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October 6, 1998 RC

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## UNITED STATES OF AMERICA NUCLEAR RECULATORY COMMISSION

#### BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	
GEORGIA INSTITUTE OF TECHNOLOGY	Docket No. 50-160-Ren
(Georgia Tech Research Reactor)	
(Renewal of License No. R-97)	

NRC STAFF'S RESPONSE TO LICENSING BOARD'S MEMORANDUM AND ORDER OF SEPTEMBER 26, 1995 CONCERNING CONTENTION 9 (MANAGEMENT)

#### INTRODUCTION

On September 20, 1995, the NRC's Office of Nuclear Reactor Regulation issued an amendment to the operating license held by the Georgia Institute of Technology ("Georgia Tech" or the "Licensee") for the Georgia Tech Research Reactor ("GTRR"), whereby the Technical Specifications for the facility were amended to reflect an organizational change described in a recent license amendment application filed by the Licensee. On September 26, 1995, the Atomic Safety and Licensing Board ("Licensing

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See Letter from Marvin M. Mendonca to Dr. Ratib A. Karam, dated September 20, 1995, enclosing Amendment No. 11 to Facility Operating License No. R-97, attached to Board Notification 95-15 ("Commission and Board Notification of Potentially Relevant and Material License Amendment in the Matter of the Georgia Institute of Technology Research Reactor"), transmitted on September 21, 1995.

<sup>&</sup>lt;sup>2</sup> See Letter from R. A. Karam (Georgia Tech) to Document Control Desk (NRC), dated August 16, 1995 ("Application") (Attachment 1 hereto).

Board") in this proceeding issued a "Memorandum and Order (Effect of Organizational Changes on Contention 9)," in which it directed the parties to advise the Licensing Board as to whether the organizational change reflected in the license amendment has any effect on Contention 9 filed by Georgians Against Nuclear Energy ("GANE").

The NRC Staff ("Staff") hereby responds to the Licensing Board's Order. For the reasons set forth below, the Staff submits that the license amendment does not affect GANE Contention 9.

#### BACKGROUND

In its license amendment application of August 16, 1995, the Licensee announced that it intends to "eliminate" the position of Vice President for Interdisciplinary Programs, which had previously been the position to which the Director of the Neely Nuclear Research Center (NNRC), Dr. Karam, reported; the Vice President for Interdisciplinary Programs, in turn, had reported to the President. In place of this organizational structure, the Licensee stated that the NNRC Director will henceforth report to the Dean of the College of Engineering, "who reports directly to the President of the Institute" (Application at 1). No other office or committee associated with operation of the GTRR appears to be affected by this change: The Nuclear Safeguards Committee will continue to report directly to the Office of the President, as it did previously (Id., TS Figure 6.1); and the Manager of the Office of Radiation Safety will continue to be subject to administrative supervision by the Director of the NNRC, and will continue to report to the Nuclear Safeguards Committee on issues of safety and safety policy, as in the past (Id.).

#### DISCUSSION

In its Contention 9, GANE raised several concerns regarding the management of the GTRR, involving two general issues: (1) whether the facility director, Dr. R. Karam, has been given too much authority, including authority over the Office of Radiation Safety, in view of his alleged misconduct relating to a cadmium-115 accident in 1987; (2) whether the scope of the Nuclear Safety Committee's authority is too limited, in that it allegedly has no responsibility for review of health issues, and whether management should place more reliance upon the Office of Radiation Safety Manager for health physics issues. GANE Contention 9 asserts, in its entirety, as follows:

9. GANE contends that management problems at the GTRR are so great that safety for the public cannot be assured. Safety concerns at the Georgia Tech reactor are the sole responsibility of Dr. R. A. Karam (SAR, Fig. 6.1, Dr. Karam is the director who withheld information about a serious accident from the NRC (1987 cadmium-115 accident). The NRC was advised of the 1987 cadmium-115 accident by the safety officer at that time, who was later demoted, and left the GTRR operation claiming harassment. Since the incident, management has been restructured giving the director (Dr. Karam) increased authority, including increased authority over the Manager of the Office of Radiation Safety. Although the safety officer has a line to higher-ups than the director, since he/she works for the director on a day-to-day basis, the threat of reprisal would be a huge disincentive to defying the director.

