

November 30, 1979

West Virginia  
University

Mr. William Gammill  
Acting Assistant Director for Operating  
Reactor Projects  
Division of Operating Reactors  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555

Re: License R-58, Docket No. 50-129

Dear Mr. Gammill:

Mr. Peter Erickson from your Division recently called me to ask some specific questions regarding West Virginia University's September 27, 1979 request to dismantle and dispose of its AGN-211P (Serial No. 103) Reactor. Presumably, these requests for additional information had come from members of your staff. The paraphrased questions and responses follow:

Question: What is your most sensitive radiation survey instrument?

Response: The University Radiation Safety office has informed me that a Model E-520 Eberline portable gamma probe Geiger counter (with readout) is sensitive to detecting radiation levels as low as 0.02 mR/hr. This is capable of discriminating true sources of low-level radiation from background and noise fluctuations.

Question: You did not specifically mention contingencies for handling possibly irradiated reactor components (other than fuel elements). Do you plan to do?

Response: We have detected no discernible radiation from any of the components removed from the reactor with the exception of the fuel elements, which was noted in the dismantling request. In particular, the glory hole guide tube, the control and safety rod blades, and the steel "blade guide channels" attached to four of the fuel elements show absolutely no evidence of being radioactive. These would have been located in regions of maximum neutron flux during periods of reactor operation. We see only background fluctuations on the E-520 meter. In brief, we expect no irradiated materials problems with which to contend.

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Question: What do you intend to do about the Ra-Be neutron start-up source in the graphite reflector element which is presently stored in a 55-gallon water-filled plastic drum, which in turn is located inside the storage vault?

Response: This is unsatisfactory on a long-term basis. Our initial reaction was to construct a 1" thick rectangular cross section lead "cover sleeve" for the source bearing element to attenuate the soft gammas resulting from Ra decay; and then imbed this sleeve in a 55-gallon steel drum filled with paraffin. We now believe that this approach will be both time consuming and costly in terms of materials procurement and labor, and will still not result in a container which meets DOT and IEC shipping regulations.

We thus intend to immediately proceed to secure a DOT approved shipping container for the neutron source bearing element, and transfer the element from the water-filled drum to the shipping container within the confines of the storage vault. A portable electrically operated overhead crane can be set up in the vault to accomplish this. Maximum radiation exposure to any personnel involved in this element transfer will be 5 mrem. This will be determined by a combination of pencil dosimeters and area survey monitors. Dr. G. L. Blackshaw will be both in charge of and the most active participant in the operation.

Once transfer to the shipping container is accomplished, the container will be stored in the vault until the decision has been reached to send the reactor fuel to Oak Ridge or to North Texas State University. (See Item 5 on page 1 and Justification on page 2 of the September 27, 1979 letter.)

Sincerely,

*G. Lansing Blackshaw*

G. Lansing Blackshaw  
Assistant Dean of Engineering  
Acting Reactor Director

Copies to: Dr. Ray Koppelman  
Dr. Steve Slack

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