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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH

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

Docket No. 50-160-Ren

NRC STAFF (PANEL C) TESTIMONY OF
ALEXANDER ADAMS, JR., AND MARVIN M. MENDONCA
CONCERNING GANE CONTENTION 9 (MANAGEMENT)

Q1. Please state your names, occupations and by whom you are employed.

A1(a). (AA) My name is Alexander Adams, Jr. I am employed as a Senior Project Manager in the Non-Power Reactors and Decommissioning Project Directorate, Division of Reactor Program Management, Office of Nuclear Reactor Regulation (NRR), U.S. Nuclear Regulatory Commission (NRC). A statement of my professional qualifications is attached hereto.

A1(b). (MMM) My name is Marvin M. Mendonca. I am employed as a Senior Project Manager in the Non-Power Reactors and Decommissioning Project Directorate, Division of Reactor Program Management, Office of Nuclear Reactor

Regulation (NRR), U.S. Nuclear Regulatory Commission (NRC). A statement of my professional qualifications is attached hereto.

Q2. Please describe your current responsibilities.

A2(a). (AA) I currently serve as the NRC Staff's project manager for licensing issues related to 17 research reactors, a demonstration power reactor, and the nuclear ship N.S. Savannah. I also serve as project manager for assigned Department of Defense and Department of Energy projects. As a project manager, I am responsible for coordinating all aspects of the safety and environmental evaluations related to the NRR review of reactor licensing issues for my assigned facilities, such as license renewal, license amendment, decommissioning and license termination, conversion from high-enriched to low-enriched uranium, operator requalification, emergency planning, and security. In addition, I serve as the NRR lead reviewer for my assigned reactors, which may involve reviewing licensee reports, NRC inspection reports and enforcement actions, and coordination with NRC regional inspection and other NRC personnel, as well as other State and Federal agencies. In some instances, I also act as the NRC Staff's technical reviewer for licensing applications, and occasionally, I participate in inspections of research reactors.

In addition to the above, I participated in the development of a training course on research reactors for NRC personnel, and was the project manager for the development of NUREG-1537, "Guidelines for Preparing and Reviewing Applications for

the Licensing of Non-Power Reactors." My responsibilities also include serving as the NRC's representative on standards committees associated with research reactors. I am the NRC's alternate representative to American Nuclear Society (ANS) Consensus Committee N-17, "Research Reactors, Reactor Physics and Radiation Shielding," and am the NRC's representative to an ANS subcommittee, ANS-15, "Operation of Research Reactors." I also represent the NRC on the working group for several individual American National Standards Institute (ANSI)/ANS standards pertaining to research reactors, including the working group for ANSI/ANS-15.1, "The Development of Technical Specifications for Research Reactors," which includes guidance on organizational issues. I have also been a consultant and technical committee member in the development of International Atomic Energy Agency (IAEA) guidance documents for research reactors.

A2(b). (MMM) I currently serve as the NRC Staff's project manager for approximately 18 research reactors, including the Georgia Tech Research Reactor (GTRR), operated by the Georgia Institute of Technology ("Georgia Tech" or "the Licensee"). I am responsible for conducting and coordinating the NRR review of reactor licensing, inspection and enforcement issues in connection with the NRC licenses held by these 18 facilities. Additionally, I am responsible for coordinating the NRC Staff's actions concerning two deferred nuclear power plants.

As a project manager, I am responsible for coordinating all aspects of the safety and environmental evaluations related to the NRC licensing reviews for my assigned

facilities. These responsibilities generally include activities related to license renewal, license amendment, decommissioning and license termination, conversion from high-enriched to low-enriched uranium, operator requalification, emergency planning, and security. In addition, I serve as the NRR lead reviewer for my assigned reactors, which includes review of licensee reports, NRC inspection reports and enforcement actions, and coordination with NRC regional inspection and other NRC personnel, as well as other State and Federal agencies. In some instances, I act as the NRC Staff's technical reviewer for licensing applications, and I participate in inspections of research reactors.

In addition to the above, I have conducted training courses on research reactors for NRC inspection personnel, and courses on NRC inspection and regulation issues for research reactors related to organizational, review, and audit functions, as well as operational and maintenance activities, design change functions, operator license requalification and medical activities, procedures, fuel movement, surveillance, experiments, effluent and environmental monitoring, emergency preparedness, and radiation protection.

My responsibilities also include serving as the NRC's representative on standards committees associated with research reactors, such as the American National Standards Institute (ANSI)/ANS Standard 15.10 working group on the decommissioning of research reactors, and an International Atomic Energy Agency committee on "Management of Research Reactor Ageing." I have also administered reactor operator licensing exams at research reactor facilities, including the Georgia Tech Research Reactor (GTRR).

Q3. Please describe what your duties have been with respect to the NRC Staff's review and oversight of the Licensee's management and operation of the GTRR.

