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Title: In the matter of
Georgia Institute of Technology
License Renewal

Docket Number: 50-160-REN
ASLBP No. 95-704-01-REN

Location: Atlanta, Georgia

Date: June 25, 1996

Work Order No.: NRC-743

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TR01

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10 ALSO PRESENT: MARVIN MENDONCA, Project Manager

11

12 On behalf of the Intervenor:

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PROCEEDINGS

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CHAIRMAN BECHHOEFER: Good morning, ladies and gentlemen.

Before we start this morning, are there any preliminary matters that need to be taken care of?

MR. JOHNSON: Are there any housekeeping matters?

MS. CARROLL: Believe it or not, we don't have any questions.

CHAIRMAN BECHHOEFER: Okay, with that, we'll begin with Mr. Turk.

MR. TURK: Thank you, Your Honor.

Your Honor, the staff calls to the stand the members of its panel B: Mr. Marvin Mendonca, Edward McAlpine and Craig Bassett, and ask that they be sworn. Whereupon,

MARVIN MENDONCA

EDWARD MCALPINE

CRAIG BASSETT

appeared as witnesses herein, and having been first duly sworn, were examined and testified as follows:

DIRECT EXAMINATION

BY MR. TURK:

Q Good morning, gentlemen. Gentlemen, I would ask you first whether you have prepared written testimony

1 for filing in this proceeding.

2 A (Witness Mendonca) Yes.

3 A (Witness McAlpine) Yes.

4 A (Witness Bassett) Yes.

5 Q And do you have a copy of that document in
6 front of you?

7 A (Witness Mendonca) Yes.

8 A (Witness McAlpine) Yes.

9 A (Witness Bassett) Yes.

10 Q Is that document entitled "NRC Staff Panel B
11 Testimony of Craig H. Bassett, Edward J. McAlpine and
12 Marvin M. Mendonca Concerning GANE Contention 9,
13 Management?"

14 A (Witness Mendonca) Yes.

15 A (Witness McAlpine) It is.

16 A (Witness Mendonca) Yes.

17 Q And that document bears a date in the right
18 hand corner of 5/7/96?

19 A (Witness Mendonca) Yes.

20 A (Witness McAlpine) Yes.

21 A (Witness Bassett) Yes.

22 Q And is this your prefiled testimony for filing
23 in this proceeding?

24 A (Witness Mendonca) Yes.

25 A (Witness McAlpine) Yes.

1 A (Witness Bassett) Yes.

2 Q Also, have you prepared a statement of
3 professional qualifications?

4 A (Witness Mendonca) Yes.

5 A (Witness McAlpine) Yes.

6 A (Witness Bassett) Yes.

7 Q And are your statements of professional
8 qualifications attached to your testimony?

9 A (Witness Mendonca) Yes.

10 A (Witness McAlpine) Yes.

11 A (Witness Bassett) Yes.

12 Q At this time, do you have any corrections or
13 revisions, deletions or modifications of your testimony?

14 A (Witness Mendonca) Yes.

15 A (Witness McAlpine) Yes.

16 A (Witness Bassett) Yes.

17 Q Are those changes contained in what is entitled
18 "Errata to NRC Staff Panel B Testimony?"

19 A (Witness Mendonca) Yes.

20 A (Witness McAlpine) Yes.

21 A (Witness Bassett) Yes.

22 Q And that bears a date in the right hand corner
23 of June 5, 1996?

24 A (Witness Mendonca) Yes.

25 A (Witness McAlpine) Yes.

1 A (Witness Bassett) Yes.

2 Q And is it your wish that the changes which are
3 noted on those errata sheet be made to your testimony?

4 A (Witness Mendonca) Yes.

5 A (Witness McAlpine) Yes.

6 A (Witness Bassett) Yes.

7 MR. TURK: Your Honor, we've passed out to the
8 parties and the Board and to the court reporter copies of
9 the prefiled testimony as well as the errata sheets, so you
10 should have those in front of you. If anyone needs extra
11 copies of those, I could provide them at this time as well.

12 BY MR. TURK:

13 Q Gentlemen, with the corrections and revisions
14 to your testimony as marked on your errata sheets, is your
15 testimony and your statements of professional
16 qualifications correct and true to the best of your
17 knowledge and belief?

18 A (Witness Mendonca) Yes.

19 A (Witness McAlpine) Yes.

20 A (Witness Bassett) Yes.

21 Q And do you adopt your written testimony as now
22 corrected as your testimony in this proceeding?

23 A (Witness Mendonca) Yes.

24 A (Witness McAlpine) Yes.

25 A (Witness Bassett) Yes.

1 MR. TURK: Your Honor, with that, the staff's
2 direct examination has completed and we would ask that the
3 testimony of staff panel B along with the errata sheets,
4 which these gentlemen have indicated contain corrections to
5 their testimony, be bound into the record as if read and
6 admitted into evidence at this time.

7 MR. EVANS: No objection.

8 MR. JOHNSON: No objection.

9 CHAIRMAN BECHHOEFER: Without objection, the
10 testimony of panel B with corrections will be entered into
11 the record and bound in the record as if read.

12 MR. TURK: Thank you, Your Honor. And at this
13 time, the panel is available for cross examination and
14 questions by the Board.

15 MR. JOHNSON: I suppose we go first.

16 CROSS EXAMINATION

17 BY MR. JOHNSON:

18 Q As a preliminary note, since most of your
19 testimony is based on the inspection reports of the period
20 that's specified in your testimony, I'm going to be
21 referring to those a good bit. Hopefully by doing so, I'm
22 not going to be going outside the scope of cross, even
23 though I may not be specifically referring to things within
24 the testimony. Hopefully that'll be a way for everybody to
25 be comfortable with it.

5/7/96

UNITED STATES OF AMERICA
NUCLEAR REGULATORY 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 (PANEL B) TESTIMONY OF
CRAIG H. BASSETT, EDWARD J. McALPINE
AND MARVIN M. MENDONCA, CONCERNING
GANE CONTENTION 9 (MANAGEMENT)

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

A1(a). (CHB) My name is Craig H. Bassett. I am employed by the U.S. Nuclear Regulatory Commission as a Senior Radiation Specialist in the Fuel Facilities Branch, Division of Nuclear Materials Safety, NRC Region II. A statement of my professional qualifications is attached hereto.

A1(b). (EJM) My name is Edward J. McAlpine. I am employed by the U.S. Nuclear Regulatory Commission as Chief of the Fuel Facilities Branch, Nuclear Materials Safety Division, NRC Region II. A statement of my professional qualifications is attached hereto.

A1(c). (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. A statement of my professional qualifications is attached hereto.

Q2. Please describe your current responsibilities.

A2(a). (CHB) I currently serve as an NRC radiation protection inspector and project inspector for research reactors and fuel facilities in NRC Region II.

A2(b). (EJM) As Chief of the Fuel Facilities Branch, I am responsible for supervising the implementation of the inspection program for research reactors, fuel facilities, and independent spent fuel storage installations in NRC Region II.

A2(c). (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"). As part of my duties, I am responsible for conducting and coordinating the Office of Nuclear Reactor Regulation's review of reactor licensing, inspection and enforcement issues in connection with the NRC licenses held by these 18 research reactor facilities, located in various NRC Regions. Additionally, I am responsible for coordinating the NRC Staff's actions concerning two deferred nuclear power plants.

Q3. Please explain what your duties have been in connection with the NRC Staff's inspection and oversight of the management and operation of the Georgia Tech Research Reactor (GTRR).

A3(a). (CHB) I was assigned to be the Project Inspector for the GTRR in 1989, and have served in this position until the present. In this position, I have served as the NRC Staff's principal inspector of the GTRR facility, and have been responsible for coordinating NRC Region II's inspection and enforcement efforts concerning the GTRR facility. As part of my duties, I am currently responsible for inspecting the GTRR's radiation protection program and tracking the NRC Staff's inspection and enforcement efforts to determine if the Licensee is in compliance with NRC regulations and license requirements.

A3(b). (EJM) I became familiar with inspection and enforcement issues related to GTRR initially through my responsibilities as Chief of the Radiation Safety Projects Section, in which capacity I served from August 8, 1989, until October 15, 1995, when I assumed the position of Chief, Fuel Facilities Branch. In both of these positions, I have been responsible for management of the inspection program for research reactors and fuel facilities. As part of my duties, I have been responsible for assuring that licensed facilities maintain safety programs which are adequate to protect the public and workers' health and safety, recommending enforcement action when violations are identified, and assuring that prompt and effective corrective action is taken by licensees to assure the continued protection of the public health and safety.

A3(c). (MMM) I have been an NRC project manager for research reactors since June 1990. From June 1990 to December 1991, I was the backup project manager for GTRR and during about three months of this period I was acting project manager for GTRR. I have been the project manager for the GTRR since December 1991. In this

position, I have become familiar with, and have been responsible for conducting and coordinating the NRC Staff's review of matters related to the application submitted by the Georgia Institute of Technology ("Georgia Tech" or "the Licensee") to renew its license to operate the GTRR. Additionally, my duties as project manager include the review of all GTRR applications for NRC license and Technical Specification (TS) amendments, and all inspection reports and enforcement actions concerning the GTRR. I have also participated in certain inspection activities, including management meetings, related to the GTRR; and I have administered an examination of GTRR's candidates for NRC reactor operator licenses. As part of my duties, I also reviewed and participated in the NRR review of two relatively recent license amendments (Amendments 10 and 11) regarding the GTRR's management and organization.

Q4. What is the purpose of this testimony?

A4. (All) The purpose of this testimony is to describe the Licensee's NRC inspection and enforcement history following the NRC Staff's authorization for restart of the GTRR facility in November 1988, and to provide the NRC Staff's views concerning the adequacy of Georgia Tech's management of the facility since that time, based upon this inspection and enforcement history.

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

A5. (All) Yes. As we understand the contention, GANE asserts that the Licensee's management is inadequate to provide reasonable assurance of the continued protection of the public health and safety, for the following reasons, set forth in GANE Contention 9:

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 the Licensee's NRC enforcement history, among other materials.

Q6. Do you agree with GANE's view that the Licensee's management of the GTRR facility is inadequate to provide reasonable assurance of the continued protection of the public health and safety?

A6. (All) No.

Q7. Please explain the bases for your conclusion in this regard.

A7. (All) This conclusion is based upon our knowledge of (a) the NRC Staff's inspection and enforcement efforts in the period following the NRC's November 1988 authorization for the Licensee to restart operation of the GTRR, (b) our knowledge of the actions taken by the Licensee to comply with the requirements imposed by the NRC in connection with the January and March 1988 enforcement Orders to stop experiments and cease operations and the NRC's November 1988 authorization to restart, and (c) our knowledge of pertinent regulatory actions and other matters (including licensing actions in part described in the NRC Staff's Panel C testimony in this proceeding) related to the Licensee's management of its facility in the period following restart.

Q8. Are you familiar with the events which led to the NRC's issuance of two Orders, in 1988, requiring a cessation of experiments and a shutdown of the GTRR, and the events and facts which led to the NRC's November 1988 authorization for restart?

A8. (All) Yes.

Q9. Please provide a summary of your views concerning the adequacy of the Licensee's management of the GTRR, based upon your knowledge of the NRC Staff's inspection and licensing efforts during this period.

A9. (All) In the period following the November 1988 authorization of restart, we have found that the cooperation between and functioning of the radiation

safety and operations groups has improved considerably from their descriptions by other NRC personnel who were involved with GTRR in 1988. The functioning of the radiation safety and operations organizations in this regard has been acceptable. Further, based upon our inspection and review of the Licensee's management and organizational structure, we have concluded that the Licensee's management of the GTRR since November 1988 has complied with NRC regulatory requirements (*i.e.*, regulations, license requirements and technical specifications), and accepted standards for research reactor licensees (described in the NRC Staff's Panel C testimony in this proceeding). Based on our inspections of the facility and our reviews of these matters, we have concluded that the corrective actions taken and other improvements made by the Licensee acceptably resolved the Licensee's previous management and organizational problems. Accordingly, we have concluded that the present organization and management of the GTRR provides reasonable assurance that the public health and safety, as well as the health and safety of GTRR employees, will be protected in the event that license renewal is authorized.

Q10. Please explain the NRC Staff's inspection program for non-power reactors, including the GTRR, pursuant to which NRC inspections of the GTRR were conducted.

A10. (All) The NRC inspection program for non-power reactors is conducted in accordance with the guidance of NRC Inspection Manual Chapter 2545, Research and Test Reactor Inspection Program - Operations Phase, and the inspection procedures

outlined therein. The inspection frequency is based upon the non-power reactor's authorized power level and its operational status. Class I reactors are those licensed to operate at a power level of 2 megawatts (MW) or greater; Class II reactors are those licensed to operate at a power level less than 2 MW. The GTRR is authorized to operate at a power level up to 5 MW, and is therefore a Class I facility.

In NRC Region II, typically four routine inspections are performed each year at Class I non-power reactor facilities; in contrast, only two inspections are typically performed each year at a Class II facility. The number of inspections at a particular facility might vary (*i.e.*, there be more inspections than the typical number per year) because of unplanned events occurring at the facility. If the NRC determines that an event or a series of events demands immediate or increased attention, additional inspections (*e.g.*, a reactive inspection) would be performed.

The routine inspections conducted at Class I facilities, including the inspections conducted at the GTRR, are usually performed by four different inspectors, based upon their expertise in particular areas. Some of the subjects or areas of emphasis reviewed during a routine inspection at a facility, using the inspection procedures (Ips) mentioned in Manual Chapter 2545, include:

1. Reactor Operations

IP 39745 - Class I Non-Power Reactors Organization and Operations and Maintenance Activities

IP 40745 - Class I Non-Power Reactors Review and Audit and Design Change Functions

- IP 41745 - Class I Non-Power Reactor Operator Licenses, Requalification, and Medical Activities
- IP 42745 - Class I Non-Power Reactor Procedures
- IP 60745 - Class I Non-Power Reactor Fuel Movement
- IP 61745 - Class I Non-Power Reactor Surveillance
- IP 69745 - Class I Non-Power Reactor Experiments

2. Safeguards and Security

- IP 81401 - Plans, Procedures, and Reviews
- IP 81402 - Reports of Safeguards Events
- IP 81403 - Receipt of New Fuel at Reactor Facilities
- IP 81421 - Fixed Site Physical Protection of Special Nuclear Material of Moderate Strategic Significance
- IP 85102 - Material Control and Accounting

3. Emergency Preparedness

- IP 82745 - Class I Non-Power Reactor Emergency Plan

4. Health Physics

- IP 80745 - Class I Non-Power Reactor Effluent and Environmental Monitoring
- IP 83743 - Class I Non-Power Reactors Radiation Protection
- IP 86740 - Transportation Activities

Q11. Please provide a summary of the NRC Staff's inspection efforts in the period following the November 1988 authorization for restart, and your conclusions concerning the adequacy of the Licensee's management and organization based on the NRC Staff's inspection and enforcement efforts in this period.

A11. (All) In the period following the November 1988 authorization of restart, NRC inspections at the GTRR reviewed numerous aspects of the Licensee's operation and management of the facility, in accordance with established NRC inspection procedures as described above. The areas inspected have included the organization and the review and audit functions of the Licensee (including the Nuclear Safeguards Committee), as well as other functional areas established under the NRC's inspection program such as operational and maintenance activities, design change functions, operator licenses, requalification and medical activities, procedures, fuel movement, surveillance, experiments, effluent and environmental monitoring, emergency preparedness, radiation protection, and safeguards and security. The specific inspection findings for the GTRR are documented in the NRC inspection reports issued and associated enforcement actions taken in the period following the NRC's decision to allow a restart of the GTRR.

From January 1989 through April 1996, the NRC Staff performed a total of 31 inspections at the GTRR facility. Since January 1, 1989, 18 inspections found no violations; in 13 inspections, however, a total of 17 cited violations (Severity Levels IV and V) and seven non-cited violations (NCVs) were found and documented. The Inspection Reports which documented violations are discussed below. The significance of these violations and NCVs, considered individually, is discussed below in response to

Question 13; the collective significance of these violations and NCVs is discussed below in response to Question 15.

Q12. Please explain what is meant by the terms "Severity Level" and "non-cited violation" ("NCV").

A12. (All) Until June 30, 1995, NRC Enforcement Policy categorized violations in Severity Levels I through V. After June 30, 1995, NRC Enforcement Policy categorized violations in Severity Levels I through IV (*i.e.*, Severity Level V violations are not longer routinely issued by the NRC). The January 1995 revision of 10 C.F.R. Part 2, Appendix C, "General Statement of Policy and Procedure for NRC Enforcement Actions," Section IV describes "Severity of Violations" as follows:

Severity Level I and II violations are of very significant regulatory concern. In general, violations that are included in these severity categories involve actual or high potential impact on the public. Severity Level III violations are cause for significant regulatory concern. Severity Level IV violations are less serious but are of more than minor concern; *i.e.*, if left uncorrected, they could lead to a more serious concern. Severity Level V violations are of minor safety or environmental concern.

With respect to non-cited violations (NCVs), the NRC's current Enforcement Policy affords discretion for the NRC to treat as an NCV a violation that has not been formalized in a Notice of Violation. An explanation of the most common type of NCV (a self-identified violation) under the current Enforcement Policy is provided as follows:

1. Licensee-Identified Severity Level IV Violations.

The NRC, with the approval of the Regional Administrator or his designee, may refrain from issuing a Notice of Violation for a Severity Level IV violation that is documented in an inspection report . . . and described therein as a Non-Cited Violation (NCV) provided that the inspection report includes a brief description of the corrective action and that the violation meets all of the following criteria:

(a) It was identified by the licensee, including identification through an event;

(b) It was not a violation that could reasonably be expected to have been prevented by the licensee's corrective action for a previous violation or a previous licensee finding that occurred within the past 2 years of the inspection at issue, or the period within the last two inspections, whichever is longer;

(c) It was or will be corrected within a reasonable time, by specific corrective action committed to by the licensee by the end of the inspection, including immediate corrective action and comprehensive corrective action to prevent recurrence;

(d) It was not a willful violation[,] or if it was a willful violation;

(i) The information concerning the violation, if not required to be reported, was promptly provided to appropriate NRC personnel, such as a resident inspector or regional section or branch chief;

(ii) The violation involved the acts of a low-level individual (and not a licensee official as defined in Section IV.C);

(iii) The violation appears to be the isolated action of the employee without management involvement and the violation was not caused by lack of management oversight as evidenced by either a

history of isolated willful violations or a lack of adequate audits or supervision of employees; and

(iv) Significant remedial action commensurate with the circumstances was taken by the licensee such that it demonstrated the seriousness of the violation to other employees and contractors, thereby creating a deterrent effect within the licensee's organization. Although removal of the employee from licensed activities is not necessarily required, substantial disciplinary action is expected.

NUREG-1600, "General Statement of Policy and Procedures for NRC Enforcement Actions," 60 Fed. Reg. 34380, 34393 (June 30, 1995). It should be noted that prior to June 30, 1995, NCVs could also include Severity Level V Violations. The Enforcement Policy in effect at that time stated:

The NRC may refrain from issuing a Notice of Violation for a Severity Level V violation that is documented in an inspection report (or official field notes for some material cases) provided that the inspection report includes a brief description of the corrective action and that the violation meets all of the following criteria:

(a) It was not a violation that could reasonably be expected to have been prevented by the licensee's corrective action for a previous violation or a previous licensee finding that occurred within the past two years of the inspection at issue, or the period within the last two inspections, whichever is longer;

(b) It was or will be corrected within a reasonable time, by specific corrective action committed to by the licensee by the end of the inspection, including immediate corrective action and comprehensive corrective action to prevent recurrence;

(c) It was not a willful violation.

Q13. Please provide a summary of the violations and NCVs identified in the NRC Staff's inspection reports during the period from 1989 to the present.

A13. (All) Violations and NCVs issued for the GTRR from 1989 to the present are listed below, along with a description of the actions taken by the Licensee to correct the problem and the NRC Staff's inspections that reviewed the Licensee's actions and closed out the issues:

1. Inspection Report 89-02

An operations inspection was conducted during July 31-August 3 and August 9, 1989, and was documented in Inspection Report (IR) 89-02. Two violations (both Severity Level IV) were identified:

- a. failure to perform leak-rate testing in accordance with commitments, and
- b. inadequate procedure to assure that any shim blade not fully inserted was withdrawn sufficiently to cause a negative trip when released into the core (a previous Unresolved Issue was upgraded to a violation).

The Licensee corrected the first issue by revising Procedure 4000, Containment Building Pressure Test, and developing Procedure 4002, Reference Vessel Pressure Test. The tests completed in April 1990 were reviewed by an NRC inspector during the week of June 26, 1990, and were found to be acceptable as documented in IR 90-03. The Licensee addressed the second issue by developing and implementing Procedure 7247, Determination of Minimum Shim-Safety Blade Angle to Generate a Negative Rate Trip. An NRC inspector reviewed this procedure and found that the measurements required by the procedure were made satisfactorily. However, the Licensee had failed to develop a

procedure to enforce the Technical Specification requirement of sufficient shim blade withdrawal prior to criticality. The Licensee subsequently corrected this matter by a revision to GTRR Procedure 2002, Reactor Operation, to include a requirement that each shim-safety blade be positioned at or above the minimum angle to generate a negative period trip should it fall freely into the core. This was documented in IR 92-01.

2. Inspection Report 89-05

A security inspection was conducted during September 14-15, 18-19 and 27, 1989, as documented in IR 89-05. The following six violations (all Severity Level IV) were identified:

- a. failure to maintain assessment equipment in operable condition and failure to properly position assessment equipment (two examples),
- b. failure to secure a controlled access barrier,
- c. failure to maintain the alarm system in operable condition,
- d. failure to change keys as committed,
- e. failure to control keys as committed, and
- f. failure to establish and maintain a safeguards event log.

The Licensee provided NRC Region II with a letter dated September 28, 1989, which identified actions the Licensee was voluntarily taking to enhance its security program and to correct noted violations. The Licensee committed to take the following actions:

- a. replace the assessment equipment or parts thereof that were not functioning properly,

- b. lock out the means of possible entrance to the containment building from the outside,
- c. perform an in-depth audit of the security plan,
- d. audit all keys and cards issued to Neely Nuclear Research Center (NNRC) personnel,
- e. develop a procedure for key control,
- f. develop a procedure for routine testing of the security system and emergency power source,
- g. revise the security plan by March 1, 1990,
- h. establish a safeguards event log, and
- i. assign responsibility for the security system to the Manager of Reactor Operations.

In addition, on November 16, 1989, the Licensee responded to the Notice of Violation (NOV) and outlined actions that had been or would be taken to correct the problems identified. The Licensee installed new equipment to address the first violation cited. The controlled access barrier was locked in place to address the second violation. In response to the violations concerning key changes and control, a new procedure was written to provide guidance and the requirements for changing and controlling the keys. The Licensee began keeping a safeguards events log on September 28, 1989. However, the Licensee denied the violations concerning failure to maintain the alarm system in operable condition and failure to control keys as committed. In a letter issued January 8, 1990, the NRC Staff concluded that the violations occurred as stated.

On January 22, 1990, the facility Project Inspector (Craig Bassett), the Section Chief for the Radiation Safety Projects Section (Edward McAlpine), and the Safeguards

Inspector who performed the September 1989, safeguards inspection met with GTRR management. The issues noted in the inspection report were again discussed and clarified and NRC personnel then toured the facility and observed the changes that the Licensee had made to the security system. The Licensee's corrective actions were found acceptable as documented in IR 91-01.

3. Inspection Report 90-02

A health physics (HP) inspection was performed during June 12-14, 1990, and was documented in IR 90-02. One violation (Severity Level IV) and one non-cited violation were identified:

- a. failure to maintain a high radiation area locked as required in 10 C.F.R. 20.203(c)(2), and
- b. failure to perform a personal survey at the exit to a controlled area. (This was the non-cited violation.)

The Licensee corrected the first issue identified above by revising Procedure 9310, Posting of Radiological Control Areas and Materials, to clarify the requirement for positive control over a high radiation area (HRA). The incident was verbally reviewed by the Manager of the Office of Radiation Safety (MORS) with GTRR staff members. During a subsequent inspection, the inspector discussed HRA control with selected members of the Licensee's staff, who demonstrated sufficient knowledge of the definition of a HRA and the measures required to control access to the area. This was documented in IR 91-02.

In order to correct the personal survey issue, the Licensee counselled the individual involved (a custodial worker) and gave him training on what he should do

when exiting a controlled area. The individual was also instructed to have items surveyed by health physics technicians if the items need to be removed from the controlled area. The area where the individual had been working was also surveyed and no contamination was found.

The NRC inspectors reviewed the surveys of the area during the prior six months and noted no contamination or spread of contamination which would indicate that personnel had failed to perform personal surveys. The inspectors also reviewed the training that this individual had in the past and determined that he had received training in 1976. The inspectors noted that no formal retraining program had been implemented by the Licensee at that time. The Licensee has since initiated a program to provide retraining for personnel who work with radioactive material at the research reactor facility and elsewhere on campus. In approximately January 1996, the Licensee began issuing newsletters which contain information relevant to work involving radioactive material being done around campus and other matters affecting campus personnel, including industrial safety and security.

4. Inspection Report 91-04

An emergency planning (EP) inspection was conducted during September 17-19, 1991, and was documented in IR 91-04. Two non-cited violations were noted during this inspection:

- a. Inadequate procedure for implementing the Emergency Plan notification requirements, and
- b. Failure to perform a biennial review of the Emergency Plan as required.

In response to the inadequate procedure issue, it was noted that the Licensee had revised the applicable procedure, Procedure 6100, Emergency Notification, in the past. However, because of the inadequacy noted during this inspection, the procedure was to be revised again and an Inspector Follow-up Item (IFI) was established by the NRC Staff to track the corrective action to be taken by the Licensee. The revised procedure was reviewed by the NRC Staff in IR 92-04 (see Item No. 5 below) and the adequacy of the corrective action was ultimately documented in IR 93-03. The corrective action taken was to standardize all notification times to one hour for all notifications.

Confusion concerning the second item, the biennial review, was resolved by the NRC Staff's clarification of the requirement, *i.e.*, the review cycle did not start on the date a Plan revision approval was received from the NRC but, rather, the review was required two years after the previous review had been completed. No further problems have been noted in this area during subsequent inspections.

5. Inspection Report 92-04

An EP inspection was conducted during November 9-10, 1992, and was documented in IR 92-04. One violation (Severity Level V) was noted during this inspection:

failure to have an adequate procedure for implementing certain EP notification requirements (a repeat of the non-cited violation noted in IR 91-04).

In order to correct the issue that had again been noted, the Licensee revised GTRR Procedure 6100. The revision standardized the notification times for the various

local, state, and federal agencies to one hour. This corrective action was verified to be complete as documented in IR 93-03.

6. Inspection Report 93-02

A combined operations and HP inspection was performed during September 23-24 and 27-30, 1993, and was documented in IR 93-02. Three violations (all Severity Level IV) were cited as a result of this inspection:

- a. failure of the Nuclear Safeguards Committee (NSC) to conduct the biennial audit of the licensed operator requalification program as required by Technical Specifications (the Manager of the Office of Radiation Safety (MORS) performed the audit; he was not a member of the NSC),
- b. failure to follow procedures for conducting neutron surveys, for completing certain twice weekly contamination control surveys, and for completing survey forms required for shipping radioactive material, and
- c. failure to comply with 49 C.F.R. Part 172 requirements concerning the description of radioactive material being shipped and indicating a 24-hour emergency response telephone number on shipping documents.

In response to the biennial audit issue, the Licensee denied the violation, indicating that the NSC was empowered to seek technical help from anyone regardless of membership in the committee. However, the Licensee also indicated that the NSC would perform the audit in the future. The NRC Staff rejected the Licensee's denial of the violation but accepted the Licensee's corrective action to have the NSC perform the audits henceforth. This resolution was verified by the NRC Staff and closed out as acceptable in IR 94-03.

With respect to the issue of surveys and survey forms, the Licensee added the neutron survey to its internal "work order" system which is used to schedule the required surveys and other routine surveillance items. Although the Licensee denied the twice weekly survey portion of the violation, it committed to perform the twice weekly contamination surveys until revised guidance, if needed, could be provided in GTRR Procedure 9250, Facility Contamination Surveys. (The Licensee's denial was not accepted by the NRC Staff.) Procedure 9250 was also revised to provide guidance for performing surveys of vehicles used to ship radioactive materials.

To address the issue of the description of radioactive materials and the 24-hour emergency response telephone number on shipping papers, the Licensee committed to list the chemical form and include the telephone number of the Georgia Tech Police on the shipping papers. Although these two issues have not yet been closed, the shipping papers for the most recent shipment of irradiated fuel were reviewed and determined to be acceptable.

7. Inspection Report 93-03

An EP inspection was conducted during November 2-5, 1993, and was documented in IR 93-03. One non-cited violation was noted:

failure to perform periodic testing of the criticality alarm system in accordance with procedure. (The required monthly tests of the system were not performed during May, June, and July, 1993.)

As a corrective action to prevent recurrence of missed surveillances, the Licensee modified its "work order" system to include a review of the status of work orders by the

Manager of the Office of Radiation Safety (previously, administrative personnel had been assigned to review the status work orders). In response to a separate matter, the performance of periodic testing of the criticality alarm system was reviewed during IR 96-01. No problems were noted and the periodic testing was being performed as required.

8. Inspection Report 94-01

A reactive inspection (*i.e.*, an unplanned inspection conducted in response to events or issues) was conducted during March 9-10, 1994, to follow up on an incident involving the failure of a Senior Reactor Operator (SRO) to follow procedures that resulted in two disabled reactor scram functions. This inspection was documented in IR 94-01. One NCV with two examples was identified:

- a. failure to complete the actions required by the checklist for startup of the reactor on February 15, 1994 (a fuse was not replaced after it had been removed during a training session), and
- b. failure to complete the actions required by the checklist during shutdown of the reactor on February 11, 1994 (three electrical jumpers had not been removed).

These incidents were classified as NCVs because the disabled scram functions were not required under the Technical Specifications for safe operation of the reactor, since credit is not taken for them in accident mitigation in the Safety Analysis Report, and they generally provide equipment protective functions.

Following the incident, the Licensee took corrective action which included reviewing the incident, interviewing those involved, suspending the responsible SRO's

reactor operating duties while the incident was reviewed, and establishing a panel to further investigate the incident and the SRO's operating history to recommend what actions should be taken, if any. (The SRO was the same individual who was involved in the 1987 cadmium-115 contamination event.) The Licensee's panel evaluated the technical performance of the SRO with respect to the incident of February 15, 1994, and also examined the SRO's historical performance. The Licensee's panel further determined that, because of the SRO's lack of diligence to safety and poor past performance, the suspension of the SRO should remain in effect until there was an obvious change in attitude and a commitment to follow procedures. The SRO subsequently terminated employment at the facility in June 1994.

9. Inspection Report 94-02

An HP inspection was conducted during August 17-19, 22 and 25, 1994, and was documented in IR 94-02. One violation (Severity Level IV) was cited:

failure of the licensee to make a proper evaluation of the extent of the radiation present following the annual neutron radiation survey performed August 11, 1994, which was required by procedure.

The Licensee corrected the error after it was detected by the inspector and discussed with GTRR staff. A training session was held by Licensee management with GTRR staff on document review. The GTRR form used to document surveys was changed to include the formula for converting from counts per minute to millirem per hour so that no further confusion would occur. The NRC Staff has verified that these

corrective actions have been taken; the documentation of this fact has not yet been completed by the Staff.