The Nuclear Safeguards Committee which has theoretical oversight of the GTRR operations has a distinct flaw in having no concern with health issues. The Office of Radiation Safety Manager is sought for its knowledge of law more than its knowledge of health physics. (SAR, Sec. 6.1, p. 156-159).<sup>3</sup>

Nowhere in this contention did GANE make any reference to the management structure above Dr. Karam. GANE did not assert that the organizational structure above Dr. Karam is inadequate, nor did it make any claim or reference about the particular office to whom Dr. Karam reports. It is therefore apparent that GANE's contention does not concern this aspect of the Licensee's organization and management structure. Accordingly, an organizational change in which the position of the Vice President for Interdisciplinary Programs is to be abolished, and line responsibility for the GTRR will be assumed by the Dean of the College of Engineering, does not appear to be relevant to GANE's contention.

To be sure, GANE's contention noted that "the safety officer has a line to higher-ups than the director," but asserted that since this person "works for the director on a day-to-day basis," he or she may not report problems to such persons due to "the threat of reprisal[s]." However, both the previous and the new organizational charts provide that the Manager of the Office of Radiation Safety is subject to administrative supervision by the Director of the NNRC and that he or she has a separate, direct line of reporting for safety and safety policy to the Nuclear Safeguards Committee. This

<sup>&</sup>lt;sup>3</sup> "Georgians Against Nuclear Energy Amended Petition for Leave to Intervene in Consideration of Application for Renewal of Facility License," dated December 30, 1994, at 10.

reporting relationship is unaffected by the announced reorganization. Accordingly, the proposed reorganization does not affect this aspect of GANE Contention 9.

Finally, it should be noted that both the Licensee and the Staff have concluded that the reorganization does not have an adverse impact on the public health and safety. In its application, the Licensee stated that the Nuclear Safeguards Committee reviewed the reorganization change, and "determined that the change does not decrease the effectiveness or control of issues relevant to health and safety of the public or workers." (Application at 2). The NRC Staff reviewed the proposed reorganization, and determined that it is consistent with applicable standards, that it "has no adverse effect on the reactor administrative organizational structure and function" and is therefore acceptable, and that the health and safety of the public will not be endangered by the proposed amendment.<sup>4</sup>

#### CONCLUSION

For the reasons set forth above, the Staff submits that the organizational change reflected in this license amendment has no effect upon GANE Contention 9.

Respectfully submitted,

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Sherwin E. Turk

Counsel for NRC Staff

Dated at Rockville, Maryland this 6th day of October 1995

<sup>&</sup>lt;sup>4</sup> "Safety Evaluation by the Office of Nuclear Reactor Regulation Supporting Amendment No. 11 to Facility Operating License No. R-97, Docket No. 50-160, Georgia Institute of Technology," dated September 20, 1995, at 1, 2.



# Georgia Institute of Technology ATTACHMENT 1

NEELY NUCLEAR RESEARCH CENTER 900 ATLANTIC DRIVE ATLANTA, GEORGIA 30332-0425 LISA

(404) 894-3600

August 16, 1995

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

Subject: Facility License No. R-97. Docket No. Application for Amendment of Technical Specifications

Gentlemen:

Application is hereby made to amend the Technical Specifications of the Operating License of the Georgia Tech Research Reactor (GTRR).

The change is needed because the administrative organization of the Georgia Institute of Technology is being restructured by the President of Georgia Tech. The Georgia Institute of Technology requests an expedited review and approval.

The scope of the Technical Specifications change is limited to Section 6, Administrative Controls. In the current version of the Technical Specifications, the Director of the Neely Nuclear Research Center (NNRC) reports to the Vice President for Interdisciplinary Programs. The position of Vice President for Interdisciplinary Programs is being eliminated. After the planned reorganization, the Director of NNRC will report to the Dean of the College of Engineering, who reports directly to the President of the Institute.

The change in the Organizational Chart, page 39 (T.S.), impacts one other page in the Technical Specifications: page 38. This page is also modified accordingly. The change further impacts page 156 of the Safety Analysis Report (dated April 1994 and revised January 10, 1995). This page is also modified accordingly.