A3(a). (AA) During the period of October 1986 to June 1987, I served as the NRC Staff's backup to the project manager for the GTRR. I then served as the NRC Staff's project manager for the GTRR from June 1987 to December 1991. During this period, I became familiar with and was responsible for all NRC project management and licensing issues concerning the GTRR facility.

During the period of June 1987 to November 1988, I actively participated in the NRC Staff's evaluation of the events and circumstances existing at the GTRR. As part of my duties, I reviewed inspection reports and Notices of Violation (NOVs), and participated in internal NRC discussions and decisions to take enforcement actions against the Licensee. I also reviewed documents generated during this period in an investigation at the Neely Nuclear Research Center (NNRC) performed by the NRC Office of Investigations (OI). I attended the NRC enforcement conference conducted on February 23, 1988, concerning Inspection Report (IR) 87-08; the management meeting with NRC Region II and Licensee personnel on May 16, 1988; and the enforcement conference conducted on September 19, 1988, related to potential discrimination against GTRR employees for raising safety issues. I also participated, along with NRR management, in the NRC Staff's decision to allow the GTRR to restart in November 1988.

A3(b). (MMM) I have served as an NRC project manager or backup project manager for research reactors since June 1990. From June 1990 to December 1991, I acted as the NRC Staff's backup to the project manager for various NRC licensed research reactors, including the GTRR; for several months of this period, I also served as the acting project manager for GTRR. I became the NRC Staff's project manager for the GTRR in December 1991, and have served in this position until the present.

In these capacities, I have been responsible for coordinating the NRC Staff's review of matters related to the Licensee's application to renew its license to operate the GTRR. Additionally, my duties have included the review of all inspection reports, enforcement actions, events, and license amendments related to the GTRR; I have participated in and observed NRC Region II inspection activities and management meetings concerning the GTRR; and I have examined candidates proposed by the GTRR for NRC reactor operator licenses. In addition, I have had numerous discussions concerning the NRC license and the Licensee's related activities with the NNRC Director, and with other individuals associated with the GTRR, including Operations and Radiation Safety management, and the Nuclear Safeguards Committee (NSC) Chairman.

Q4. What is the purpose of this testimony?

A4. (AA, MMM) The purpose of this testimony is to provide an historical account of the structural changes which have been made to the Licensee's management organization, and to provide the NRC Staff's views as to whether the Licensee's current

organizational structure provides reasonable assurance that the public health and safety will be protected in the event that the NRC license for the GTRR facility is renewed.

Q5. Have you reviewed the assertions made by Georgians Against Nuclear Energy (GANE) in GANE Contention 9?

A5. (AA, MMM) Yes. We understand that GANE asserts the Licensee's management is inadequate to provide reasonable assurance of the continued protection of the public health and safety, based on its contention that:

Safety concerns at the Georgia Tech reactor are the sole responsibility of Dr. R.A. Karam. 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 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.

In partial support of these assertions, GANE refers to a number of NRC staff inspection reports and enforcement events, among other matters, and has identified

certain structural changes to the Licensee's management organization in support of its assertion that the Licensee's organizational structure is inadequate.

Q6. Do you agree with GANE's views with respect to the adequacy of the Licensee's management organization?

A6. (AA, MMM) No.

Q7. Please provide a summary of the bases for this conclusion.

A7. (AA, MMM) This conclusion is based upon our knowledge of the GTRR organizational and management structure, the checks and balances incorporated in that structure, and the way in which the GTRR organizational and management structure compares with the structures in place at other research reactors and with applicable generic standards for research reactors. On this basis, we have concluded that the Licensee's management of the GTRR complies with NRC regulatory requirements and accepted standards for research reactor licensees. Further, the organizational and management structure for the GTRR provides appropriate, redundant checks and balances, in that the facility Director has overall safety responsibility, while the NSC and the Manager of the Office of Radiation Safety (MORS) have the responsibility and appropriate independence to ensure that safety issues are properly addressed or raised to higher authorities in the Licensee's organization. For these reasons, as more fully discussed below, we have concluded that the present organization and management

structure of the GTRR provides reasonable assurance that the health and safety of the public, as well as of GTRR employees, will be protected if renewal of the GTRR license is authorized.

Q8. Please provide a general description of the NRC requirements and the generic standards which are applicable to the management and organizational structures of research reactors.

A8. (AA, MMM) In accordance with 10 C.F.R. 50.36(c)(5), reactor licensees are required to establish administrative controls relating to organization and management, procedures, recordkeeping, review and audit, and reporting necessary to assure operation of the facility in a safe manner. The Commission's regulations do not require that any particular organization or management structure be adopted at power or non-power reactors. However, the "American National Standard for the Development of Technical Specifications for Research Reactors," ANSI/ANS-15.1, which contains a section on administrative controls, has been used by many research reactor licensees to achieve compliance with 10 C.F.R. 50.36(c)(5), and has regularly been accepted for this purpose by the NRC Staff in its review of numerous research reactor organizations.