10. Inspection Report 94-04

An EP inspection was performed during October 19-21, 1994, and was documented in IR 94-04. One non-cited violation was noted:

failure to submit emergency procedure changes to the NRC in accordance with Section 10.4 of the Emergency Plan.

In response to this issue, the Licensee added a notice to the master file copy of all GTRR series 6000 procedures (emergency procedures) directing administrative personnel to distribute copies of the procedures to the NRC, Georgia Department of Natural Resources (GDNR), Georgia Emergency Management Agency (GEMA), Atlanta/Fulton County Emergency Management Agency (A/FEMA), and the facility emergency organization including the Georgia Tech Police, in accordance with the distribution list, when revisions are made. The Licensee also confirmed that future NRC distributions would be made in accordance with 10 C.F.R. 50.4 and provided current copies of the GTRR series 6000 procedures to the inspector for use by NRC Region II. The Licensee also reviewed and revised the distribution list to ensure that it included current copy holders and the distributions that were required to be sent to each.

11. Inspection Report 94-05

An operations inspection was conducted during December 12-14, 1994, and was documented in IR 94-05. One non-cited violation was noted during this inspection:

failure to replace the charcoal cartridges every two weeks as required by Technical Specification 6.4.b(6).

The Licensee indicated that this issue resulted from a problem with the computer software and "work order" tracking system used to generate work orders to indicate when required surveys, analyses, and surveillances are due. The tracking system was based on a 30 day cycle. The Licensee stated that the software would be changed to allow work orders for this cartridge change out and analysis to be generated on a bi-weekly basis.

12. Inspection Report 95-01

An HP inspection was performed during February 22-24, 27, March 20-24 and 27, 1995. In addition, teleconferences between NRC and Licensee management and staff were held on April 25 and 26, 1995. The inspection results were documented in IR 95-01. Two violations (one Severity Level IV and one Severity Level V) were noted:

- a. reporting failures, by: (1) omission of some of the required data and providing inaccurate data in annual reports concerning liquid and gaseous radioactive effluents to the NRC for the years 1983, 1986, and 1988 through 1993, and (2) providing inaccurate information to the NRC in the 1994 Safety Analysis Report concerning continuous, automatic measurement and recording of meteorological data, and
- b. failure to have a Nuclear Safeguards Committee (NSC) approved procedure to calibrate and operate the alpha/beta proportional counter.

In response to the issue of omitted and inaccurate data, the Licensee created a computer data base for liquid waste discharge that included all the historical data from 1983 forward. The omitted and inaccurate data were corrected in the Licensee's response

to the Notice of Violation. The data base included software that calculates parameters required to be reported in the annual reports. A computer data base for gaseous releases was also established. With regard to the inaccurate information in the Safety Analysis Report (SAR) concerning recording of meteorological data, the Licensee sent a correction to the SAR by letter dated August 16, 1995, which deleted any reference to recording meteorological data. (This information was not required to be submitted in the SAR, since the GTRR meteorological tower and instrumentation are not required by NRC regulations or by the GTRR Technical Specifications.)

With respect to the failure to have an NSC approved procedure, the Licensee held a meeting with the GTRR staff to review the requirement and emphasize the need to have all procedures approved by the NSC. A new procedure was subsequently prepared by the Licensee and approved by the NSC.

The verification of these corrective actions has not yet been completed and documented by the NRC Staff.

13. Inspection Report 95-02

A security inspection was conducted during May 3, 8, and 12, 1995, and was documented in IR 95-02. One violation (Severity Level V) was identified:

failure to submit material status reports within 30 days of March 31 and September 30 of each year as required by 10 C.F.R. 74.13(a)(1).

As a corrective measure, the Licensee revised its work order system for tracking Special Nuclear Material Inventory reports to require that a report to all federal officials be issued within 30 days after the end of the period covered by the report. The NRC

Staff has verified that these corrective actions have been taken; the documentation of this fact has not yet been completed by the Staff.

Q14. Were any other matters noted in the NRC Staff's inspections of the GTRR, which presented some concern but did not constitute a violation or NCV?

A14. (All) Yes. In addition to the violations and NCVs discussed above, during some emergency preparedness inspections, although no violations were cited, specific areas of weakness in the Licensee's performance were identified and brought to the attention of the Licensee, as discussed in Inspection Reports 89-04, 91-04, and 94-04 (respectively closed out in IRs 90-04, 92-04, and 95-03). These performance weaknesses did not result in the issuance of violations nor did they indicate deficiencies in the Licensee's Emergency Plan. In addition, during the NRC Staff's inspections at GTRR, certain matters were identified as "Unresolved Items" (URIs) which required further inspection or evaluation before a determination could be reached as to whether they demonstrated a violation of regulatory requirements. Two of the URIs have been closed but those in one inspection report (IR 95-01) have not yet been closed and therefore could still be found to indicate a violation, with respect to (1) the completion of the calibration of the Geiger-Mueller gas monitor and the Kanne ionization chamber within the specified surveillance interval allowed time frame, and (2) the Kanne ionization chamber setpoint determinations for tritium measurement.

Q15. Please provide your views with respect to the adequacy of the Licensee's management, based upon a collective analysis of the violations and NCVs described in response to Question 13 above.

A15. (All) We have reviewed the number and nature of the violations and NCVs which were observed at the GTRR in the course of the NRC Staff's inspections. From 1989 to April 1996, the inspection and enforcement history shows: 1989 (8 violations), 1990 (1 violation, 1 NCV), 1991 (no violations, 2 NCVs), 1992 (1 violation), 1993 (3 violations, 1 NCV), 1994 (1 violation, 3 NCVs), and 1995 (3 violations). While the number of violations and non-cited violations appears large, they have generally not involved significant health and safety issues, nor does our review indicate that the violations demonstrate a breakdown of management controls and programs. Accordingly, the violations and NCVs discussed above do not support a conclusion that the Licensee's management of the facility is inadequate.

In addition, we have found an overall reduction in the frequency and severity of violations since restart of the GTRR was authorized in November 1988. The previous enforcement history shows that, during the period from 1987 - 1988, the NRC Staff identified approximately 20 violations of NRC regulations and TS requirements; the NRC Staff held three management and enforcement conferences with GTRR management; and the NRC issued two orders restricting reactor operation and a \$5000 civil penalty to Georgia Tech. However, since January 1989, in a period of over seven years, the NRC Staff identified 17 violations, or about the same number of violations as were previously found from 1987 through 1988; further, the violations found in the period since restart

have had a lower degree of severity as defined in the NRC Enforcement Policy. In addition, our review leads us to conclude that the violations observed during the period of 1989 to date do not indicate a consistent failure of Licensee management to identify and correct problems (as had occurred previously). On the contrary, the NRC Staff's inspection and enforcement efforts show an improvement as compared to the period before 1989. Based on the above, we conclude that the Licensee continues to operate and manage its facility in a manner that acceptably ensures that the public health and safety is protected.

The NRC Staff has instituted periodic reviews of all research reactor licensees in NRC Region II, including Georgia Tech. This has involved a staff assessment of the Licensee's performance followed by a meeting between the Licensee and senior regional management to discuss that performance; the Licensee has also been afforded the opportunity to discuss its view of its performance. During the period of January 1989 to the present, assessments of the Licensee's performance, followed by meetings with Georgia Tech management, were conducted on January 10, 1991, June 25, 1992, and February 16, 1994. During all three assessments, NRC staff and senior regional management determined that the Licensee's performance was acceptable and the problems from the 1987 to 1988 time period had been corrected. Since early 1989, the personnel at GTRR have significantly improved the facility's procedures, and the Licensee's compliance with NRC regulations and procedures has generally improved. In sum, it is our conclusion that the Licensee's present organization performs its various functions in a manner which assures proper attention to the protection of the public health and safety.

Q16. To what extent do your conclusions as to the adequacy of the Licensee's management of the GTRR take into consideration discussions with, or observations of, License personnel in connection with the NRC Staff's inspections?

A16. (All). In general, NRC inspections at the Licensee's facility have verified that the Licensee complies with the Technical Specification requirements associated with organization and management. The Project Inspector (Craig Bassett) has personally attended various meetings of the Nuclear Safeguards Committee (NSC). This attendance at NSC meetings and the NRC Staff's review of the minutes of the majority of the other meetings showed the Committee performed its duties (including, among other matters, the review of procedures) as stated in the Technical Specifications.

Also, during our assigned duties related to the facility, we have had the opportunity to interact with various members of the Licensee's staff including health physics personnel, licensed operators, and office personnel. During the period since 1989, the number of personnel on staff at the NNRC has varied from about 15 to 30. Over the past seven years since restart, we have interviewed the majority of the NNRC personnel, including management, HP technicians, reactor operators, and office personnel, concerning working conditions, surveys, procedures, and their opinions of interoffice relationships and cooperation at GTRR. None of those interviewed indicated that there was a continuation of the past problems between the HP and operations personnel. Those individuals who had been at the facility during the previous personnel problems stated there was a significant improvement in the working relationships. None indicated that they had been or are currently harassed or intimidated by management or

fellow workers, or that they had been restricted in any way from performing their job functions. None of the HP technicians or operations personnel raised any concerns about unsafe conditions at the facility or management problems during our interviews.

Q17. In your interviews with NNRC and GTRR personnel, did you detect any reluctance to discuss safety issues or potential regulatory violations with the Director of the NNRC, the Nuclear Safeguards Committee (NSC), University officials or NRC personnel?

A17. (CHB) No. During my interviews with HP technicians, reactor operators, and office personnel, conducted outside the presence of Licensee management, no reluctance was noted or expressed by anyone to discuss safety issues with the Director of the NNRC, the NSC, other Georgia Tech officials or NRC personnel.

Q18. Have you reached a conclusion as to whether the Licensee's management encourages a safety-conscious attitude among its employees, and provides an environment in which employees feel they can freely voice safety concerns?

A18. (All) Yes. Based upon the information available to us to date, we are not aware of any reason to believe that the Licensee's management has failed to encourage a safety-conscious attitude among its employees, or to provide an environment in which employees feel they can freely voice safety concerns. The NRC Staff does not specifically inspect a Licensee's "work environment," as a matter of course, as part of any formal inspection procedure or module. Rather, the Staff inspects a Licensee's

training program and its display of appropriate notices to workers, concerning their ability to bring safety concerns to the attention of management or the NRC. The Staff also reviews Licensee documents, such as control room logs and committee meeting minutes, in which safety issues are customarily recorded. In addition, the NRC Staff would consider seriously allegations concerning harassment and intimidation by Licensee management, or management directions to conceal, or to refrain from reporting, safety problems or regulatory violations to Licensee management or oversight committees or to the NRC.

The Staff's inspections of the GTRR to date have indicated that proper training has been received by Licensee personnel concerning employees' right to bring safety and regulatory concerns to the attention of Licensee management or the NRC, and that appropriate notices are in place at the facility in this regard. In addition, our review of the Nuclear Safeguards Committee (NSC) minutes indicates that potential problems have been reported to the NSC, and the NSC's minutes provide a record of these communications. In the period following the restart decision through March 1996, the NRC did not receive any allegations of potential harassment and intimidation; any allegations or additional information received following that period would be evaluated by the Staff and dispositioned appropriately. Accordingly, we are not aware of any reason to believe that the Licensee's management has failed to encourage a safety-conscious attitude among its employees, or to provide an environment in which employees feel they can freely voice safety concerns.

Q19. Did the Licensee satisfactorily complete the actions it was required to take prior to restart?

A19. (CHB, EJM) Yes. All issues that were required to be complete prior to restart were resolved before issuance of the November 15, 1988, letter providing "Authorization to Resume Reactor Operations and Experiments." In late 1990, during a general review of records associated with closure of various enforcement Orders, NRC Region II determined that an official closure of orders to Georgia Tech had not been documented. As a result, a review was conducted and a letter was sent to Georgia Tech dated September 18, 1990, notifying the Licensee that the NRC Staff was satisfied that the Licensee had complied with all of the terms of the Orders. The September 18, 1990, letter identified the pertinent correspondence between the NRC and the Licensee to that date and all of the inspections that had been performed with respect to the Licensee's closeout of these matters.

Q20. GANE has asserted that the director of the facility has been given "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." Do you agree with these assertions?

A20. (All) No. With regard to the director's increased authority over the Manager of the Office of Radiation Safety (MORS), the director of the facility was given increased authority over the MORS upon the issuance of Amendment No. 7 in 1988

(described in the NRC Staff's Panel C testimony in this proceeding). However, based on our testimony as stated above, it is our belief that the current organizational structure has improved the organizational relationships and resulted in acceptable performance. The MORS' performance of his safety responsibilities is regularly considered in NRC inspection activities to ensure that the ability to raise issues to higher levels of management or the NSC on safety matters is clearly understood and implemented. That is, we conclude that there is no effective disincentive to raising safety issues and assuring that they are properly addressed.

Q21. GANE has also asserted that "safety concerns at the Georgia Tech reactor are the sole responsibility of Dr. R.A. Karam." Do you agree with this assertion?

A21. (All) No. Although the Director of the facility has overall responsibility for safety at the GTRR, responsibility for safety at the facility rests not only with the Director of the facility, but also with the MORS, the NSC, other Georgia Tech officials (including the President of Georgia Tech and the Dean for Engineering), as well as all employees involved with GTRR. This is further discussed in the testimony of NRC Staff Panel C.

Q22. GANE has also asserted that the Nuclear Safeguards Committee "has theoretical oversight of the GTRR operations" but has "no concern with health issues." Further, GANE asserted that the Manager of the Office of Radiation Safety (MORS) "is

sought for its knowledge of law more than its knowledge of health physics." Do you agree with these assertions?

A22. (All) No. This conclusion is based on the facts and views set forth in response to Question 16 above with regard to NSC function and safety responsibilities (which is also described in testimony of NRC Staff Panel C). In addition, the qualifications and experience of the present MORS were outlined in a letter from the Licensee to the NRC dated December 4, 1992; these qualifications demonstrate the MORS has in-depth knowledge and practical experience in the area of health physics and radiation safety.

Further, the NRC inspector (Craig Bassett) has met with the current MORS on many occasions at the facility, has inspected the implementation of his program and his overall performance, and is satisfied that the current MORS is capable of performing his functions effectively and that he has done so.

Q23. GANE has also asserted that the MORS lacks sufficient authority or independence to perform his functions effectively. Do you agree that the MORS lacks sufficient authority, independence and support from the Director of the facility to effectively perform his duties?

A23. (All) No. Based on our knowledge of the current organizational structure and functioning of the GTRR, we are satisfied that the MORS has the backing and support of the Director to perform his duties in both the health physics and safety areas. This conclusion is also based on discussions we have had with the NNRC

Director, the MORS, and other GTRR personnel, and on our observations and review of safety-related activities and programs in connection with our assigned duties concerning the GTRR.

Q24. Please describe the present status of the Licensee's HP procedures, equipment and personnel competency to deal with a contamination event at the GTRR.

A24. (CHB) At present, the HP procedures and equipment are acceptable, and the HP and operations personnel are competent, to implement the radiation protection program at the GTRR. Since 1989, I have noted improvements in the Licensee's HP procedures, including standardized format, references to the regulations or requirements and to other related procedures, and more information, specific guidance, and direction for the HP staff. Procedure changes have been reviewed and approved by the NSC.

Q25. GANE has also asserted that the Licensee's management is inadequate based on certain circumstances involving a bismuth block leak and a fuel element failure. Please provide your understanding of the facts concerning these matters.

A25. (CHB) I understand the facts concerning these matters to be as follows.

1. The Bismuth Block

The bismuth block is part of a shield located adjacent to the biomedical facility. It is designed to attenuate gamma radiation from the core while allowing neutrons to pass through to the biomedical facility. The bismuth block cooling system is primarily

designed to remove heat to cool the bismuth shield block for equipment protection purposes and is not a SAR accident mitigation system.

In NRC Inspection Report 83-01, dated September 29, 1983, a description is provided concerning the discovery of a leak in the bismuth block. This report indicates that on August 4, 1983, GTRR staff noted that a one gallon per hour leak had developed in the coolant system of the innermost bismuth shield block of the bio-medical beam port. At the time, the bismuth block coolant system contained heavy water (D_2O) in a closed system which was (and is) entirely separate from the reactor's D_2O coolant system. Some of the D_2O leak flowed by gravity to the next lower level which is the basement and entirely contained within the Reactor Containment Building. The reactor was shutdown when the leak was discovered and much of the D_2O was collected and stored. An area of about 12 feet by 12 feet in the basement was posted and restricted as a potentially contaminated area. No personnel contamination occurred and no significant increases in air or liquid effluents to unrestricted areas resulted. After examining the source of the leak, plans were made to correct the problem. A commercial radiator "stop-leak" product was used to seal the leak and, after flushing the system, regular water was used as the coolant in place of the heavy water.

In 1989, the bismuth block began to leak once again. As documented in NRC Inspection Report 90-01, dated February 5, 1990, this time the application of epoxy over the leak area and addition of "stop leak" to the coolant did not stop the leak. The GTRR staff then received approval from the NSC to install a collection system in the area under the leak to catch the leaking water, channel it to a condensate pump, circulate the water

through a 5 micron filter and return the water to the coolant storage tank. Inspections in the area of the basement where the collection system is located have indicated that the area is roped off and controlled as a potentially contaminated area. Review of the contamination surveys of the area have indicated no contamination spread outside the controlled area. Only small amounts of water have ever been observed in the area and the collection system appears to be functioning. The area is sometimes damp but no running water has been observed.

2. Fuel Element Failure

A fuel element weld failure was noted in the NSC minutes dated October 29, 1992. The Licensee informed the NRC of the problem by a phone call on September 22, and in a letter dated September 23, 1992. The letter explained that a problem was noted during an annual exchange of the fuel elements in storage outside the GTRR core with some of the elements in the core. During an attempt to install fuel element B015, the Licensee observed that it did not seat correctly in the plenum. An inspection of the bottom end of the fuel element indicated that two of the four welds of the guide plate were broken and the other two were bent. Because the locating end fitting of the fuel element was flared slightly, the element did not seat properly. It was also noted that there were no missing pieces of the fuel element that could have fallen into the reactor vessel. The Licensee stated that element B015 would not be used in the reactor in the future. The fuel element weld failure was also mentioned in Paragraph 1.b of the Licensee's Annual Report dated February 22, 1993. During an inspection of the facility

in January 1996, I noted that fuel element B015 was removed from the floor storage area in the reactor building and was transferred to the storage pool for further processing.

GTRR management notified the NRC of both the bismuth block leak and the fuel element failure. Neither the bismuth block leak nor the fuel element weld failure problem resulted in a violation of NRC regulations or the GTRR license.

Q26. Please summarize your testimony regarding the adequacy of the management at the GTRR facility.

A26. (All) In summary, it is our conclusion that the GTRR management and organizational structure fulfills the NRC requirements for the performance of required duties with sufficient oversight to assure independent review. The organizational structure provides an integrated approach to operations, experiments, radiation safety and use of radioactive materials. The organizational structure also provides a satisfactory means to raise safety issues to University officials by both the NSC and MORS. The Licensee's inspection history following restart, and the Staff's conversations with Licensee personnel to date, support a conclusion that safety problems and regulatory violations would likely be reported to appropriate Licensee management or to the NRC.

Q27. Does this conclude your testimony?

A27. (All) Yes.

Craig H. Bassett

Senior Radiation Specialist
Fuel Facilities Branch
Division of Nuclear Materials Safety
Region II
Nuclear Regulatory Commission (NRC)

Education:

Brigham Young University (63-64 & 67-69)
Bachelor of Arts Degree in Political Science
University of Utah (74-77)
Completed approximately 77 hours of the Pre-Med
requirements for Medical School

Experience:

3/89 to Present - Current position is NRC Senior Radiation Specialist and Project Inspector. Principal duties include inspecting, assessing, and reporting on all aspects of the criticality safety programs at various fuel facilities including General Electric, Westinghouse, and Nuclear Fuel Services, and inspecting, assessing, and reporting on all aspects of the radiological protection programs at various non-power reactors in the region including Georgia Institute of Technology, North Carolina State University, University of Florida, and University of Virginia. Current duties also include serving as project inspector for two fuel facilities and the four non-power reactors in Region II to track progress toward completion of the overall inspection effort for each facility.

3/86-3/89 - Functioned in the positions of NRC Radiation Specialist and Senior Radiation Specialist. Principal duties during this period included inspecting, assessing, and reporting on all aspects of the radiological protection programs at various nuclear power plants.

11/84-3/86 - Manager, Radiological Auditing and Safety Engineering for Westinghouse Electric Corporation (WEC). Responsibilities included implementation and oversight of the radiological auditing and industrial hygiene/safety programs at the Naval Reactors Facility in Idaho.

6/82-11/84 - WEC Supervisor, Radiological Controls Crew Q. Responsibilities included supervising and coordinating the activities of health physics technicians in support of fuel disposal efforts and in support of maintenance work at the Expanded Core Facility at the Naval Reactors Facility in Idaho.

6/78-6/82 - WEC Radiological Control Technician (Health Physics Technician). Responsibilities included monitoring for external and internal exposures, air sampling, contamination control, decontamination of equipment and personnel, radiological waste and spent fuel shipping, and maintaining exposures ALARA at the Expanded Core Facility at the Naval Reactors Facility in Idaho.

9/73-6/78 - Various companies unrelated to the nuclear field. Also attending the University of Utah.

9/69-9/73 - U. S. Army - Various positions including 2nd and 1st Lieutenant in the Army Security Agency/Army Intelligence.

EDWARD J. McALPINE

Chief, Fuel Facilities Branch
Division of Nuclear Materials Safety
Region II (RII)
Nuclear Regulatory Commission (NRC)

Education: Pennsylvania State University B.S./Chem. Eng. 1965

Professional
Experience:

1995 to Present - Chief, Fuel Facilities Branch, Division of Nuclear Materials Safety, RII, NRC - Responsible for the management of inspection program for four research reactors, five fuel fabrication facilities, and four independent spent fuel storage installations.

1989 to 1995 - Chief, Radiation Safety Projects Section, Nuclear Materials Safety and Safeguards Branch (NMSS), Division of Radiation Safety and Safeguards (DRSS), RII, NRC - Responsible for the management of inspection program for four research reactors, five fuel fabrication facilities, and four independent spent fuel storage installations.

1980 to 1989 - Chief, Material Control & Accountability Section, NMSS, DRSS, RII, NRC - Responsible for the management of the MC&A inspection program for six fuel fabrication facilities.

1977 to 1980 - Material Control Analyst, Division of Safeguards (DS), Office of Nuclear Material Safety and Safeguards (ONMSS), NRC - Responsible for the review and approval of Fundamental Nuclear Material Control Plans for the accounting of Special Nuclear Material for assigned facilities.

1976 to 1977 - Acting Chief, Material Control and Accountability Licensing Branch (MC&A LB), DS, ONMSS, NRC - Responsible for the management of the national program for review and approval of Fundamental Nuclear Material Control Plans for the accounting of Special Nuclear Material.

1975 to 1976 - Material Control Reviewer, MC&A LB, DS, ONMSS, NRC - Responsible for the review and approval of Fundamental

Nuclear Material Control Plans for the accounting of Special Nuclear Material for assigned facilities.

1974 to 1975 - Manager, Program Audits, General Electric Company, San Jose, California - Responsible for the establishment and conduct of a program to audit safeguards programs at four sites.

1971 to 1974 - Manager, Nuclear Materials Management - California Components, General Electric Company, San Jose, CA - Responsible for the management of the program to account for all Special Nuclear Material at two sites.

1969 to 1971 - Accountability and Quality Control Engineer, General Electric Company, Pleasanton, CA - Responsible for the accountability and quality control programs for a plutonium fuel development laboratory.

1967 to 1969 - Supervisor, Plutonium Laboratory, General Electric Company, Pleasanton, CA - Responsible for the supervision of workers and the safe operation of a plutonium fuel development laboratory.

1965 to 1967 - Research Engineer, Corporate Research & Development Center, General Electric Company, Schenectady, NY - Responsible for assigned projects in the area of chemical system and process research and development.

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./ME	1972
	University of California, Berkeley	B.S./ME	1971
	Modesto Junior College	A.A./Engr.	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 research 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 - 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 - 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

6/05/96

UNITED STATES OF AMERICA
NUCLEAR REGULATORY 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))

ERRATA TO

NRC STAFF (PANEL B) TESTIMONY OF
CRAIG H. BASSETT, EDWARD J. McALPINE
AND MARVIN M. MENDONCA, CONCERNING
GANE CONTENTION 9 (MANAGEMENT)

Page 2, line 11:	Delete "18"	Insert "19"
Page 2, line 15:	Delete "18"	Insert "19"
Page 3, line 21:	Delete "three"	Insert "four"
Page 7, line 6:	[no deletions]	Insert "generally" after "has" (to read: "has generally complied")
Page 8, line 9:	[no deletions]	Insert "may" after "there" (to read: "i.e., there may be more")
Page 8, line 16:	Delete "(Ips)"	Insert "(IPs)"
Page 11, line 8:	Delete "not"	Insert "no" (to read: "are no longer")
Page 11, line 21:	Delete "current"	[no insertions]

Page 11, line 23:	[no deletions]	Insert "as such" (to read: "formalized as such")
Page 11, line 24:	Delete "current"	[no insertions]
Page 19, line 9:	Delete "Confusion"	Insert "A misconception"
Page 21, line 12:	Delete "Although these two issues have not yet been closed,"	Insert "The corrective actions for these two issues were verified to be complete as documented in IR 94-02. Also,"
Page 33, line 20:	Delete "Manager of the Office of Radiation Safety (MORS),"	Insert: "radiation safety function,"
Page 33, line 21:	Delete "the MORS"	Insert: "the new MCRS position"

1 I suppose that we should start off by just some
2 questions we had about the qualifications which are bound
3 in at the end. We have already heard a lot of testimony
4 earlier in the proceeding about the importance,
5 specifically with the health physics staff of Georgia Tech
6 and also in other contexts, to the importance of having
7 advanced degrees, and you know, great stock being put in
8 having master's degrees and Ph.D.s and so forth. I notice
9 that all three of you gentlemen have bachelor's degree --
10 except Mr. Mendonca does have a master's degree. But it is
11 safe to say that none have Ph.D.s and I was just interested
12 what comments you might make in terms of I suppose the
13 relative importance and symbiotic relationship between your
14 education and your training and how it is that gentlemen
15 who don't have as advanced degrees as a Ph.D. -- you know,
16 how you feel competent in terms of regulating people who do
17 have that high level of education, and considering the
18 great weight that has been given to those advanced levels
19 of education by the licensee earlier in this proceeding.

20 Is that clear? Should I rephrase that?

21 A (Witness McAlpine) Yes, could you rephrase
22 that?

23 Q What qualities of training or, you know,
24 knowledge that you have, enable you to have the competence
25 to regulate people who have more advanced degrees in the

1 specific field than you do? And if any of you want to
2 answer it individually or what.

3 A (Witness McAlpine) I think that the ability to
4 regulate the industry is based on a combination of the
5 education that one has, the experience that one has in the
6 industry and the training that one has had in technical
7 training courses beyond the formal education process.

8 You'll note that I have some experience in the
9 nuclear industry, in the operations of and in the
10 management of certain programs in the nuclear industry. We
11 didn't outline all the technical training that we've gotten
12 with NRC, but it has been extensive.

13 Q Mr. Bassett or Mr. Mendonca, does that concur
14 with your feeling? Don't feel a need to add anything if
15 you don't want to.

16 A (Witness Bassett) Yeah, I agree with that
17 statement. In my particular instance, while I have a B.A.
18 degree, I've also had courses in calculus and chemistry,
19 organic chemistry, physics. I studied pre-medicine for
20 awhile, so I've had various courses in college.

21 After college, I have had -- I worked for
22 Westinghouse for awhile and was qualified as a radiological
23 control technician in a program out in Idaho which included
24 principles, theories, practices of radiological control.
25 And in coming to work for the NRC, I've also had courses,

1 course work in respiratory protection, radiation detection,
2 protection -- two courses in internal dose assessment,
3 health physics technology, non-power reactor technology,
4 nuclear criticality safety and air sampling for radioactive
5 materials.

6 So with the training as well as with the
7 experience, I've worked in the nuclear field about 18
8 years, so I think that would suffice.

9 Q So I guess just to try and wrap it up with a
10 shorter question that can maybe clear up the record and we
11 can move on. Would all of you agree that in matters such
12 as this that sufficient training, experience, you know,
13 hands on kind of experience is sufficient in order to
14 assure knowledge of the issue and that a Ph.D. level degree
15 is not necessary to have complete knowledge of the field?

16 MR. TURK: Objection as to the introduction to
17 your question, you said "matters such as this." So the
18 record is clear, the answer stated that -- by Mr. McAlpine
19 -- that for purposes of regulation, and then the answer
20 continued. And if the question refers to the same
21 predicate as Mr. McAlpine's, I have no objection, but I
22 think the record should be clear.

23 MR. JOHNSON: Well, let me try and rephrase it
24 and do it one more time.

25 BY MR. JOHNSON:

1 Q Do you feel, do you all feel that the post-
2 educational training, the hands-on experience that you
3 have, compensates for any lack of advanced degrees in terms
4 of your ability to regulate the industry and to perform
5 your functions accurately?

6 A (Witness McAlpine) Yes.

7 A (Witness Bassett) Yes.

8 A (Witness Mendonca) Yes.

9 Q As I said before, I think that -- can we take a
10 moment off the record?

11 CHAIRMAN BECHHOEFER: Yes.

12 (Brief pause.)

13 CHAIRMAN BECHHOEFER: Back on the record.

14 WITNESS MENDONCA: Could I elaborate on the
15 answer related to qualifications?

16 CHAIRMAN BECHHOEFER: Sure.

17 WITNESS MENDONCA: The NRC takes a great deal
18 of time and effort in training us, in providing us on-the-
19 job training, qualifying us. There's a good deal of
20 experience and I think we have demonstrated the ability to
21 regulate the industry and assure that they're providing
22 acceptable safety for the public health and safety. I
23 think it's a total picture.

24 BY MR. JOHNSON:

25 Q Thank you. I have one further question

1 specifically for Mr. McAlpine I guess, and because of your
2 more specific experience within the industry itself, I
3 guess I would have a question that I would like to phrase.
4 Do you feel that in your experience, you are able to work
5 in the actual industry, you know, in the field of nuclear
6 operations, without having an advanced degree, and to do so
7 safely due to training and other experience that you have.

8 A (Witness McAlpine) Yes.

9 Q At this point, I think it's probably
10 expeditious to refer to some of the inspection reports.

11 A (Witness McAlpine) Let me expand on that
12 "yes".

13 Q Okay, please do.

14 A (Witness McAlpine) If you note, when I was
15 working in the nuclear industry, I was in the operations
16 side, so that my degree in chemical engineering was a good
17 fit for the operations side. Had I been in the licensee's
18 organization in health physics, for example, I may not have
19 been sufficiently qualified to develop, maintain and
20 implement that type of program.

21 Q The first inspection report that I'd like to
22 refer to -- and I'm going to try and identify the reference
23 within the testimony --

24 MS. CARROLL: And I'm going to fumble with some
25 exhibits over here.

1 BY MR. JOHNSON:

2 Q I'm going to try to do this in a way that's
3 easiest for -- starting off with this one --

4 MS. CARROLL: Okay, we have exhibits for
5 everyone, get ready to mark it.

6 BY MR. JOHNSON:

7 Q This is inspection report 90-02 --

8 MS. CARROLL: And do you have a number for us,
9 Mr. Warren?

10 MR. JOHNSON: That would be 55.

11 THE REPORTER: 55.

12 BY MR. JOHNSON:

13 Q And this is July 11, 1990 --

14 MS. CARROLL: I think Mr. Turk has everything
15 and he's got everything, GANE 55. I think the inspection
16 report is attached to the notice of violation.

