping was regularly scheduled through the Department of Energy (DOE) at 24 elements per year. This was consistent with MURR's nominal fuel usage of 24 to 26 elements per year and resulted in little or no increase to the base inventory of fuel elements in cycle required for MURR to operate on its 150 hours per week schedule.

In recent years, spent fuel shipping has become irregular and unpredictable for reasons outside MURR control. The DOE has many times altered schedules to juggle the spent fuel shipping needs of university and DOE research reactors with the need to accept and store foreign spent fuel. This has caused accumulation at MURR of more spent fuel elements than preferred before we are allowed to ship.

Over the last five years, the shipping irregularity has required MURR to request and NRC to evaluate and approve five different amendments associated with various temporary possession limits (Amendments 19, 21, 22, 24 and 26).

Our present 60 kilogram temporary possession limit (License Amendment No. 26) expires May 31, 1995. The attached graph (dashed line) shows that even if we make three spent fuel shipments, as tentatively scheduled, we will not be able to get below our historic 45 kilogram uranium-235 possession limit. For the foreseeable future, until we are able to resume more regular and increased spent fuel shipments to reduce the backlog of elements stored at MURR, we anticipate the possessed uranium-235 will vary between 40+ and 60 kilograms.

We request the increase in the stable uranium-235 possession limit to 60 kilograms understanding that if DOE provides spent fuel shipping capability on a more continuous basis, we would request returning the stable uranium-235 possession limit to 45 kilograms.

2. The second requested change is to increase the uranium-235 temporary possession limit to 75 kilograms because of recent delays and uncertainties in spent fuel shipments. We require authorization for more than the 60 kilogram limit to receive new elements in June and August 1995, because we are not being allowed to ship as planned earlier this year (see attached Department of Energy letter). A 75 kilogram limit will allow uninterrupted reactor operation into early 1997.

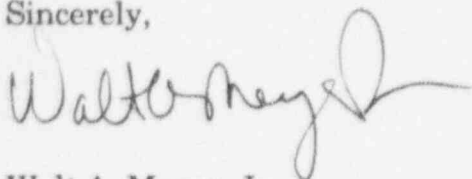
A similar temporary 75 kilogram limit was requested by MURR March 8, 1991, and was evaluated by the NRC as the basis for Amendment No. 21 to Facility License R-103.

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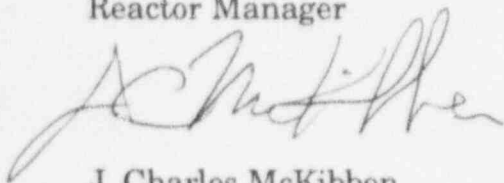
These changes to the license will not require changes to the Physical Security Plan for MURR. Criticality aspects of fuel storage at MURR are not changed by the requested amendment.

We respectfully request an expedient review of this application for relief from this situation. It is uncertain when a stable Department of Energy resolution will be available. It is outside of MURR's control. If there are any questions, please call Roland Hultsch (314-882-5205) or me (314-382-5203).

