

# NORTH CAROLINA STATE UNIVERSITY AT RALEIGH

SCHOOL OF ENGINEERING

DEPARTMENT OF NUCLEAR ENGINEERING  
NUCLEAR REACTOR PROGRAM  
Box 5636 ZIP 27650

March 29, 1983

NRP-RGC-83-55  
Docket No. 50-111

Mr. Dennis M. Crutchfield  
Chief, Operating Reactors, Branch 5  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Dear Mr. Crutchfield:

Enclosed is our final survey, radiation and removable contamination, of our R-3 Reactor Bay after the biological shield has been demolished. The removable contamination survey is attached to a letter of transmittal to Mr. Bill Peery, Region II, and is included here to complete the final survey report.

Our final survey shows compliance with the criteria established by letter dated March 6, 1981, from Mr. Robert W. Reid to Dr. Joab L. Thomas. Specifically:

1. The removable activity from the Bay walls and floor were 82 DPM/100 cm<sup>2</sup> or less, which complies with Regulatory Guide 1.86.
2. The radiation survey shows a general Bay background of less than 5  $\mu$ R/hr above background, except for the area immediately under the R-3 core location. This area, which now reads 8  $\mu$ R/hr above background, will be covered by 18 inches of concrete to bring the Bay floor to a common level, thereby reducing these readings to less than 5  $\mu$ R/hr above background.
3. The background for the Bay was established at 20  $\mu$ R/hr by Region II after surveying the Bay before demolition was begun, and in comparison with similarly tiled rooms in nearby buildings. It was agreed the results of the contamination survey of the Bay walls and floor, if negative, would be acceptable as evidence the surfaces at higher elevations were likewise uncontaminated.
4. Eu-152 was the isotope found in the concrete. CO-60 was found in rebars and tie wires. Cs-137 was not found, Ba-133 was found in the barytes concrete only.

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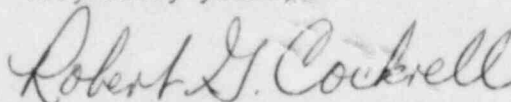
It is requested that the R-63 license be terminated.

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If you have any questions concerning this report, please contact me (919/737-2321) or Mr. Robert D. Cross, Reactor Health Physicist (919/737-3385).

Very truly yours,



Robert G. Cockrell  
Director,  
Nuclear Reactor Program

RDC:RGC:lpe

Attachment:

Final Survey of R-3 Reactor

cc: Mr. Peter Erickson  
Mr. John Kayle, Region II  
Mr. Dayne Brown  
Mr. D. W. Morgan  
(all with attachment)