Each impacted page is enclosed herein in two versions: one showing editorial marks (deletion redlined and struck through) and one clean copy as revised.

In addition, we take this opportunity to correct errors reported in the facility Safety Analysis Report, dated April 1994 and revised January 10, 1995. The errors occurred on pages 100 and 101. Again the deletions are redlined and struck through and the additions are

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shown on the clean copy as revised. No other documents such as the Emergency Preparedness Plan or the Security Plan are impacted by this change.

Budget lines will be transferred from VPIP to the Dean of Engineering. No staff or faculty will be terminated as a result of this reorganization.

Financial qualifications of the Licensee to operate the reactor are not affected by the change. Also unaffected is the licensee's standing commitment concerning funding of eventual decommissioning.

The reorganization change was reviewed by the Nuclear Safequards Committee. The Committee determined that the change does not decrease the effectiveness or control of issues relevant to health and safety of the public or workers.

Revised pages of the Technical Specifications and the Safety Analysis Report, incorporating the new administrative structure and error correction changes, are submitted herewith for information.

The changes proposed do not endanger the health and safety of the public and will not affect compliance with applicable regulations.

These modifications are respectfully submitted on behalf of the Georgia Institute of Technology, by

R.A Karam R. A. Karam

Director, Neely Nuclear Research Center

VICKIE L. CLARK NOTARY PUBLIC DOUGLAS COUNTY MY COMMISSION EXPINES **SEPTEMBER 30, 1997** 

Enclosures:

Signed original transmittal letter

Technical Specifications:

Page 38 showing deletion redlined and struck through

Page 38 showing clean copy as revised Page 39 showing old organizational chart Page 39 showing new organizational chart

Safety Analysis Report dated April 1994, revised January 10 1995:

Page 100 showing deletions redlined and struck through

Page 100 showing clean copy as revised

Page 101 showing deletions redlined and struck through

Page 101 showing clean copy as revised

Nuclear Regulatory Commission August 16, 1995

Page 3

Page 156 showing deletions redlined and struck through Page 156 showing clean copy as revised

CC:

Document Control Desk, NRC

Mr. Stewart Ebneter, NRC, Region II

Mr. Marvin Mendonca, NRC

Dr. John White, College of Engineering, GIT

Dr. Gary Poehlein, Interdisciplinary Programs, GIT

#### 6.1 ORGANIZATION

- a. The organization for the management and operation of the reactor shall be as indicated in Figure 6.1. The Director, Nuclear Research Center, shall have overall responsibility for direction and operation of the reactor facility, including safeguarding the general public and facility personnel from radiation exposure and adhering to all requirements of the operating license and Technical Specifications.
- b. The Manager, Office of Radiation Safety, shall advise the Director, Nuclear Research Center, in matters pertaining to radiological safety. He/she has access to the Vice President, Interdisciplinary Programs, and/or the President of the Institute as needed.
- c. The minimum qualifications with regard to education and experience backgrounds of key supervisory personnel in the Reactor Operations group shall be as follows:

#### (1) Reactor Supervisor

The Reactor Supervisor must have a college degree or equivalent in specialized training and applicable experience, and at least five years experience in a responsible position in reactor operations or related fields including at least one year experience in reactor facility management or supervision. He shall hold a Senior Reactor Operator's license for the GTRR.

### (2) Reactor Engineer

The Reactor Engineer must have a combined total of at least seven years of college level education and/or nuclear reactor experience with at least three years experience in reactor operations or related fields. He shall be qualified to hold a Senior Reactor Operator's license.

## d. Senior Reactor Operator's License

Whenever the reactor is not secured, the minimum crew complement at the facility shall be two persons, including at least one senior operator licensed pursuant to 10 CFR 55.