Sincerely,



Walt A. Meyer, Jr.
Reactor Manager

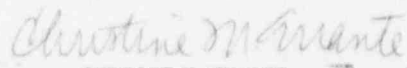


J. Charles McKibben
Associate Director

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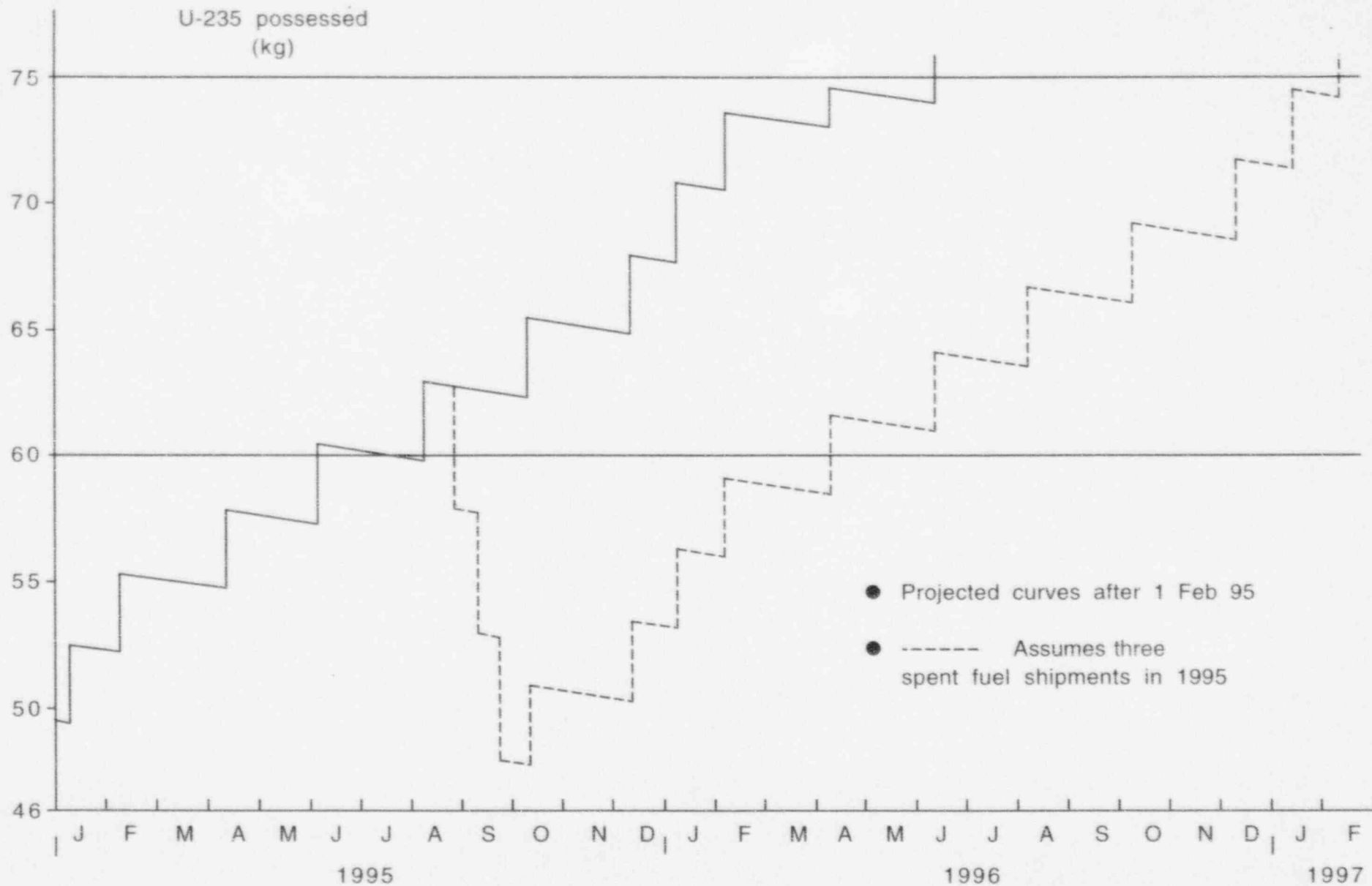
attachments

xc: USNRC, Region III


CHRISTINE M. ERRANTE
NOTARY PUBLIC STATE OF MISSOURI
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MY COMMISSION EXPIRES APR. 14, 1995

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University of Missouri Research Reactor (MURR)





Department of Energy
Savannah River Operations Office
P.O. Box A
Aiken, South Carolina 29802

JAN 06 1994 5

The University of Missouri-Columbia
Research Reactor Facility
Attn.: Mr. Roland A. Hultsch
Research Park
Columbia, Missouri 65211

Dear Mr. Hultsch:

SUBJECT: Delays in Shipment of Spent Nuclear Fuel (SNF) to the Department of Energy's Savannah River Site (SRS)

Recently there have been concerns raised about the criticality safety of SRS's main SNF receipt facility, the Receiving Basin for Offsite Fuels (RBOF). As a result, we are undertaking a rigorous criticality rebaselining effort in this facility that involves visual inspection and documentation of the existing conditions as well as revised criticality calculations as required.

Because of the uncertainties associated with continued receipt of SNF into RBOF at this time, we have been forced to delay and reschedule many shipments, including the planned shipment from the Missouri University Research Reactor. Under our current schedule, we are now planning to receive the SNF from your facility in the August, 1995 time frame.

If this schedule delay causes significant impacts to your facility such as reactor shutdown, significant increases in personnel radiation exposures, or major impacts to experiments, please document this impacts in a letter to me as soon as possible. We will work with you to minimize these impacts.

I appreciate your patience and cooperation in this important program.

If you have any questions please feel free to give me a call at 803-557-3759.

Sincerely,

William D. Clark, Manager
Spent Nuclear Fuel Program

RSFD:WDC

CE-95-0027

cc: Gary W. Stout, PAI Corporation