

July 2, 1999

Dr. Nolan E. Hertel, Director  
Neely Nuclear Research Center  
Georgia Institute of Technology  
900 Atlantic Drive  
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SUBJECT: GEORGIA INSTITUTE OF TECHNOLOGY, GEORGIA TECH RESEARCH  
REACTOR DECOMMISSIONING PLAN (TAC NO. MA2363)

Dear Dr. Hertel:

Enclosed is a copy of the Environmental Assessment and Finding of No Significant Impact related to your application for amendment dated July 1, 1998, as supplemented on February 8, 1999. The proposed amendment would change Facility Operating License No. R-97 authorizing decommissioning in accordance with the proposed decommissioning plan.

The assessment is being forwarded to the Office of the Federal Register for publication.

Sincerely,

ORIGINAL SIGNED BY

Marvin M. Mendonca, Sr. Project Manager  
Events Assessment, Generic Communications and  
Non-Power Reactors Branch  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

Docket No. 50-160  
Enclosure: Environmental Assessment  
cc w/enclosure:  
See next page

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

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Sincerely,

A handwritten signature in black ink, appearing to read "Marvin M. Mendonca, Sr.", with a horizontal line extending to the right.

Marvin M. Mendonca, Sr. Project Manager  
Events Assessment, Generic Communications and  
Non-Power Reactors Branch  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

Docket No. 50-160

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See next page

Georgia Institute of Technology

Docket No. 50-160  
(PAGE 1 OF 2)

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Georgia Institute of Technology

Docket No. 50-160  
(PAGE 2 OF 2)

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UNITED STATES NUCLEAR REGULATORY COMMISSIONGEORGIA INSTITUTE OF TECHNOLOGYDOCKET NO. 50-160GEORGIA TECH RESEARCH REACTORENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT

The U.S. Nuclear Regulatory Commission (the Commission) is considering the issuance of a license amendment to Facility Operating License No. R-97, issued to the Georgia Institute of Technology (the licensee) that would allow decommissioning of the Georgia Tech Research Reactor (GTRR) located in Atlanta, Georgia.

ENVIRONMENTAL ASSESSMENTIdentification of the Proposed Action

The GTRR is on the 330-acre campus of the Georgia Institute of Technology. The campus is just north of the center of downtown Atlanta in a residential and commercial area. The GTRR is in a containment building at the Neely Nuclear Research Center. The Neely Nuclear Research Center also has a high bay area, and a laboratory and office building.

The high bay area contains a hot cell facility, radio-chemistry laboratory, decontamination room and storage facility. The three-story laboratory and office building adjoins the containment building. The GTRR is designed for isolation from the rest of the Neely Nuclear Research Facility.

The heavy water moderated, cooled and reflected GTRR was licensed and first operated in 1964. The 5-megawatt thermal reactor was shut down on November 17, 1995. This shutdown was in preparation to remove the high-enriched uranium fuel. All fuel was removed by the end of February 1996, to allow conversion to low-enriched uranium fuel. Also, the reactor was defueled during the Olympic Games which were held in Atlanta, in the summer of 1996. Since that time no new GTRR fuel has been received. By letter dated July 1, 1997, the Georgia Institute of Technology informed the NRC that the GTRR would be permanently shut down. The licensee applied for a possession only status on August 7, 1997. By License Amendment No. 12 on April 2, 1998, the NRC removed the authority to operate and authorized possession of the residual radioactive materials.

The licensee submitted a decommissioning plan in accordance with 10 CFR 50.82(b) on July 1, 1998, as supplemented on February 8, 1999. Decommissioning, as described in the plan, will consist of transferring licensed radioactive equipment and material from the site, and decontamination of the facility to meet unrestricted release criteria (this is called the DECON option). After the Commission verifies that the release criteria have been met, the reactor license will be terminated.

A "Notice and Solicitation of Comments Pursuant to 10 CFR 20.1405 and 10 CFR 50.82(b)(5) Concerning Proposed Action to Decommission Georgia Institute of Technology Georgia Tech Research Reactor" was published in the FEDERAL REGISTER on February 1, 1999, (64 FR 4902). It was also published in the Atlanta Journal-Constitution on February 14, 1999, and in the Georgia Technique on February 12, 1999. Comments were received from an individual and from the Georgians Against Nuclear Energy. The NRC staff plans to consider and respond to these comments.

Further, 10 CFR 51.53(d) provides that each applicant for a license amendment to authorize decommissioning of a production or utilization facility shall submit an environmental report that reflects any new information or significant environmental change associated with the proposed decommissioning activities. By letter dated May 28, 1999, the Georgia Institute of Technology provided their environmental report.