Amendment No. 10

#### 6.1 ORGANIZATION

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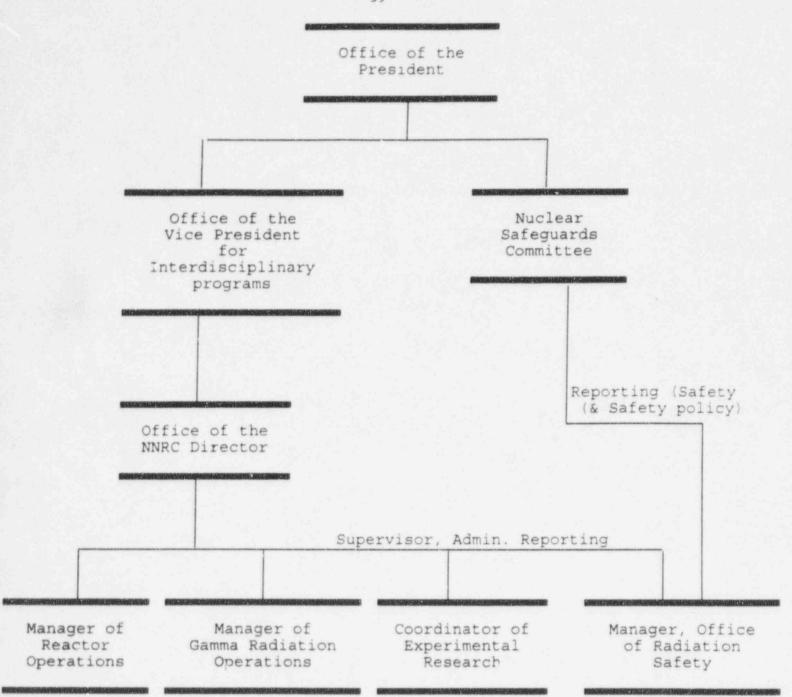


Figure 6.1 Georgia Tech Organization for Management and Operation of the GTRR.

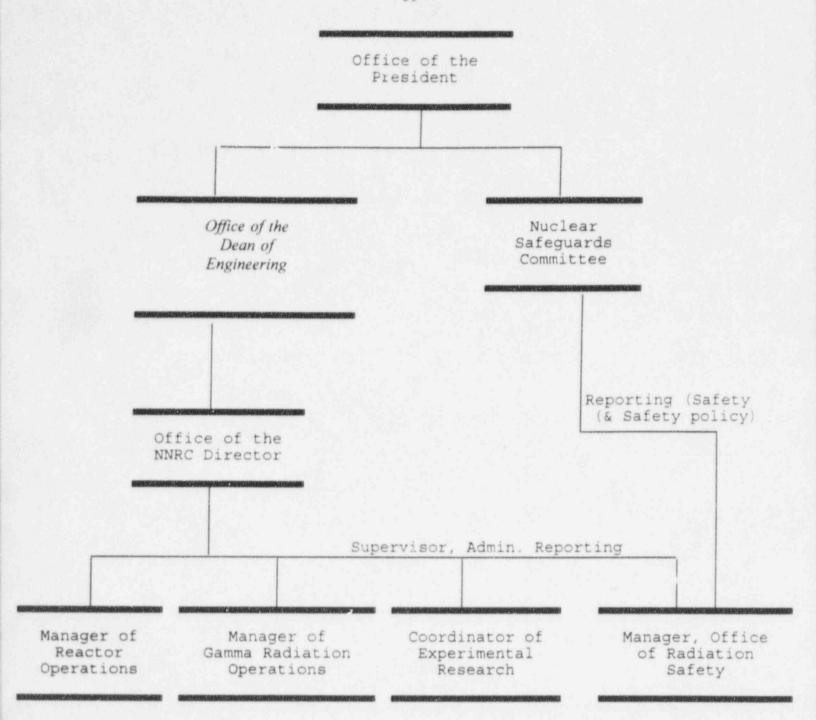


Figure 6.1 Georgia Tech Organization for Management and Operation of the GTRR. (Amendment 11).

Georgia Tech employee, except where special arrangements are made and approved by the Manager, Officer of Radiation Safety (MORS).

Persons who are permitted to work with significant radioactivity or to enter the containment building or high bay area without escort must meet standards of training established by MORS.

Instruments are provided to allow persons leaving the controlled area to monitor their hands and shoes for radioactivity. All persons who are potentially exposed to loose radioactive materials are required to monitor themselves at appropriate times.

Permanent records of personnel monitoring results are maintained by the Office of Radiological Safety. Individuals are permitted to examine their own personal monitoring file upon request.