ANSI/ANS-15.1 is a voluntary consensus standard which was developed under the direction of Subcommittee ANS-15. This standard is intended to aid industry, consumers, governmental agencies, and general interest groups. The working group that developed the standard represents a cross section of research reactor operators and

regulators (*e.g.*, NRC licensees, Department of Energy and Department of Defense reactor facilities, and associated regulators).

Any standard proposed by the ANS working group must be approved by the full ANS-15 subcommittee and the consensus committee N-17, "Research Reactors, Reactor Physics and Radiation Shielding." The NRC Staff has been actively involved in the work of these committees, as discussed above. The Project Director, Non-Power Reactors and Decommissioning Project Directorate, represents the NRC on the American Nuclear Society Consensus Committee N-17; as indicated above, Alexander Adams, Jr., serves as the NRC's alternate representative on this committee, as well as the NRC's representative to ANS subcommittee ANS-15. NRC representatives on the committees ensure that the standards produced are consistent with NRC regulations and guidance to the maximum extent possible.

The NRC Staff has accepted the organizational guidance and structure described in ANSI/ANS-15.1 as an adequate format for research reactors, and has approved licensee Technical Specifications (TSs) that follow the guidance in the standard. If licensees submit organizational proposals that are significantly different from the guidance contained in ANSI/ANS-15.1, the NRC Staff generally points out the difference(s) and asks the licensee to justify its proposal.

Q9. Please describe the particular guidance contained in these standards which pertains to the management and organizational structure of research reactor facilities.

A9. (AA, MMM) There are two revisions of ANSI/ANS-15.1 that are germane to this discussion: the 1982 and 1990 versions. Recommended organizational charts for research reactor facilities are contained in ANSI/ANS-15.1-1982 and ANSI/ANS-15.1-1990, and are attached to this testimony, as Attachments 1 and 2, respectively.

The ANS recommended organizational chart contained in ANSI/ANS-15.1-1982 (Attachment 1 hereto) indicates a level 1 unit or organizational head; a level 2 reactor facility director or administrator reporting to level 1; a level 3 reactor or shift supervisor (this level is conditional and is intended for facilities with routine multi-shift operations) reporting to level 2; and a level 4 that consists of the operating staff reporting to level 3. The chart also indicates review and audit functions should be performed at a level above the facility director. The review and audit function reports to level 1 management. The chart shows that radiation safety personnel report either to level 2 (the director/administrator of the reactor facility) or to level 1 (unit or organizational head).

The 1982 standard showed only reporting lines, but the 1990 version of the standard (Attachment 2), shows both reporting and communication lines. In particular, the 1990 ANS standard (Attachment 2 hereto) shows communication lines between the review and audit functions and the level 2 facility director, and between the radiation

safety function and level 3 reactor or shift supervisor. Further, in the 1990 standard, a narrative section was added on radiation safety that emphasized that the radiation safety function shall report to either level 1 or level 2 management, stating that the individual or group assigned responsibility for implementing the radiation protection program at the reactor is to report to Level 1 or Level 2.

Q10. Please describe the GTRR license amendments which were issued during the period of 1987-1989, with regard to the GTRR organizational structure in light of the generic standards described above.

A10. (AA) In the period of 1987-1989, two license amendments (Amendment Nos. 7 and 8) were approved by the NRC Staff with regard to the GTRR's management and organizational structure. As the NRC Staff's Project Manager for the GTRR facility at the time, I served as the NRC Staff's principal reviewer of these two license amendments.

License Amendment No. 7

The Licensee's first proposal to amend the organizational structure of the GTRR described in the TSs was submitted to the NRC by the Licensee's letter dated August 6, 1987. I was the project manager and technical reviewer for the amendment request.

Georgia Tech proposed to abolish the Office of Radiological Safety and establish a new Office of Radiation Safety as a unit of the NNRC. In the proposed organizational

structure, the managers of the Offices of Radiation Safety, Reactor Operations, Hot Cell Operations and Coordinator of Experimental Research would all report to the NNRC Office of the Director. In turn, the chart indicated the Director would report to the Vice President for Research, and the Vice President would report to the President. In addition, the proposal showed that the NSC (with the NSC Chairman also holding the title of RSO) would report to the NNRC Director, with communication to the Office of the President.