17 MR. JOHNSON: I think that you may be right.
18 I'm pretty sure that you are.

19 MS. CARROLL: And Mr. Turk will tell us if he
20 doesn't have a complete document, I'm depending on it.

21 MR. TURK: I'm depending on your
22 representation. Is it complete?

23 MS. CARROLL: What we've got is a good complete
24 document for you. And you marked it GANE 55?

25 THE REPORTER: Yes.

1 (The document referred to was marked
2 for identification as GANE Exhibit
3 Number 55.)

4 BY MR. JOHNSON:

5 Q This is inspection report 90-02, it was
6 performed June 12 through 14, 1990, according to your
7 testimony. And if I may just ask this question, -- let me
8 see, this is conducted by Mr. Bassett, so I imagine most of
9 these questions will probably be more pertinent to you,
10 although obviously if either of you have any relevant
11 testimony I'd be happy to hear it.

12 There are a couple of points of interest in
13 this. As you state in your testimony and as we also find
14 in the report itself, in the testimony it'd probably be
15 easier to find, it says (a) right at the top underneath
16 inspection report 90-02, this is page 17 of the written
17 testimony, there's a mention of a failure to maintain a
18 high radiation area locked as required in 10 CFR Part
19 20.203(c)(2).

20 In the actual report, it goes into more detail
21 on this, so I'm going to sort of paraphrase some of what it
22 says in the inspection report. It says that each entrance
23 or access point to a high radiation area shall be equipped
24 with a control device which will cause the level of
25 radiation to be below that at which an individual might

1 receive a dose of 100 millirem an hour. And it says
2 further down that during a tour of the containment building
3 on June 13, the inspector noted several areas that were
4 posted as high radiation areas. Each of these areas had a
5 door to the area that was locked, except one. And on the
6 next page of the inspection report, it says that the health
7 physics technician who was basically responsible or
8 accountable had previously worked at a power plant where as
9 I understand it, this standard of having the area locked
10 only applies when there are dose rates in excess of 1000
11 millirem per hour, is that correct, Mr. Bassett?

12 A (Witness Bassett) Yes, that's what the report
13 says.

14 A (Witness Mendonca) I think you also should add
15 though that there are other provisions for protecting the
16 high radiation area. You just mentioned the facility, the
17 device to reduce the dose. There is also the allowances
18 for lock and other things that are in the inspection
19 report.

20 Q That is true, I didn't mean to represent. That
21 was the one I wanted to highlight, but those are also in
22 there and I would not try to represent or ignore those.

23 It says that the individual was not aware that
24 a research reactor facility had lower criteria; i.e., 100
25 millirem per hour for maintaining high radiation area in a

1 locked state.

2 Whose responsibility is it to train this
3 individual so that they are aware of the differences
4 between the power reactors and the research reactors and
5 the different standards that may apply to the two different
6 types, in your professional judgment?

7 A (Witness Bassett) I would suggest that in this
8 instance, the manager of Office of Radiation Safety would
9 probably be the one responsible for training the people
10 that work for them.

11 A (Witness McAlpine) However, the responsibility
12 is the licensee's responsibility. The licensee will
13 establish an organization that determines who in that
14 licensee's organization is responsible for training.
15 Training and procedures go together.

16 Q Who was the manager of the Office of Radiation
17 Safety at this point? I believe it was Ms. Revsin, the
18 acting manager.

19 A (Witness Bassett) Yes.

20 MR. TURK: I'm sorry, just for clarification,
21 at which point? At the time of the inspection?

22 MR. JOHNSON: At the time of the inspection.

23 MR. TURK: And that was in June of 1990?

24 MR. JOHNSON: Yes. On the document, she's
25 represented as being the acting manager, I don't know

1 what -- if there might have been a state of transition or
2 something at that time.

3 BY MR. JOHNSON:

4 Q But one thing that is not contained in this
5 document that I'm aware of but may have missed it; do you
6 know how long this individual had been working at the Neely
7 facility at the time that they made this error?

8 A (Witness Bassett) No, I don't.

9 MR. TURK: At the time that --

10 MR. JOHNSON: At the time that they made this
11 error. We see that they used to work in power reactors,
12 and we're familiar with that standard and did not know or
13 were not aware of the differences.

14 MR. TURK: I didn't hear the word, I'm sorry.

15 BY MR. JOHNSON:

16 Q Do you know the name of the individual in
17 question?

18 A (Witness Bassett) I don't recall.

19 Q So Ms. Revsin -- Dr. Revsin, before she had
20 worked at the Neely facility actually had worked at the
21 NRC, had she not?

22 A (Witness Bassett) That's correct.

23 Q She was an NRC inspector.

24 A (Witness Bassett) Yes.

25 Q So you would imagine that she was familiar with

1 these standards and familiar with the differences between
2 the two?

3 A (Witness Bassett) Yes, she was. She was very
4 embarrassed by this finding.

5 Q I see. Well, to I guess follow up on that, did
6 she offer any explanation as to whether perhaps the person
7 had been trained and had forgotten or as to how this kind
8 of error had happened?

9 A (Witness Bassett) The only explanation I
10 recall is what was written in the report.

11 Q I see. Could we take a moment off the record
12 again? I need to try and cross reference something here.
13 I apologize for the clumsiness.

14 (Brief pause.)

15 CHAIRMAN BECHHOEFER: Back on the record.

16 BY MR. JOHNSON:

17 Q Moving on to page 7 of the same inspection
18 report which is the contamination of control section.
19 Basically there's a -- I'm going to try and paraphrase this
20 somewhat, but if I misrepresent, I trust that you will
21 correct it.

22 MR. TURK: I think we should rely on the
23 document. If you'll just point to which paragraph of the
24 document you're referring to, we can all see it.

25 BY MR. JOHNSON:

1 Q During this time frame, the inspector noted
2 that the worker took the mop, crossed over to the
3 uncontrolled side of the monitoring station without
4 performing a personal survey or having the mop surveyed,
5 and mopped the floor. The individual then crossed back to
6 the controlled area side of the monitoring station and
7 proceeded out through the door into the reactor control
8 zone and continued with his work. After exiting the
9 controlled area, the inspector brought this event to the
10 attention of the licensee. The licensee counseled the
11 worker this was not an appropriate practice.

12 If I can skip down to the middle paragraph in
13 the middle of the page, it says the inspector reviewed the
14 training records for the worker involved and determined he
15 had received training to work in the reactor control zone,
16 but that that had been given in 1976. This would be 14
17 years earlier at the time of this inspection, wouldn't it,
18 Mr. Bassett?

19 A (Witness Bassett) Yes.

20 Q When asked whether or not there was a
21 retraining program, the inspector was informed that no
22 formal retraining program existed. Licensee indicated
23 individuals were given retraining when required on a case-
24 by-case basis. Licensee also indicated that it was
25 difficult to get the maintenance people to work in the

1 facility and that although this individual made an
2 occasional mistake, he was one of the few willing to work
3 in the reactor building.

4 Did -- was there any elaboration given to you
5 as to why this was the case, why it was difficult to get
6 maintenance people to work in the facility?

7 A (Witness Bassett) If I recall correctly, it
8 was just because people did not want to work in the reactor
9 -- in the vicinity of the reactor building.

10 Q I see. So then this falls into the category of
11 what we have come to know as non-cited violations?

12 A (Witness Bassett) Yes, the report indicates it
13 was a non-cited violation.

14 Q Is this something that could be cited as a
15 violation? Does this meet the threshold for being cited as
16 a violation? Perhaps I'm betraying my ignorance of the
17 process by which these violations are given.

18 A (Witness McAlpine) We thought at the time that
19 this was most appropriately classified as a non-cited
20 violation. And as a result, we did so, because of the
21 isolated case and that it didn't have a lot of safety
22 significance. I think you'll find in the report that there
23 was no spread of contamination.

24 CHAIRMAN BECHHOEFER: Before you finish this
25 particular report, I'd like to ask a question.

1 MR. JOHNSON: You may go ahead if you wish now.

2 CHAIRMAN BECHHOEFER: It's on this same one,
3 but if you're going to ask the same question, then I won't.

4 MR. JOHNSON: Let me go ahead and ask at least
5 one or two more.

6 CHAIRMAN BECHHOEFER: Okay.

7 BY MR. JOHNSON:

8 Q What kinds of procedures were put in place or
9 what kind of controls were put in place to make sure that
10 this sort of thing did not happen again, even if it wasn't
11 necessarily a grave safety concern. Obviously it's not the
12 kind of control, you know, that you would like to have of
13 these sensitive areas -- what kinds of things happened to
14 give you confidence that this would not happen again, what
15 kind of training was put in place or what-have-you?

16 A (Witness Bassett) Because it was an isolated
17 incident, the individual was given retraining and it was
18 emphasized that he should frisk or perform a personal
19 survey on exiting a controlled area and not take items out
20 of controlled area without having the items frisked. So
21 because it was an isolated incident, that type of training
22 for that individual seemed to be adequate.

23 A (Witness Mendonca) I think it's also described
24 in the page 18 of our testimony, that they've also
25 initiated a retraining program for personnel and so I think

1 it's fully described what the corrective actions were in
2 our testimony.

3 MS. CARROLL: Where is that detailing?

4 WITNESS MENDONCA: Continuing in response to
5 our testimony on page 17, which was reference to inspection
6 report 90-02, it continues on page 18 and describes what
7 the programmatic revisions were, so the corrective actions
8 are described in our testimony already.

9 MS. CARROLL: I've spent a lot of time alerting
10 Rob to my concerns about this. May we tag team? Would
11 everybody be comfortable with that?

12 MR. TURK: I would not be comfortable with
13 that. I think that you've had plenty of time to prepare.
14 We filed this testimony a month before it was even required
15 to be filed and I think you should be organized by this
16 point to be able to proceed with a single questioner.

17 MS. CARROLL: Well, if we aren't organized,
18 we'll go ahead and take your time and everybody's time on
19 the asides, unless somebody says something different.

20 BY MR. JOHNSON:

21 Q What gave you such confidence this was an
22 isolated incident?

23 A (Witness Bassett) During my inspections there,
24 that's the only instance I've ever seen of an individual
25 doing this type of thing, crossing the area without

1 frisking.

2 Q Is there any documentation or any way of you
3 knowing about these kind of instances other than your
4 actually observing them when you were on site?

5 A (Witness Mendonca) There are inspections by
6 many personnel and this is one of the key features that we
7 look at in operations, emergency preparedness, operator
8 licensing. So we verify this sort of function regularly in
9 observing licensee personnel activities, including specific
10 health physics activity inspections. So it's observed by
11 many inspectors and many different aspects, including our
12 managers observe this type of performance.

13 Q How many inspections are commonly conducted per
14 year by the NRC of a facility like this, roughly?

15 A (Witness Bassett) Typically four, four
16 different types of inspections.

17 Q And those inspections take place over a period
18 of a few days apiece, two or three days, sometimes more?

19 A (Witness Bassett) Two or three days, up to a
20 week.

21 Q Up to a week.

22 A (Witness Mendonca) Let me elaborate a little
23 bit on that. That is Region II's process. Other regions
24 can do it differently with different number of inspections
25 and different time periods. But four is what Region II

1 does with this facility and similar facilities.

2 ADMINISTRATIVE JUDGE LAM: Now what is typical
3 man-hours spent per inspection?

4 MS. CARROLL: I'm sorry, I was conferring with
5 counsel here, I didn't hear the question.

6 ADMINISTRATIVE JUDGE LAM: I was asking the
7 panel how intensive in terms of man-hours and my colleague
8 corrected me, saying person-hours --

9 (Laughter.)

10 ADMINISTRATIVE JUDGE LAM: I stand corrected.

11 WITNESS MCALPINE: Probably on the order of 30
12 to 40 hours per week. Georgia Tech is advantageous for us
13 because we have very little travel time, but that is my
14 recollection. I wouldn't want to swear to that.

15 ADMINISTRATIVE JUDGE LAM: So typically, about
16 40 hours per inspection.

17 WITNESS MCALPINE: Yes.

18 WITNESS MENDONCA: The inspection procedures
19 have estimates of time that is used for each inspection
20 procedures and, again, from recollection, I recall that to
21 complete the program at a research reactor of this sort of
22 power level, I recall something on the order of 80 hours
23 per year is extended, so it would be typically about two
24 man-weeks, is typical. But there is variability in that;
25 many times more, sometimes less.

1 ADMINISTRATIVE JUDGE LAM: Thank you.

2 MS. CARROLL: Mr. Turk, I'm sorry that the lay
3 people volunteers aren't prepared enough for you, but we're
4 having a hard time here. It's time-consuming and you know
5 I'm stubborn. You know I'm going to badger Rob until he
6 asks the question that's in my mind. And I appeal maybe
7 for the efficiency of the entire process and all these
8 important people's time, that we can reconsider allowing me
9 to ask the question.

10 CHAIRMAN BECHHOEFER: I think it would be
11 better if Mr. Johnson asks all the questions, take whatever
12 time you need to make sure you --

13 MS. CARROLL: We'll do it.

14 MR. JOHNSON: I think I know the question that
15 Ms. Carroll wants to ask and I'm trying to phrase it in a
16 way that will hopefully be clear for everybody.

17 MS. CARROLL: And I'll bug him until he does.

18 MR. JOHNSON: I'm going to do the best I can.

19 BY MR. JOHNSON:

20 Q If these inspections are taking place four
21 times a year for up to a week apiece and if the kind of
22 behavior that we have been talking about, a non-cited
23 violation, is considered very minor activity really, and
24 probably not worthy in the eyes of most -- not worthy in
25 the eyes of Georgia Tech most likely -- of recording; what

1 kind of confidence do you have that the other 48 weeks of
2 the year that you're not actually on site, that this kind
3 of behavior is not taking place?

4 MR. EVANS: Objection. That's rank
5 speculation. How can they know what is happening? The
6 only time they can know what is happening is when they're
7 there.

8 MS. CARROLL: Is that the testimony of counsel?

9 MR. EVANS: That's an obvious -- it's
10 speculation. They can't know what is happening on a
11 momentary basis when they're not present. They can only
12 check -- they can look at records to see what may have
13 happened but they can't know what's going on at a given
14 time other than by looking at records of what has
15 transpired. And I think you're asking them to speculate.
16 I think that's improper and I move that the question be
17 disallowed.

18 CHAIRMAN BECHHOEFER: The subject is
19 appropriate and we will allow the objection.

20 MR. JOHNSON: We can try and rephrase that.

21 ADMINISTRATIVE LAW JUDGE KLINE: If you want to
22 know about what they project or what gives them confidence
23 in their projection when they are not present, you can
24 inquire into that.

25 MR. JOHNSON: I'm actually going to try and

1 rephrase it in another way, which is hopefully closer to
2 Glenn's intent.

3 BY MR. JOHNSON:

4 Q There are records kept of a lot of things that
5 happen when you are not on site, and when you are on site
6 doing an inspection, you review these records and these do
7 provide another source of information for you. Is that not
8 true?

9 A (Witness McAlpine) True.

10 Q Being that this kind of event is not one that
11 is likely to have any records kept of it, is there any
12 conceivable fashion in which you can be aware of this
13 behavior taking place when you are not on site?

14 A (Witness Mendonca) I think I had answered that
15 question with our other inspections that that is one thing
16 that many of our inspectors in personnel are looking for
17 and looking at. Additionally, we have described in our
18 answer to Question 10, our inspection program, which
19 outlines the sort of things that we sample. We sample with
20 detailed inspection procedures many different aspects of a
21 licensee's operation, which many of these include such
22 activities. So I think we've responded to the question
23 that we take a reasonable sample. We've also estimated the
24 time in response to Judge Lam's question and we put
25 together what we think is a reasonable comprehensive

1 program to ensure that the licensee is acceptably
2 implementing their programs and requirements.

3 A (Witness McAlpine) We cannot know what goes on
4 at the facility when we are not there unless it is
5 documented in the records. So, we try to be firm in the
6 application of the regulations. We require licensees to
7 meet those regulations. We try to be fair in determining
8 what severity level an issue deserves. Subsequent to that
9 time, we have not observed a repeat of that particular
10 occurrence or an occurrence of any failure -- I think this
11 is right and, Craig, correct me if I'm wrong -- of failure
12 to survey upon exiting a controlled
13 area.

14 A (Witness Mendonca) I would like to also draw
15 on Mr. Bassett's comments about the embarrassments in that
16 their management was fairly embarrassed and does want to
17 provide the safety conscious program and I think that adds
18 some confidence that they will correct and have corrected
19 this problem based on the corrective action we've described
20 in our testimony.

21 Q Is there documentation for these kind of
22 surveys -- I guess perhaps by referring to behavior earlier
23 I may have been on the wrong track. You are talking about
24 the -- We have been talking about doing the surveys when
25 leaving a controlled area. Is there documentation

1 available for those surveys that you have an opportunity to
2 review on inspections?

3 A (Witness Bassett) Let me ask, are you talking
4 about a personnel -- a personal survey that a person would
5 perform?

6 Q Yes. Yes, in terms of the maintenance records
7 or --

8 MS. CARROLL: Maintenance workers.

9 BY MR. JOHNSON:

10 Q I'm sorry, in terms of the maintenance workers?

11 A (Witness Bassett) No, there are no records of
12 a personal survey, no.

13 Q I have one more question at least on this
14 inspection report. If I can refer back to what we had
15 talked about earlier about the individual not being aware
16 of the different criteria and the incident that you had
17 mentioned that Mr. -- Dr. Revsin was embarrassed about. I
18 apologize for it taking me so long to find this reference,
19 but this is another inspection report -- 94-02 --

20 MS. CARROLL: Wait a minute. Let me get this
21 distributed.

22 CHAIRMAN BECHHOEFER: Well, are you through
23 with this particular inspection report?

24 MS. CARROLL: Cross-referenced.

25 MR. JOHNSON: I'm going to be drawing a

1 comparison here, and that's probably my last real reference
2 to this one.

3 CHAIRMAN BECHHOEFER: I just have one question.

4 MR. JOHNSON: If you want to -- I mean, I don't
5 know if you want to do it now?

6 CHAIRMAN BECHHOEFER: Why don't I ask it now?

7 MR. JOHNSON: Yeah, because I am going to be
8 referencing another document.

9 MS. CARROLL: Should we get a number on the
10 document we just passed out before we go too far or --

11 THE REPORTER: 56.

12 MS. CARROLL: Yeah, GANE 56 is what we've just
13 passed out.

14 (The document referred to was marked
15 for identification as GANE Exhibit
16 No. 56.)

17 CHAIRMAN BECHHOEFER: The question I wanted to
18 ask while you are still looking -- On page 18 of the
19 testimony, there is a sentence, second sentence on the page
20 -- starting, "The area where the individual had been
21 working was also surveyed and no contamination was found."
22 But the next sentence states that you've reviewed surveys
23 of the area and noted no contamination, which would
24 indicate personnel had failed to perform the personal
25 survey. Well, isn't that -- aren't those two sentences

1 sort of inconsistent? The fact that the incident in
2 question didn't have any contamination? Wouldn't it be
3 likely, almost by definition, no contamination would be
4 shown so that a look at the past would be not very
5 meaningful. I'm just seeing if these two are consistent
6 with each other.

7 WITNESS BASSETT: Well, the survey -- the
8 licensee performed the survey after this incident to verify
9 that there was no spread of contamination. I went back and
10 looked at the previous surveys just to make sure that if
11 the individual had ever done this before to make sure that
12 there was no spread of contamination previously as well.
13 So I wanted to make sure to try and verify that there had
14 never been a spread of contamination as a result of any of
15 this activity.

16 WITNESS MENDONCA: Or any activity associated.
17 I think Craig went back far enough in history to get a good
18 sample of what their activities would be in that area and
19 would know what sort of contamination you could expect
20 there. So, it's --

21 CHAIRMAN BECHHOEFER: Well, my real question
22 is, if there is no contamination found in this particular
23 incident, why would you ever expect evidence of
24 contamination to have been -- I mean, the practice could go
25 on and instances of no contamination evolved and you

1 wouldn't know anything about the past essentially.

2 A (Witness Mendonca) Well, there are other
3 activities that could contaminate that area in moving
4 material back and forth. So it's not only this specific
5 activity, but if that area were contaminated you would want
6 to see that him mopping wouldn't spread the contamination
7 to the other areas where there are other activities. So,
8 as I said, Craig took a reasonable sample to make sure that
9 the sort of activities that go on in the facility were
10 covered and known and surveyed and that there wasn't any
11 contamination from, again, a reasonable time frame would be
12 from my indication.

13 CHAIRMAN BECHHOEFER: Okay.

14 BY MR. JOHNSON:

15 Q I just had a question about -- We had already
16 talked about the embarrassing incident with the different
17 standards not being understood by one of the health physics
18 individuals. In inspection report 94-02, which is going to
19 be, I guess, GANE number 56.

20 Have you already distributed copies of this?

21 MS. CARROLL: (Affirmative nod)

22 BY MR. JOHNSON:

23 Q Page 8 of the document proffered under the
24 category "Posting" --

25 MR. TURK: This is page 8 of the report

1 details?

2 MR. JOHNSON: Yes. It is section D. Right at
3 the very top of the page it says Posting.

4 MR. EVANS: Could you identify -- I'm still not
5 sure where we are.

6 MR. JOHNSON: It's --

7 MS. CARROLL: There's a couple of documents put
8 together. It's page 8 of the report.

9 MR. EVANS: Report details for starters?

10 MR. JOHNSON: Yes, only one part of the report
11 has a page 8 so it's -- It has Posting.

12 MR. EVANS: What is the page number?

13 MR. JOHNSON: Eight.

14 MR. EVANS: Under E?

15 MR. JOHNSON: E is the one at the very bottom.

16 MR. EVANS: Okay.

17 MR. JOHNSON: And D, for Posting, is at the
18 top.

19 BY MR. JOHNSON:

20 Q There is mention here -- and I believe this is
21 also Mr. Bassett -- "Upon noting that radiation levels
22 greater than 100 millirem per hour existed in an area on
23 the second floor, the inspector reviewed the precautions
24 that the licensee had established to control exposures in
25 that area. The area was posted with a sign," and so forth.

1 Well, first I'm going to stop and ask what precautions had
2 they established and if you could elaborate a little bit on
3 that, Mr. Bassett, because this does seem to -- The reason
4 that I am jumping back between these two reports is this is
5 basically referring to the same section of the CFR. This
6 is also 10 CFR 20.203, about secured areas and locked
7 areas, and various radiation levels that require that.
8 What precautions had they taken that you could see?

9 A (Witness Bassett) Give me a minute and let me
10 review this.

11 Q Oh, please do.

12 A (Witness Bassett) Mr. Johnson?

13 Q Yes?

14 A (Witness Bassett) Your question was, what
15 controls had they established?

16 Q Yes, you say just to quote from the document,
17 "The inspector reviewed the precautions that the licensee
18 had established controls..." I would just like for you to
19 elaborate on what those precautions might have been?

20 A (Witness Bassett) Of course, one of the
21 controls was the posting, as such.

22 Q Sure.

23 A (Witness Bassett) The other control was that
24 it is basically right near where the reactor operator sits,
25 and he has positive control -- he had positive control over

1 the area when the reactor was operating. He would have to
2 be present. He could control the area. That's how they
3 used -- That's how they kept people out of the area.

4 Q I see. So, okay, then this is a locked secured
5 area, then?

6 MR. TURK: Is what a locked, secured area?

7 BY MR. JOHNSON:

8 Q This area with radiation levels greater than
9 100 millirem per hour as discussed in this document,
10 because as I understand it from our discussion about this
11 previous inspection report, that is what 10 CFR 20.203
12 specifies, among other things, is that for research
13 reactors, any area with 100 millirem per hour or more has
14 to be locked. Was this area locked?

15 A (Witness Bassett) No, this area was not
16 locked, but there are other controls, as you just
17 mentioned.

18 A (Witness Mendonca) Specifically the control is
19 -- that you didn't mention, is equipped with a control
20 device which shall energize a conspicuous visible or
21 audible alarm signal in such a manner with the individual
22 entering the high radiation area and the licensee or a
23 supervisor of that activity are made aware of the entry,
24 but I believe those are the provisions because entry into
25 the containment is alarmed. Entry into those areas is

1 obvious and visible to the operator, as Craig was saying,
2 so I believe those are the provisions of the part that
3 apply.

4 MR. TURK: Mr. Johnson, for clarification, your
5 question seemed to indicate a belief that Part 20 requires
6 areas with radiation levels over 100 millirems per hour to
7 be locked. That is not the only control that is possible.
8 I hope you understand that a lock is not strictly required.

9 MR. JOHNSON: I do now.

10 BY MR. JOHNSON:

11 Q Was there any concern as to what kind of
12 exposure the operator may have been receiving, if this was
13 an area that he was working in?

14 MR. TURK: It was an area that he was working
15 near.

16 BY MR. JOHNSON:

17 Q -- working near? Thank you.

18 A (Witness Bassett) The licensee provides their
19 personnel with proper dosimetry, and that records the
20 exposure they receive and I have never noted any high
21 levels of personnel exposure.

22 A (Witness Mendonca) Additionally, operators are
23 trained to deal with high radiation areas. That's one of
24 the training that they receive and also what we verify when
25 we issue licenses, that they understand the provisions of

1 this particular regulation and protection of themselves,
2 members of the staff and the public.

3 Q In the following paragraph on page 8 -- this is
4 still in GANE 56 -- to further elaborate, "The inspector
5 discussed the situation with licensee representatives.
6 They indicated these levels were present, that lead brick
7 shielding had been removed from a shaft that existed in the
8 top of the reactor which led to a shutter." I'll skip that
9 next sentence. Well, maybe I shouldn't. "The shutter
10 controlled radiation levels in the licensee's biomedical
11 room just below, and the biomedical room was not in use and
12 lead bricks and other shielding were placed in the shaft.
13 This shielded the radiation but also prevented the use of
14 the shutter. The licensee had removed the shielding to
15 experiment with using the shutter in preparation for
16 possible use of the room in conjunction with the BNCT
17 therapy. The licensee indicated that until such time as
18 the shutter was to be used on a continuing basis, not just
19 experimentally, the lead bricks would be replaced to
20 provide more shielding. At such time when it would become
21 necessary to use the biomedical room and shutter, the
22 licensee would remove the shielding but establish more
23 stringent controls." My question on this is, this -- Well,
24 let me back up. Is this in your opinion or in your mind
25 acceptable to remove this shielding in order to operate

1 this shutter even if it is only experimentally -- even if
2 it is only for brief periods of time, is that acceptable?

3 A (Witness Bassett) Yes.

4 Q If you could elaborate and explain why you feel
5 that it is --

6 A (Witness Mendonca) I think we could elaborate
7 that it meets the requirements. We just specified to you
8 how it met the requirements and the alarms and the control
9 by the operator. It meets the requirements as specified in
10 the regulations. Also, the other defense are depth
11 features of the operator training, staff training, posting.
12 There is a multitude of things that assure that the
13 exposure is not excessive.

14 A (Witness Bassett) One other thing I could add
15 is that personnel entering the area have all received
16 training or are escorted by someone who has had training.
17 So they would have the training, you know, to --

18 A (Witness Mendonca) To supplement it.

19 A (Witness Bassett) Yeah, so that they wouldn't
20 go into the area necessarily.

21 (Ms. Carroll and Mr. Johnson confer.)

22 MR. JOHNSON: Yeah, that's probably a good idea
23 before we get too far. We would like to move to enter 55
24 and 56, GANE 55 and 56, into the record. Inspection report
25 55 being the one from 1990 and number 56 being the one from

1 1994. 94-02 is number 56 and 90-02 is number 90 (sic).

2 MR. EVANS: We have no objections to 55 or 56.

3 MR. TURK: No objection to 55, Your Honor. 56,
4 I wouldn't object to it being admitted. However, I note
5 that there is a page missing -- at least from my copy --
6 the signature page of the packet -- The second page of the
7 packet seems to be missing from my copy. I don't object,
8 however, it's a page --

9 MS. CARROLL: That's it I think. Is this it?

10 MR. TURK: It's in pages 1 and 3. No.

11 MS. CARROLL: Well, I got this from the public
12 document room.

13 MR. TURK: May I just note, Your Honor, that
14 page 2 simply states at the top, "Should you have any
15 questions concerning this letter, please contact us.
16 Sincerely, Douglas M. Collins," it gives his title, it
17 lists the enclosures and provides the cc. So with that
18 note, I don't oppose the introduction and admission of this
19 document. I would note, also, however, there are three
20 pages on which some handwritten notes appear, which I
21 believe are GANE's notes on GANE 56. Page 2, in report
22 details, has something in the margin which I believe is an
23 entry by GANE. Same thing, page 6 ad 7 have some hand
24 notations --

25 MS. CARROLL: Right. Yes.

1 MR. TURK: -- I believe are GANE's.

2 MS. CARROLL: They are our notes, yes.

3 MR. JOHNSON: We would not move to --

4 MR. TURK: No, I don't oppose. I'm just noting
5 for the record so that that's clear. And with that, I
6 wouldn't oppose the admission of that.

7 CHAIRMAN BECHHOEFER: Both of those documents
8 will be admitted.

9 (The documents referred to as GANE
10 Exhibits 55 and 56 were admitted into
11 evidence.)

12 MR. JOHNSON: At this point I would like to
13 move on to inspection report 92-04.

14 MS. CARROLL: Okay, let me distribute.

15 MR. JOHNSON: Please do. December 10, 1992, at
16 the top.

17 MS. CARROLL: And I guess this will be GANE 57.

18 MR. JOHNSON: This will be GANE 57.

19 MS. CARROLL: Did you mark our copy?

20 MR. JOHNSON: I will.

21 (The document referred to was marked
22 for identification as GANE Exhibit
23 No. 57.)

24 MR. JOHNSON: We will go ahead and do GANE 58
25 at this point as well, which is 91-04.

1 MS. CARROLL: This is what? 59?

2 MR. JOHNSON: No, 58. 58.

3 MS. CARROLL: Okay. GANE 58.

4 (The document referred to was marked
5 for identification as GANE Exhibit
6 No. 58.)

7 BY MR. JOHNSON:

8 Q Now, these two inspections were undertaken by a
9 Mr. Kreh, perhaps, would be how you pronounce that in
10 number 57, and Mr. Gooden -- or I suppose it could be Ms.
11 for either of them.

12 THE REPORTER: I'm sorry, it could be Ms. who?

13 MR. JOHNSON: It could be Ms. for either of
14 them, I don't know either of these people. I don't know
15 whether they are male or female.

16 MS. CARROLL: Males.

17 WITNESS MCALPINE: They are both male.

18 BY MR. JOHNSON:

19 Q Mr. Kreh and Mr. Gooden aren't here, but I am
20 assuming that you are familiar with these inspections if
21 only because of inspections that have occurred since then
22 and records that you have reviewed. As I understand it,
23 both from your testimony and from the reports themselves,
24 an inspection that was done September 17, 1991, was one
25 that resulted in, although not a violation, a pointing out

1 to the licensee that their emergency notification plan was
2 not what it should be.

