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USNRC

6.0 ADMINISTRATIVE CONTROLS

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6.1 ORGANIZATION

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The organization for the management and operation of the reactor is indicated in Figure 6.1. The Director of the Nuclear Research Center has over all responsibility for direction and operation of the reactor facility, including safeguarding the general public and facility personnel from radiation exposure and adhering to all requirements of the operating license and Technical Specifications.

The Manager, Office of Radiation Safety, advises the Director, Nuclear Research Center in matters pertaining to radiological safety. She/he has access to the Vice President, Interdisciplinary Programs and/or the President of the Institute as needed.

The minimum qualifications with regard to education and experience backgrounds of key supervisory personnel in the Reactor Operations group are as follows:

(1) Reactor Supervisor

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

(2) Reactor Engineer

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

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

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NUCLEAR REGULATORY COMMISSION
Docket No. 50-160-REN EXHIBIT NO. 29
In the matter of Ha Tech
 Staff Applicant Intervenor Other
 Identified Received Rejected Reporter WGW
Date 5/30/96 Witness _____

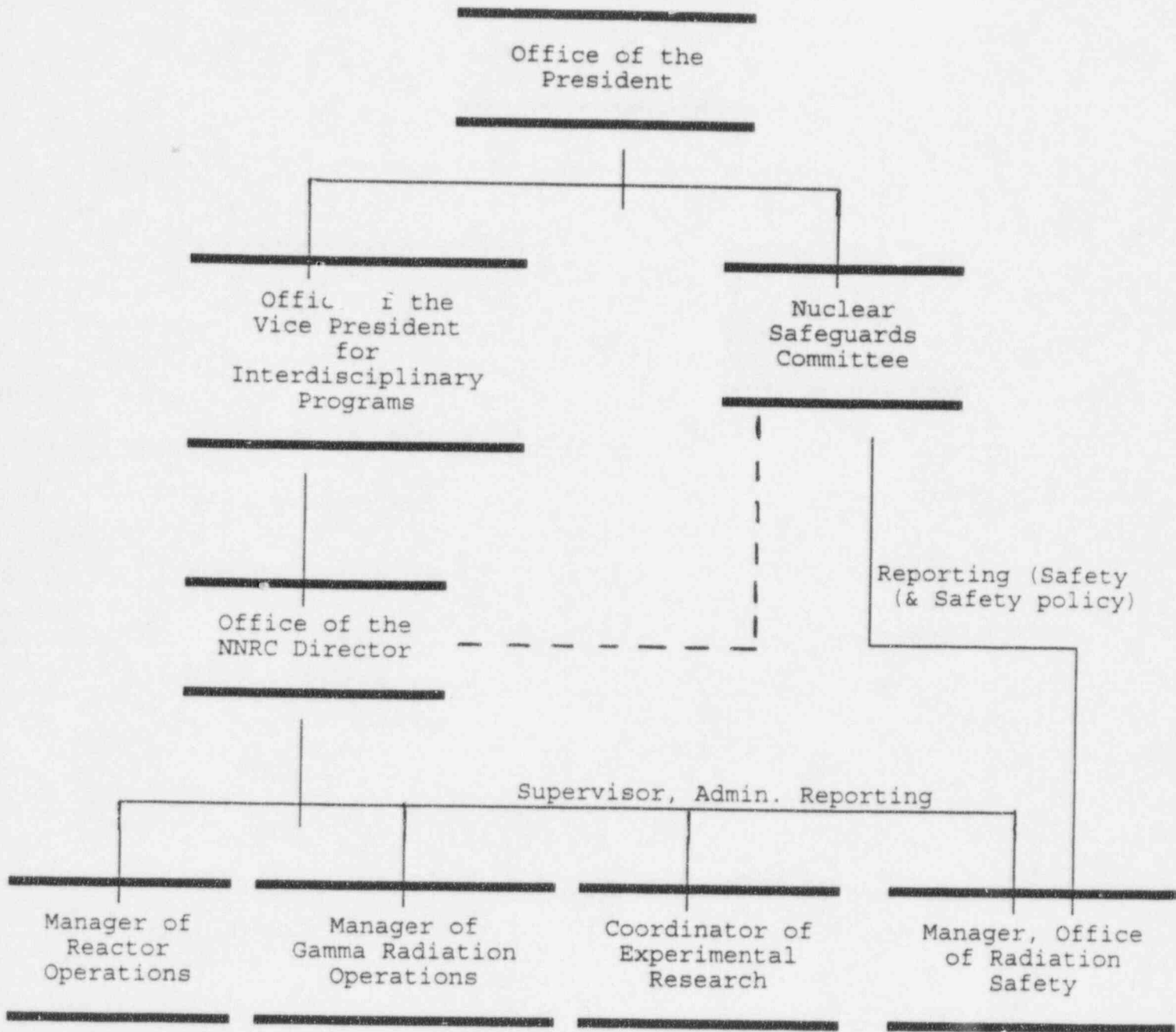


Figure-6.1 Georgia Tech Organization for Management and Operation of GIRR.

An operator or senior operator licensed pursuant to 10 CFR 55 must be present at the controls unless the reactor is shutdown as defined in The Technical Specifications.

6.2 NUCLEAR SAFEGUARDS COMMITTEE

A Nuclear Safeguards Committee established by the President of the Institute is responsible for maintaining health and safety standards associated with operation of the reactor and its associated facilities.

The Committee is composed of five or more senior technical personnel who collectively provide experience in reactor engineering, reactor operations, chemistry and radiochemistry, instrumentation and control systems, radiological safety, radiation protection, and mechanical and electrical systems. A minority of the Committee members are selected from the GTRR staff.