In this application, the Licensee also requested changes to the TSs for the Nuclear Safeguards Committee. These proposed TS changes were as follows:

1. To remove the requirement for a minimum number of persons on the NSC.
2. To expand the collective experience of the NSC members to include radiation protection.
3. To remove the requirement for the Reactor Supervisor and Radiological Safety Officer to be ex officio members of the NSC.
4. To remove the requirement that no more than a minority of the NSC shall be from the GTRR staff.
5. To expand the responsibility of the NSC by requiring their review and approval of proposed operating procedures and proposed changes to the procedures, although minor changes to procedures that do not change the intent could be initially approved by the Director of the NNRC and submitted to the NSC for consideration at their next meeting. All minor modifications were to be approved by the Committee. (The then existing TSs only required the committee to review and approve proposed operating procedures and proposed changes

which change the original intent of the operating procedure in a non-conservative manner.)

6. To change the responsibility for approval of changes in TS organizational structure from the NSC to the President of the Institute.
7. To remove the responsibility for the NSC to review changes to the facility license.
8. To change the distribution of written records from the President, Georgia Tech, to the President's office.
9. To change the words "operational records" to "operation records" in TS 6.2.e.5 and "Nuclear Safeguards Committee" to "Committee" in TS 6.2.b.

These changes to the organizational structure of the GTRR were implemented on or about July 1, 1987, without NRC approval. This is discussed in Inspection Report 87-08 as an allegation follow-up item, and was identified as an apparent violation concerning administrative changes made to the licensee's organization without an approved amendment to the TS. These organizational structure changes were under review for adequacy by NRR at the time of the inspection, and certain aspects of these changes were found to be unacceptable for the reasons discussed below.

After completing an initial review of the amendment request, the NRC Staff found certain aspects of the Licensee's proposal to be unacceptable, and communicated several questions to the Licensee. The more significant issues raised with the Licensee were as follows:

1. The indication that the NSC would report to the Director of the NNRC instead of level 1 management did not conform to ANSI/ANS-15.1.
2. The review and audit functions proposed by the Licensee for the NSC were fewer than those suggested by ANSI/ANS-15.1.
3. The minimum number of members of the NSC was not specified in the proposed TSs, as suggested by ANSI/ANS-15.1.
4. The proposed TSs did not prohibit NNRC staff members from being a majority of the required quorum of the NSC, as suggested by ANSI/ANS-15.1.

The Licensee submitted a revised organizational chart for the GTRR TS, which addressed the NRC Staff's questions. In the revised organization, the NSC would report to level 1 management (Office of the President) and would communicate with the NNRC Director. Also, the Manager of the Office of Radiation Safety would report to the NNRC Director for supervision and administrative reporting -- but would report to the NSC on safety and safety policy matters.

In addition, the Licensee revised its proposed amendment to expand the scope of the review and audit responsibilities of the NSC to activities generally suggested by ANSI/ANS-15.1. The following NSC "review" requirements were to be added to the TSs by Amendment No. 7:

1. The responsibility of the NSC was expanded by requiring their review and approval of proposed operating procedures and proposed changes to the procedures, although minor changes to procedures that do not change the intent could be initially approved by the Director of the NNRC and submitted to the NSC for consideration at their next meeting.

2. The requirement for the NSC to review and approve determinations that proposed changes in equipment, systems, tests, experiments, or procedures do not involve an unreviewed safety question pursuant to 10 CFR 50.59(a).
3. The requirement for the NSC to review violations of TSs, license, or internal procedures or instructions having safety significance.
4. The requirement for the NSC to review operating abnormalities having safety significance.
5. The requirement for the NSC to review audit reports.

The following "audit" requirements would be added to NSC's responsibilities by Amendment No. 7:

1. The requirement to audit existing operating procedures for adequacy and to assure that they achieve their intended purpose in light of any changes since their implementation was removed from the TSs. The requirement to review all changes to procedures eliminated the need for this audit.
2. The requirement to audit plant equipment performance with particular attention to operating anomalies, reportable occurrences, and the steps taken to identify and correct their causes was removed from the TSs. The requirement to review violations of TSs, license, or internal procedures or instructions having safety significance and review operating abnormalities having safety significance eliminated the need for this audit.
3. A requirement to audit the retraining and requalification program for the operating staff, at least once every other calendar year (interval between audits not to exceed 30 months) was added to the TSs.
4. A requirement to audit the results of action taken to correct those deficiencies that may occur in the reactor facility

equipment, systems, structures, or methods of operations that affect reactor safety, at least once per calendar year (interval between audits not to exceed 15 months) was added to the TSs.

5. An interval of at least once per calendar year (interval between audits not to exceed 15 months) was added to the TSs for the existing audit requirement to audit reactor operations and reactor operation records for compliance with internal rules, procedures, and regulations and with licensed provisions, including TSs.