3 MR. EVANS: I object. Where do you see in
4 here, not what it should be?

5 MR. JOHNSON: Perhaps that's not an accurate
6 characterization.

7 MS. CARROLL: I think you need to be more
8 specific.

9 BY MR. JOHNSON:

10 Q There are two non-cited violations noted during
11 this inspection, inadequate procedure for implementing the
12 emergency plan notification requirements and failure to
13 perform a bi-annual review of the emergency plan as
14 required. As seems to be the case -- and that was on page
15 18 of the testimony of the panel on the bottom, the part I
16 just read. It's an easy place to find it. During the exit
17 interview as I understand it, this was not cited as a
18 violation but was explained to the licensee that these were
19 things that needed to be worked on. Again, I'm not trying
20 to phrase this pejoratively. I'm just trying to represent
21 it accurately. From what we see in inspection report 92-
22 04, which is GANE 57, by Mr. Kreh, they had failed to do so
23 and were cited for a violation and again on page 19 of the
24 staff testimony, they have a little excerpt where it says
25 the violation was for failure to have adequate procedure

1 for implementing certain emergency plan notification or
2 requirements. A repeat of the non-cited violation noted
3 91-04. Again, I am aware that neither -- that none of you
4 gentlemen actually participated in either of these two
5 inspections, but --

6 CHAIRMAN BECHHOEFER: I think the report
7 indicates, at least GANE 58, seems to indicate -- seems to
8 list Mr. Bassett as accompanying personnel and Mr. McAlpine
9 as well.

10 MR. JOHNSON: Well, they do have the primary
11 inspector always listed.

12 CHAIRMAN BECHHOEFER: That is correct.

13 MR. JOHNSON: And many of these reports, these
14 gentlemen are primary inspectors. They weren't necessarily
15 on this one. Again, like I said --

16 CHAIRMAN BECHHOEFER: The same on GANE 57.
17 These people were present so...

18 MR. JOHNSON: I am assuming and hoping that
19 they are familiar. It's just they weren't the primary
20 inspector. That's all I --

21 CHAIRMAN BECHHOEFER: It says they're
22 accompanied. It must mean something.

23 MR. JOHNSON: That's all I meant to say.

24 BY MR. JOHNSON:

25 Q I would just ask, again, Mr. Bassett, as you

1 say, it was accompanying people, why you felt that this was
2 not followed up on? Why you feel that this was not
3 corrected when it was identified as an non-cited violation
4 and why did it ever become a violation. There was a good
5 time period, over a year, between the initial report
6 identifying that they were not -- again, that they were not
7 identifying inadequate procedure for implementing the
8 emergency plan notification requirements and failure to
9 perform a bi-annual review. After more than a year, they
10 still had not gotten themselves into full compliance, and I
11 don't want to ask you to speculate too much. I want to
12 ask, does -- the emergency plan is an important safety
13 feature, is it not?

14 MR. TURK: The question is, essentially, is the
15 emergency plan an important safety feature?

16 MR. JOHNSON: Yes.

17 WITNESS MCALPINE: The emergency plan is an
18 important document that specifies how the licensee is going
19 to respond under emergency situations.

20 BY MR. JOHNSON:

21 Q As someone who was, I guess, accompanying, even
22 if not primary inspector, does it concern you that this
23 document was still inadequate after over a year -- after
24 the licensee had been notified?

25 MR. TURK: The question is, that the documents

1 were not satisfactory? I guess my question is, 92-04 talks
2 about failure of having an adequate procedure for
3 implementing EP notification requirements. I guess your
4 question is then, is it important to you that the procedure
5 was inadequate after one year since the previous report.

6 MR. JOHNSON: Yes. And as noted in staff
7 testimony on page 19, in parentheses you see a repeat of
8 the non-cited violation noted in 91-04.

9 MR. TURK: I don't object to that with that
10 clarification that we are talking about procedure.

11 WITNESS MCALPINE: The NRC is particularly
12 concerned when violations are not corrected. I will draw
13 your attention to the cover letter, to inspection report
14 92-04 -- I don't know which GANE exhibit that is --

15 BY MR. JOHNSON:

16 Q That's 57.

17 A (Witness McAlpine) We say that we are
18 concerned about this. You will notice that we had a non-
19 cited violation in inspection report 91-04. We did not
20 have a non-cited 92-04. It was a repeat.

21 Q And -- But let me go ahead and read a brief
22 passage from the cover letter because I think that does
23 perhaps frame some of what I would like to inquire about.
24 "Recurring violations are of particular concern because the
25 NRC expects licensees to learn from their past violations

1 and to take effective corrective actions. In this
2 particular case Dr. Karam stated that corrective action was
3 taken before the inspection report was issued, based on his
4 understanding of the exit discussion." I suppose from the
5 way that reads, there is virtually no other understanding
6 one can come to other than there was some misunderstanding
7 that took place in the exit interview. Is that your
8 understanding? Is that correct?

9 A (Witness McAlpine) I was at the exit
10 interview. I understood what he said. It was clear to me.
11 It's clear to me in reading the inspection report. It
12 wasn't corrected. We found it again. We cited it.

13 Q Would you --

14 A (Witness McAlpine) Why Dr. Karam didn't
15 understand it, you may want to ask him.

16 Q We may well do that. As some background, how
17 long had the emergency plan -- again, I want to quote to
18 make sure I don't misrepresent. How long had there been an
19 adequate procedure for implementing the emergency plan
20 before the non-cited violation was given in 1991? Can any
21 of you answer that? Is that within your personal
22 knowledge?

23 A (Witness McAlpine) Not within my personal
24 knowledge.

25 A (Witness Bassett) No.

1 A (Witness Mendonca) I don't know.

2 Q As we understand it, different inspections
3 often will focus on what are I think some times called
4 modules depending on how long it's been since a certain
5 aspect of the program has been inspected. When was the
6 last time that the emergency plan had received a clean bill
7 of health, just to use a layman's term, prior to the '91
8 inspection where it was given the non-cited violation? Is
9 that something that we have access to?

10 A (Witness McAlpine) I note that Mr. Kreh and
11 Mr. Bassett did an inspection that is documented in 90-04.
12 If Mr. Kreh was there, that was undoubtedly an emergency
13 preparedness inspection.

14 Q Is that his specialty or -- Is that his
15 specialty?

16 A (Witness McAlpine) Yes, it is.

17 A (Witness Mendonca) I guess I understood your
18 question to be on the emergency plan. Was that correct?
19 The last time the emergency plan received --

20 Q A clean slate or flying colors.

21 A (Witness Mendonca) The emergency plan is a
22 different document. The emergency plan is the overriding
23 document. The citation was against the emergency
24 procedures. Whether or not anybody ever looked at these
25 specific procedures before, I don't think we can say it. I

1 know I can't say, but the emergency plan had been looked at
2 and what our inspectors found was that the emergency
3 procedures did not implement the emergency plan in a
4 specific enough mechanical way to ensure that the
5 notifications would be properly conducted. It was a
6 procedural violation.

7 Q An important distinction. I appreciate that.

8 A (Witness McAlpine) In that inspection that I
9 referenced, inspection report 90-04, was an inspection
10 conducted September 19 and 20, 1990, and there were no
11 violations or deviations identified in that inspection.

12 Q I see.

13 A (Witness Mendonca) Again, that doesn't
14 necessarily mean that our inspector looked at that specific
15 procedure at that time or that he didn't. Unless you want
16 to review that particular inspection.

17 Q So let me ask a clarifying question. The
18 inspection you are referring to as 90-04 was one that
19 reviewed the emergency plan but not necessarily the
20 procedure for implementing that plan? That's sort of a
21 semantic difference we seem to be trying to --

22 A (Witness Mendonca) Inspectors generally review
23 both the plan and procedure. Ed is now looking to see
24 exactly what was in that particular inspection report.

25 A (Witness McAlpine) Section two of that

1 inspection report is entitled, Emergency Plan and
2 Implementing Procedures. Section three is Emergency
3 Response Training. Section four, Emergency Facilities,
4 Equipment and Supplies. Section five, Coordination with
5 Off-Site Support Groups. Section six, Emergency Response
6 Drill. Section seven, Action on Previous Inspection
7 Findings. Section eight, Exit Interview.

8 Q Then I'd like to ask this question. If there
9 had been a violation cited at the time that the non-cited
10 violation occurred in the inspection of 91-04, do you feel
11 that that would have encouraged the licensee to come into
12 better compliance quicker than having a non-cited
13 violation? Or do you feel that the misunderstanding or
14 whatever it may be in the exit interview may have still
15 caused the same problem, even if it had been cited as a
16 full violation?

17 MR. TURK: I would object because it calls for
18 speculation as to how the licensee would respond in one
19 case versus another case. On the other hand, if the
20 question was framed merely in general as to whether they
21 believed that, in their opinion, whether citing something
22 as a violation or calling it a non-cited violation would or
23 should make a difference, I don't have a problem with it.
24 I would oppose the question asking for speculation.

25 BY MR. JOHNSON:

1 Q Would you gentlemen feel that a non-cited
2 violation carries the same weight in terms of corrective
3 action as a full violation?

4 A (Witness McAlpine) Yes.

5 Q And I guess in way of follow up, do you feel
6 that that is actually the way it is perceived by licensees
7 or is that the way the licensees are supposed to react? Is
8 it a matter of the licensees are supposed to take proper
9 corrective actions, whether it's a cited violation or non-
10 cited violation, or is it a matter that you actually have
11 perceived in practice that the licensees take them as
12 seriously?

13 A (Witness McAlpine) Licensees take them
14 seriously. Our enforcement policy is established to
15 recognized a non-cited violation because we wish to
16 encourage the licensees to find and identify their own
17 problems and correct them.

18 Q On page 22 of your testimony -- well, I think
19 it's the same document -- no, this is a different document.
20 This is inspection report 94-01 conducted March 9 and 10.

21 MS. CARROLL: This will be number 59, Rob?

22 MR. JOHNSON: Yes.

23 MS. CARROLL: GANE Exhibit Number 59.

24 (The document referred to was marked
25 for identification as GANE Exhibit

Number 59.)

1
2 CHAIRMAN BECHHOEFER: Before you get into this
3 next series, let me ask the panel one question based on the
4 previous two reports.

5 Considering inspection reports 91-04 and 92-04,
6 if the non-cited violation in 91-04 had instead been
7 considered a Level V citation, which is the lowest level
8 actually of violation, would the repetition have made a
9 Level V in 92-04 a Level IV instead?

10 WITNESS MCALPINE: Not under the enforcement
11 policy that was in effect then. Under the enforcement
12 policy that's in effect now, yes, repetitive violations --
13 but it's a permissive -- can be escalated. For example,
14 currently if we issue a Severity Level IV and it is
15 repeated and it has safety significance, we could classify
16 a repeat as a Severity Level III and take the appropriate
17 enforcement action; i.e., conduct an enforcement conference
18 and potentially issue a civil penalty. But not under the
19 enforcement policy that was in effect at the time.

20 CHAIRMAN BECHHOEFER: Well, if you had a non-
21 cited violation at say a low level today and another repeat
22 cited at again a low level, say a IV because there are no
23 Vs, would a non-cited violation plus a repeat have a --
24 whatever the cited level is -- operate the same way as if
25 the previous one had been cited at the lowest level.

1 WITNESS MCALPINE: Yes.

2 CHAIRMAN BECHHOEFER: So you could treat a non-
3 cited violation as if it had been a violation in terms of
4 future enforcement.

5 WITNESS MCALPINE: A non-cited violation is a
6 violation, it's one that we refrain from issuing a notice
7 of violation for and requesting the licensee to respond
8 with their corrective action, but it is a violation. So
9 the second occurrence, if we cite it, is as though it had
10 been cited before.

11 CHAIRMAN BECHHOEFER: I see. That's what I was
12 driving at. Thank you very much.

13 WITNESS MCALPINE: You're welcome.

14 MR. TURK: Before moving on, would this be a
15 good time for a break?

16 CHAIRMAN BECHHOEFER: Time-wise it would be, so
17 I guess if this is a good breaking point for you.

18 MR. JOHNSON: Sure.

19 CHAIRMAN BECHHOEFER: Why don't we do that, 15
20 minutes or however long it takes to get coffee.

21 (A short recess was taken.)

22 CHAIRMAN BECHHOEFER: Back on the record.

23 BY MR. JOHNSON:

24 Q Before we took a break we were getting ready to
25 go into talking about inspection report 94-01. The Board

1 had been asking some questions I think about another --
2 your questions are all finished, we can proceed?

3 CHAIRMAN BECHHOEFER: Well, I had a couple of
4 other questions from that inspection report, but they
5 were -- they're on a subject that's not even close to any
6 that you raised. So I can wait on that one.

7 MR. JOHNSON: Okay.

8 CHAIRMAN BECHHOEFER: That's just a source of a
9 question that has several other sources as well. So I can
10 get back to it later.

11 BY MR. JOHNSON:

12 Q Inspection 94-01, this is one that was taken
13 March 9 and 10, 1994, this is GANE Number 59. Everybody
14 should have a copy of it. This is the inspection and it's
15 designated as a reactive inspection; i.e., an unplanned
16 inspection conducted in response to events or issues.

17 This was a follow up on an incident involving
18 the failure of senior reactor operator to follow procedures
19 that resulted in two disabled reactor scram functions.
20 There are two different examples; a non-cited violation
21 given on this particular issue.

22 MS. CARROLL: Oh, you know what, I think our
23 copies on this are funky, Rob, I think there is a notice of
24 violation and ours was separated from the doc -- please
25 forgive us while I scramble.

1 MR. JOHNSON: We're going to attempt to fix
2 this document, apparently we --

3 MS. CARROLL: I may be wrong, I may be wrong.
4 Wait a minute, I'll have to look at ours.

5 MR. JOHNSON: If it's a non-cited violation,
6 would it have a notice of violation?

7 MS. CARROLL: Oh, good point.

8 WITNESS MENDONCA: Can we just say that there's
9 no notice of violation on a non-cited violation, so you
10 don't need to look any further. Also, Mr. Johnson had said
11 "unplanned inspection." It's not unplanned even though
12 it's reactive, our inspections are planned and we decide
13 what we want to do, what we're going to look at before we
14 go out.

15 BY MR. JOHNSON:

16 Q It wasn't a routine inspection though in terms
17 of however often you do them.

18 MR. TURK: Mr. Mendonca, do you wish to clarify
19 that?

20 WITNESS MENDONCA: An unplanned inspection as
21 in not in accordance with the program, it's not included in
22 our normal program where we do go out and review
23 operations; it was a reactive inspection. In the
24 testimony, it says: an unplanned inspection conducted in
25 response to the events. I guess "unplanned" being it's not

1 planned ahead that we scheduled it in a time frame, a year
2 or two in advance, is what I would clarify. Thank you.

3 CHAIRMAN BECHHOEFER: But you told management
4 that you were coming.

5 WITNESS MENDONCA: Yes, it's an announced
6 inspection.

7 MR. JOHNSON: We would not suggest that these
8 inspections are totally unplanned even under those
9 circumstances. I would hope not, anyway.

10 MR. TURK: Perhaps unscheduled is the word that
11 the testimony should have used, but it certainly was
12 planned before you went in the door.

13 WITNESS MENDONCA: Yes, sir. Can we issue an
14 errata at this point?

15 (Laughter.)

16 BY MR. JOHNSON:

17 Q But anyway, moving on, the two examples that
18 you have cited here are failure to complete actions
19 required by the checklist for startup of the reactor and
20 then in parentheses (a fuse was not replaced after it had
21 been removed during a training session). Why would the
22 fuse have been removed during a training session? Would
23 that have been for safety reasons, in order to make sure it
24 wasn't a live reactor, so to speak? Again, my terms may
25 not be very accurate, but I was just wondering why the fuse

1 would be replaced (sic) during a training session,
2 necessitating it being put back.

3 A (Witness Bassett) It was part of the
4 checklist, it was -- the checklist required that the fuse
5 be removed and then a little ways further down on the
6 checklist, it required it to be replaced.

7 Q I see. And the other example is failure to
8 complete actions required by the checklist in terms of
9 another -- in terms of shutdown of the reactor on another
10 day. Three electrical jumpers had not been removed.

11 I was wondering just on a technical level if
12 you would be willing to go into some detail exactly what
13 these jumpers are and what their function is, because
14 that's something that I'm curious about.

15 A (Witness Mendonca) The jumpers are designed to
16 disable certain scram functions in shutdown, so that as you
17 shutdown those scram functions don't unnecessarily come up.
18 The specific scram functions and the discussion of it are
19 in the inspection report which you've submitted as
20 evidence, in the area of page 4, describing the event,
21 paragraph 3(a) on through page 5, which you've submitted
22 into evidence.

23 Q So just to try and phrase it in layman's terms,
24 are these jumpers sort of a bypass mechanism?

25 A (Witness Mendonca) Bypass -- jumpers generally

1 refer to a wire that goes around the circuitry to prevent
2 the circuitry from actuating.

3 Q I see. It says that the incidents were
4 classified as non-cited violations because the disabled
5 scram functions were not required under the tech specs for
6 safe operation of the reactor. What -- I suppose -- I was
7 under the impression that the technical specifications are
8 very inclusive and very comprehensive for most reactor
9 functions and I'm wondering why these scram functions are
10 not required under the tech specs and what that delineation
11 is.

12 A (Witness McAlpine) In this situation, the
13 licensee had some additional safety equipment that was over
14 and above what was required for the safe operation of the
15 plant. And as such, when the NRC reviewed the safety of
16 that plant, they did not rely on those safety functions to
17 provide the safety margin for the plant. And since the NRC
18 did not rely on them, they were not incorporated in the
19 technical specifications.

20 Q I see. And also, as you have noted in your
21 testimony, they're not part of the accident mitigation part
22 of the safety analysis report as well as --

23 A (Witness McAlpine) That's right -- you're
24 correct. They are actually listed in the technical
25 specifications but they're not required to be operational--

1 Q I see --

2 THE REPORTER: I'm sorry, what was the last
3 word?

4 WITNESS MCALPINE. Not required to be
5 operational for the safety of the reactor.

6 BY MR. JOHNSON:

7 Q And this is just an interesting kind of
8 semantic difference that I'd just like to elaborate on. So
9 they're listed in the technical specifications, but in the
10 technical specifications, there is a distinction made
11 between those procedures or equipment that are vital or
12 necessary for the safety of the reactor and those which
13 are, if not -- not unnecessary necessarily, but not as
14 necessary or not crucial.

15 MR. TURK: There may be something like that,
16 but if you're asking about these, I think the testimony
17 characterized it differently than the way you're
18 characterizing it. You're saying they're not as necessary
19 or as crucial. The testimony says they're not required
20 under the TS for safe operation.

21 MR. JOHNSON: True. Maybe I should rephrase
22 it. It was just Mr. McAlpine's comment that they are
23 listed in the technical specifications that I found
24 interesting, that apparently the technical specifications
25 not only include very specific requirements in terms of

1 what is required for the safe operation of the reactor, but
2 also does contain other information. That was one of the
3 reasons I was asking about it, because the way it said it
4 was not required under the technical specifications, I had
5 been led to believe technical specifications were very
6 inclusive and comprehensive of virtually anything that
7 would go on at the reactor and I guess your answer pretty
8 much reinforces what I thought.

9 WITNESS MCALPINE: When I said they're listed
10 in the tech spec, that's based on something that Mr.
11 Bassett said to me, and so I'm relying on his remembrance
12 of the fact that they're listed in the tech spec. But they
13 are not required.

14 BY MR. JOHNSON:

15 Q The licensee, it says, took corrective action
16 after this, reviewed the incident and reviewed those
17 involved, suspending the reactor operator duties of the
18 reactor in question, and the SRO, it says in parentheses,
19 was the same individual who was involved in the 1987
20 cadmium 115 contamination event. This is Bill Downs, I
21 believe we've identified.

22 A (Witness McAlpine) Yes.

23 Q There's a comment here that I find interesting.
24 It says you evaluated the technical performance of the SRO
25 as well as examining the SRO's historical performance, and

1 licensee's panel further determined that because of the
2 SRO's lack of diligence to safety and poor past
3 performance, suspension of the SRO should remain in effect
4 until there is an obvious change in attitude and a
5 commitment to follow procedures.

6 Dr. Karam testify yesterday the he felt that
7 following the cadmium incident in 1987, that Mr. Downs had
8 a proper attitude and had demonstrated a commitment to
9 follow procedures. It seems as if this view is not shared.
10 Let me refer back to the comment I just earlier quoted --
11 the SRO's lack of diligence to safety and poor past
12 performance. Is that a comment that refers to just these
13 two incidents or upon reviewing this individual would one
14 come to the conclusion that his overall performance
15 throughout his career was substandard?

16 A (Witness McAlpine) What we are referring to is
17 we are quoting what the licensee said, that's not an NRC
18 comment.

19 Q Oh, I see, I wasn't -- I was unsure. Well,
20 then let me ask members of this panel, do you agree with
21 that statement, do you agree with that characterization of
22 Mr. Downs as a reactor operator?

23 A (Witness McAlpine) We did not detect a
24 performance problem in Mr. Downs between the time of the
25 cadmium incident and this inspection.

1 Q Would you agree, I guess in the interest of
2 clarification, does this characterization seem to you to be
3 a comment on his general performance? When I see this
4 statement saying because of the SRO's lack of diligence to
5 safety and poor past performance, that seems to me to be a
6 very general statement.

7 MR. EVANS: I think I have to object because
8 again, you're calling for speculation as to the meaning of
9 words written by somebody else, or apparently from either
10 Dr. Karam or someone at the licensee. And they're the ones
11 that said it, they're the ones you would have to ask what
12 they're referring to.

13 MR. JOHNSON: Let me rephrase then.

14 BY MR. JOHNSON:

15 Q In your mind -- I'm going to be asking for a
16 professional opinion on your part -- if you had an
17 individual who had committed an error or an infraction in
18 1987, had -- and as you said, did not detect any
19 performance problem after that until this incident seven
20 years later -- would you characterize them as having poor
21 past performance or would you specify that it was simply a
22 couple of incidents of -- just a couple of bad incidents.
23 Or would you make these kind of general statements? Is
24 that clear?

25 MR. TURK: No, the question is clear, but I

1 think to put it in context, this panel is addressing events
2 that happened after restart. Panel A was here and they
3 talked about Mr. Downs and the fact that there was an
4 enforcement conference with Mr. Downs because of his
5 performance.

6 With that context, if you want to ask this
7 panel about the performance during the period for which
8 they are here to testify about, post-restart, I don't have
9 a problem with asking them what was the performance like
10 during that period, but I think you're asking them to
11 comment upon performance which was the subject of panel A's
12 testimony.

13 MR. JOHNSON: I see, by mentioning the '87
14 incident, that goes outside of their --

15 MR. TURK: This panel is here to talk about
16 post-restart. I have no problem if you want to ask them to
17 comment on that prior performance which was subject to the
18 enforcement conference, but my problem I think is in trying
19 to bridge the entire period and asking for a
20 characterization on the performance of Mr. Downs during the
21 entire period, as opposed to distinct portions of the
22 period.

23 MR. JOHNSON: And we do understand that great
24 care has been taken to try and present these panels in such
25 a way that they don't overlap, and we would respect that.

1 BY MR. JOHNSON:

2 Q Well, I just guess that I would like to ask --
3 I mean, Mr. McAlpine already made a comment, but I'll ask
4 for some elaboration on in the post-restart period, you
5 know, I guess irregardless of the 1987 incident, would you
6 characterize Mr. Downs as having a lack of diligence to
7 safety and poor past performance?

8 A (Witness McAlpine) This event that was the
9 subject of the reactive inspection, certainly in my mind
10 reflects lack of diligence on the part of the senior
11 reactor operator. As I said before, we did not detect a
12 performance problem prior to that during the restart
13 period. But also remember that earlier in the day, we had
14 discussed the fact that we have limited observation. So
15 the licensee is in a much better position to judge
16 performance of their employees than we are.

17 Q Thank you. Well then, I guess from a
18 management standpoint, and that is the contention and so
19 forth, is it of concern to you that, especially given what
20 you just said that the licensee is in the best position
21 basically to determine the performance of their employees,
22 that after restart the licensee was of the opinion that Mr.
23 Downs had a change in attitude and he was committed to
24 follow procedures, and here seven years later we find them
25 basically saying that he has a lack of diligence to safety

1 and poor past performance.

2 I guess does this inconsistency of perception,
3 in terms of the licensee's opinion of his performance as an
4 employee, does that concern you in terms of the
5 management's ability to train or supervise this employee?

6 MR. TURK: I have to object to the predicate,
7 you're blending in so many different factors. This panel
8 is reciting what they understand from the licensee's
9 evaluation of Mr. Downs. In terms of what the past poor
10 performance is, to my mind, that's pre-restart. Now what
11 Dr. Karam or the licensee means by it may be something
12 different. I really think you're asking this panel to
13 speculate on the meaning of the words presented by the
14 licensee.

15 MR. EVANS: I would join in the objection and
16 suggest that this is a very appropriate question for Dr.
17 Karam, although he did already state of record yesterday
18 that there was a period there that at the time of the
19 cadmium -- it's not inconsistent because he said at the
20 time of the cadmium spill and right after that there was an
21 enforcement conference and at that time, Downs indicated
22 that he was repentant and sorry and realized he'd messed
23 up. And Karam also said that for a period of time in
24 there, that there were no problem with him. And then this
25 happened again. You can ask Dr. Karam, certainly the

1 implication is plain that the history Dr. Karam is talking
2 about is '97 and earlier, even with the hiatus between --
3 excuse me, '87 -- and '94, and then he resolved -- he
4 recommended the firing of Downs in I guess it was '87 or
5 '88, that time period, and there again we get where he's
6 doing it again in '94. Well, the history I think was
7 testified to yesterday, but if you want to cross examine
8 Karam further, I would suggest he's the appropriate person.
9 He's the only one that can explain what he meant when he
10 wrote that.

11 MR. JOHNSON: At this point, I'm going to
12 apologize for backing up somewhat to inspection report 93-
13 02. This is going to be GANE Number 60, if I'm correct.

14 MS. CARROLL: 93-02.

15 MR. JOHNSON: Conducted by Mr. Abbott and Mr.
16 Bassett; also Mr. Mendonca and Mr. Adams and several
17 others.

18 MS. CARROLL: GANE Number 60?

19 MR. JOHNSON: GANE Number 60. Is that correct?

20 THE REPORTER: Correct.

21 (The document referred to was marked
22 for identification as GANE Exhibit
23 Number 60.)

24 ADMINISTRATIVE LAW JUDGE KLINE: May I ask one
25 question before you -- on this line of -- A question about

1 Mr. Downs. Did the NRC, itself, consider whether this
2 incident should bring into consideration whether Mr. Downs'
3 SRO license should be suspended or revoked?

4 WITNESS MENDONCA: Yes, we did consider that as
5 a potential, but the licensee was taking actions to suspend
6 him and was acting responsibly, the licensee.

7 ADMINISTRATIVE LAW JUDGE KLINE: So since the
8 licensee was acting against him, you chose not to, is that
9 correct?

10 WITNESS MENDONCA: Yes, and we were waiting for
11 the licensee's final decision on how they assessed Mr.
12 Down's performance through many activities as Mr. McAlpine
13 pointed out.

14 ADMINISTRATIVE LAW JUDGE KLINE: In your mind
15 is it reasonable to suppose that had the licensee not acted
16 that you would have?

17 WITNESS MENDONCA: I think it is reasonable to
18 suppose that we would have considered evaluating Mr. Downs
19 for a position as a senior license operator.

20 ADMINISTRATIVE LAW JUDGE KLINE: Thank you.

21 BY MR. JOHNSON:

22 Q Getting to the inspection report 93-02, this is
23 September 23, 24, and the 27th through 30th of '93, Mr. Rap
24 and Mr. Bassett primarily. There are three different
25 violations cited on this one, the first one being the

1 failure of the Nuclear Safeguards Committee to conduct the
2 bi-annual audit of the licensed operator requalification
3 program as required by the text specs. This had been
4 delegated to the MORS function. I find it interesting
5 immediately below the three violations themselves it says,
6 "In response to the bi-annual audit issue, the licensee
7 denied the violation, indicating the NSC was empowered to
8 seek technical help from anyone regardless of membership in
9 the committee." They indicate that the NSC would do the
10 audit -- perform the audit in the future, so I'm sure it
11 was not much of an issue, but the question I have is, is
12 the licensee correct in saying that? If the technical
13 specifications say that the NSC is supposed to do
14 something, can anyone else perform that function under NRC
15 regulations?

16 A (Witness McAlpine) We didn't have a problem
17 with the Nuclear Safeguards Committee having someone else
18 do the audit. What we had a problem with is the direction
19 in which they delegated responsibility of the audit. We
20 thought that it was inappropriate for them to delegate back
21 to the facility the responsibility of auditing themselves.
22 Had they gone outside to someone independent of the
23 facility that reported back to them where they reviewed the
24 results, I think that would have been appropriate. But the
25 delegation went in the wrong direction.

1 Q I see. Was there, perhaps, in an exit
2 interview or at any point during this process, was there
3 any elaboration on the part of the licensee as to why it
4 was delegated specifically in that direction? Specifically
5 to that person?

6 A (Witness Bassett) I don't recall.

7 A (Witness McAlpine) I don't recall either.

8 Q And it does say that the NRC rejected their
9 denial, but they did agree to move forth and do it as the
10 text specs indicated from now on.

11 The next violation that we have here talks
12 about failure to follow procedures conducting neutron
13 surveys and for completing certain twice weekly
14 contamination control surveys, completing survey forms
15 required for shipping radioactive material. In here, I
16 believe it speaks of these surveying and paperwork
17 requirements. I want to find a few things. This is -- On
18 page two it says enclosure 1 at the top left. This says,
19 enclosure 1, notice of violation and page two headed up at
20 the top it lists the procedures in place and the technical
21 specification section for proper performing of these
22 functions and then it says, contrary to the above, the
23 licensee failed to comply with the following things and you
24 see a, b, c, d below that. A says, "During 1993 no routine
25 neutron radiation surveys were performed on the reactors

1 operating at a level of greater -- of less than one --" Is
2 that suppose to be greater than or less than? I haven't
3 seen one of those signals (sic) in quite some time.

4 A (Witness McAlpine) Greater than or equal to.

5 Q -- "greater than or equal to 1 megawatt.

6 Neutron radiation surveys were not performed for
7 experiments inserted or removed from the vertical beam
8 ports and no semi-annual neutron radiation surveys were
9 performed." I'm interested by that mention of wattage. Is
10 there any particular reason why these surveys are not
11 necessary at a level of greater than or equal to one
12 megawatt?

13 A (Witness McAlpine) We are saying that they
14 were required and they were not done.

15 Q Okay. During conversations, exit interviews
16 and so forth with the licensee, did they indicate that
17 there was some reason to not perform these functions?

18 A (Witness McAlpine) I was not at that exit.

19 THE REPORTER: I'm sorry, I couldn't hear you.

20 A (Witness McAlpine) I'm sorry. I was not at
21 that exit, so I have no knowledge.

22 A (Witness Bassett) I was, but I don't recall
23 anything like that.

24 Q Was it -- Would it be fair to say that it was
25 something that simply slipped by, simply wasn't kept up

1 with?

2 MR. TURK: I would object. You're asking to
3 speculate on why something may have happened or may not
4 have happened. He is saying he doesn't recall any
5 conversation at the exit meeting about this.

6 BY MR. JOHNSON:

7 Q We also see on the same page numbers (sic) C
8 and D talking about shipping of radioactive material. The
9 same shipping papers for shipments 93-05, 93-08, 93-10 were
10 complete but contained incorrect shipping names or
11 incorrect material identification numbers for the material
12 being shipped. The shipping papers for 93-01, 93-04, 93-05
13 did not include survey data for the packages being shipped.
14 This would make it very difficult to track these shipments,
15 if nothing else, would it not?

