

MISSISSIPPI STATE UNIVERSITY

RADIOLOGICAL SAFETY OFFICE

108 CARPENTER

May 16, 1984

DRAWER NE
MISSISSIPPI STATE, MS. 39762
(601) 325-3412

Mr. Cecil Thomas, Chief
Standardization and Special Projects Branch
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Docket No. 50-241

Dear Mr. Thomas:

A close out safety inspection of the Mississippi State University Edwards Reactor Facility was conducted on June 21 and 22, 1982 by Mr. Ross Albright of the NRC Region II (Atlanta) office. As a result of a radiation area survey performed during this inspection, some equipment items were discovered to have possible contamination/activation levels above background. A subsequent analysis of the affected items using a 3" x 3" NaI scintillation detector connected to a 1024 channel multi-channel analyzer indicated the presence of small amounts of Co-60 in the in-core ion chambers and control rods, and Cs-137 in the off-gas holding tank. A summary of NRC survey meter readings as well as our estimate of activity of these items is shown below.

RESULTS			
<u>Component</u>	<u>Smear</u> (alpha and beta)	<u>Direct Radiation</u> (micro-R/hr)	<u>Activity and</u> <u>Isotope</u>
4 Detectors	less than 1000 DPM/100cm ² on outside of bagging	50 (on contact)	49 µCi Co-60
2 Control Rods	less than 1000 CPM/100cm ² on outside of bagging	20 (on contact)	1.55 µCi Co-60
Off-Gas Holding Tank		5 (on contact)	229 µCi Cs-137

These equipment items (listed above) will be added to the University's broad radioactive materials license (License # MS-EBL-02) and stored with other radioactive materials held by the Mechanical and Nuclear Engineering Department. Attachment 1 outlines the possession limits of our radioactive materials license.

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In addition to the equipment items listed above, two (2) stacks of graphite were surveyed by Mr. Albright with an indicated reading of ~20 $\mu\text{R/hr}$ on contact. Subsequent analyses of the graphite indicated less than 50 dpm/100 cm^2 of removable surface contamination. The specific activity of neutron activation products (primarily Europium) in the graphite is estimated to be less than 2.0×10^{-5} $\mu\text{Ci/gram}$ of graphite. During the recent broad license compliance inspection by the Mississippi State Department of Health, Mr. Michael J. Smith (MSDH inspector) surveyed the graphite at my request with a MSDH micro-R survey meter. Survey results are tabulated below.

South block

~17 $\mu\text{R/hr}$ (on contact)
~4-4 $\frac{1}{2}$ $\mu\text{R/hr}$ (@ 1 meter)

North block

~21 $\mu\text{R/hr}$ (on contact)
~5 $\frac{1}{2}$ -6 $\mu\text{R/hr}$ (@ 1 meter)

The building area background was estimated to be approximately 3.5 - 4.0 $\mu\text{R/hr}$.

Based on the results of the above analyses and surveys, it is my opinion that the graphite currently stored in the Edwards Reactor Facility presents no significant health hazard and should be released for unrestricted use.

With the resolution of these items, please accept this letter as a request to vacate both the construction permit and the docket number.

Sincerely yours,

Mike Hibbard

Michael J. Hibbard, P.E.
Radiological Safety Officer

MJH:er

xc: C. T. Carley
Eddie Fuente (MSDH)
J. I. Paulk (Chairman, NEC)

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ATTACHMENT 1

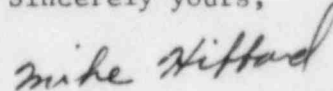
Radioactive Material Possession Limits

Please note for your records, Mississippi State University is licensed by the Mississippi State Department of Health to possess radioactive materials. The University's license number is MS-EBL-02, expiration date September 1, 1984.

The University is authorized to possess up to 10 curies of each radioactive material between Atomic numbers 3 and 83 inclusive in any physical and/or chemical form. A list of additions and exceptions to this possession limit is attached.

If you should have additional questions regarding MSU's radioactive materials license, please feel free to contact me.

Sincerely yours,



Michael J. Hibbard, P.E.
Radiological Safety Officer

MJH:er
Enclosure

MISSISSIPPI STATE DEPARTMENT OF HEALTH

RADIOACTIVE MATERIAL LICENSE

Supplementary Sheet

page 2 of 6 pagesLicense Number MS-EBL-02

Amendment No. 19

6. Radioactive Material
(Element and Mass Number)7. Chemical and/or Physical
Form8. Maximum Radioactivity and/or
quantity of material which
licensee may possess at any
one time.

B. Hydrogen-3

B. Any

B. No single source to exceed
5 curies, total possession
100 curies

C. Americium-241

C. Any

C. 1 curie

D. Curium-244

D. Any

D. 10 microcuries

E. Plutonium-239

E. Plutonium-Beryllium
Neutron Sources

E. 80 grams

F. Radium-226

F. Any

F. 100 milligrams

G. Uranium-235

G. Any

G. 14 grams

H. Californium-252

H. Neutron Source

H. 3 micrograms

I. Uranium-238

I. Cylindrical Slugs

I. 2500 kilograms

TOTAL POSSESSION LIMIT FOR
ALL RADIOACTIVE MATERIAL
SHALL NOT EXCEED 200 CURIES.