In addition to the above proposed changes, the following changes were made to the requirements for the NSC by Amendment No. 7:

1. The requirement for expertise of the NSC was expanded to include experience in radiation protection. (This was originally proposed by the Licensee.)
2. The requirement that the GTRR operating staff may not constitute a majority of those present was added to the TS.
3. The requirement that the Reactor Supervisor and Radiological Safety Officer be ex officio members of the Committee was removed from the TSs. (This was originally proposed by the Licensee.)
4. The distribution of written records was changed from the President, Georgia Tech, to the President's office. (This was originally proposed by the Licensee.)
5. The phrase "operational records" was changed to "operation records" in TS 6.2.e.5 and "Nuclear Safeguards Committee" to "Committee" in TS 6.2.b. (The changes were originally proposed by the Licensee.) Also, the phrase "majority of the full Committee" was changed to "majority of the Committee membership" in TS 6.2.d.
6. The responsibility to approve changes in TS organizational structure was changed from the NSC to the President of the

Institute. (This change was originally proposed by the Licensee.)

In its revised amendment request, the licensee withdrew its proposal to delete the requirement that the NSC be composed of a minimum of five members, the requirement that no more than a minority of the NSC members shall be from the GTRR staff, and the requirement that the NSC review and approve changes to the license. Thus, these requirements would remain in the TSs.

The NRC Staff reviewed the Licensee's revised amendment application, and determined that (a) the proposed organization, in which the radiation safety staff reports to the facility Director, is successfully in use at other non-power reactors to streamline facility operation; and (b) the arrangement of giving the Director day-to-day supervision of the radiation safety staff and oversight responsibility to the NSC and RSO, and having the MORS report to the NSC on issues concerning safety and safety policy, allows the Director to have management control over the radiation safety staff while allowing for independent oversight that enhances radiation safety. Although not explicitly stated in the Staff's safety evaluation report (SER), the proposed organization also met the guidance of ANSI/ANS-15.1; and the Staff determined that the review and audit responsibilities of the NSC had been changed to those of ANSI/ANS-15.1. On this basis, the NRC Staff approved the revised amendment application, and the proposed revisions were incorporated in the TSs by Amendment No. 7, issued on July 12, 1988.

Following the issuance of the requested license amendment, the implementation of these new TSs was reviewed on August 29 - September 9, and November 7 - 10, 1988, as documented in Inspection Report 50-160/88-02. The NRC inspectors found that the organization was consistent with that described in the TSs. The NRC letter of November 15, 1988, authorizing a resumption of reactor operations and experiments, further stated that the NSC members were aware of their expanded responsibilities, and the NSC had sufficient depth and breadth of review to ensure adequate third-party oversight.

License Amendment No.8

A further TS amendment was authorized in License Amendment No. 8, issued on December 22, 1988, in response to the Licensee's application of October 3, 1988. This amendment made a minor modification in the organizational structure described in the GTRR TSs, whereby oversight responsibility for the GTRR was transferred from the Vice President for Research and Management to the Vice President for Interdisciplinary Programs. The Licensee stated that the scope of responsibility for the Vice President for Interdisciplinary Programs was narrower than the Vice President for Research and that this should provide greater attention to the GTRR. The NRC Staff determined that the proposed change was acceptable, in that the new Vice President would have the same access to the University President as the prior Vice President, and no important management functions for safe operation of the research reactor were removed.

Q11. Please describe any GTRR license amendments which were issued from 1990 to the present, with regard to the GTRR management and organizational structure, in light of the generic standards described above.

A11. (MMM) Two license amendment applications were submitted by the Licensee and approved by the NRC Staff during the period of 1990 to the present, involving the management and organizational structure of the Licensee (License Amendment Nos. 10 and 11). As the NRC Staff's Project Manager for the GTRR facility during this period, I served as the NRC Staff's principal reviewer of these two license amendments.

License Amendment 10

A change to the GTRR Technical Specifications relating to the Licensee's organizational structure was reviewed and evaluated in License Amendment No. 10, dated June 11, 1991. The amendment deleted the Radiation Safety Officer (RSO) designation for the Chairman of the NSC. This designation was deleted because the NSC Chairman had no actual responsibility for the routine functions of the Office of Radiation Safety, and because most functions of the position of RSO had been assumed by the Manager of the Office of Radiation Safety (MORS) upon the issuance of Amendment No. 7. License Amendment No. 10 also transferred the other TS-defined responsibilities of the RSO to the MORS (*i.e.*, it was established that the MORS was thereafter to have access to the Vice-President, Interdisciplinary Programs, and the President of Georgia Tech, and to

advise the Director of the NNRC on matters of radiation safety which were previously RSO responsibilities under the TS). The NRC Staff's safety evaluation of the proposed amendment noted the independent oversight responsibility of the NSC, the safety responsibilities of MORS, and the overall responsibility of the Director, NNRC, for proper management in regard to safety. It also considered that this type of organization had been used successfully at other research reactors and that the change was consistent with ANSI/ANS-15.1. On the basis of these considerations, the amendment was found acceptable.