#### Need for the Proposed Action

The proposed action is necessary because of Georgia Institute of Technology's 1997 decision to cease operations permanently. As specified in 10 CFR 50.82, any licensee may apply to the NRC for authority to surrender a license voluntarily and to decommission the affected facility. The Georgia Institute of Technology is planning to use the area for other purposes once it is released for unrestricted use.

#### Environmental Impact of the Proposed Action

The Commission has completed the environmental assessment of the proposed action and concludes that the associated radiological effects of the decommissioning will be acceptable. As noted in Section 3.1.5 of the Decommissioning Plan submitted on July 1, 1998, the collective total effective dose equivalent to all onsite workers for the entire decommissioning program is estimated to be 7.74 person-rem. The licensee established controls to ensure occupational exposure remains below NRC regulatory limits for decommissioning personnel. No estimated exposure to the public from the proposed action was provided, but the licensee established that decommissioning activities will not exceed 10 CFR 20.1301, "Dose Limits for Individual Members of the Public," and established an As Low As Reasonably Achievable (ALARA) program to minimize exposure. Further, the only potential radiological accident scenarios involve contaminations that

could occur during decontamination and decommissioning activities. These scenarios would not result in release of radioactive material outside the facility nor in occupational exposures greater than 10 CFR Part 20 limits.

Occupational and public exposure may result from offsite disposal of the low-level residual radioactive material from the GTRR. The handling, storage, and shipment of this radioactive material are specified to meet the requirements of 10 CFR 20.2006, "Transfer for Disposal and Manifest," 49 CFR Parts 100-177, "Transportation of Hazardous Materials," 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste," 40 CFR Part 261 "Identification and Listing of Hazardous Waste," and applicable disposal site license conditions. Experience with such disposal has shown that occupational and public exposure associated with such disposal is minimal.

Based on the review of the specific proposed activities associated with the dismantling and decontamination of the GTRR, the Commission has determined that the proposed action will not increase the probability or consequences of accidents, no changes are being made in the types of any effluents that may be released off site, and there is no significant increase in occupational or public radiation exposure. Therefore, no significant radiological environmental impacts are associated with the proposed action.

With regard to potential non-radiological impacts, the proposed action does not involve any historic sites. It does not affect non-radiological plant effluents and has no other environmental impact. Therefore, no significant non-radiological environmental impacts are associated with the proposed action.

Accordingly, the Commission concludes that no significant environmental impacts are associated with the proposed action.

#### Alternatives to the Proposed Action

The three alternatives to the proposed action for the GTRR are SAFSTOR, ENTOMB, and no action. SAFSTOR is the alternative in which the nuclear facility is placed and maintained in a condition that allows the nuclear facility to be safely stored and subsequently decontaminated (deferred decontamination) to levels that permit release for unrestricted use. ENTOMB is the alternative in which radioactive contaminants are encased in a structurally long-lived material, such as concrete, the entombed structure is appropriately maintained and continued surveillance is carried out until the radioactivity decays to a level permitting release of the property for unrestricted use. The no action alternative would leave the facility in its present configuration. However, the regulations in 10 CFR 50.82(b) only allow a limited time for this condition to exist.

The radiological impacts of SAFSTOR would be less because of radioactive decay prior to DECON. The ENTOMB option would result in lower radiological exposure but continued use of resources. Georgia Institute of Technology has determined that the proposed action (DECON) is the most efficient use of the existing facility, since it wants to use the space that will become available for other academic purposes. The SAFSTOR, ENTOMB and no action alternatives would entail continued surveillance and physical security measures to be in place and continued monitoring by licensee personnel.

#### Alternative Use of Resources

The action does not involve the use of resources different from those previously committed for construction and operation of the GTRR.

Agencies and Persons Contacted

In accordance with its stated policy, the NRC staff consulted with the State of Georgia. In response to the NRC's notice and solicitations for comments on the GTRR decommissioning, Thomas E. Hill, Manager of the Radioactive Materials Program for the Georgia Department of Natural Resources wrote, in part, that "[w]e fully support Georgia Tech's goal of decommissioning the facility to provide for license terminations and release of the facility for unrestricted use."

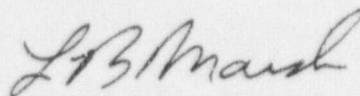
FINDING OF NO SIGNIFICANT IMPACT

On the basis of the environmental assessment, the Commission concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the NRC has determined not to prepare an environmental impact statement for the proposed action.

For further details with respect to the proposed action, see the licensee's letter dated July 1, 1998, as supplemented by letter dated February 8, and May 28, 1999, which are available for public inspection at the NRC's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC 20555.

Dated at Rockville, Maryland, this 2nd day of July 1999.

FOR THE NUCLEAR REGULATORY COMMISSION



Ledyard B. Marsh, Chief  
Events Assessment, Generic Communications and  
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