16 A (Witness McAlpine) No, it's not a matter of
17 tracking the shipments. The shipping papers are important
18 from the standpoint that they tell not only the receiver
19 but the carrier what he has so that the appropriate
20 precautions can be --

21 Q Immediately below that we see a number 3 in the
22 left margin. 10 CFR 71.5 requires each licensee who
23 transports licensed material outside the confines of its
24 plant or other place of use to comply with applicable
25 requirements of DOT. And proceeds to cite other parts of

1 the CFR requiring the description -- must include a
2 description of the physical and chemical form of the
3 material. On the other page, requiring that a person
4 offers hazardous material for transportation must provide
5 24 hour emergency response number and so forth and then
6 saying, contrary to the above, licensee failed to provide
7 the proper description of the reactor material being
8 shipped and failed to include an adequate emergency
9 telephone number on the shipping papers. And that of all
10 the radioactive material shipments the licensee made during
11 1993, none contained a description of the chemical form of
12 the material, and the emergency telephone number provided
13 was that of the reactor control room, which was not
14 monitored 24 hours a day. What is meant in this context by
15 chemical form of the material?

16 A (Witness McAlpine) Chemical form typically
17 would be whether it is, say, a uranium metal, uranium
18 oxide, uranium nitrate. The chemical composition of the
19 material.

20 Q I see. And I suppose that could also have some
21 variance in terms of how it was stored? Different chemical
22 forms could probably have different methods of storage and
23 shipment, couldn't they?

24 A (Witness McAlpine) That is correct.

25 Q So, without knowing the chemical form of

1 something, it would be difficult to know whether it was
2 being stored or shipped correctly, wouldn't it?

3 A (Witness McAlpine) I would guess that the
4 licensee knew what the chemical form was, but they did not
5 put the chemical form on the paperwork.

6 Q And as you -- I'm sorry, Mr. Bassett?

7 A (Witness Bassett) I can clarify that. The
8 shipping papers that they used did not physically have a
9 space designated as the chemical form. So there was none
10 listed.

11 Q I see. Have they changed the forms since then
12 to your knowledge?

13 A (Witness Bassett) Yes.

14 Q They now do contain that information?

15 A (Witness Bassett) Yes, they do.

16 Q If we will move on, moving past the notice of
17 violation into the body, I suppose, of the inspection
18 details. You have on page two of -- I guess it's not
19 necessarily the body, sort of the introductory summary,
20 where it says scope, results and so forth. These are not -
21 - These are just -- I'll just read this part. "Additional
22 observations in the licensee's operational program were
23 noted in the following areas. The procedure for reactor
24 start-up contained unclear guidance for monitoring of
25 period meters or recorder during approach to criticality."

1 Now, assuming that -- Well, I shouldn't assume. Would you
2 just briefly for the record state what period meters are?
3 What this kind of recording equipment is?

4 MR. TURK: I'm sorry, I've lost the page you
5 are on.

6 MR. JOHNSON: This is GANE 60 -- I hope that
7 everyone has a copy.

8 MR. TURK: Yes. Here.

9 MR. JOHNSON: It's in the summary to the report
10 details. It's sort of between the notice of violation and
11 the major body of the report. There's a number two at the
12 top of the page. It doesn't come all the way down the
13 page. It's only about two-thirds of a page of printed
14 material.

15 MR. TURK: And you are asking about which
16 statement in there?

17 BY MR. JOHNSON:

18 Q I'm asking about the first one of the dotted
19 items, "Procedures for reactors start-up contained unclear
20 guidance for monitoring of period meters or recorder during
21 approach to criticality," and I was going to ask just as a
22 clarification point before I asked some other questions, if
23 you could just briefly for the record state what are these
24 period meters, what is their function, why is it important
25 that they be monitored in proper fashion?

1 A (Witness Mendonca) The period meter indicates
2 the rate of power increase on a reactor. It's important
3 for the operator to know what sort of power increase or
4 power conditions he has and also in regards to the corridor
5 and where the power has been and it is going.

6 Q So then as you are approaching criticality,
7 that is obviously a time when the power of the reactor is
8 climbing, if I am correct, so that would be fairly
9 accurate?

10 A (Witness Mendonca) Not as you are approaching
11 criticality from a reactor physics' point of view because
12 period is increasing as you approach criticality. It's --
13 It's an indication of approaching a sustained fission
14 reaction.

15 Q Well, then now to move on to my other question.
16 What about the -- What about the procedure? What -- What--
17 What about this guidance was unclear? What was it that was
18 considered to not be clear and why -- how can this be a
19 problem?

20 A (Witness Mendonca) I think it is described in
21 the report details on page 5, paragraph 5(A), Operations,
22 as to what the inspector had found. The operator did not
23 check other control indications such as the period meter
24 and it describes perhaps where it should have been and why
25 he identified it and that he would follow up on it at some

1 later date.

2 Q I noticed this point here. The procedure was
3 not clear if these directions applied during the approach
4 to critical. So, I can see what that is referring to.

5 The next dotted item is interesting. Two LPG -
6 - I'm assuming that might mean liquid propane powered --
7 "Two LPG fueled fork trucks," forklift type vehicles, I
8 assume, "were stored in the reactor bay near reactor
9 safety." Well, first I would like a clarification about
10 what is meant by reactor safety in that statement because I
11 thought reactor safety was more of a concept than a
12 location.

13 A (Witness McAlpine) It appears that some words
14 were left out of the summary. Because if you go back to
15 page two of the details under section C-1 it says, "...
16 near equipment essential to reactor safety."

17 Q I see. Even in the more elaborate version
18 here, in the details, we're not necessarily told why this
19 could or might be a problem. There is a mention -- There
20 is a mention that the inspector's questioned if a fire
21 explosion hazard review had been conducted. The licensee
22 said such a review is not required. Am I to assume from
23 that reference that this was a concern because of possible
24 fire hazard perhaps because of the propane being the fuel
25 source? I'm just generally curious.

1 A (Witness McAlpine) It would appear so.
2 Clearly you can have a piece of equipment that has
3 liquified petroleum gas in it. You don't want it near
4 equipment important to safety. That equipment important to
5 safety is necessary for the safe operation of the reactor.
6 If you're going to have to park it somewhere, park it
7 somewhere where it is not a potential -- does not have
8 potential to impact safety.

9 CHAIRMAN BECHHOEFER: You could take it off-
10 site through Valu-Jet.

11 (Laughter)

12 WITNESS MCALPINE: I'm glad I didn't make that
13 a part of the record.

14 CHAIRMAN BECHHOEFER: I'm not sure it needs to
15 be on the record.

16 BY MR. JOHNSON:

17 Q To any of your knowledge, had this been an
18 issue before? Had they been asked to move these same
19 forklifts previously because of a very similar problem?

20 A (Witness Bassett) Not to my knowledge.

21 A (Witness McAlpine) Not to my knowledge.

22 A (Witness Mendonca) Me either.

23 Q The next item is fairly self-explanatory.
24 "Records were not consistently maintained in an readily
25 retrievable location." I would be interested to know what

1 the meaning of readily retrievable is. Does that mean they
2 are in a locked room? Does that mean that the records are
3 not organized in such a way that it is easy to find what
4 you're looking for? What does that refer to, to your
5 knowledge?

6 A (Witness Bassett) Inspector -- I was one of
7 the inspectors in this inspection, but Mr. Rap, that's his
8 observation, and I believe I recall from the -- in trying
9 to review operator requalification records or something to
10 do with operators, and that some of them had -- some of the
11 records had been stored at another location off site. So
12 it took some time for the licensee to retrieve those
13 records. They were historical records. They weren't
14 current records but they were historical records, and it
15 took a while for the licensee to retrieve them.

16 Q I see. Is it common for documents like this to
17 be stored off-site like that?

18 A (Witness Bassett) I don't know.

19 A (Witness Mendonca) For historical records it's
20 not uncommon to store them in some other location. Indeed
21 the particular point of this open item is discussed in the
22 report details, page four, paragraph four, under training.
23 As Mr. Bassett correctly recalled, it looks like it was
24 related to training records.

25 A (Witness Bassett) NRC doesn't have a

1 requirement that the licensee keep everything in one place.
2 This comment may, in retrospect, be one that we should not
3 have put there. It's not a requirement. So --

4 Q It may be excessively --

5 A (Witness Mendonca) Yeah. It was something
6 that would make our job a little easier, but it is not
7 something that we would require.

8 CHAIRMAN BECHHOEFER: Are there certain records
9 that a licensee must either store on site or have ready
10 access -- ready identification, I should say, to where
11 those records are stored and treatable?

12 WITNESS MCALPINE: There are records that the
13 licensee is required to maintain, but I am not aware of any
14 -- any requirements on how readily retrievable they are,
15 with respect to research reactor records.

16 WITNESS MENDONCA: No, there's no requirement
17 that I am aware of either in any reactor license or
18 requirement for how readily retrievable they are.

19 ADMINISTRATIVE LAW JUDGE KLINE: That's
20 assuming they are retrievable in some form.

21 WITNESS MENDONCA: They must be retrievable in
22 some form and licensees demonstrate to us that they have
23 the records and have met the requirements.

24 ADMINISTRATIVE LAW JUDGE KLINE: Yeah, if you
25 ask them for a record and they say, well, gee, I know I

1 have it, but I can't find it right now, that would be not -

2 -

3 WITNESS MENDONCA: That's not acceptable. That
4 means the record wasn't presented and we would eventually
5 get to a violation. The specifics on this again --

6 WITNESS MCALPINE: Let me correct that. We
7 would not necessarily get to a violation. If the record
8 was ultimately retrievable, then a violation did not occur,
9 if it is a required record. We might get there through a
10 circuitous path. We might have a situation in which the
11 licensee says, gee, I don't think I have it. We say, it's
12 a required record. Issue a violation and then ultimately
13 withdraw it if the licensee produces or finds the record.

14 WITNESS MENDONCA: The other point is, if it is
15 not a required record. In this instance towards the bottom
16 of page four it describes that they eventually found the
17 records and personnel files, and again, the inspector just
18 wanted to follow up on the item at a later date.

19 MR. JOHNSON: That does say no violations or
20 deviations down at the bottom. That's fine.

21 BY MR. JOHNSON:

22 Q One question that this last line of questioning
23 has brought up for me, the statement that precedes these
24 five items. "Additional observations in the licensee's
25 operational program were noted in the following areas:" As

1 I understand it none of these five items are necessarily
2 citable or violation oriented occurrences. They are listed
3 in this document, I imagine because they were of concern --
4 you know, you're saying you felt the one about the records
5 was perhaps frivolous and shouldn't be in there in any
6 regard, but to back up one, is there a requirement in terms
7 of where the forklifts are stored, or is that just a matter
8 of safety and common sense that they should not be in an
9 area that could harm reactor safety?

10 A (Witness McAlpine) This was an observation
11 that the inspector made during his inspection and we
12 documented that observation. Sometimes when you bring
13 someone in from the outside, like a NRC inspector, they can
14 see something where others may have looked at it every day
15 and saw nothing out of the ordinary. At the same time in
16 the spectrum, they may go in and not see it either. We're
17 all fallible. So here was something that the inspector saw
18 that could have an impact on safety. He brought it to the
19 licensee's attention and we documented it in the inspection
20 report.

21 Q I see. So would you say then that an NRC
22 inspector is not strictly bound to just looking for
23 violations but that anything that could negatively impact
24 reactor safety or public health is something that they
25 should be alert for? Again, keeping in mind that we are all

1 fallible, as you just said, these seem to be instances here
2 of things that don't necessarily fit into specific
3 violations or specific NRC regulations but were observed as
4 possible issues. Is this appropriate for NRC inspectors to
5 make these kind of observations and to note things like
6 this when they feel they may affect safety, even if they
7 don't necessarily apply to specific regulations or
8 violations?

9 A (Witness McAlpine) Absolutely, but I would --

10 MR. TURK: The characterization Mr. McAlpine
11 was talking about -- your previous question, I believe,
12 about finding the LPG trucks, and you say "these kinds of
13 things", I don't think he said that failure to have the
14 records all at one readily accessible place could possibly
15 affect safety.

16 MR. JOHNSON: I probably should, as a
17 clarification, they had stated that they feel the third one
18 of these items is possibly frivolous.

19 WITNESS MCALPINE: But I would turn your
20 statement around. We go in to determine whether the
21 facility is operated safely. That's our primary mission.
22 Of secondary importance is that if there are violations of
23 regulatory requirements, then we document those, get the
24 licensee to correct them, and go on from there.

25 BY MR. JOHNSON:

1 Q Let me ask this question. If you were, as an
2 inspector, to find an issue regarding safety which fell in
3 some kind of gray area or fell between the cracks, however
4 you would want to characterize it, of current regulations;
5 is there any recourse, is there any procedure by which you
6 can create new regulations to govern that situation or that
7 you can at least pass on to your superiors or to whoever
8 would be in charge or creating new regulations.

9 A (Witness McAlpine) We wouldn't need to create
10 a new regulation to take care of a safety issue. All
11 inspectors know that if they're in the field and they see a
12 safety problem, that they must alert the licensee and they
13 must have the understanding that that safety problem is
14 going to be corrected before they leave. If the licensee
15 will not correct the safety problem, then they call back to
16 the regional office, and if it indeed is a safety problem,
17 we will get that fixed. We will go as high as we need to
18 go. And in this case, we didn't have to do that, but we
19 will go as high as we need to go in that licensee's
20 organization to fix a safety problem.

21 A (Witness Mendonca) For lesser -- Ed is talking
22 about some very significant safety problem. For safety
23 problems that aren't an immediate need, where there may be
24 some improvement in the regulations, there is also
25 processes for that. There's also processes for getting

1 generic information out. We have various processes that
2 ensure that the complete spectrum of issues are covered in
3 some manner so that safety is assured.

4 Q So I guess just to try and put a more tangible
5 example to all this, if the licensee had been told to move
6 these forklift trucks because it was a possible safety
7 hazard and they had declined to do so, there would have
8 been recourse, if it was felt to be significant enough for
9 them to do so.

10 A (Witness McAlpine) Yes.

11 MR. JOHNSON: We can go off the record for a
12 moment.

13 CHAIRMAN BECHHOEFER: Off the record.

14 (Brief pause.)

15 CHAIRMAN BECHHOEFER: Back on the record.

16 BY MR. JOHNSON:

17 Q This is number 9, Internal Exposure Review-
18 Radiation --

19 CHAIRMAN BECHHOEFER: Give the page, when you
20 mentioned the page, we weren't on the record.

21 MR. JOHNSON: Oh. We are on page 8, this is
22 GANE 60 and we're looking at number 9 and the subheading
23 (a) on the bioassay program.

24 BY MR. JOHNSON;

25 Q They reviewed selected results of the bioassay

1 analyses that had been performed to date during 1993.
2 During that period, the highest intake for a seven
3 consecutive day period was calculated to have been 1.8
4 microcuries of tritium. This exposure had occurred during
5 cleanup of cooling water that had leaked from around the
6 bismuth block filter at the biomedical port of the reactor.

7 We had already heard testimony that the bismuth
8 block is part of the cooling system and I had been under
9 the impression that we had -- someone had been trying to
10 give us the impression that as such, it was capable, for
11 lack of a better word that I can come up with right now, of
12 leaking radiation. This is obviously a small amount of
13 radiation, but I'm just curious as to since this is the
14 cooling system, how any tritium at all found its way into
15 the cooling water.

16 MR. TURK: May I say we have not heard
17 testimony that the bismuth block is part of the cooling
18 system. We have heard testimony that the bismuth block has
19 its own cooling system, distinct from the cooling system of
20 the reactor.

21 MR. JOHNSON: Well, if I can I guess back up a
22 moment. This exposure had occurred during cleanup of
23 cooling water that had leaked from around the bismuth block
24 filter. And I suppose that could be from its own cooling
25 system, but I'm still I think left with the same question

1 of how did tritium get into a cooling system, I guess
2 regardless of whether it was a smaller scale cooling system
3 merely meant to cool the bismuth block or a larger one.
4 I'm just curious.

5 WITNESS MCALPINE: The cooling system for the
6 bismuth block historically was heavy water. At some point
7 in time, they changed and I don't know what date, but they
8 went from a heavy water coolant to a light water coolant.
9 There may have been some residual heavy water in that light
10 water cooling system. It could have gotten tritium
11 creation from the --

12 THE REPORTER: I'm sorry, I can't hear you.

13 WITNESS MCALPINE: I'm sorry. You could have
14 gotten the tritium creation from the detergent.

15 WITNESS MENDONCA: You are indeed asking us to
16 conjecture somewhat on how this material got there.
17 Tritium is a very invasive material, it's basically
18 hydrogen and it can get through a lot of different sources
19 and subsequently be condensed in water. It could have come
20 also from the primary, if we're going to conjecture. There
21 are various paths that it can come through.

22 MR. JOHNSON: I understand that.

23 WITNESS MENDONCA: The point is that it was
24 measured, it was a low amount, and evaluated by the staff,
25 the NRC staff.

1 MR. JOHNSON: I understand you can't know for
2 sure, but I figured you would have a better idea than I
3 probably would.

4 ADMINISTRATIVE JUDGE KLINE: Has that tritium
5 ceased to appear in that cooling water now?

6 WITNESS BASSETT: If I remember correctly, they
7 still find traces of tritium in that cooling water.

8 WITNESS MCALPINE: I might point out that
9 regular water has some hydrogen in it that has an extra
10 neutron, very small, and that could activate.

11 ADMINISTRATIVE JUDGE KLINE: The cooling water
12 for the bismuth block is exposed to neutrons, is that
13 right?

14 WITNESS MCALPINE: Yes, sir.

15 BY MR. JOHNSON:

16 Q I was looking below here in the same area on
17 page 8. As a result of this exposure, a total of .3 MPC
18 hours were assigned to the individual. What is an MPC
19 hour?

20 A (Witness McAlpine) MPC stands for maximum
21 permissible concentration. So that is in essence the
22 amount of intake that an individual would receive in three
23 tenths of an hour breathing air that contains the maximum
24 permissible concentration of tritium, in this case. Now
25 this is old Part 20, not the current Part 20.

1 Q So that's 18 minutes?

2 A (Witness McAlpine) If that's what three terths
3 is, yes.

4 Q Licensee indicated that MPC hours were not
5 tracked formally, but were tracked informally. Is there
6 any conversion that can be done to MPC hours into other
7 units since this seems to be the only unit that they
8 identified this individual as. Is there anything that is
9 tracked that you can convert that to? Is there any way
10 that you can make that into another measurement? Is there
11 a millirem per hour, are there other units that you can
12 convert that into?

13 MR. TURK: I think what you have to understand
14 is that the regulation is written in a certain way. Part
15 20 uses the phrase "maximum permissible concentration" and
16 that's what they're relating it to. I don't have a problem
17 if you want to ask the witnesses for clarification of that
18 or if I'm wrong -- figuratively speaking.

19 BY MR. JOHNSON:

20 Q The point that I'm really trying to get at is
21 that if this is not tracked, you know, then how can there
22 really be assurance that there aren't health effects; you
23 know, how can you assure the safety of this individual when
24 you're measuring their exposure by a unit that even though
25 apparently it is a unit that's an official unit as Mr. Turk

1 is just trying to explain to me, how can you assure health
2 and safety and so forth when you're measuring dosages in
3 something that is not tracked formally by the people making
4 the measurement.

5 A (Witness Mendonca) This is an old -- this is
6 the old part of the regulation and I'm recalling from the
7 past that there are given limitations on when you need to
8 monitor and how far you need to monitor and my recollection
9 again on this old regulation is that this was below that
10 particular threshold, so there was no requirement for them
11 to monitor further. And that is generally the case at
12 these sort of reactors, that airborne contamination release
13 is generally below the sort of thresholds we're monitoring
14 and tracking formally is required.

15 A (Witness McAlpine) Yes, you'll find on the
16 next page that the level of airborne concentration was less
17 than 25 percent, which did not require formal calculation
18 or tracking of exposure from that airborne source. And at
19 a reactor, the major hazard is from ionizing radiation that
20 you're going to receive externally as opposed to internally
21 from airborne contamination.

22 Q I see. Well, just in terms of your comments
23 about threshold, -- and again, it does say the licensee
24 indicated, so this may not be something that you can defend
25 or explain. But it says the licensee indicated that MPC

1 hours were not tracked formally. It doesn't say that MPC
2 hours below a certain threshold are not tracked formally,
3 it says that they're not tracked formally period.

4 And I guess my question is, is that appropriate
5 -- if I'm reading this correctly, even if you would have
6 gotten, as opposed to .3 MCP hours, if you would have
7 gotten 10 MCP hours or 100 or however, it still would not
8 be tracked formally by the licensee. At least that's the
9 licensee's indication here. Is that appropriate?

10 A (Witness Mendonca) I think you have to take
11 the whole sentence that it's not tracked informally (sic)
12 but if there were problems, they would have a responsible -
13 - they would take action noted and take responsible action.
14 Again, they met the requirement and satisfied the
15 requirement and again had a program that is not
16 unreasonable or untypical either, of monitoring of reactors
17 for this type of contamination, from airborne
18 contamination.

19 Q I see. So MPC hours --

20 A (Witness Bassett) And they were running the
21 bioassay, they had a bioassay program. They were taking
22 urine samples, they were analyzing and, you know, coming up
23 with some type of exposure rate here, so they had a program
24 in place to detect if there was exposure to tritium.

25 ADMINISTRATIVE JUDGE KLINE: My understanding

1 is that that block cooling system has continued to leak;
2 that is to say, the radiator stop leak and whatever didn't
3 really work, so you have a chronic leak down there of
4 tritiated water. Could you tell me why you're comfortable
5 with that in terms of radiation exposure to people,
6 especially from the comment of Mr. Mendonca that tritium is
7 pretty invasive in terms of its mobility?

8 WITNESS BASSETT: In my observations of the
9 area that -- the area of the leak, if you will -- I have
10 never noted any running water or anything. You might
11 notice some dampness, it's not a steady leak or it's not
12 something that appears to be a big problem. But it does
13 leak and occasionally you'll see dampness there.

14 ADMINISTRATIVE JUDGE KLINE: I have wondered
15 about this before. In terms of sort of roping off an area
16 of water leak, that doesn't really contain the tritium,
17 does it?

18 WITNESS MCALPINE: No. And there's really more
19 to the temporary solution that the licensee has implemented
20 than simply allowing it to leak. They are collecting it in
21 a vessel and this material is then recycled into the
22 cooling system.

23 ADMINISTRATIVE JUDGE KLINE: I understand the
24 bulk water is collected, but nevertheless, there must be a
25 vapor phase that's getting away.

1 WITNESS MENDONCA: Indeed, as Craig said, they
2 are doing the bioassay program, they do have other
3 monitors.

4 ADMINISTRATIVE JUDGE KLINE: So the bioassay
5 program does continue then, is that correct?

6 WITNESS MENDONCA: Yes, we have observed that.

7 BY MR. JOHNSON:

8 Q Well, a question, again especially because this
9 is a chronic leak -- and that's a good choice of words -- a
10 lot of effects of radiation can be cumulative. Without a
11 formal tracking program in place, how can you really tell
12 what long-term effects this may be having on employees or
13 on other people who may be there?

14 A (Witness Bassett) When licensee employees work
15 in an area that they suspect some type of exposure to
16 tritium, they require a sample be submitted for analysis,
17 and that's basically -- it's not tracked formally because
18 it's always below -- or it has, to my knowledge, always
19 been below that threshold level, but they do require a
20 sample be given if there is work done in an area that there
21 is suspected exposure to tritium. So they do do the
22 analysis and they do check for it.

23 A (Witness Mendonca) You were mentioning long-
24 term effect and the point being that by them meeting the
25 regulation, we have good confidence that the effects on

1 these individuals are within the regulations, and
2 therefore, within what the NRC has established as
3 acceptable to protect not only the public, but also the
4 occupational health and safety of these individuals.

5 Q Well then, would that sort of calculation be
6 the source of the figure at the bottom of page 7 when it's
7 talking about doses for individuals, it says the highest
8 accumulated individual exposure for the year is 150
9 millirem, is that figure done with, you know, calculating
10 cumulative exposure over time?

11 MR. TURK: May I ask where you're looking at?

12 MR. JOHNSON: Page 7 of the report details, the
13 page right before, at the very bottom, the highest
14 quarterly whole body dose received, and goes on.

15 A (Witness McAlpine) The answer is no. That
16 whole body dose with the exposure to ionizing radiation
17 would not include the exposure -- the internal exposure to
18 tritium, at that time. Our regulations have subsequently
19 changed and we now require the licensee to sum the internal
20 and external exposure. So that now they would sum -- they
21 would take this three tenths of an MPC hour, convert that
22 into its equivalent and sum it up along with the external
23 radiation that the individual received.

24 Q I see. That helps answer my question before
25 about whether it can be converted. And this is now the

1 official rule?

2 A (Witness McAlpine) Yes.

3 ADMINISTRATIVE JUDGE LAM: What was the 10 CFR
4 20.101 limit on total radiation exposure at that time?

5 WITNESS MCALPINE: It was a quarter of the five
6 rem, 1.25.

7 WITNESS MENDONCA: Up to a maximum.

8 ADMINISTRATIVE JUDGE LAM: 125 millirem.

9 WITNESS MCALPINE: No, 1.25 rem.

10 WITNESS MENDONCA: I'd have to look at the
11 regulations to be sure that there's not another maximum.

12 WITNESS MCALPINE: 1250 millirem.

13 ADMINISTRATIVE JUDGE LAM: 1250.

14 MR. TURK: That's the whole body?

15 WITNESS MCALPINE: Whole body.

16 WITNESS MENDONCA: And I think there was an
17 upper limit of three per quarter if you met the, what is
18 it, N minus 18 times 5 limit, if you want to be precise.

19 WITNESS MCALPINE: 5N minus 18.

20 WITNESS MENDONCA: Yeah, 5N minus 18.

21 BY MR. JOHNSON:

22 Q In 5N minus 18, what is the N?

23 A (Witness McAlpine) N was the age of the
24 person.

25 Q I see. And that figure --

1 A (Witness McAlpine) That was cumulative
2 lifetime.

3 Q Oh, I see. And that's one of the ways that
4 cumulative exposure is measured?

5 A (Witness McAlpine) That's a limit.

6 A (Witness Mendonca) It's in the old regulation.

7 A (Witness McAlpine) It's gone now.

8 MR. TURK: And just for clarification, that was
9 the maximum of three rem --

10 WITNESS MENDONCA: Per calendar quarter if you
11 met the lifetime exposure allowance.

12 BY MR. JOHNSON:

13 Q What is the new limit for exposure, if there's
14 a new standard?

15 A (Witness Mendonca) It's in the regulations,
16 it's basically five rem per year, whole body, and combined
17 whole body; internal and external exposure.

18 MS. CARROLL: Now?

19 WITNESS MENDONCA: Correct.

20 MS. CARROLL: Per year.

21 WITNESS MENDONCA: Per year.

22 WITNESS MCALPINE: That would be a total
23 effective dose equivalent.

24 MR. TURK: If you want, we can try to get you a
25 citation.

1 MR. JOHNSON: For the new limits?

2 MS. CARROLL: A citation would be lovely. I
3 really thought it was 500 millirem a year and 100 millirem
4 for the general population. That's why we asked.

5 WITNESS MCALPINE: 100 millirem for the general
6 population?

7 WITNESS MENDONCA: The general population is
8 specified in Part 20 -- 10 CFR 20.1301, is for the public
9 generally. And 1302 also has some requirements for the
10 public. Occupational dose limits are generally specified
11 in like 10 CFR 20.1201 and it specifies the total effective
12 dose equivalent of five rem. And in that whole -- actually
13 the whole subpart (C) in 10 CFR 20 specifies occupational
14 dose limits, if you're interested, it's titled Subpart (C).

15 MR. EVANS: That's per year?

16 WITNESS MENDONCA: Per year, five rem per year.

17 MR. EVANS: Thank you.

18 MR. JOHNSON: What time is it?

19 CHAIRMAN BECHHOEFER: 12:25.

20 MR. JOHNSON: We're at a relatively good
21 stopping point.

22 CHAIRMAN BECHHOEFER: That's okay.

23 MR. JOHNSON: The next question could take a
24 little while and I thought it might be a good time --

25 CHAIRMAN BECHHOEFER: Are you through with GANE

1 60?

2 MR. JOHNSON: No, I have one line of
3 questioning, but it may take another 15-20 minutes.

4 CHAIRMAN BECHHOEFER: You haven't put either
5 that or 59 in the record yet.

6 MR. JOHNSON: That's true. Maybe we should go
7 ahead and do that before we break, if we could have a
8 moment. We would move to enter 59 and 60 into the record.

9 MS. CARROLL: Is 58 in, 57? Let's mop it up
10 and get them all in.

11 CHAIRMAN BECHHOEFER: They're all in.

12 MR. JOHNSON: Okay, we would like to move 57,
13 58, 59 and 60 into the record and these are all inspection
14 reports.

15 MR. EVANS: No objection.

16 MR. TURK: No objection.

17 CHAIRMAN BECHHOEFER: Those exhibits will be
18 admitted into the record.

19 (The documents, heretofore marked as
20 GANE Exhibits Number 57, 58, 59 and
21 60, were received in evidence.)

22 CHAIRMAN BECHHOEFER: 1:45 to come back.

23 (Whereupon, a luncheon recess was taken at
24 12:30 p.m., the hearing to resume at 1:45 p.m.,
25 the same day.)

AFTERNOON SESSION

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CHAIRMAN BECHHOEFER: Anything preliminary before we resume cross examination?

(No response)

MR. JOHNSON: We had been working -- in addition to working from the written testimony of the panel, we had been working from GANE number 60, which is inspection report 93-02. There were a couple of items that we wanted to go over pointed out to me by my cohort.

MS. CARROLL: I think you should save that for last, though.

MR. JOHNSON: You want me to do this one first?

MS. CARROLL: Yeah. Yeah.

Whereupon,

MARVIN MENDONCA

ED McALPINE

CRAIG BASSETT

resumed the stand as witnesses, and having previously been sworn, was examined and testified as follows:

CROSS EXAMINATION (continued)

BY MR. JOHNSON:

Q If you would turn to page 13 of the report details, the environmental monitoring. It has a heading C at the top. It's just right after page 12. It has a good

1 number of facts and figures and tables on it. In the
2 environmental monitoring section, it's talking about
3 various monitoring, including using film badges and in the
4 middle paragraph there it says, a review of the exposures
5 of the 30 environmental film pack badges indicated that
6 none showed radiation exposure above background.
7 Nevertheless, several badges showed -- or I should say,
8 none of them showed radiation exposure above background due
9 to reactor operations. Nevertheless, several badges did
10 show radiation exposure above the background. One such
11 badge was located on the roof of the NRRC building and two
12 others were located near the barn behind the reactor
13 containment building. The licensee determined that the
14 exposures registered on the badge located on the building
15 were attributable to environmental damage, otherwise rain
16 or excess heat. The exposures registered on the badges
17 located near the barn were due to the presence of Radium
18 226 sources stored in that building. The licensee
19 subsequently consolidated the sources for shipment and they
20 were disposed of as radioactive wastes.

21 A question that I would have is, we have heard
22 about these outdoor monitoring devices and we have heard
23 the licensees claim that a lot of high readings have been
24 caused by heating damages and rain and so forth. Is it
25 possible that the Radium 226 sources here, which is given

1 credit for causing some high readings near the barn, could
2 have also contributed to the high readings elsewhere? Is
3 that clear?