License Amendment No. 11

License Amendment No. 11 was issued on September 20, 1995, in response to the Licensee's application dated August 16, 1995. The amendment involved replacing the position of the Vice President for Interdisciplinary Affairs with the position of the Dean of Engineering, who reports to the President of Georgia Tech, so that the Director of the NNRC would now report to the Dean of Engineering in place of the Vice President for Interdisciplinary Affairs. The NRC Staff's safety evaluation determined that the reporting change was consistent with the standards in ANSI/ANS-15.1-1990, and was otherwise acceptable because it had no adverse effect on the reactor's administrative organizational structure and function. On this basis, the NRC Staff approved the license amendment.

Q12. Please describe the current management and organizational structure of the GTRR, and how it meets the generic standards described above.

A12. (MMM) Under the current GTRR organizational structure, the NNRC Director has administrative responsibility for safe operation of the facility, which includes reactor operation, experimental, and radiation safety activities. This responsibility for safety is shared with the NSC and MORS, which provide inherent checks and balances to ensure that safety matters are properly considered. The NSC provides these checks and balances through the NSC members' appointment by and responsibility to the President of Georgia Tech. The MORS provides these checks and balances in that it is the responsibility of the MORS to report safety concerns to both the Director of the NNRC and the NSC. The safety responsibilities of the NNRC Director, NSC and MORS are integral and primary functions of their positions.

The current organizational chart contained in the GTRR TSs shows the Office of the President at the top of the organization. The Office of the Dean of Engineering and the NSC report to the Office of the President.

With respect to the Nuclear Safeguards Committee, the GTRR TSs state:

The Nuclear Safeguards Committee shall be established by the President of the Institute and shall be responsible for maintaining health and safety standards associated with operation of the reactor and its associated facilities The Committee shall be composed of five or more senior technical personnel who collectively provide experience in reactor engineering, reactor operations, chemistry and radiochemistry, instrumentation and control systems,

radiological safety, radiation protection, and mechanical and electrical systems.

The TSs also state that the NSC reviews and approves changes in equipment, systems, tests, experiments, or procedures; reviews reportable occurrences; reviews and approves proposed procedures and experiments; and reviews and approves proposed changes to the TSs and license, excluding organizational structure, which is the responsibility of the President of the Institute. Thus, consistent with the ANS standard, the NSC reviews reportable occurrences and operating abnormalities and violations of the TSs, license, or internal procedures or instructions having safety significance. The NSC also audits reactor operations and associated records, the retraining and requalification program, and corrective action for deficiencies that affect reactor safety.

The organizational independence of the Nuclear Safeguards Committee from the GTRR Director, and the fact that the NSC is appointed by and reports to the President of Georgia Tech, ensures sufficient organizational independence, consistent with the guidance of ANSI/ANS-15.1. Similarly, the fact that the NSC is responsible to exercise the review and audit function, and the fact that it reports to level 1 management, is consistent with the ANS standard.

The organizational chart contained in the GTRR Technical Specifications shows that the NNRC Director is to report to the Dean of Engineering. The TSs require that the Director, NNRC, is to 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 TSs. The GTRR organizational chart also shows that the Manager of Reactor Operations, the Manager of Gamma Radiation Operations, and the Coordinator of Experimental Research are to report to the Office of the NNRC Director in all regards, and that the MORS is to report to the Office of the NNRC Director in matters relating to supervision and administration, but is to report to the NSC with regard to matters related to safety and safety policy. In this regard, Technical Specification 6.1.b states:

The Manager, Office of Radiation Safety, shall advise the Director, Nuclear Research Center in matters pertaining to radiological safety. She/he has access to the Dean of Engineering and/or the President of the Institute as needed.

This is consistent with the ANS standard discussed above, and is not an unusual management and organizational structure.

Q13. Please provide your conclusions regarding the acceptability of the management and organizational structure currently in place at the GTRR.

A13. (AA, MMM) The present GTRR organizational structure is consistent with the guidance of ANSI/ANS-15.1-1990 as previously described, and is generally (although not uniformly) comparable to the organizational structures in place at a number of other research reactors. The GTRR's organizational structure and comparable organizational structures at other facilities have been effectively used for a considerable time, as determined by NRC licensing and inspection activities. Further, the GTRR

management and organizational structure, specified in the TSs, satisfies NRC regulatory requirements and applicable generic standards. Finally, the Licensee's organizational structure provides acceptable checks and balances and sufficient independent oversight to assure the protection of the health and safety of the public and of GTRR employees.

Q14. Does this conclude your testimony?

A14. (AA, MMM) Yes.