#### 4.5.3 Area Monitoring

The Office of Radiological Safety conducts a program of routine and special area monitoring of the reactor and laboratory buildings. External radiation levels, airborne activity, and surface contamination are measured. Schedules for routine surveys are determined on the basis of degree of utilization and levels of radioactivity being handled in various areas. Special surveys are performed whenever a non-routine activity takes place involving possible significant exposure to radioactivity. Under certain conditions, established by MORS, persons other than members of the Office of Radiological Safety may be authorized to perform radiation surveys. Each new installation is carefully surveyed when it is first put into operation and, if the potential hazard warrants, it will be added to the routine survey program. The Office of Radiological Safety maintains records of all surveys, and reports significant results to the appropriate persons.

## 4.5.4 Environmental Monitoring

An environmental monitoring program has been carried on with the cooperation of the Radiological Health Section of the Georgia Department of Public

Georgia Tech employee, except where special arrangements are made and approved by the Manager, Officer of Radiation Safety (MORS).

Persons who are permitted to work with significant radioactivity or to enter the containment building or high bay area without escort must meet standards of training established by MORS.

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An environmental monitoring program has been carried on with the cooperation of the Environmental Radiation Section of the Georgia Department of

Health since initial reactor startup. Thermoluminesent dosimeters are placed at 50 locations outside the perimeter of the reactor facility and are changed on a quarterly basis. No statistically valid indication of an increase in environmental radioactivity levels has been observed through analysis of the data produced in this program.

All evidence, both theoretical and empirical, indicates that the only radioactive material emitted from the stack in measurable quantities is argon-41. Every attempt is being made to isolate the sources of the argon-4l production and minimize its release. It is highly unlikely that the radioactivity released under reactor operating conditions at 5 MW will cause any person continuously residing or working in the neighborhood to be exposed to more than a small fraction of the total effective dose equivalent permitted in 10CRF 20.1301. However, the environmental monitoring program will continue to demonstrate the validity of this assumption by direct measurement rather than by theoretical analysis. Equipment for continuous, automatic measurement and recording of wind speed and direction has been installed as an aid to the selection of monitoring points and the analysis of the resultant data.

The environmental monitoring program includes the following elements:

- A. The State Radiological Health Section will continue their program of thermoluminescent dosimeter (TLD) monitoring which has been in effect since initial reactor startup.
- B. Georgia Tech began a supplementary thermoluminescent desimeter monitoring program outside of the reactor perimeter fence in December 1966. Currently thirty TLD's are placed in locations which current meteorological conditions indicate will be the most likely to receive the maximum dose from argon-41. These badges are being changed every three months.
- C. The program of monitoring the radiation dose at the reactor perimeter fence will continue.
- Special determinations of radiation doses using ionization chambers
   will be made under specific meteorological conditions which indicate

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In the Matter of	)
GEORGIA INSTITUTE OF TECHNOLOGY	) Docket No. 50-160-Ren
(Georgia Tech Research Reactor)	
(Renewal of License No. R-97)	;

#### CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF'S RESPONSE TO LICENSING BOARD'S MEMORANDUM AND ORDER OF SEPTEMBER 26, 1995 CONCERNING CONTENTION 9 (MANAGEMENT)" in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class, or as indicated by an asterisk through deposit in the Nuclear Regulatory Commission's internal mail system on this 6th day of October 1995.

Charles Bechhoefer, Chairman\*
Administrative Judge
Atomic Safety and Licensing Board
Mail Stop: T-3 F23
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dr. Jerry R. Kline\*
Administrative Judge
Atomic Safety and Licensing Board
Mail Stop: T-3 F23
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dr. Peter S. Lam\*
Administrative Judge
Atomic Safety and Licensing Board
Mail Stop: T-3 F23
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Atomic Safety and Licensing Board Panel\* Mail Stop: T-3 F23 U.S. Nuclear Regulatory Commission Washington, D. C. 20555

Adjudicatory File\* (2)
Atomic Safety and Licensing Board
Mail Stop: T-3 F23
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Office of the Secretary\* (2)
Attn: Docketing and Service
Mail Stop: OWFN-16 G15
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Office of Commission Appellate
Adjudication\*
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U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

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Ms. Glenn Carroll GANE 139 Kings Highway Decatur, Georgia 30030

Sherwin E. Turk Counsel for NRC Staff

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