4 A (Witness Mendonca) High readings where or
5 elsewhere, I guess is my question?

6 Q Near the reactor building itself. I suppose I
7 mean -- We have seen a lot of, as I've said, evidence of
8 high readings on these badges and they are always put off
9 usually to heat damage, rain, things such as that, and this
10 is one of the few times that we see such of a level
11 identified with an actual presence of radioactive material
12 and it says that after this, this radioactive material was
13 moved off -- you know, was disposed of as radioactive waste
14 and so forth, but I was just wondering if it is possible
15 that the licensee could have been mistaken about some of
16 their earlier claims that these readings were caused by
17 environmental purposes and that the Radium 226 could have
18 been responsible for other high readings as well?

19 A (Witness McAlpine) I don't believe that there
20 is sufficient information here in this inspection report to
21 draw a conclusion one way or the other. It would depend on
22 how much Radium 226 was present and how far away the film
23 badges were, and this just does not provide sufficient
24 information to analyze that.

25 A (Witness Mendonca) I guess what I would add

1 is, based on the fact that it is in the inspection report,
2 our inspectors had assessed it and had not controverted
3 that conclusion, you know, and they were evaluating it at
4 that time for the specific locations, which is one in the
5 variable, and the distances, and again, have not
6 controverted that. In our follow-up of this type of -- of
7 this consideration of TLDs, we have come to an agreement
8 that based on the licensee's analysis and subsequent
9 analysis that this, indeed, probably was due to either heat
10 or moisture damage or some other damage. So I guess -- I
11 think through inference plus our analysis more recently
12 that is associated with the 22-06, I would concur that it
13 probably was from a rain or an excessive heat.

14 Q Well, the natural follow-up question -- I mean,
15 we have been trying -- We've been mentioning these TLDs
16 several times already. This may be a good time to try and
17 get this question out. The TLDs do seem to have a history.
18 At least --

19 ADMINISTRATIVE LAW JUDGE KLINE: Before we get
20 too far there should be a distinction draw between film
21 badges and TLDs. Just make clear what it is you're talking
22 about.

23 MR. JOHNSON: Okay. They had mentioned that,
24 so it threw me off.

25 BY MR. JOHNSON:

1 Q In terms of the outdoor monitoring, in terms of
2 the monitoring outside the facility for airborne --
3 contamination that leaves the building, we have a long
4 history -- we've seen in several different inspection
5 report and other documents of these readings being thrown
6 off, for lack of a better word, by environmental sources,
7 heat, moisture, the things that we have already mentioned.
8 Being that you -- I'm just asking your professional
9 opinions, since you all work in this area, why is it that
10 these monitoring devices continue to be relied upon if they
11 are -- it is apparently fairly easy for them to be
12 disrupted by --

13 MR. TURK: They --

14 MR. JOHNSON: I'm sorry?

15 MR. TURK: Go ahead and conclude. I didn't
16 mean to interrupt you.

17 MR. JOHNSON: Since it appears to be fairly
18 easy for them to be disrupted by such fairly ordinary
19 occurrences as heat, moisture, I mean, there are
20 environmental outdoor monitoring devices that are going to
21 be in the rain, they're going to be in the heat. Why are
22 they relied upon if they are so easily diverted by these
23 things.

24 MR. TURK: I would have to object to the
25 characterization because I'm not aware there is a long

1 history of problems with the film badges. I don't --

2 MS. CARROLL: You mean film badges or TLDs?

3 MR. TURK: This inspection report has to do
4 with film badges. I'm not aware of a long history of
5 problems with either. If there is some document you are
6 referring to that you could enlighten us, we'd appreciate
7 it.

8 MS. CARROLL: Are they used interchangeably?

9 WITNESS MENDONCA: No.

10 MS. CARROLL: What was a film badge doing
11 outside? Don't you normally use TLDs?

12 WITNESS MENDONCA: Up until not too long ago
13 they used film badges and then they converted to the TLDs.

14 MS. CARROLL: Because the TLDs were considered
15 better?

16 WITNESS MCALPINE: TLDs are not sensitive to
17 those problems like film is.

18 WITNESS MENDONCA: They also have a better
19 resolution. That is, they go to a lower sensitivity in
20 dose as the TLBs that they are currently using.

21 BY MR. JOHNSON:

22 Q When did they make the changeover from film
23 badges to TLDs, just so we can get it clear when the one
24 would have stopped and the other would have started?

25 A (Witness McAlpine) I think we would have to

1 guess.

2 MR. TURK: If you would have to guess, I would
3 say it's not going to help the record.

4 MR. JOHNSON: That's true.

5 WITNESS MCALPINE: We don't have the record
6 here to enable us to answer that question.

7 MR. JOHNSON: I see.

8 BY MR. JOHNSON:

9 Q Well, I see -- I mean, here in GANE Number 56,
10 just so I can make another reference, I mean, this is even
11 more current. This -- I mean, we've already heard
12 arguments yesterday about the admissible and relevance of
13 certain things because they were admitted because they were
14 occurrences that happened after the contention was filed.
15 94-02 I think is probably the last inspection that was
16 filed before the contention was put in. This is September
17 20, 1994. I believe it was October of '94 when you first
18 started in this proceeding and as of 94-02, on page ten of
19 the report, details the general body of the document. It
20 says, "Environmental monitoring".

21 Yes, I have moved from GANE 60 to GANE Number
22 56. I apologize if I didn't speak up or say that loud
23 enough.

24 Now, on page 10 of the details part of the
25 document under a heading that says, Environmental

1 Monitoring, and all through this entire section they are
2 talking of film badges being used. And towards the bottom
3 of this section we see a paragraph that says, again, these
4 results were considered to be attributable to environmental
5 damage. And even if it has been changed to at TLD
6 monitoring at this point as recently as two or three weeks
7 before this contention was filed, they were still using the
8 film badges. They were still having false readings,
9 apparently due to environmental factors, and you know, if I
10 had more time, I think we could probably find more
11 examples, but if nothing else, we at least have one from
12 '93 and one from nearly a year later. Basically, you know,
13 giving the same excuse for the same problem. Before the
14 TLDs came into effect, were there other monitoring options?
15 Were there other things they could have done besides TLDs?

16 A (Witness Mendonca) The environmental
17 monitoring that is specified with these 30 TLDs is one of
18 the methods for determining what releases are given to the
19 environment. There are other monitors which are in the
20 stack and in the plan. Indeed, some of the TLD -- some of
21 the film badges were damaged. It wasn't all of them and
22 there are considerable other environmental monitors, plus
23 the monitors that are required by the technical
24 specifications at that facility.

25 A (Witness Bassett) I might add a couple of

1 points. This kind of damage has been noted at other
2 facilities, research reactors, and attributable to
3 environment or heat or something like that, and also when
4 the licensee gets a report back from the vendor, sometimes
5 it will have an explanation of a reading like that would be
6 possible damage to the environmental conditions. Also, I
7 believe it was, you pointed out in 1994 they were still
8 using film badges and I believe it was the next year that
9 they switched to TLDs.

10 Q So sometime in '95. Roughly, again, I
11 understand you're not sure. You know, the obvious question
12 -- I understand and appreciate what Mr. Mendonca was saying
13 about other monitoring equipment and other things besides
14 the film badges, but the film badges, I'm assuming are
15 supposed to operate as part of an integrated monitoring
16 system. Why was this used for as long as it was when it
17 seems like it is inherently unreliable.

18 MR. TURK: Could we perhaps first establish
19 whether these badges were a part of a required
20 environmental monitoring program?

21 BY MR. JOHNSON:

22 Q Is this kind of film badge monitoring, is this
23 an optional or voluntary monitoring effort by Georgia Tech
24 or is this something that's part of their technical
25 specifications and so forth?

1 A (Witness Bassett) It's a monitoring program
2 that has been approved by the NRC. I might add also that -
3 -

4 Q I guess the question is, is this a required
5 part -- just in order to clarify what Mr. Turk was trying
6 to get at -- Is this a required part of their monitoring or
7 is this something they are doing extra, that they are not
8 necessarily relying on for the safety of the public and so
9 forth, but which they are doing voluntarily?

10 A (Witness Mendonca) I'd like to look it up in
11 the technical specifications to make sure. I don't have
12 it memorized.

13 MS. CARROLL: Right. Maybe you can establish
14 when this change was made, since it must have been more
15 recently than two years ago to a different monitoring
16 system.

17 CHAIRMAN BECHHOEFER: Let's go off the record.

18 (Off the record)

19 CHAIRMAN BECHHOEFER: On the record.

20 MR. TURK: Your Honor, for the record I think
21 we'll allow the panel to answer to the best of their
22 ability at this time based on the documents which they have
23 reviewed, and if necessary Mr. Mendonca might be able to
24 supplement tomorrow when he appears as part of Panel C, if
25 he considers it necessary.

1 WITNESS MENDONCA: There is in the safety
2 analysis report submitted by the licensee in their
3 application to renew their license -- the one I am looking
4 at currently is dated -- with the cover letter, January 19,
5 1995, from Dr. Karam to the U.S. NRC document control desk.
6 There is on the pages, starting on page 100, a section
7 4.5.4, Environmental Monitoring, and continues through
8 about page 102. It specifies various environmental
9 monitors that are at the facility, included in that is
10 environmental monitors that Georgia Tech has which are
11 currently 30 luminescent devices. So Georgia Tech has
12 committed in their safety analysis report, and is currently
13 committed because it is in the current safety analysis
14 report, to have those thermal luminescent devices. If
15 you're asking if it is a requirement, it is not a
16 requirement that is in the license or technical
17 specifications, but it is a commitment through the safety
18 analysis report that Georgia Tech will have similar
19 luminescent devices. As far as your question about the
20 number of failures and the reliability of these, I don't
21 find it as being out of the ordinary or unusual or
22 unexplainable and I do find that there are back up monitors
23 that are appropriate for the particular requirements of
24 this facility.

25 A (Witness Bassett) I might add that in the past

1 I know they have kept a film badge, in the past, have kept
2 a film badge in the stack, and in the past, that particular
3 film badge has not been damaged by environmental
4 conditions, and that film badge has typically -- I mean,
5 not in everywhere, but typically it reads very low
6 background levels.

7 Q So that serves almost as a control film badge
8 in a way because it doesn't have the exposure to the
9 environment that the others would. That's just my
10 characterization of it. I'm just trying to characterize it
11 in layman's terms.

12 A (Witness Bassett) It would not be background.
13 It would be exposed to any of the effluents going out the
14 stack. So, it would be -- it would be the most exposed, if
15 you will.

16 Q The Argon 41, I guess particularly?

17 A (Witness Bassett) (Affirmative nod)

18 Q Well, one thing I want to say, just because
19 you're talking about the commitment that they had made to
20 the TLDs, even though it may not be mandatory in the
21 requirements is, had Georgia Tech made a similar commitment
22 that you are aware of? Again, I understand that you may
23 not have documents to back this up, but they made a similar
24 commitment in terms of the film badges, in terms of using
25 those as an integral part of their monitoring system, to

1 your knowledge?

2 A (Witness Mendonca) That was also in the safety
3 analysis report before this amendment. So it's been a
4 consistent part of their safety analysis report.

5 Q I see.

6 MR. TURK: I'm sorry. What has been a
7 consistent part?

8 WITNESS MENDONCA: The fact that they have a
9 commitment to have environment monitoring and that they
10 were going to have 30 film badges was in their safety
11 analysis report.

12 BY MR. JOHNSON:

13 Q Before they amended it to make it TLDs?

14 MS. CARROLL: They said they were using TLDs
15 since 1966.

16 WITNESS MENDONCA: Since their initial
17 licensing in '66, they were using some sort of
18 environmental monitoring. Our understanding is that from
19 about 1966 to somewhere in the 1994, '95 time frame, they
20 were using film badges. After that they converted to TLDs,
21 but they always had some sort of environmental monitoring
22 at about 30 locations around their facility.

23 MR. TURK: For clarification do you mind if I
24 merely ask Mr. Mendonca if he recalls the FSAR previous to
25 April of 1994 specified film badges?

1 WITNESS MENDONCA: I --

2 MR. TURK: Or is this speculation on your part?

3 WITNESS MENDONCA: I recall that it was film
4 badges, specified film badges before this time frame.

5 MR. TURK: And for further clarification may I
6 note that Mr. McAlpine has in front of him the April 1994
7 SAR?

8 WITNESS MCALPINE: They are the same.

9 MR. TURK: It's the same as the one Mr.
10 Mendonca referred to as the January '95?

11 WITNESS MCALPINE: It's dated -- submitted
12 April, revised January 10, '95.

13 WITNESS MENDONCA: We compared the April
14 submittal and the January submittal and in these particular
15 sections that we referenced they seemed to be very close.
16 We didn't see any differences.

17 MR. TURK: I just want to avoid any confusion
18 on the record. I've given these gentlemen the original SAR
19 submitted with the license and application in April of '94,
20 as well as the January '95 revision which had different
21 typographical and other types of changes. They've looked
22 at both of those documents now.

23 MR. JOHNSON: Well, that's interesting because
24 I have been working from a January '95 standpoint in terms
25 of when this document was put out, which makes it more

1 understandable if they had amended this or changed this to
2 read thermo-luminescent dosimeter, because by '95 -- in
3 inspection report 95-01, they are already speaking, you
4 know -- by February of '95, at least, they are mentioning
5 TLDs in the inspection reports, but since this is April of
6 '94, in April of '94 they apparently weren't using thermo
7 luminescent dosimeters. They were using film badges
8 instead? MS. CARROLL: No. It says here on
9 page 101, A and B, it talks about thermo luminescent. A)
10 says, "The state radiological health section will continue
11 their program of TLD monitoring which has been in effect
12 since initial reactor start-up. B) Georgia Tech began a
13 supplementary TLD monitoring program outside the reactor
14 perimeter fence in December 1966. Currently 30 TLDs are
15 placed in locations which current meteorological conditions
16 indicate will be the most likely to receive the maximum
17 dose from Argon 41," which isn't exactly consistent with
18 Mr. Bassett's testimony, "these badges are being changed
19 every three months." I think Georgia Tech is also confused
20 and thinks film badges and TLDs are the same.

21 CHAIRMAN BECHHOEFER: Well, why don't you let
22 Mr. Johnson refer to that and ask the panel about that?

23 MS. CARROLL: I'm getting shaky here.

24 MR. JOHNSON: No, that's what I was getting to
25 is that this says currently. In April of 1994 there were

1 apparently not 30 TLDs placed in locations, which current
2 meteorological conditions indicate, and there had not been
3 since December 1966 30 TLDs placed in locations, which
4 current meteorological conditions --

5 MS. CARROLL: Well, I don't read it that way.

6 MR. JOHNSON: -- indicate to be most likely --
7 And Again, I think I am understanding where some of this
8 confusion came from because the very last sentence of this
9 statement here is, "These badges are being changed every
10 three months."

11 CHAIRMAN BECHHOEFER: Why don't you ask the
12 panel that? They can testify. You're reading --

13 MR. JOHNSON: I'm just confused.

14 MS. CARROLL: Read this very carefully. Just
15 take your time.

16 CHAIRMAN BECHHOEFER: Just refer to whatever
17 those documents are to the panel and ask them.

18 MR. JOHNSON: They do have this in front of
19 them, don't they?

20 CHAIRMAN BECHHOEFER: Oh, okay. Okay.

21 MR. JOHNSON: Do you have the SAR in front of
22 you?

23 CHAIRMAN BECHHOEFER: Just ask them.

24 MS. CARROLL: Maybe we should go off the record
25 for a minute. All the parties seem to be conferring

1 amongst themselves.

2 (Pause)

3 MR. JOHNSON: Okay. I'm going to try and
4 phrase this in the best way for everybody.

5 BY MR. JOHNSON:

6 Q Is it your testimony that the section of the
7 SAR here is inaccurate in terms of TLDs having been in use
8 since December 1966?

9 A (Witness McAlpine) That's not my testimony.

10 A (Witness Mendonca) My understanding is that
11 TLDs have not been in use since 1966, that TLDs came into
12 use sometime around 1994, 1995. That's my understanding of
13 the situation.

14 Q I guess just for the sake of the record, Mr.
15 McAlpine, were you trying to state for the record that you
16 aren't sure?

17 A (Witness McAlpine) I'm not testifying to that.
18 I have no knowledge of when the TLDs came into effect.

19 Q I just wanted to make sure Mr. Warren heard you
20 because I heard you saying that.

21 Is it possible, again, considering the
22 statement at the bottom, "These badges are being changed
23 every three months," in your professional opinion is it
24 possible that the licensee has confusion in their mind as
25 to the difference between film badges and thermo

1 luminescent dosimeters?

2 MR. TURK: Objection as to speculation as to
3 what's in the minds of the licensee. If there is a
4 discrepancy in the words, it's there in front of all of us
5 and Dr. Karam can be asked about what the words mean.

6 BY MR. JOHNSON:

7 Q I guess just perhaps to clarify because it was
8 Judge Kline who originally brought it up, I would ask you
9 gentlemen just for confirmation that film badges and thermo
10 luminescent dosimeters are not the same thing.

11 A (Witness McAlpine) They are not the same
12 thing.

13 Q Okay. Thank you.

14 ADMINISTRATIVE LAW JUDGE KLINE: Would a
15 professional likely know the difference?

16 WITNESS MCALPINE: Yes.

17 WITNESS MENDONCA: Yes.

18 BY MR. JOHNSON:

19 Q We'll leave this pretty soon, but I do think
20 that -- this is going to be obviously an opinion kind of
21 question and I'm just asking, gentlemen, for your opinion.
22 Would you understand why this kind of mix-up -- I don't
23 know how else to refer to it -- would create serious doubt
24 in the mind of the public as to whether the monitoring was
25 being done successfully at all?

1 MR. TURK: I would object to the speculation
2 again as to what may be in the mind of this amorphus
3 public.

4 BY MR. JOHNSON:

5 Q Would you not agree that -- Can you understand
6 why GANE -- I won't make it the public. I'll make it more
7 specific -- Would you understand why GANE is not satisfied
8 with environmental monitoring at the Georgia Tech facility
9 based on the fact that Georgia Tech seems to show
10 indications that they don't know the difference between a
11 film badge and a thermo luminescent dosimeter?

12 MR. TURK: Objection.

13 MR. EVANS: There's no foundation that we don't
14 know -- that Georgia Tech does or doesn't know. We won't
15 know that until Dr. Karam talks. As to what the
16 differences are, I don't know what the differences are, but
17 maybe Dr. Karam does. Secondly, it is calling for
18 speculation because you are still asking these gentlemen to
19 try and figure out what the misunderstanding of some other
20 gentlemen is. That's just hopelessly speculative.

21 CHAIRMAN BECHHOEFER: While we will uphold the
22 objection as asked, the witnesses don't know what GANE
23 thinks or what everybody else thinks.

24 MS. CARROLL: Why don't you tell them, Rob.

25 CHAIRMAN BECHHOEFER: Well, why don't you ask

1 them what they think it is, whether there is any
2 discrepancies between commitments made and what actually
3 has happened. They can answer that, if you want them to
4 answer that. I'm not sure that is exactly what you are
5 driving at.

6 MR. JOHNSON: I think that -- I mean, at Mr.
7 Mendonca, anyway, has already testified that this is not
8 accurate and that in his mind they have not been using
9 these since 1966. So I think that, you know, that stands,
10 but another question which is related, that we would like
11 to know is, is this discrepancy -- is this something that
12 should or needs to be straightened out before Georgia
13 Tech's license would be renewed? Before this process is
14 over are we going to have to straighten this out one way or
15 the other?

16 MR. TURK: Is that a question as to the legal
17 significance or is this -- The fact that the word badges
18 appears in there is necessarily a bar to renewal of the
19 license?

20 MR. JOHNSON: Well, not just that but the fact
21 that they say they've been using a supplementary thermo
22 luminescent dosimeter monitoring program since 1966 and
23 apparently they have not been. You know, this kind of
24 factual inaccuracy -- You know, as I understand it, the
25 safety analysis report is a fairly germane document to the

1 whole process of renewing the application, and you know,
2 these gentlemen are NRC inspectors. They know the
3 legalities and the regulations concerning how permits and
4 licenses get renewed. Don't we have to have some kind of
5 satisfactory answers to what the actual situation is in
6 terms of their environmental monitoring before the license
7 can be renewed? I mean, is that the case?

8 MR. EVANS: I think I'd have to object to the
9 compound question. First I am hearing to what the license
10 is, or what it is today, and I think that probably is
11 germane, but then I hear the history of whether it was in
12 effect as early as 1966 and I guess my question is, what's
13 the difference because whatever --

14 MS. CARROLL: So what?

15 MR. EVANS: -- happened in 1966, so what?

16 MS. CARROLL: So what? Who cares?

17 MR. EVANS: Why should anyone care what it said
18 in 1966? I think what is in effect now is important and
19 what's projected if the license is renewed was projected
20 for that time is important, but if there is a mistake
21 historically that it came in in 1968 or '64, I don't really
22 see where that has anything to do with management.

23 ADMINISTRATIVE LAW JUDGE KLINE: My
24 understanding from Mr. Bassett's response is that the
25 licensee made a commitment to monitor and the NRC approved

1 it. Is that what I understood from your response?

2 WITNESS BASSETT: That's correct, sir.

3 ADMINISTRATIVE LAW JUDGE KLINE: You said NRC
4 approved it. Now, as to licensing, would NRC approve the
5 program either way now with either TLDs or film badges if
6 they were to be offered?

7 WITNESS BASSETT: I am the licensing project
8 manager and I believe, yes, that those criteria would meet
9 the needs for the environmental monitoring program.

10 ADMINISTRATIVE LAW JUDGE KLINE: Either way,
11 whichever offer of the license he made, then NRC would
12 likely approve it?

13 WITNESS BASSETT: Yes, based on my experienced
14 in licensing.

15 ADMINISTRATIVE LAW JUDGE LAM: That means the
16 use of film badges are still acceptable to the NRC, is that
17 correct?

18 WITNESS BASSETT: Yes.

19 CHAIRMAN BECHHOEFER: I think we can proceed
20 with the next question.

21 BY MR. JOHNSON:

22 Q I'm going to ask you two more questions about
23 this. One is -- and this may not be within the specific
24 purview of any of you gentlemen. Should the NRC commu-
25 themselves to resolving this, in your opinion. so that it

1 is factual; so that it represents the actual state of
2 affairs which has been happening?

3 A (Witness Mendonca) I feel it's not a
4 significant difference. Georgia Tech is professionals in
5 this regard and realizes the differences between TLDs and
6 film badges, as has been recognized not only by the panel
7 here but also the Judges. The difference in the date it
8 seems to me is simply that they replaced their film badge
9 with the words thermo luminescent devices, and to be
10 consistent, I think that NRC will pursue, or Georgia Tech
11 will pursue, based on the testimony, to update that and
12 correct it. I would say it's not very significant in a
13 licensing manner as indicated by our responses to the
14 questions from the Judges.

15 Q Are you concerned about any lack of reliability
16 in the environmental program -- the environmental
17 monitoring program at Georgia Tech?

18 MR. TURK: What lack of reliability?

19 BY MR. JOHNSON:

20 Q Well, are you concerned about the reliability
21 of environmental monitoring devices at the Georgia Tech
22 facility?

23 A (Witness Mendonca) I am not.

24 A (Witness McAlpine) I am not.

25 A (Witness Bassett) I'm not.

1 Q We have already numbered and referred to GANE
2 Number 56.

3 CHAIRMAN BECHHOEFER: My records reflect that
4 GANE 56 is already admitted.

5 MR. JOHNSON: True. I was --

6 MS. CARROLL: I'm going to go ahead and
7 distribute these.

8 MR. JOHNSON: This is going to be GANE 61.
9 It's an inspection report from 1969 and we're not going --

10 (The document referred to was marked
11 for identification as GANE Exhibit
12 No. 61.)

13 MR. EVANS: Sixty-one?

14 MS. CARROLL: Sixty-one.

15 MR. JOHNSON: Sixty-one. We're not going to be
16 going back to 56 for the moment, so put that aside.

17 MR. TURK: For clarification, this looks to be
18 part of inspection report 89-02. It's a summary -- two
19 pages of summary, plus report details.

20 MS. CARROLL: Where is it here? It's the one I
21 just distributed. What a mess. Okay, now what's wrong
22 with this?

23 MR. JOHNSON: We just identified it. It's two
24 pages of summary.

25 BY MR. JOHNSON:

1 Q On page 4 of the details, I would like to point
2 everybody to the items regarding discrepancies with
3 procedure 72-02. And the first one is talking about "in
4 two records, reviewed the shim-safety drop times were
5 slightly less than the lower value of the acceptance
6 criteria range, 430 to 500 milliseconds specified in the
7 procedure. TS requirement for drop times specify less than
8 500 milliseconds. Since the TS limit is less restrictive
9 than that in the procedure, no requirement was violated.
10 However, when results are not within procedure acceptance
11 criteria, action should be taken to justify or explain
12 acceptance."

13 Does this refer to what we call the shim-safety
14 blades? Is that what this is referring to?

15 A (Witness Mendonca) Yes.

16 Q And on page 6, if you'll move to follow up of
17 violations and open items, there is -- it's listed as
18 closed, an unresolved item at the bottom. It says "verify
19 shim blade position ensures a negative trip as required by
20 technical specifications. Prior to August 3, 1987, the
21 licensee had no record of measuring or otherwise
22 determining the minimum shim blade position to cause a
23 negative rate trip by the release of a single blade."

24 Basically, both of these incidents, number one
25 described on page 4 and the one described on page 6 and

1 further on page 7 are both talking about the same
2 equipment, aren't they?

3 A (Witness Mendonca) They're talking about the
4 same equipment but in a different sense. One is to ensure
5 a proper scram time and one is to ensure a proper
6 positioning so that if it were to have a problem and fall
7 in, that you would get a negative rate trip scram.

8 Q And further on to page 7, at the bottom of the
9 first paragraph, it does say that this lack of procedural
10 control has been identified as a violation. Procedures did
11 not assure that any shim blade not fully inserted was
12 withdrawn sufficiently to a negative rate trip as Mr.
13 Mendonca helped explain. I'm hoping I understand it
14 correctly.

15 So this is -- basically, they had already been
16 cited for a violation at least once in the past for not
17 operating this equipment according to procedures.

18 MR. TURK: I would object to that. This
19 violation that's referred to on pages 6 and 7 is not for
20 failure to operate in accordance with procedures.

21 BY MR. JOHNSON:

22 Q Let me back up a few sentences. Hence, it is
23 important to ensure that any released shim blade initiates
24 the insertion of all the other shim blades lest the release
25 add activity to the core. The procedures as written do not

1 assure this capability. So as Mr. Turk pointed out, this
2 is more of a procedural problem than an equipment problem.
3 That, I suppose was an inaccurate representation. But
4 still, they had been cited for violations for not having
5 proper procedures concerning the shim blades as far back as
6 '87 and again -- showing up again in '89.

7 In GANE Number 60, which we were just looking
8 at, this is inspection report 93-02. "We find on the very
9 front page -- on the cover page in the third paragraph the
10 statement that during this inspection, an issue was
11 identified relating to your methodology used to determine
12 shim safety blade reactivity work. This issue remains
13 open. Therefore, please submit an analysis and any other
14 pertinent information and any separate correspondence
15 within 60 days of receipt of this letter."

16 Was it of concern to you to see -- again, even
17 though I think we understand that these are different
18 problems -- well, I suppose I should ask -- these are all
19 three different problems concerning -- or at least related
20 to the shim safety blades. Is that an accurate
21 representation in your mind?

22 A (Witness Mendonca) Yes.

23 CHAIRMAN BECHHOEFER: Let me ask one sort of
24 follow-up question. I'm a little confused about what
25 amounts to violations. I happen to have a copy of -- the

1 notice of violation was attached to inspection 89-02, which
2 seems to be a lack of procedures. Is that a different
3 violation than the one that questions have been asked about
4 for the last couple of minutes? I'm trying to figure out
5 are these different violations. Because this other one
6 seems to be a follow up of an earlier one.

7 WITNESS MENDONCA: I know it seems like I have
8 a short memory, Your Honor, but I can't remember what we've
9 been talking about in the past few minutes. Which
10 violation was it, or can somebody clarify --

11 CHAIRMAN BECHHOEFER: Well, that's what I was -
12 -

13 MR. JOHNSON: 89-0202 is the numerical
14 designation.

15 WITNESS MENDONCA: And what was the previous
16 one that you were talking about?

17 MR. JOHNSON: It seems like there was an
18 unresolved item called 87-0109 which, I think, led in some
19 way to 89-0202. As we found out, a lot of times, problems
20 once identified aren't fixed and become violations later.

21 WITNESS MCALPINE: They are coupled.
22 Unresolved item 87-0109 was an unresolved item. An
23 unresolved item is the issue about which additional
24 information is needed in order to determine whether a
25 situation of compliance or non-compliance exists. It

1 appears -- I should say this inspection report states in
2 89-02 that the inspector was following up on unresolved
3 item 87-0109. He apparently got the additional
4 information. The information was sufficient then for him
5 to determine that a violation occurred, and he identified
6 it as a violation, 89-0202.

7 MR. JOHNSON: Okay, so I was correct?

8 WITNESS MCALPINE: Yes.

9 CHAIRMAN BECHHOEFER: That is the violation
10 that --

11 WITNESS MCALPINE: That was the initiation of
12 the violation, yeah. 87-0109 was an unresolved item, not a
13 violation.

14 CHAIRMAN BECHHOEFER: Okay. I just wanted to
15 get it clear in my own mind.

16 ADMINISTRATIVE JUDGE LAM: So as a result, the
17 item may or may not turn into a violation?

18 WITNESS MCALPINE: Yes, that is correct.

19 MR. TURK: So in effect, then there were not
20 three violations. There was this violation, there was a
21 previous URI and there was another violation later.

22 MR. JOHNSON: That's true.

23 BY MR. JOHNSON:

24 Q One of the things that we were speaking of is
25 on page 4 and this is identified as a discrepancy. It's

1 not identified as a violation. That is not the proper way
2 to -- this is GANE Number 61, still in the 89 inspection
3 report, on page 4 of the body where it talks about the shim
4 safety drop times. This is not identified as a violation
5 but it is identified as a discrepancy with procedure. And
6 then we have the -- what we've just spoken about. I won't
7 go into that again. And then we have the issue of the shim
8 safety blade reactivity work that we find in inspection
9 report 93-02 which is GANE Number 60.

10 What we would like the panel to try and do --
11 what we would like you to do is to sort of compare and
12 contrast these three events. Again, they are not
13 necessarily all violations and I won't characterize them
14 that way. But the discrepancy with procedure 72-02 that's
15 identified on page 4. The unresolved item that eventually
16 became violation 89-0202 and the issue identified relating
17 to the methodology used to determine shim safety blade
18 reactivity work in GANE Number 60. If you could just sort
19 of compare and contrast -- are there an similarity between
20 these incidents, you know, differences?

21 A (Witness Mendonca) With regard to what you
22 referred as a discrepancy and is referred to as a
23 discrepancy in inspection report 89-02, that has to do with
24 shim safety blade drop times and the licensee had
25 established an administrative limit through their procedure

1 500 milliseconds. The actual drop times were in a range
2 that was near the 500 milliseconds. It did not get near
3 the tech spec required limit. It was not a safety problem.
4 The thing that the inspector identified as a discrepancy
5 was that the licensee may want to have some acceptance
6 criteria as to what to do if you went beyond their
7 administratively established acceptance criteria of 500
8 millisecond. So it was an observation that the licensee
9 may want to establish that and indeed was left, I don't
10 even think as a follow-up item.