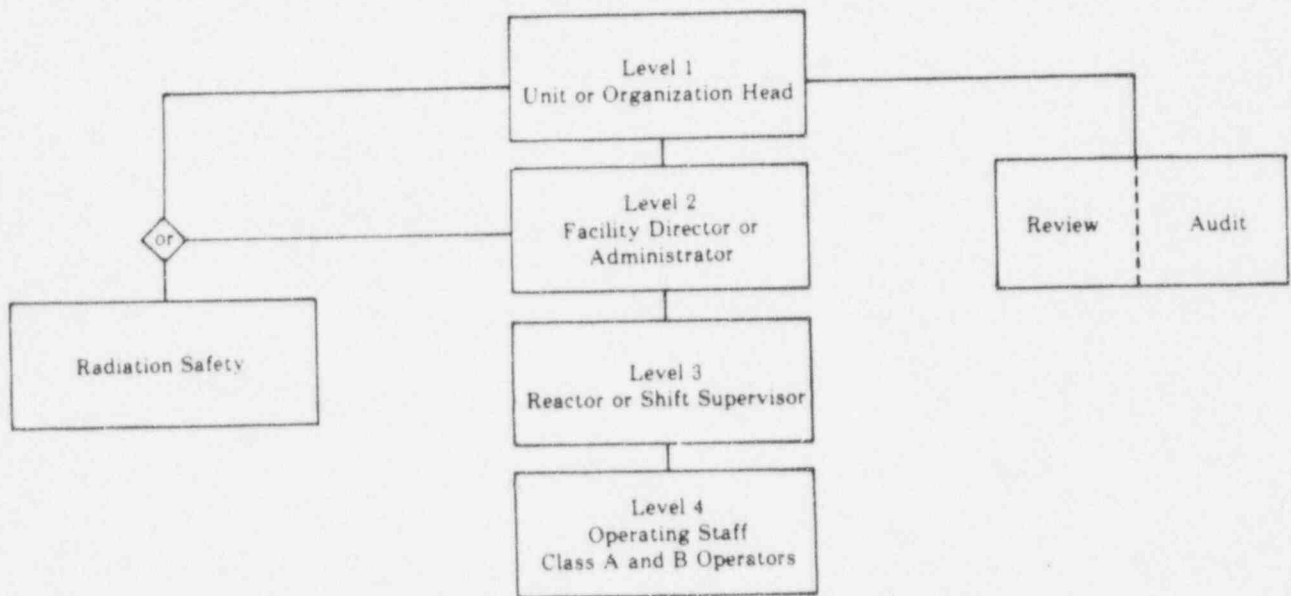


Fig. 1
Organization Chart
Titles are given as examples only.

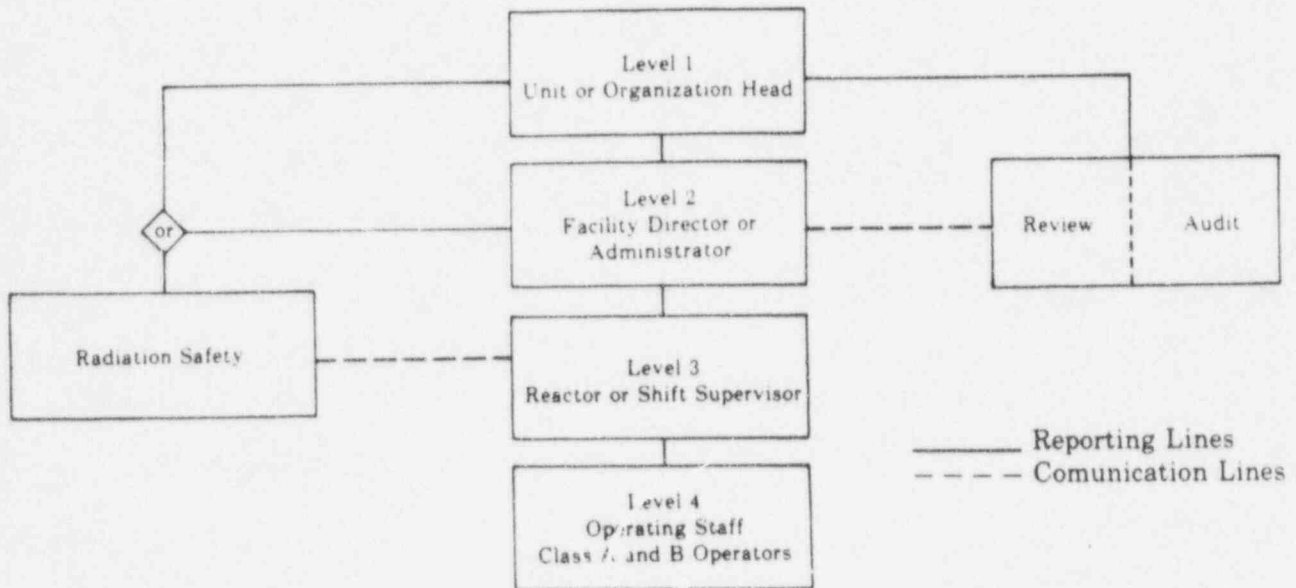


Fig. 1
Organization Chart
Titles are given as examples only.

