

50-174  
File by.

THE PENNSYLVANIA STATE UNIVERSITY  
University Park, Pennsylvania

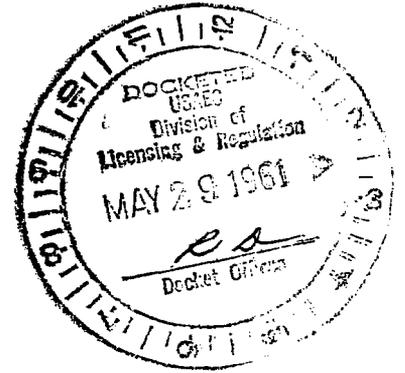
Vice President for Research

May 17, 1961

United States Atomic Energy Commission  
Washington 25, D.C.

Att: Mr. Harold Price, Director  
Division of Licensing and Regulation

Reference: Docket No. 50-174  
Facility License R-72



Gentlemen:

The Pennsylvania State University hereby respectfully requests that the United States Atomic Energy Commission amend Facility License No. R-72 which authorizes The Pennsylvania State University to possess but not to operate the nuclear reactor at the Curtiss-Wright Nuclear Research Laboratory of The Pennsylvania State University at Quehanna, Pennsylvania.

Specifically, The Pennsylvania State University makes application to the United States Atomic Energy Commission for permission to move the fuel elements from the reactor pool to the storage pool (eight feet wide by ten feet long by fifteen feet deep) in the hot cell service area (see page 28 of Hazards Summary dated September, 1960). This transfer will be accomplished under the supervision of the personnel in Appendix III of the application for License dated September 29, 1960, with additional experienced personnel being used as required from the Nuclear Reactor Facility at University Park, Pennsylvania. The purpose of transferring the fuel elements from the reactor pool is to permit maintenance and repair of the pool which requires complete drainage.

(continued)

B/8

The thirty-four irradiated 10-plate elements will be moved two at a time from their present location into the storage pool. The elements will be stored in racks to be moved from the small portion of the reactor pool. These are storage rack positions 1-10, 26-40, and 41-50 as described in Appendix IV of the license application of September 29, 1960. These racks provide 5" spacing between centers of the fuel elements. To prevent the racks from falling they will be bolted together in a "U", the open end then tied across with a 2" aluminum angle to form a rectangle guaranteeing subcriticality. The racks will be placed on the bottom of the storage pool with the top of the fuel approximately twelve feet below the surface. The hold down device described in paragraph I of Appendix IV of the original license application (September 29, 1960) will not be used during the period that this amendment is in effect. The safeguards as outlined in paragraphs II, on "Monitoring", and III, on "Periodic Inspection of the Laboratory", of the original application are being carefully observed at the Laboratory. Therefore, it is not considered essential to the security of the fuel elements that the hold down device be used during the period that the amendment is in effect.

The transfer will be made in a ten inch thick, lead-filled, stainless steel cask which is on hand and which was designed for transferring fuel elements and other radioactive sources between the reactor pool and the hot cell area of the Laboratory. There is available at the reactor laboratory all the necessary equipment to handle this cask. Adequate health physics instruments are on hand including several Geiger-Mueller and ionization-type meters, continuous air monitors, and provision for smear counting. All personnel will be adequately monitored with pocket type dosimeters and film badges. The standards of Part 20 of the Federal Regulations will be adhered to. There is now a Rams II monitor over the storage pool which is tied into a local alarm system. This will be connected so that it will set off the building alarm and the remote alarm in Building 7 of the Curtiss-Wright Corporation Research Division in case

(continued)

of high radiation levels. The cask will hold two fuel elements at a time. No special cooling is required during the transfer because the two fuel elements together, under the worst assumptions, will produce only about 25 watts of heat. This heat will be readily dissipated by the water present in the cask during transfer. Normal health physics procedures will be continued as in the past to obtain water, air and smear samples on a routine basis and in a manner consistent with the potential hazard that exists.

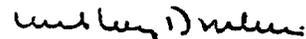
This license amendment is requested for a period of sixty days, at which time, or before, the elements will be returned to the reactor pool and stored as described in Appendix IV of the original Application for License. It is estimated that the elements will be in the gamma pool for approximately thirty days.

It is respectfully requested that this application for amendment be expedited as rapidly as possible to be made effective immediately upon approval. If additional information can be supplied, please do not hesitate to contact us.

Very truly yours,



E. F. Osborn  
Vice President for Research



McKay Donkin  
Vice President and Treasurer

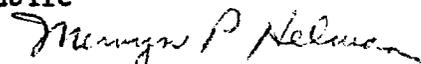
EFO:FJR:BS

CC: M. Donkin  
M. A. Williamson  
W. Sjoborg  
F. J. Remick  
N. J. Palladino  
P. Ebaugh

Commonwealth of Pennsylvania  
County of Centre :ss

Subscribed in form to before me  
this 26<sup>th</sup> day of May, 1961

Notary Public



MURRAY P. NELSON, Notary Public,  
State of Pennsylvania,  
My Commission Expires  
December 31, 1962