11 As we've discussed, we'll move on to the
12 unresolved item in the same inspection report on page 6.
13 It was an unresolved item, 87-0109. The violation that
14 ultimately resulted was because the licensee did not have a
15 procedure to establish what withdrawal limit should be in
16 place to ensure that you have a negative rate trip
17 functioning. That was issued as a violation, 89-0202.

18 What was the other inspection report number?

19 Q The other inspection report number is 93-02,
20 marked as GANE Number 60, and this speaks of the reactivity
21 work. The methodology used to determine the shim safety
22 blade reactivity work.

23 A (Witness Mendonca) And where is it in the
24 inspection report, please?

25 Q It is -- on the cover of page, there's a good

1 example on the third paragraph right below where it says
2 subject: notice of violation. The third paragraph there
3 says during this inspection, an issue was identified, and
4 again, not necessarily as a violation. But an issue was
5 identified relating to your methodology used to determine
6 shim safety blade reactivity work.

7 MR. EVANS: Again, what page and what GANE
8 exhibit are we on?

9 MR. JOHNSON: GANE Number 60, the very front
10 page, right in the middle.

11 MR. EVANS: Okay.

12 WITNESS MENDONCA: I think in order to get a
13 full understanding of that, I'll have to go to the
14 inspection report and find the specific section where that
15 was discussed. The body of the report discusses a
16 particular item that was mentioned in the cover letter. On
17 page 6, paragraph 6, starting with the second paragraph in
18 that section, or Section 6, the second paragraph. It
19 basically says that there is a tech spec requirement to
20 position the rod above a minimum angle with the reactor
21 critical, and that is conflict with another requirement in
22 the procedure, and once -- suggests again to the licensee
23 to get their procedure in compliance with the technical
24 specification is my understanding of this. Again, it's
25 explained in the paragraph, and I think it's in the record

1 and speaks for itself.

2 BY MR. JOHNSON:

3 Q Is there -- is this the same -- just for
4 clarification, is this the same kind of thing spoken of in
5 violation 89-0202, or is this a different function? Is
6 this a different --

7 A (Witness Mendonca) It's a different aspect of
8 the use of the equipment and the testing of the equipment,
9 although it is the same equipment. It is relating to the
10 same general topic, but it is a different aspect.

11 Q For the record, just what exactly is the
12 significance, the safety significance of shim safety blades
13 to the reactor design? I think that would be helpful.

14 A (Witness Mendonca) The shim safety blades are
15 to ensure that you can shut down the reactor safely. There
16 are other aspects which are included in this. Some of this
17 negative rate trip that is discussed in one of them was to
18 ensure that if a mechanical stop doesn't work, that you
19 have a backup and you get a negative rate trip. The aspect
20 that you talked about first about a discrepancy has to do
21 with will the shim safety blades fall in fast enough to
22 shut the reactor down fast enough. This particular aspect
23 is -- in the 93-02 is really a procedural discrepancy and
24 is not of great safety significance in my opinion.

25 MS. CARROLL: The shims -- the blades are not -

1

2 WITNESS MENDONCA: The particular aspect of the
3 paragraph that you directed me to in 93-02 is not very
4 significant, although the shim safety blades themselves are
5 the primary thing that shuts the reactor down.

6

MR. JOHNSON: If the Board has any questions
7 about 93-02, I think we've pretty much left it.

7

8

BY MR. JOHNSON:

9

Q I would refer you to page 14 of your testimony
10 which talks about inspection report 89-02 that we just went
11 through some of those references about the shim blades. In
12 addition to that violation of the old unresolved item,
13 there's also a mention of a failure to perform leak rate
14 testing in accordance with commitments. And you say
15 beneath the space in which you identified as two different
16 issues, the licensee corrected the first issue by revising
17 procedure 4000, containment building pressure test, and
18 developing procedure 4002, reference, vessel pressure test.

19

My question would be, if you would just
20 elaborate on how the revision of procedure 4000 and the
21 development of procedure 4002 helped to alleviate those
22 problems?

23

A (Witness Mendonca) The development of those
24 procedures made the licensee's surveillance procedure for
25 containment integrated leak rate test consistent with the

1 ANSI standard is basically the answer.

2 Q I see. In what ways had they failed to meet
3 the ANSI standard before this new procedure had been put in
4 place?

5 A That's described in the report, and if you
6 want, I can pick out the section so that it can be
7 referenced by whoever.

8 MS. CARROLL: Well once this document is in the
9 record, we can reference it to our heart's content whether
10 the staff testifies to specific portions of it or not.

11 CHAIRMAN BECHHOEFER: (No response.)

12 MS. CARROLL: Judge Bechhoefer, I don't think
13 you understood. I was asking you a question. If we get
14 GANE Number 61 entered into the record, we don't need
15 testimony from the panel to use anything that's written in
16 this document and our findings, is that correct?

17 CHAIRMAN BECHHOEFER: You'll have to -- many of
18 those documents have a lot of extraneous matter. You could
19 use it if it relates to management. You had better make
20 sure it does.

21 WITNESS MENDONCA: The description of that
22 inspection finding starts on page 2, Section 3 and goes on
23 essentially to almost the end of that particular section on
24 page 4.

25 CHAIRMAN BECHHOEFER: Which document?

1 WITNESS MENDONCA: Of the inspection report 89-
2 02.

3 CHAIRMAN BECHHOEFER: Okay.

4 MR. TURK: Your Honor, I should note that the
5 document which we're looking at, GANE 61, is not a complete
6 document. It comes from a more complete document which is
7 entitled Notice of Violation (NRC inspection report number
8 50-160/89-02). The complete document includes a notice of
9 violation and the very first violation, number A, describes
10 the violation. And if GANE had it in front of them, they
11 would see that. The violation is that the licensee's SAR,
12 Section 772, states that the containment building
13 integrated leak rate test shall be conducted in accordance
14 with the ANS standard 7.60, leak rate testing of
15 containment structures. Contrary to the above, the
16 containment building leak rate test was not conducted in
17 accordance with ANS 7.60 with regard to leakage test data
18 analysis and -- of the supplemental tests for verifying the
19 accuracy of leakage rate test results. It may be that if
20 GANE had the complete document before them or perhaps in
21 the record, that the significance of the violation would be
22 more readily understood.

23 MS. CARROLL: Do you want to put it in the
24 record?

25 MR. TURK: I'm making the statement on the

1 record of what else is out there that might be referred to
2 in this regard. It's up to you to make the exhibit if
3 you're interested in making an exhibit.

4 MS. CARROLL: That doesn't answer our question.
5 It sounds great.

6 BY MR. JOHNSON:

7 Q On page 4, towards the end of this section that
8 Mr. Mendonca was referring us to, it says that however --
9 this is the second paragraph from the top on page 4.
10 "However, though appropriate data were taken, the licensee
11 failed to document the calculation of leakage rate for the
12 supplemental test. Without this calculation, the licensee
13 could not make a comparison with the previously measured
14 24-hour results."

15 Is it safe to characterize this as not
16 necessarily any kind of equipment problem but as human
17 error?

18 A (Witness Mendonca) It's not clear from the
19 writeup whether it's human error, procedural inadequacy or
20 what particular inadequacy it was. It's not clear. If we
21 would have subsequently closed out this violation, in that
22 close out, it's probably in the testimony, because we
23 describe what our rationale was for each of the close outs.
24 So, it is described that they changed the procedures. As
25 I've described, it made it consistent with the ANSI

1 standard.

2 Q It was found to be acceptable as documented in
3 90-03?

4 A In 90-03.

5 Q That would be when it was closed out?

6 A Yes.

7 CHAIRMAN BECHHOEFER: Mr. McAlpine, since your
8 name is reflected on the first of these reports, 89-02,
9 does this -- does the description that's come out so far
10 accord with your recollection of what happened?

11 WITNESS MCALPINE: It has been so long, Your
12 Honor, I honestly do not remember.

13 MR. TURK: Is there a question pending?

14 MS. CARROLL: I thought we were waiting for
15 them to tell us something.

16 CHAIRMAN BECHHOEFER: I thought you said you
17 didn't remember anything further?

18 WITNESS MCALPINE: Not anything further than
19 what's in the testimony.

20 CHAIRMAN BECHHOEFER: Right, right. That's my
21 only inquiry on that.

22 WITNESS MCALPINE: But I was looking in the
23 inspection report for where you had seen my name.

24 CHAIRMAN BECHHOEFER: It's not ever reported.
25 It's in the Notice of Violation that was attached to it.

1 MR. TURK: The Notice of Violation shows Mr.
2 Caudel Julian as having signed it and a concurrence page
3 where various individuals are listed, including Mr.
4 McAlpine.

5 CHAIRMAN BECHHOEFER: Yes, that's where I got
6 that from.

7 WITNESS MCALPINE: Okay. Yeah. I'm sure I
8 concurred in the report at the time it was issued.

9 BY MR. JOHNSON:

10 Q There is one thing in your testimony on page 37
11 that I wanted to ask a few questions about, and this is
12 speaking of the bismuth block, which we have already talked
13 about somewhat, but this is more along the lines of efforts
14 ameliorated.

15 At the bottom of the large paragraph that takes
16 up most of page 37, you see, "After examining the source of
17 the leak, plans were made to correct the problem. A
18 commercial radiator stop-leak product was used to seal the
19 leak and after flushing the system, regular water was used
20 as the coolant in place of heavy water." Again, we already
21 heard testimony to that. My question is, is using
22 commercial radiator stop leak to seal leaks in a nuclear
23 facility done often in your experience and your knowledge?

24 A (Witness McAlpine) I don't know how often it
25 is done. It -- I do know of situations where products that

1 are used to stop leaks in swimming pools are used to stop
2 leaks in the pools associated with research reactors. So, I
3 guess I don't have that wide of a knowledge of what's used
4 across the country. So, I'm not in a good position to
5 answer your question.

6 Q Well, one thing that can be said though -- that
7 leads me to another question -- would you say, judging by
8 what you just said about the swimming pools and so forth,
9 that this is sufficient for the problem at hand?

10 A (Witness McAlpine) Well, it didn't work.

11 Q Apparently not.

12 A (Witness McAlpine) It didn't work so it was
13 not sufficient for the problem at hand.

14 A (Witness Mendonca) From a point of view of
15 what is nationwide, there are commercial products that are
16 used in various aspects at research reactors and at power
17 reactors, and they do use such. It's not uncommon, and if
18 they work and are properly applied, they can be effective.

19 CHAIRMAN BECHHOEFER: Is this a -- I assume it
20 isn't, but is this a product for which there might be a
21 upgraded specification where a commercial grade would not
22 be acceptable? I think there are products in commercial
23 plants that are labeled in a certain way.

24 WITNESS MCALPINE: What you would have to worry
25 about with a stop leak material is whether you would get

1 any activation products as a result of them residing in the
2 coolant, and so you'd have to be careful in deciding what
3 type of a stop leak to use.

4 CHAIRMAN BECHHOEFER: But there's no specific
5 requirement that in a situation such as this that a
6 particular quality of stop leak product be used?

7 WITNESS MCALPINE: Not that I am aware of.

8 ADMINISTRATIVE LAW JUDGE KLINE: So is just
9 fixing the leak excessively complicated or why don't they
10 just do that? I mean --

11 WITNESS MCALPINE: It's my understanding they'd
12 have to replace the entire bismuth block.

13 ADMINISTRATIVE LAW JUDGE KLINE: I see.

14 WITNESS MCALPINE: And I also believe that that
15 bismuth block would be ultimately replaced when they began
16 the neutron boron capture therapy.

17 ADMINISTRATIVE LAW JUDGE KLINE: Is that an
18 expensive deal? What is it that restrains them now from
19 replacing it?

20 WITNESS MCALPINE: At this point in time I
21 would imagine -- I don't know what it is. I'm going to
22 imagine, so I'd better not imagine.

23 (Laughter)

24 MS. CARROLL: We'll ask Dr. Karam that.

25 WITNESS MCALPINE: No imagination allowed.

1 MS. CARROLL: You want to go on record saying
2 that?

3 BY MR. JOHNSON:

4 Q One question that I would have --

5 A (Witness Mendonca) It is Mr. Bassett's
6 testimony, but I think it is clear in the testimony that
7 the block is not safety related per se and also it's clear
8 from our discussion in one of the violations in Mr. Downs'
9 failure to have jumpers removed and reinstate a fuse, that
10 at least in the bismuth block most of those functions are
11 not safety related, per se.

12 ADMINISTRATIVE LAW JUDGE KLINE: So that's the
13 reason you don't require it to be changed?

14 WITNESS MENDONCA: Right. It's not performing
15 a safety function and -- or they can operate with it in
16 this degraded condition is another way of looking at it.

17 BY MR. JOHNSON:

18 Q Okay, if we could move back a few pages to page
19 33 of your testimony, to the statement -- Well, there's
20 first a question, GANE has asserted that the director of
21 the facility has been given increased authority over the
22 MORS. Although the Safety officer has line to higher-ups
23 than the director, since he or she works for the director
24 on a day-to-day basis, the threat of reprisal would be a
25 huge disincentive to defying the director. Do you agree

1 with this assertion? Everyone: No.

2 When Dr. Ice, who was the current MORS at the
3 Georgia Tech facility was on the stand recently he referred
4 to Dr. Karam as his boss repeatedly and said that -- Well,
5 I just want to -- Withdrawn.

6 I would ask you to back up a couple of pages to
7 page 31, question number 18, have you reached a conclusion
8 as to whether the licensee's management encourages a safety
9 conscious attitude among its employees and provides an
10 environment which employees feel they can clearly voice
11 safety concerns? Yes. Based upon the information available
12 to date, we are not aware of any reason to believe that the
13 licensee's management has failed to encourage a safety
14 conscious attitude among its employees or to provide an
15 environment in which employees feel they can freely voice
16 safety concerns.

17 Georgia, as I understand it, is an agreement
18 state. And I wonder if among the information available to
19 you gentlemen would be information concerning state
20 inspections concerning other regulators and their
21 interaction with Georgia Tech on a programmatic and
22 management level. Again, we have I think thoroughly by
23 this point decided that there are certain materials and so
24 forth which are under state license which have no
25 jurisdiction whatsoever in this process. However, in the

1 process of state inspections, the state inspectors also
2 talk about the Georgia Tech facility in programmatic ways
3 in terms of talking about management, talking about
4 management's ability to encourage a safety conscious
5 attitude. Have you ever had any exposure to that input as
6 well in your --

7 A (Witness Mendonca) I've had conversations with
8 the state people in regard to regulations, both ours and
9 theirs.

10 A (Witness McAlpine) In addition, as part of
11 Georgia's agreement: state status, NRC has oversight into
12 the implementation of that agreement state program. And by
13 virtue of that oversight performs periodic inspections
14 using a program that we call an IMPEP, I-M-P-E-P,
15 Integrated Materials Program -- Integrated Materials
16 Evaluation Program. I think that's what it is called.
17 Recently there was an inspection of the Georgia State
18 oversight of the Georgia State Agreement Program, and if
19 you need information on that -- I don't believe NRC has
20 reached any definite conclusions, but that is the arm of
21 the NRC that looks at the Georgia Agreement State Program.
22 That would be out of the NRC Office of State Programs.

23 CHAIRMAN BECHHOEFER: Is there any
24 documentary -- documentary material that the state program
25 issues or -- that the NRC issues concerning its review?

1 WITNESS MCALPINE: Yes, but I don't think it is
2 issued yet, Your Honor, but I think it will be coming out
3 soon.

4 CHAIRMAN BECHHOEFER: Does that then become a
5 public record? Do various people have access to it?

6 WITNESS MCALPINE: I would think so.

7 MR. TURK: Would this be a good time for a
8 break?

9 MR. JOHNSON: Actually, my --

10 CHAIRMAN BECHHOEFER: Would it be a good time
11 for a break now as far as your questions?

12 MR. TURK: If you are done with this subject?

13 MR. JOHNSON: No, but it is probably a good
14 time for a break though.

15 CHAIRMAN BECHHOEFER: Oh, okay.

16 (A short recess was taken.)

17 CHAIRMAN BECHHOEFER: On the record.

18 MR. JOHNSON: In order to try and re-establish
19 where we stand, I was asking Panel if they were aware of
20 other regulators' opinions or findings concerning
21 management, concerning programmatic concerns at the Georgia
22 Tech facility based on their statement on page 31 of their
23 testimony that based on the information available to them,
24 they had no reason to believe that the licensee's
25 management has failed to encourage a safety conscious

1 attitude.

2 MR. EVANS: 31?

3 MR. JOHNSON: Page 31 of the Panel testimony.

4 MR. EVANS: 18?

5 MR. JOHNSON: Answer to question 18.

6 MR. EVANS: Okay.

7 MR. JOHNSON: At this point I think Glenn is
8 going to help me out by distributing what is going to be
9 GANE Number 62.

10 MS. CARROLL: Now, I've organized my paper,
11 what did I do with it? Here it is.

12 MR. JOHNSON: You had it before the break.
13 Okay.

14 (The document referred to was marked
15 for identification as GANE Exhibit
16 No. 62.)

17 WITNESS MENDONCA: I guess I would like to
18 clarify. I thought you had asked us earlier if we had
19 contact or knew of other inspection findings. I guess you
20 didn't ask us if we knew about their opinions that the
21 state had -- of opinions?

22 MR. JOHNSON: I suppose I haven't characterized
23 it exactly the way I characterized it before. I had asked
24 you if you had that kind of contact. I guess I should say
25 that I am now going to attempt to bring to your attention

1 findings of the state regulator again, not as it concerns
2 any state regulated material, not as it concerns anything
3 that is outside the jurisdiction of this panel, but as it
4 concerns management and programmatic state of affairs at
5 the Georgia Tech facility, simply because of the fact that
6 it seems as if this person is in possession of information
7 or seems to feel that they are in possession of information
8 different from these gentlemen and seems to feel
9 differently about it.

10 I would like to ask Glenn to help distribute.

11 MS. CARROLL: And the number, please?

12 MR. JOHNSON: 62. I would point out that there
13 are various stars in the sides and underlining notes and so
14 forth, and as we have stipulated with other similar
15 documents in this proceeding, obviously -- Did they not
16 give you one?

17 MS. CARROLL: Oh --

18 MR. JOHNSON: I'll show them this one.

19 MS. CARROLL: Loan them a court copy because
20 you'll be needing your copy.

21 MR. JOHNSON: Okay. Can I please --

22 MS. CARROLL: And don't forget to get it back.

23 MR. JOHNSON: This is what I am speaking of,
24 and I'm going to be speaking mainly about page two. I
25 would be very happy to stipulate that the notes and

1 underlining and stars in the margin and so forth are not
2 entered as evidence or anything like it, and for that
3 matter I would stipulate that the references in this
4 document to material and activities regulated by the State
5 and not regulated by the NRC are not attempted to be
6 entered into evidence.

7 MR. TURK: May I ask you to inquire if these
8 witnesses have seen this document before today?

9 MR. JOHNSON: Okay.

10 BY MR. JOHNSON:

11 Q Have you seen this document before today? Any
12 of you gentlemen?

13 A (Witness Bassett) I have not.

14 MR. TURK: Is that true of the entire panel?

15 BY MR. JOHNSON:

16 Q Did you?

17 A (Witness Mendonca) I have seen similar
18 documents, but I don't know if I have seen this one before.
19 I don't recall it. I would say, no, I haven't studied this
20 document before.

21 A (Witness McAlpine) I have not seen this
22 document before.

23 MR. TURK: Your Honor, I don't know if there is
24 any point in questioning on it. These witnesses are not
25 familiar with it. You don't have the author of the

1 document here to cross exam. I don't know what can be
2 established by having them to read a document and forming
3 an opinion of it for the first time, particularly not going
4 into the context in which it arose or any facts which may
5 have been documented earlier or later concerning the
6 matters stated here.

7 MR. JOHNSON: My intent is to offer some
8 specific factual observations made by the author of this
9 document and to see whether those factual observations
10 affects the panel's opinion of their statement on page 31
11 that they are not -- where, any reason to believe that
12 licensee's management has failed to encourage a safety
13 conscious attitude. I understand that they cannot be
14 expected to be experts on this document and, again, as far
15 as the bulk of this document is concerned, I am quite aware
16 that the vast majority of it is going to be thoroughly
17 inadmissible in this proceeding, especially in the context
18 of which I am offering right now. I merely wish to see if
19 they received new information, just a few pieces which are
20 contained in this document, if that might change their
21 mind, and I would -- you know, if you wish to object, I
22 mean, the judges, I'm sure, will rule. We can do that now.

23 MR. EVANS: For one, I don't really know, I'm
24 not sure I know the author of the document. I don't think
25 the author is in court today.

1 MR. JOHNSON: No, they're not.

2 MR. EVANS: If the author is not here, I don't
3 see how it can really be authenticated much less the basis
4 of any questioning. It would be all asking on hearsay as
5 to what someone else thinks, their view, and what someone
6 else thinks who is not here to defend his own work. We
7 don't know anything about the competency of the author. We
8 know nothing about the document. I think it is improper
9 and I move that no questioning be permitted on a document
10 which I think is clearly inadmissible into evidence. I
11 think the one thing they could do, they could ask -- use
12 this document as a basis for asking questions. I would
13 have no problem with that.

14 CHAIRMAN BECHHOEFER: You can do that if you
15 want.

16 MR. EVANS: Just asking questions, do you --

17 CHAIRMAN BECHHOEFER: We are not ruling that
18 you can't get this in either. I mean, we are not ruling at
19 the moment.

20 BY MR. JOHNSON:

21 Q On page two of this document, Mr. Hill, who
22 is --

23 MR. EVANS: I would rather them simply ask the
24 question. Say the question is, do you agree with this
25 statement. I think that is the proper way of doing it.

1 Read the statement. I'm not -- I don't want anyone named
2 Mr. Harold Hill or -- I think that is all irrelevant.

3 MR. JOHNSON: I'll try and narrow it down.

4 BY MR. JOHNSON:

5 Q Would you agree that not conducting retraining
6 for principal investigators or people working under their
7 supervision in some cases with some of these people using
8 license materials having not been trained since 1987, would
9 that in your mind be indicative of encouraging a safety
10 conscious attitude?

11 MR. TURK: This has to do with the materials
12 which were at issue here, which are the state license
13 materials.

14 WITNESS MCALPINE: I'm not familiar with the
15 state license, and really the types of material that the
16 Georgia Tech has under its state license and what the terms
17 and conditions of that license are. So I am having
18 difficulty trying to even imagine how I might answer that
19 question. I really don't have enough information to give
20 you even an informed personal opinion.

21 MS. CARROLL: I think we are going to stop any
22 questions. Don't forget to give them back to the court
23 reporter. I think we are going to question Dr. Karam about
24 it.

25 MR. JOHNSON: We'll still keep it numbered but

1 we won't be entering it.

2 MR. EVANS: Is it numbered?

3 MR. JOHNSON: We gave it, I think, number 62.

4 MS. CARROLL: We did.

5 MR. TURK: Your Honor, GANE has indicated that
6 they won't ask any further questions of this panel about
7 the document, although they may want to ask Dr. Karam.

8 CHAIRMAN BECHHOEFER: I have one question only.
9 Is the panel familiar with what is set forth in the first
10 paragraph of page two, which is apparently -- it's a
11 reference to a NRC finding that the depleted uranium was
12 not properly inventoried. Do you know what that has
13 reference to? It's a NRC finding according to this.

14 WITNESS MCALPINE: Yes, I do, I guess.

15 CHAIRMAN BECHHOEFER: Can you just explain what
16 that has reference to?

17 WITNESS MCALPINE: If I can find the proper
18 inspection report. What that finding is referring to is
19 NRC inspection report 95-05, and the details of inspection
20 report 95-05 have been withheld from public disclosure
21 pursuant to 10 CFR 2.790 as commercial and financial
22 information because it deals with a material control and
23 accountability inspection that was performed at the Neely
24 Nuclear Research Center on December 5 through 7. So I
25 really can't talk about the details of that report, but

1 that's where that finding comes from. It was an inspection
2 in which we were looking at the accountability for special
3 nuclear material, and as an aside, the team happened to
4 notice the depleted uranium inventory did not match what
5 the records said, and we forwarded that information to the
6 State of Georgia, since the depleted uranium is under their
7 jurisdiction.

8 CHAIRMAN BECHHOEFER: Thank you.

9 MR. JOHNSON: In light of the panel's lack of
10 familiarity with the document, I think we will save further
11 questions on this document for someone who is more familiar
12 with the state license. We do still have further
13 questions.

14 MS. CARROLL: Let me make sure -- Let me get
15 this for the court reporter. I've been there, I don't want
16 to lose these documents. It's very hard to put them back
17 together. Okay, everybody, number it 62 because you will
18 be expected to be able to produce your copy later in the
19 week.

20 Have you finished with all your questions --
21 No, you haven't finished with all your questions. You have
22 your minutes there --

23 MR. EVANS: What is that number -- That's 62?

24 MR. JOHNSON: 62, we're up to number 62. We
25 won't move to enter that. We should, I think, move to

1 enter 61 which we probably not have moved to enter yet,
2 have we, Mr. Reporter?

3 THE REPORTER: No.

4 MR. JOHNSON: GANE will go ahead and move to
5 enter number 61 into evidence before we forget. This is
6 89-02 inspection report -- I believe it is 89-02, yeah, 89-
7 02 inspection report. We already numbered it quite some
8 time ago as GANE 61, but we have not moved it into evidence
9 yet. So we will do that.

10 MR. EVANS: I believe that's the one that Mr.
11 Turk suggested was missing the Notice of Violation page. I
12 believe he has already stated -- but I don't want to put
13 words in his mouth. With that clarification, if he has no
14 objection, I certainly have no objection.

15 MR. JOHNSON: Yes. I'm not sure how we ended
16 up getting an incomplete document, but obviously we are --
17 we would prefer to have a complete version inasmuch as
18 anyone else would. So, if there is a way that that can be
19 remedied?

20 MS. CARROLL: If anybody else wants to put this
21 complete document in, feel free.

22 MR. JOHNSON: We would be happy to help.

23 MS. CARROLL: Well, no, we won't do it, but
24 we'll be happy to not object to somebody else entering the
25 complete document into the record. We've spent \$500 on

1 photocopies, so we'll just have to deal with this.

2 MR. TURK: Your Honor, we don't object to the
3 offer of this partial document. If GANE wanted to put in
4 only a page of it, they could do that. We don't intend to
5 supplement, however. We think that the salient details are
6 covered in the staff's testimony, and we don't see a need
7 for anything beyond what is in the staff's testimony if
8 they want this portion to come in at all. So I don't
9 object to that.

10 CHAIRMAN BECHHOEFER: Without objection GANE 61
11 will be admitted. This will not preclude anybody seeking
12 to enter the first few pages if they so desire at a later
13 date -- I should say without prejudice.

14 (Whereupon, the document marked as
15 GANE Exhibit No. 61 was admitted into
16 evidence.)

17 MR. JOHNSON: At this point we are going to
18 move to GANE Number 56. This is inspection report 94-02,
19 September 20, 1994, which we have already talked about some
20 before. This is going to be page two of the body of the
21 report right before where it says, see audits, the
22 paragraph directly above that. The inspector noted that on
23 one occasion in March 1994 only six of 12 members were
24 present at a committee meeting. Issues were raised and
25 voted upon. We have copies of this meeting and we'll get

1 to entering these later.

2 MS. CARROLL: Oh, actually, everybody else's
3 copies are in these blue notebooks, and it's time --

4 BY MR. JOHNSON:

5 Q Minutes of a committee meeting held on August
6 11, 1994 indicated that the chairman of the NSC issued a
7 letter dated May 24, 1994, stating the full forum of the
8 committee --

9 MS. CARROLL: Wait a minute, Rob. Let me give
10 these out to people. I mean, they've got that, but they
11 don't have the minutes.

12 Y'all I made a real bad mistake, I've got to
13 tell y'all about this. I wrote in beautiful gold ink, the
14 exhibit number, on the side of this vinyl. It hasn't
15 dried. So you need to, like, rub it off with a piece of
16 paper or something before you get it on your suit. Did
17 everybody hear me?

18 CHAIRMAN BECHHOEFER: Was there a number
19 reserved for this?

20 MS. CARROLL: Yes. So this is going to be GANE
21 Number 44, except I'm sure you are going to want to
22 separately number every single set of minutes that is in
23 here, but this gold ink rubs off, so I am leaving it up to
24 you to rub it off on a piece of paper and not on your
25 business suit. Okay? Now, everybody that gets a set of

1 minutes, be advised, because I don't know if dry cleaning
2 can get it out. I'm so sorry. I thought it would be
3 beautiful and I was sure that it would set up, but it
4 didn't. I mean, it's been four weeks and it hasn't set
5 yet.

6 (Laughter)

7 MS. CARROLL: But doesn't it look pretty?

8 CHAIRMAN BECHHOEFER: Now you know what the
9 golden rule means.

10 (Laughter)

11 MR. EVANS: Now, these are minutes?

12 MS. CARROLL: These are minutes, and we will be
13 referring periodically to two certain sets of minutes.

14 MR. EVANS: I must say, the way you've done
15 that -- It really is attractive. My compliments. It is
16 pretty.

17 MR. JOHNSON: And I believe it is chronological
18 so it should be easy to find the specific ones we are
19 speaking of now.

20 MS. CARROLL: They did have a meeting in
21 between here. Steve, did you hear me? You won't get it on
22 your suit, will you? Kind of like radiation, you don't
23 want to get any on you.

24 (Laughter)

25 MR. JOHNSON: Now that we've gotten these

1 pretty well distributed to everyone, hopefully, I will
2 probably end up showing these copies to the members of the
3 panel so that they can look at them.

4 (The document referred to was marked
5 for identification as GANE Exhibit
6 No. 44.)

7 BY MR. JOHNSON:

8 Q Minutes from a committee meeting held August
9 11th indicated the chairman of the NSC issued a letter
10 dated May 24, 1994, which is in there, stating that a full
11 quorum of the committee, at least 7 of 12 members had not
12 been present during the March meeting and that those issues
13 discussed would need to be re-reviewed and re-approved.
14 This was done and all issues resolved by August 11, 1994.

15 I'm going to take these copies over to the
16 panel so they can take a look and see. These are the
17 minutes of March 17th. As you'll notice there are seven
18 items, including continuing on to the next page. The
19 seventh item is talking about an occurrence without safety
20 implications, it says, involving a violation in the
21 procedure for reactor operations. Again, even though it
22 does say there without safety implications the fact that it
23 is a violation of procedures for reactor operations, I
24 think we can all agree, is at least significant. This is
25 the letter from Mr. Cobb stating that a quorum was not

1 present, stating that it was not an official meeting and
2 stating that there would need to be a redress of the issues
3 addressed at that meeting at a time when there would be a
4 quorum.

5 I'm sorry that there aren't more copies for you
6 two.

7 MR. TURK: That's the May 24 letter referred to
8 in the inspection report?

9 MR. JOHNSON: Yes, it is on the Southern
10 Company stationery at the top. It's signed by Mr. Cobb
11 down at the bottom. And the August 11th meeting, which is
12 referred to in that inspection report that I just quoted
13 from, we see as item number two here -- if I can find a
14 space so that you guys can look at this as well -- Minutes
15 of the meeting of March 17, 1994, were distributed but it
16 was decided that a quorum did not exist at the meeting.
17 All items addressed at that meeting were brought up for
18 consideration and approval and we have A, B, C, D, E and F,
19 which correspond to most of the issues that were covered in
20 the March 17th meeting. However, there is, in the August
21 11th meeting, no reference whatsoever to item number 7 from
22 the meeting that this is intended to replace concerning a
23 violation of procedures for reactor operations.