ALEXANDER ADAMS, JR.

Senior Project Manager
Non-Power Reactors and Decommissioning Project Directorate
Division of Reactor Program Management
Office of Nuclear Reactor Regulation
Nuclear Regulatory Commission

Education:	State University of New York at Buffalo (SUNY-AB) SUNY-AB SUNY-AB	M.B.A./Accounting 1986 Management Science 1983 30 Graduate Credit Hours Engineering and Health Physics B.S./Nuclear Engineering 1977
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Professional
Experience:

1986 to Present - NRC Project Manager (1986-1992) and Senior Project Manager (1992 to present). Responsible for implementation of NRC regulatory program for approximately 20 non-power reactors. Responsible for assigned Department of Defense and Department of Energy projects.

1983-1986 - Reactor Engineer, Research Reactor, SUNY-AB. Provided engineering support for operation of two MW research reactor, supervised research and administrative staff, and acted as facility business manager when required. Trained reactor operators.

1981-1983 - Nuclear Reactor Supervisor, Research Reactor, SUNY-AB. Supervised reactor operators and senior reactor operators in operation of nuclear reactor, implemented experimental programs, responsible for health physics, security, and initial emergency response while on shift.

1979 - Senior Health Physicist, Institute for Resource Management. During two month leave of absence from SUNY-AB. Performed health physics duties during construction activities at Carolina Power and Light Company's H.B. Robinson Plant.

1978-1981 - Senior Reactor Operator, Research Reactor, SUNY-AB. Operated nuclear research reactor, maintained facility and experiments, operated accelerator, participated in major rebuilding of reactor.

A. Adams, Jr.

Page 2

Professional
Experience

(Continued):

1975-1978 - Reactor Operator, Research Reactor, SUNY-AB.
Operated reactor, maintained plant and experiments under shift
supervisor.

Certification:

U.S. Nuclear Regulatory Commission Senior Reactor Operator License
- 1978-1986
U.S. Nuclear Regulatory Commission Reactor Operator License
- 1975-1978

MARVIN M. MENDONCA

Senior Project Manager
Non-Power Reactors and Decommissioning Project Directorate
Division of Project Support
Office of Nuclear Reactor Regulation (NRR)
Nuclear Regulatory Commission (NRC)

Education:	University of California, Berkeley	M . S . / M e c h a n i c a l Engineering, 1972
	University of California, Berkeley	B.S./Mechanical Engineering, 1971
	Modesto Junior College	A.A./Engineering, 1969

Professional
Experience:

1990 to Present - NRC Senior Project Manager for Non-Power Reactors and Decommissioning Project Directorate, NRR. Responsible for implementation of NRC regulatory program for approximately 20 non-power reactors.

1986 to 1990 - NRC Project Section Chief, Division of Reactor Projects and Safety, Region V. Responsible for implementation of NRC inspection program for Diablo Canyon and Trojan Nuclear Power Plants.

1983 to 1986 - NRC Senior Resident Inspector, Region V. Responsible for implementation of NRC inspection program at the Diablo Canyon Nuclear Power Plant during post-construction, pre-operational, startup, and full-power operational phases.

1981 to 1983 - NRC Resident Inspector, Region V. Responsible for inspection activities at the Diablo Canyon and San Onofre Nuclear Power Plants during the pre-operational phase.

1976 to 1981 - NRC Reactor Engineer, Reactor Systems Branch, NRR. Responsible for safety evaluation of reactor systems analyses, events and conditions at Pressurized and Boiling Water Reactors.

1972 to 1976 - Senior Engineer, General Atomics. Responsible for several safety analyses of core heatup, fission product release, and core testing for High Temperature Gas-Cooled Reactor designs.

Certification: Professional Mechanical Engineer Certified by the State of California.

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

'96 MAY -8 P3:14

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH

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 the "NRC STAFF TESTIMONY (PANEL A) OF DOUGLAS M. COLLINS, PAUL E. FREDERICKSON, ALBERT F. GIBSON, AND GEORGE B. KUZU;" "NRC STAFF (PANEL B) TESTIMONY OF CRAIG H. BASSETT, EDWARD J. McALPINE AND MARVIN M. MENDONCA;" and "NRC STAFF (PANEL C) TESTIMONY OF ALEXANDER ADAMS, JR. AND MARVIN M. MENDONCA CONCERNING GANE 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 a single asterisk through deposit in the Nuclear Regulatory Commission's internal mail system, or as indicated by a double asterisk via express mail on this 7th day of May 1996.

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U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

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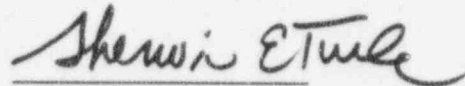
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