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February 26, 1988

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Subject: Revised version of Amendment (Addition) to UVAR TS 3.6

Gentlemen:

On July 2, 1987 a modification to Amendment 8 of Facility License No. R-66, Docket 50-62 (for the University of Virginia Reactor or "UVAR") was requested by us. (Amendment No. 8 was issued on August 4, 1971. It authorizes the possession, storage and use in the UVAR reactor pool of 70,000 Curies of cobalt-60, in the form of rods.) In response to this request, the NRC determined that the experimental use of Co-60 should more properly be addressed in UVAR Technical Specification (TS) 3.6 entitled "Limitations to Experiments".

Accordingly, the U.Va. Reactor Safety Committee approved the text of an amendment to UVAR Technical Specifications which was sent to the NRC on January 5, 1988, for evaluation and approval. As part of the NRC's evaluation of our request, further discussions were held with Mr. Alexander Adams, U.VA.'s NRC project manager in Washington. Based on these discussions, a slight modification of the text of the proposed TS amendment, with respect to pool water sampling and radioassay frequency, was deemed in order. This revision, which has been approved by our Reactor Safety Committee, is to be found in attachment. Again, we respectfully request NRC approval for this TS change.

Yours sincerely,

Robert U. Mulder, Director
U. of Virginia Reactor Facility

Sworn to and subscribed before me this 29th day of February, 1988.
Witness my hand and official seal.
Delores E. Van Notary Public
My Commission Expires 9/17/89.

cc: USNRC Region II Administrator, Atlanta, Georgia
Project Manager Mr. Al Adams, USNRC, Washington D.C.

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PROPOSED ADDITION TO UVAR TECHNICAL SPECIFICATION 3.6
(SECOND VERSION, REFLECTING MONTHLY SAMPLING)

To clarify the conditions under which Co-60 rods may be used in the UVAR reactor pool, the following paragraph will be added to UVAR Technical Specification 3.6 on "Limitations to Experiments", following NRC approval:

"(11) The Co-60 rods possessed under the UVAR Operating License shall be used and stored in the UVAR pool at distances greater than 5 feet from the operating UVAR reactor. Gamma irradiation facilities utilizing the Co-60 rods shall be designed to prevent physical damage to the Co-60 rods. UVAR pool water samples shall be subjected to gamma spectroscopy for the presence of Co-60 on a monthly frequency, to assure that substantial leakage of Co-60 from the rods to reactor pool water does not occur. The NRC is to be notified upon verification of major damage to the Co-60 rods, resulting in Co-60 concentrations in reactor pool water in excess of federal regulatory limits for restricted areas. "

BASIS

Distance from UVAR Reactor

The Co-60 rods are to be kept a safe distance away from the UVAR reactor when it is operated, to avoid neutron activation and possible failure of the rod cladding, which may result in leakage of Co-60 to the reactor pool water. The Co-60 rods and the gamma irradiation facilities in which they are used will not be used in conjunction with the UVAR.

Pool Water Sampling Frequency

The monthly reactor pool water sampling frequency, adopted to monitor possible Co-60 leakage from the rods, is the same as that used in the U.S. AEC Safety Evaluation that was performed for these rods by the Division of Reactor Licensing on August 4, 1971. This is a reasonable frequency, for the most likely damage to the rods would be caused by cladding corrosion leading to pin holes. Co-60 leakage under these circumstances would proceed very slowly, into a large pool of water. Therefore, a monthly water sampling and analysis frequency should be adequate to indicate contamination levels before they become significant.

NRC Notification

Title 10 of the Federal Code of Regulations specifies the maximum permissible radioisotope concentrations in water for spills in restricted areas (10 CFR 20, Appendix B, Table 1), and the reporting requirements for instances where these limits are exceeded (10 CFR 20.403).