

REACTOR FACILITY  
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May 28, 2010

ATTN: Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Docket: 50-288  
License: R-112  
Subject: Request for License Amendment to increase the Possession Limit for U-235.


The Reed Research Reactor hereby requests an amendment to the Facility Operating License No. R-112. The requested amendment is to allow us to receive and possess, but not use, up to 4000 grams of contained uranium-235 enriched to less than 20 percent in the form of TRIGA® reactor fuel.

We also request a wording change to our current license paragraph 2.B to specify that we may receive, possess, and use up to 2500 grams of contained uranium-235 enriched to less than 20 percent in the form of TRIGA® reactor fuel. The current license does not specify the enrichment.

Please see the attachment to this document for justification for this proposal. Please contact me if you have any questions.

Under penalty of perjury, I declare this to be true and correct to the best of my knowledge.

Executed on 6-1-10.

  
Stephen Frantz

### Justification

The Reed Research Reactor (RRR) is currently licensed to “to receive, possess and use up to 2500 grams of contained uranium-235.” Most of our fuel is aluminum clad. We are working with the U.S. Department of Energy (DOE) to replace our aluminum clad fuel with to stainless steel clad fuel, which is less likely to experience cladding failure.

Due to this planned reactor fuel replacement, we will be receiving a shipment of up to 91 used stainless steel clad fuel from the University of Arizona which will arrive before we have completed the analysis to load the fuel in the reactor. Therefore, RRR must increase its possession limit of uranium-235.

Currently the RRR has 2424 grams of contained uranium-235 enriched to less than 20 percent in the form of TRIGA® reactor fuel on site and expects to receive 3252 grams of contained uranium-235 enriched to less than 20 percent in the form of TRIGA® reactor fuel from the University of Arizona. The fuel from the University of Arizona is standard 8.5 weight-percent stainless steel clad TRIGA® enriched to less than 20% in uranium-235. RRR requests an amendment to the Facility Operating License No. R-112 allowing us to receive and possess, but not to use, an additional 4000 grams of uranium-235. A limit of 4000 grams is proposed to cover any potential uncertainties in the total mass of uranium-235 in the RRR inventory.

The proposed wording of the additional paragraph would be:

Pursuant to the Act and 10 CFR Part 70, “Domestic Licensing of Special Nuclear Material,” to receive and possess, but not use, up to 4000 grams of contained uranium-235 enriched to less than 20 percent in the form of TRIGA® reactor fuel.

### Storage

The fuel will be stored in our standard fuel storage racks similar to the ones described in our SAR. We have had additional storage racks manufactured to add the required additional storage. They will be mounted on the walls of the reactor storage pool in a manner similar to the existing racks, and will meet the Technical Specification requirements for fuel storage.

### Security

The fuel will be stored within our controlled access area with the rest of our TRIGA® fuel in accordance with the RRR Security Plan.

The fuel from the University of Arizona will remain in storage until we complete the necessary analysis and receive a future license amendment to use the fuel. We hope to accomplish this in 2011.