24 CHAIRMAN BECHHOEFER: Where were the items 1
25 through 7 indicated?

1 MR. JOHNSON: Item number 7 is the second page
2 of the March 17th minutes. Talking about R. Nerem's letter
3 to Dr. Karam. It's March 17, 1994.

4 CHAIRMAN BECHHOEFER: I don't have anything
5 other than the letter.

6 MS. CARROLL: They did have a May 19 meeting in
7 between the March 17 meeting and the August meeting.

8 MR. JOHNSON: Flip further back and let's see
9 if we can find it. Here.

10 CHAIRMAN BECHHOEFER: Oh, okay.

11 MR. JOHNSON: And on the second page there,
12 you'll find an item number 7, talking about the violation
13 of procedures for reactor operations.

14 BY MR. JOHNSON:

15 Q I guess the question before the panel is that
16 in light of this, you cannot really say, as it says in this
17 inspection report, that all these issues were resolved --
18 all the issues except for the one that involved a violation
19 of procedures for reactor operation were resolved. That
20 one seems, to our viewpoint, to have been fairly
21 conspicuously omitted from the items that were revisited
22 during the new meeting now that there's a quorum, now that
23 there's a full assemblage of people.

24 MR. TURK: May I register an objection to the
25 question, Your Honor? The testimony concerning inspection

1 report 94-02 appears on page 23 of the prefiled testimony.
2 It discusses the fact that a violation, one violation, of
3 Severity Level IV was cited in the inspection report and
4 the testimony then goes on to discuss how that violation
5 was addressed.

6 The fact that the staff is present does not
7 mean that they are subject to examination on every
8 inspection report and every finding. What they are subject
9 to examination on is the direct examination, the direct
10 testimony. The cross here, regardless of its interest to
11 GANE, is simply beyond the scope of the direct testimony.

12 ADMINISTRATIVE JUDGE LAM: Mr. Turk, where on
13 page 23 is what you made reference to?

14 MR. TURK: Inspection report 94-02; isn't that
15 the one that --

16 ADMINISTRATIVE JUDGE LAM: Right, but where on
17 page 23 that you said --

18 MR. TURK: Page 23 of the staff's testimony,
19 item 9 entitled "Inspection Report 94-02".

20 ADMINISTRATIVE JUDGE LAM: Oh, so its on the
21 top of page 24 that the staff has verified that these
22 corrective actions have been taken. Is that what you made
23 reference to?

24 MR. TURK: The only thing in the staff's
25 testimony about this inspection report has to do with the

1 violation or failure to make a proper evaluation of the
2 extent of radiation present, following the annual neutron
3 radiation survey. The testimony then discusses how that
4 matter was closed out. That's what the testimony concerns.
5 The testimony does not embrace the entire inspection report
6 and every other issue in the inspection report apart from
7 the violation which is discussed in the testimony. And in
8 fact, if you look at the very beginning of this part of the
9 testimony, it explains why these different items were
10 focused upon in the testimony. The question is "Please
11 provide" -- this is question 13 on the top of page 14,
12 which reads, "Please provide a summary of the violations
13 and NCVs identified in the NRC staff's inspection reports
14 during the period of '89 to the present." And then it goes
15 on to make a listing in chronological sequence. Inspection
16 report number 94-02 is listed as item number 9 on page 23
17 of the testimony.

18 The only part of the inspection report that's
19 referenced in the testimony, the only thing that's
20 discussed in the testimony, is the violation that was
21 found, not any of the other things that may have been
22 discussed in the inspection report. And we are not
23 introducing into evidence anything other than the facts
24 concerning that violation.

25 MR. JOHNSON: And our claim would be that this

1 is tied to their testimony not on page 23, but on page 31
2 where they make the statement that they are not aware of
3 any reason to believe that management has failed to
4 encourage a safety-conscious attitude among its employees.

5 This is, to us, an issue that is relevant. The
6 panel, I'm sure, is familiar with this inspection report,
7 they have read it, it is available to them. The fact that
8 when this meeting was redone, that the one item concerning
9 a violation of procedures concerning reactor operations was
10 conspicuously omitted, is something we have concerns about.

11 MR. TURK: I must have missed the point.
12 Something was conspicuously omitted from?

13 MR. JOHNSON: From the August 11 meeting of the
14 Nuclear Safeguards Committee.

15 CHAIRMAN BECHHOEFER: The Board is going to
16 overrule that objection. We believe the panel can answer
17 any questions about the report to which they have reference
18 and if they -- the whole reports could be put into the
19 record, for that matter, and if they don't know, they can
20 say so. They don't have to have knowledge about everything
21 --

22 MR. TURK: I'm sure this panel has knowledge.

23 CHAIRMAN BECHHOEFER: But they participated in
24 the report and they can answer any questions based on the
25 report.

1 MR. TURK: I'm sure the panel has knowledge on
2 the inspection report; Mr. Bassett and Mr. McAlpine are in
3 concurrence. The point is, however, that if somebody
4 references a single definition in an encyclopedia or
5 dictionary, that doesn't mean that the entire encyclopedia
6 or dictionary becomes at issue or becomes part of what
7 cross examination may proceed upon.

8 CHAIRMAN BECHHOEFER: This is a little bit
9 different from a dictionary. The Board wants to see that
10 the entire record is established appropriately and is not
11 cut off sentence-by-sentence to choose what one party
12 wishes to stress.

13 So to the extent the witnesses have knowledge -
14 - if they don't have knowledge and it isn't directly part
15 of their direct testimony, so be it, that's nothing held
16 against them for that, but I think inquiry will be
17 permitted.

18 BY MR. JOHNSON:

19 Q And the main question remains, in light of the
20 fact that at the August 11 meeting, one of the items that
21 was discussed at the meeting that was voided was
22 conspicuously omitted -- our choice of words -- can you --
23 is it not true that the last sentence in this paragraph in
24 this inspection report, this was done and all issues
25 resolved by August 11, 1994, cannot stand, and I also would

1 refer you to page 31 of your testimony where you say that
2 there is no reason to believe that management has failed to
3 encourage a safety-conscious attitude. I feel that when
4 this meeting was conducted for the second time on August 11
5 and the only item that was omitted was the one that
6 concerned a violation of procedures concerning reactor
7 controls, that would tend to suggest a lack of safety-
8 conscious attitude -- would you agree?

9 MR. TURK: I have to object because I don't
10 understand the question.

11 CHAIRMAN BECHHOEFER: It got a little extended.

12 MR. JOHNSON: That did get a little compound.
13 Let me try and bring it back.

14 MR. TURK: Maybe you can explain -- maybe this
15 would help, I don't know. You're referring first of all to
16 the March 17, 1994 minutes, item number 7.

17 MR. JOHNSON: Yes.

18 MR. TURK: And this is a discussion about Mr.
19 Nerem's letter to Dr. Karam.

20 MR. JOHNSON: True.

21 MR. TURK: Then you're referring over to the
22 August 11 minutes?

23 MR. JOHNSON: Well, it might be helpful as an
24 intermediary step to refer to the letter that states that a
25 quorum was not reached and that the issues of that meeting

1 on March 17 were going to have to be raised again. But
2 yes, then the next step from that is to go on to the August
3 11.

4 MR. TURK: And then you're asking what is the
5 significance of the fact that the minutes in August don't
6 explicitly recite a discussion or reflect a discussion?

7 MR. JOHNSON: No, not that they don't reflect a
8 discussion, it is our understanding and our intent that the
9 discussion about item number 7 did not happen on August 11,
10 that it was not revisited and that there was never an
11 official discussion of that issue in an official Nuclear
12 Safeguards Committee meeting. This seems to us to not
13 encourage a safety-conscious attitude, would you agree?

14 MR. TURK: I have to object because you don't
15 have a good predicate. The statement in the August 11,
16 1994 minutes says, quote, "All items addressed at that
17 meeting were brought up for consideration and approval."

18 MR. JOHNSON: And that is an incorrect
19 statement.

20 MR. TURK: I don't see that you can make that
21 assumption merely by the fact that six items are listed
22 rather than seven. You don't have a predicate, you do not
23 have a witness here who can state whether that item was
24 brought up at the meeting or not. And you need that before
25 you can go further and say what's the significance of the

1 omission.

2 MR. EVANS: Also, I might point out the same
3 objection that if you look at the minutes of March 17,
4 there are certain items which were approved which normally
5 means a vote and therefore, you would have to have a quorum
6 to have a valid vote. Item 7 does not involve anything for
7 approval, it simply states the committee was informed about
8 a letter. Karam reported an occurrence. This is a report,
9 it is not a committee action; therefore, I don't know that
10 when you say approved, you don't have to approve something
11 which wasn't approved to start with, it was a point of
12 information. And if I'm reading 7 correctly, there would
13 be no necessity for approval by a quorum. There's no
14 official action taken.

15 CHAIRMAN BECHHOEFER: The latter objection we
16 will uphold because that is correct. That is true and we
17 can see why it was not necessarily referenced later.

18 MR. JOHNSON: I would, again referring to the
19 staff's testimony that they are not aware of any reason to
20 believe that licensee's management has failed to encourage
21 a safety-conscious attitude, and I would say that even if
22 this was not a matter that needed to be brought up for a
23 vote, the fact that the only time that an issue concerning
24 a violation of procedure concerning reactor operation --
25 the fact that the only time that this issue was brought up

1 was at a meeting at which a quorum did not exist, a meeting
2 which for all intents and purposes had no substantial value
3 whatsoever, may as well not have happened. To me, to bring
4 up an issue concerning violation of procedures of reactor
5 operations only then and to not take the opportunity
6 provided to management to bring it up again on August 11,
7 whether they were necessarily required to do so or not,
8 would not encourage a safety-conscious attitude.

9 BY MR. JOHNSON:

10 Q I would ask the panel if they would agree with
11 that perception.

12 MR. EVANS: If I may object once again. Maybe
13 I wasn't complete enough. If you will look at item 7 on
14 the March 17 minutes, it is simply information being
15 provided by the director. It was a matter, it said without
16 safety implications, involving violation of procedure.
17 He also speaks of the resolution of the matter. The
18 operator in question has been restricted to limited access.
19 In other words, the director reported a procedural
20 violation, also reported the action taken to remedy it,
21 which is the restriction of the operator in question. This
22 is simply information passed on. It is not action by the
23 committee, no action was requested by Dr. Karam. The
24 committee, of its own -- on its own could have taken some
25 action, but it didn't apparently. And therefore, there is

1 nothing to be ratified. The whole purpose of the second
2 meeting is very simple; if you have an irregular meeting
3 without a quorum and the actions taken -- this is
4 resolutions, actions taken -- are not valid, they are not
5 illegal, they are simply not valid, but they can be -- that
6 can be corrected by a ratification by a successive meeting
7 of the Board, which is apparently what happened. All of
8 the actions taken were approved. If you want to use the
9 legal term, we usually call it ratified. But you don't
10 ratify passing on information, there's nothing to ratify.

11 And also, we don't know what they discussed at
12 the meeting of August. They're talking about actions, but
13 they may well have discussed this again, they may have
14 discussed 20 other things, we don't know.

15 And there's simply no basis for any showing of
16 inconsistency, much less any impropriety.

17 CHAIRMAN BECHHOEFER: As a matter of
18 information, you're not the one to ask, but we've already I
19 think had testimony to the effect that these minutes are
20 circulated to all members of the committee, whether or not
21 present.

22 MR. EVANS: Yes, sir, that is true. Every
23 member of the committee would have a copy of the minutes,
24 even of a meeting which -- where actions were taken which
25 were, not illegal, but invalid. All members of the

1 committee had the information if they received the minutes,
2 they presumably did.

3 So all we have here is Dr. Karam passed on that
4 there had been a procedural violation which he had taken
5 care of, explained what he did restricting the operator who
6 made a mistake, restricting that operator. It was passed
7 to the committee as a point of information. Now the
8 committee, when it gets information, can do one of two
9 things. It can either say thank you for the information,
10 or it can say we also want you to do this, this, this.
11 They didn't do the latter. That would have been an action.
12 But there is nothing in the, what I would call the invalid
13 meeting, there is no action taken on this point of
14 information, and therefore there was nothing to ratify
15 since no action doesn't require a ratification. It's that
16 simple.

17 MR. JOHNSON: There is no issue of impropriety
18 here. The issue here is one of perception in terms of
19 encouraging a safety-conscious attitude. It is our
20 position, and the panel may feel free to disagree, -- as
21 Mr. Evans apparently does -- over whether bypassing this
22 matter in a fairly quick fashion at an invalid meeting,
23 which for all legal and technical purposes might as well
24 not have happened, is that concurrent with encouraging a
25 safety conscious attitude.

1 We have not necessarily implied impropriety or
2 breaking regulations or breaking the law. All we wish is
3 to compare it to the perception.

4 CHAIRMAN BECHHOEFER: I don't think that that -
5 - given the background, I don't think that that question is
6 relevant even to safety-consciousness or anything else.
7 Certainly one without safety implications. So I don't
8 think the panel -- I don't know if there's a current
9 objection, but I think the panel does not have to answer
10 that.

11 MS. CARROLL: If the Judge objects, I think
12 that's --

13 MR. TURK: There is an objection.

14 MR. EVANS: It was an objection, Your Honor.

15 CHAIRMAN BECHHOEFER: Well, if there was an
16 objection, I uphold it. Sustain it.

17 MR. EVANS: When I raise my voice, that usually
18 is an objection.

19 MR. JOHNSON: We would just point out one more
20 thing. On page 2 of the body of the inspection report that
21 we quoted from earlier, and this could have been an error
22 on the part of the person preparing the inspection report,
23 this may be inaccurate, but if so, the record should
24 reflect exactly what's wrong. A full quorum of the
25 committee had not been present during the March meeting and

1 those issues discussed would need to be re-reviewed and re-
2 approved -- those issues discussed -- not necessarily just
3 things that were ratified, not necessarily just things that
4 were voted on -- the issues that were discussed would need
5 to be -- again not necessarily re-approved, possibly just
6 re-reviewed. That did not happen. Why?

7 MR. TURK: I don't think you understood Mr.
8 Evans' comment. The things that required approval were
9 discussed and re-approved. The point is that item 7 was
10 not an approval item, it was an information item.

11 MR. JOHNSON: It was an issue discussed.

12 MR. TURK: It says those issues discussed would
13 need to be re-reviewed and re-approved. This was done.
14 The things that needed re-approval were re-approved. The
15 information item did not require approval.

16 MR. JOHNSON: Well, this is not clear on that.

17 MR. EVANS: It's really not an issue. Issue
18 implies there's something to be decided, a question --
19 issue means question, meaning something to be decided.

20 Now the committee could have made this a
21 question, but they didn't. And a point of information is
22 not an issue. It seems clear enough to me.

23 MR. JOHNSON: A semantic difference to say the
24 least.

25 MR. EVANS: And also, as far as what was re-

1 discussed, we don't know what was re-discussed. It may
2 well have been re-discussed.

3 MS. CARROLL: I want to get my documents back
4 so I'll have a complete notebook here.

5 CHAIRMAN BECHHOEFER: I might say we're not
6 precluding you from asking questions about this with Dr.
7 Karam because -- he might say the same thing that counsel
8 said, but you've got a right to ask him that.

9 MS. CARROLL: We were just surprised to find it
10 in the inspection report and that, you know, we don't
11 happen to think that the inspection report reflects it
12 factually, and we didn't get very far in our effort to --

13 MR. JOHNSON: It may be clumsy semantics,
14 nothing more.

15 MS. CARROLL: As volunteers, we prepared for
16 this I'm sure very differently than lawyers would. Rob has
17 indicated to me that he has finished the questions he was
18 prepared to ask. I have several questions. If we moved
19 cleanly from Rob conducting the questioning to me
20 conducting the questioning and we would not switch back,
21 would that be acceptable or would everybody prefer to
22 continue with what I think is a less efficient way of
23 having me transmit to Rob what I perceive needs to be asked
24 and then having him attempt to ask, which sometimes he
25 doesn't quite get to the heart of the matter the way I

1 would attempt to anyway.

2 MR. JOHNSON: And I would assure everybody that
3 I would not be asking any more questions.

4 MR. TURK: May I inquire approximately how many
5 minutes do you think you have or how many questions you
6 think you have?

7 MS. CARROLL: It's a fairly good amount. I
8 would hate to put a -- what time is it?

9 MR. EVANS: Quarter to five.

10 MS. CARROLL: Quarter to five. I think
11 everybody would probably like to finish this today and that
12 would certainly be my goal, but I'm just basically going to
13 move through it and hit the points that Rob didn't hit.
14 And I will tell you my game plan is to go over a document
15 that I created that Rob has read but it's not in him like
16 it's in me. There were points that I found in the
17 inspection reports in here I'd like to touch upon. I have
18 another document to ask about and I want to ask some
19 questions about the application, and it's probably a fair
20 amount.

21 MR. TURK: What does a fair amount mean?

22 MS. CARROLL: Pardon me?

23 MR. TURK: I don't understand what a fair
24 amount means.

25 MR. EVANS: Two hours, three?

1 MR. TURK: Five minutes?

2 MS. CARROLL: Just going through it right now,
3 I question whether we could finish today no matter how we
4 approached it, with panel B.

5 MR. TURK: Your Honor, originally this Board
6 required the staff to file the testimony of these witnesses
7 by May 31 I believe -- I'm looking for the order, but that
8 was the date. We filed May 7, even though we were not
9 strictly required to. I don't want to get personal but in
10 a conversation with Ms. Carroll about a week ago, she had
11 not read panel B's testimony yet. I don't think that this
12 panel should be subjected to two rounds of questions when
13 there could have been coordination if proper planning and
14 preparation had occurred.

15 And it's really a request I suppose for
16 reconsideration of Your Honor's previous indication to GANE
17 that they should have one questioner, and that was
18 something that was raised earlier today and Your Honors
19 indicated that there should be one person.

20 This testimony has been available for a long
21 time.

22 MS. CARROLL: Longer than the public document
23 room.

24 ADMINISTRATIVE JUDGE KLINE: You've got a
25 document there that Mr. Johnson can read, don't you?

1 Didn't you say that you did?

2 MS. CARROLL: Are you referring to this?

3 CHAIRMAN BECHHOEFER: If we -- well you showed
4 two documents, one was your discovery response I think.

5 MS. CARROLL: Which I'm saying, you know, he
6 has read, but I created it.

7 CHAIRMAN BECHHOEFER: If you talk it over after
8 we adjourn tonight, could you be ready, Mr. Johnson, to ask
9 the questions because it would be a little more -- would
10 flow a little better I think if you asked the questions in
11 the morning.

12 The Board could use up the rest of the time
13 this afternoon for one or two questions which we have.

14 MR. JOHNSON: The issue is not my willingness
15 to try and ask Glenn's questions. The issue is more that I
16 don't seem to be able to ask Glenn's questions in the way
17 in which she intends them. Glenn is not the kind of linear
18 thinker who is very good at writing a question down and
19 passing it over to me. I am willing, to the best of my
20 ability, to continue to have Glenn funnel questions through
21 me, or her request is one that is made strictly from trying
22 to speed the process along. I feel that that's honestly
23 the reason why we -- it's quite possible that we should
24 have prepared more, I'm not going to argue that question
25 right now. But there's nothing that we can do about that

1 now besides prepare more tonight I suppose for tomorrow.

2 CHAIRMAN BECHHOEFER: That's what we were
3 suggesting.

4 MR. JOHNSON: Well, we can do our level best to
5 do that, but you know, the question is more whether I'm
6 representing Glenn accurately and that's something that I
7 take fairly seriously. Glenn is the official intervenor in
8 this process and I don't take lightly the possibility of my
9 misrepresenting her, and that's all I wish to say.

10 MS. CARROLL: However, I will get satisfaction
11 however long it takes. If he doesn't understand the spirit
12 of the question or if he doesn't understand the response
13 the way I do and it needs follow up questions, I will
14 badger him until it gets out. I think it's a more time
15 consuming process.

16 ADMINISTRATIVE JUDGE KLINE: That's his problem
17 though, isn't it?

18 CHAIRMAN BECHHOEFER: But I think he knows some
19 of the things he's asked already and can coordinate it
20 better with previous questions that he's already asked.

21 MS. CARROLL: I have faith in his ability, but
22 I really do think that it takes longer that way, but I'm
23 confident that we will get the results we want by doing it
24 that way, so that's fine.

25 CHAIRMAN BECHHOEFER: Then you can confer

1 tonight to see --

2 MS. CARROLL: Which should help.

3 CHAIRMAN BECHHOEFER: Help the wording so that
4 you get what you're interested in.

5 MS. CARROLL: The unknown quantity to us is the
6 answers from the panel and how that affects, you know, what
7 follows.

8 CHAIRMAN BECHHOEFER: Of course.

9 MS. CARROLL: That'll work.

10 CHAIRMAN BECHHOEFER: Do you want me to ask my
11 questions now and use up the rest of the day? It won't use
12 up the rest of the panel's time, but I had one that I did
13 want to ask, but I've got to get a couple of pieces of
14 paper.

15 (Pause.)

16 BOARD EXAMINATION

17 BY CHAIRMAN BECHHOEFER:

18 Q My question is based first on a statement made
19 by panel A which they couldn't answer and they deferred to
20 you, but it's also a statement that appears in one of the -
21 - to start out with, it appears on page 21 of panel A's
22 testimony. But it's only one sentence, and then there's a
23 statement in an inspection report that says essentially the
24 same thing, an inspection report that was introduced today.

25 The sentence says, in terms of improvement

1 after reorganization, it says, "At the same time, the
2 licensee added an NNRC Deputy Director which was viewed by
3 the NRC Region II staff as a positive change to the
4 facility." Now there's a similar statement in -- let me
5 see if I can find the darned thing --

6 (Brief pause.)

7 CHAIRMAN BECHHOEFER: Okay, this was stated as
8 well in inspection report 90-02, which --

9 MS. CARROLL: Did you say where in 90-02?

10 CHAIRMAN BECHHOEFER: It's on the front page of
11 the -- it may be elsewhere but it's on the front page of
12 the inspection report itself.

13 MS. CARROLL: Of the inspection report. Of the
14 report details?

15 CHAIRMAN BECHHOEFER: Summary, and then it says
16 Results, the second sentence under Results.

17 BY CHAIRMAN BECHHOEFER:

18 Q My question is -- no, no, this is the wrong
19 sentence, this is not the right one. There's a similar
20 sentence in another report. This is the wrong report.

21 In any event, I'll just base it on -- I saw it
22 in one of the other reports. Does this person who I guess
23 is Mr. McDonald -- was Mr. McDonald -- does anyone fulfill
24 that position now?

25 A (Witness McAlpine) Currently, there is no one

1 in the position.

2 Q Does the staff have any problem with the fact
3 that the position is no longer filled -- a position which
4 the staff seemed to approve at the time it was set up?

5 A (Witness McAlpine) Since that position has
6 been vacant since about April of 1992, we have not -- and
7 we have not seen a degradation in performance during that
8 period of time, I personally do not have a problem with
9 that being vacant.

10 Q Well, was there any expectation by the staff
11 back at the time the position was established -- as I say,
12 panel A spoke favorably of it, but they didn't have any
13 knowledge or comments on what subsequently happened. Was
14 there any expectation that someone would continue in that
15 position and that there was a need generally to have the
16 capability represented by the extra person to fulfill the
17 organizational and managerial duties that would be
18 exercised?

19 A (Witness McAlpine) I don't know. That's
20 before our time period I believe, if I understand the --

21 Q Well, they deferred to you, so --

22 A (Witness Mendonca) I think I would indicate
23 that the position was created with our approval, the
24 approval at the time of panel A, it was indicated that
25 there were several problems that needed to be resolved,

1 including among them radiation protection procedures,
2 perhaps better touch with the regulatory requirements and
3 the person that they were bringing into this position had
4 qualifications that would help and aid in addressing the
5 problems that had been identified in the '88 time frame.
6 We had continued to verify in our inspections that those
7 problems were being addressed and eventually had been
8 addressed to a fair satisfaction. I mean they have now
9 pretty good procedures, they have an organization that
10 seems to be functioning. I think that our assessment is
11 that the concerns that generated that position have been
12 addressed and fulfilled through the licensee's processes
13 and program.

14 Q So that then allowing the position to fade away
15 would not go against the staff's expectations on what staff
16 expected the position to -- the person filling the position
17 to accomplish.

18 A (Witness Mendonca) That's correct; to answer
19 your question, yes, you're right. I'm sorry I didn't
20 answer your question the first time.

21 Q And you did not view this as a continuing
22 commitment to have a person in that position.

23 A (Witness Mendonca) We did not require it in
24 the tech specs, we did not gain a commitment that they
25 would continue to do that in any official licensing

1 document. So -- correct.

2 BY ADMINISTRATIVE JUDGE LAM:

3 Q In panel B's testimony on page 10, they
4 indicate that since January 1989, the staff has performed a
5 total of 31 inspections of Georgia Tech's facility and in
6 these inspections, 18 inspections found no violations and a
7 total of 17 cited violations and seven non-cited were found
8 and documented.

9 My question is how many other Class I research
10 reactors are there besides Georgia Tech in this country and
11 how do they compare in terms of performance against this
12 type of Severity Level IV and V violations?

13 A (Witness McAlpine) I'm going to let Mr.
14 Mendonca answer that because he's got the broad range of
15 experience across the country, whereas Craig and I are
16 limited to Region II.

17 A (Witness Mendonca) Mr. McAlpine has practiced
18 that answer for a long time now --

19 (Laughter.)

20 A (Witness Mendonca) -- and he finally got a
21 chance to use it.

22 I tabulated the Class I university research
23 reactors that are comparable in structure. They are the
24 University of Virginia, the Massachusetts Institute of
25 Technology, the University of Michigan, University of

1 Missouri at Columbia. Additionally, there's NIST, which is
2 a test reactor, it's not a research reactor, so I did not
3 tabulate that, it was in a different category.

4 You had mentioned total violations. For UVA,
5 the total violations in the period of my experience with
6 this program at UVA was approximately five. They had no
7 Level Is, two Level IIs, no Level IIIs, one Level IV, two
8 Level Vs and then additionally they had six NCVs, so a
9 total of 11.

10 BY ADMINISTRATIVE JUDGE KLINE:

11 Q Over what time period was that?

12 A (Witness Mendonca) Over the time period of my
13 involvement with the program which is since about June of
14 1990.

15 MR. TURK: I'm sorry June 1990 until --

16 WITNESS MENDONCA: Until present, or until I
17 prepared this tabulation.

18 BY ADMINISTRATIVE JUDGE LAM:

19 Q So UVA had two Level II violations?

20 A (Witness Mendonca) Yes. My point being that
21 those are quite significant, and if you want to discuss
22 them a little --

23 MIT had no Level Is, no Level IIs, no Level
24 IIIs, four Level IVs, no Level Vs, and one NCV for a total
25 of about five violations.

1 University of Michigan; no Level Is, no Level
2 IIs, two Level IIIs, two Level IVs, no Level Vs and six
3 NCVs for a total of ten violations.

4 University of Missouri at Columbia had no Level
5 Is, two Level IIs, three Level IIIs, three Level IVs, no
6 level Vs and no non-cited violations, for a total of eight
7 violations.

8 I think the Georgia Tech had no Level Is, no
9 Level IIs, no Level IIIs, six Level IVs, two Level Vs and
10 seven non-cited violations for a total of 15.

11 That sort of gives you a numerical comparison
12 and a level of significance comparison. I think I should
13 also mention that NCVs are not a bad thing, they're
14 actually a good thing, they're of low significance,
15 identifying your own problems and correcting them properly
16 or coming up with an adequate solution. So that's the sort
17 of comparison that I would give. Did I answer the
18 question?

19 ADMINISTRATIVE JUDGE LAM: Thank you. That's a
20 very well informed answer, I appreciate that.

21 ADMINISTRATIVE JUDGE KLINE: Mr. McAlpine was
22 right.

23 (Laughter.)

24 ADMINISTRATIVE JUDGE LAM: Thank you.

25 BY CHAIRMAN BECHHOEFER:

1 Q One further supplement just to nit-pick. Let
2 me ask you, of the I guess 31 inspections, how many of
3 those 31 were unannounced, not announced?

4 A (Witness McAlpine) We announce most of our
5 inspections at research reactors now, but that has not
6 always been the case. The two in 1989 probably were not
7 announced, subsequent to that, from 1989, we've tried to
8 announce all our inspections at research reactors.

9 A (Witness Mendonca) And at all reactors really.

10 MR. JOHNSON: Except for the unplanned ones --

11 WITNESS MENDONCA: Unscheduled.

12 MR. JOHNSON: Unscheduled, sorry.

13 A (Witness Mendonca) What we were finding is
14 that we were arriving at these university reactors at a
15 time when the individual in charge had a class and they
16 were canceling their classes in nuclear engineering and the
17 other courses that they taught in order to be there for us
18 to inspect their reactor. So we tried, to the extent that
19 we could, to minimize the impact we were having on the
20 educational process. And that's why we went to announcing
21 our inspections.

22 BY CHAIRMAN BECHHOEFER:

23 Q Well, doesn't that sort of encourage immediate
24 fixes and cover ups?

25 A (Witness McAlpine) In general, a licensee

1 cannot fix a pervasive problem that is in their program
2 overnight. And we don't announce these inspections a great
3 length of time in advance. They could fix minor things;
4 yes, they could, but not the major ones.

5 A (Witness Mendonca) Additionally, you know, the
6 penalty for them trying to fix minor things or hide things
7 is so severe that I would think that any licensee would not
8 be a licensee very long or very well considered if we got
9 any inkling of such activity.

10 CHAIRMAN BECHHOEFER: I guess that's all we
11 have for now.

12 MS. CARROLL: Can we ask a follow on to Judge
13 Lam's question?

14 CHAIRMAN BECHHOEFER: Yes, go ahead.

15 MS. CARROLL: I would like to know if you've
16 done any tabulating to compare the operating hours, the
17 annual operating hours in which these violations occurred.
18 Georgia Tech, for example, has been 150 hours annually or
19 less of operating. Did you tabulate the number of hours
20 these reactors were operating in which this violation
21 history --

22 MR. TURK: I would object as beyond the scope
23 of the direct, Your Honor. There's nothing in here about
24 operating hours. What we're talking about are violations.

25 CHAIRMAN BECHHOEFER: We'll overrule the

1 objection.

2 MR. TURK: It's not relevant at all to the
3 issue.

4 CHAIRMAN BECHHOEFER: It may or may not be, but
5 we'll overrule the objection. If the witnesses don't know,
6 they can say so.

7 WITNESS MENDONCA: What was the question?

8 MR. TURK: The question was did you do a
9 tabulation -- I guess that's a simple yes or no.

10 WITNESS MENDONCA: No, I did not.

11 CHAIRMAN BECHHOEFER: Well, I think we'll now
12 conclude for the day and we'll resume with your further
13 questions of this panel tomorrow morning at 9:00.

14 (Whereupon, the hearing was adjourned at
15 5:09 p.m., to resume at 9:00 a.m. on Wednesday,
16 June 26, 1996.)

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C E R T I F I C A T E

This is to certify that the attached proceedings before the
U. S. Nuclear Regulatory Commission in the matter of:

Name of Proceeding: Georgia Tech Research Reactor

Docket Number: 50-160-REN

Place of Proceeding: Atlanta, Georgia

Date: June 25, 1996

were held as herein appears, and that this is the original
transcript thereof for the file of the United States
Nuclear Regulatory Commission taken by me and, thereafter
reduced to typewriting by me or under the direction of the
court reporting company, and that the transcript is a true
and accurate record of the foregoing proceedings.

William L. Warren

WILLIAM L. WARREN
Official Reporter

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