The Committee meets quarterly and as circumstances warrant. Written records of the proceedings, including any recommendations or occurrences, are distributed to all Committee members and the President's Office.

A quorum consist of not less than a majority of the Committee membership which includes the chairman or his designated alternate. The operating staff may not constitute a majority of those present.

The Committee:

- (1) Reviews and approves determinations that proposed changes in equipment, systems, tests, experiments, or procedures do not involve an unreviewed safety question pursuant to 10 CFR 50.59 (a).
- (2) Reviews reportable occurrences.
- (3) Reviews and approves proposed operating procedures and proposed changes to operating procedures. Minor modifications to operating procedures which do not change the original intent of the operating procedure may be approved by the Director of NNRC on a temporary basis. The Committee will consider such minor modifications at the next scheduled meeting.

- (4) Reviews and approves proposed changes to Technical Specifications and license excluding organizational structure. The responsibility and authority for organizational structure resides with the President of the Institute.
- (5) Reviews and approves proposed experiments and tests utilizing the reactor facility which are significantly different from tests and experiments previously performed at the GTRR.
- (6) Reviews and approves proposed changes to the facility made pursuant to 10 CFR 50.59(c).
- (7) Reviews violations of Technical Specifications, license, or internal procedures or instructions having safety significance.
- (8) Reviews operating abnormalities having safety significance.
- (9) Reviews audit reports.
- (10) Audits reactor operations and reactor operation records for compliance with internal rules, procedures, and regulations and with licensed provisions, including Technical Specifications at least once per calendar year (interval between audits must not exceed 15 months).
- (11) Audits the retraining and requalification program for the operating staff, at least once every other calendar year (interval between audits must not exceed 30 months).
- (12) Audits the results of action taken to correct those deficiencies that may occur in the reactor facility equipments systems, structures, or methods of operations that affect reactor safety, at least once per calendar year (interval between audits must not exceed 15 months).

6.3 ADMINISTRATIVE CONTROLS OF EXPERIMENTS

6.3.1 Evaluation by Safety Review Group

No experiment is performed without review and approval by the Nuclear Safeguards Committee. Repetitive experiments with common safety

considerations may be reviewed and approved as a class. Criteria for review of an experiment or class of experiments include (a) applicable regulatory positions including those in 10 CFR Part 20 and the technical specifications and (b) in-house safety criteria and rules which have been established for facility operations, including those which govern requirements for encapsulation, venting, filtration, shielding, and similar experiment design considerations, as well as those which govern the quality assurance program required under 50.34. Records are kept of the Nuclear Safeguards Committee's review and authorization for each experiment or class of experiments.

6.3.2 Operations Approval

Every experiment must have the prior explicit written approval of the Licensed Senior Operator in charge of reactor operations. Every person who is to carry out an experiment is certified by the Licensed Senior Operator in charge of reactor operations as to the sufficiency of his knowledge and training in procedures required for the safe conduct of the experiment.

6.3.3 Procedures for Active Conduct of Experiments

Detailed written procedures are provided for the operation of each experimental facility. The Licensed Operator at the console must be notified just prior to moving any experiment within the reactor area and must authorize such movement. Each experiment removed from the reactor or reactor system is subject to a radiation monitoring procedure which anticipates exposure rates greater than those predicted. The results of such monitoring is documented.

6.3.4 Procedures Relating to Personnel Access to Experiments

There must a documented procedure for the control of visitor access to the reactor area to minimize the likelihood of unnecessary exposure to radiation

as a result of experimental activities and to minimize the possibility of intentional or unintentional obstruction of safety. There must be written training procedure for the purpose of qualifying experimenters in the reactor and safety related aspects or their activities, including their expected responses to alarms.

6.3.5 Quality Assurance Program

There is a quality Assurance Program covering the design, fabrication, and testing of experiments, including procedures for verification of kinds and amounts of their material contents to assure compliance with the technical specifications.

6.4 Administrative Procedures

Procedures and major changes thereto are reviewed and approved by the Nuclear Safeguards Committee prior to being effective. Changes which do not alter the original intent of a procedure may be approved by the director of the facility. Such changes are recorded and submitted periodically to the Nuclear Safeguards Committee for routine review.

Written procedures are provided and utilized for the following:

- (1) Normal startup, operation and shutdown of the reactor and of all systems and components involving nuclear safety of the system.
- (2) Installation and removal of fuel elements, control blades, experiments and experimental facilities.
- (3) Actions to be taken to correct specific and foreseen potential malfunctions of systems or components, including responses to alarms, suspected primary system leaks and abnormal reactivity changes.
- (4) Emergency conditions involving potential or actual release of radioactivity.

- (5) Preventive or corrective maintenance operations which could have an effect on the safety of the reactor.
- (6) Radiation and radioactive contamination control.
- (7) Surveillance and testing requirements.
- (8) A site emergency plan delineating the action to be taken in the event of emergency conditions and accidents which result in or could lead to the release of radioactive materials in quantities that could endanger the health and safety of employees or the public. Periodic evacuation drills for facility personnel shall be conducted to assure that facility personnel are familiar with the emergency plan.
- (9) Physical security of the facility and associated special nuclear material.

6.5 Operating Records

The following records and logs are prepared and retained at the facility for least five years:

- (1) Normal facility operation and maintenance.
- (2) Reportable occurrences.
- (3) Tests, checks, and measurements documenting compliance with surveillance requirements.
- (4) Records of experiments performed.

The following records and logs are prepared and retained at the facility for the life of the facility:

- (1) Gaseous and liquid waste released to the environs.
- (2) Offsite environmental monitoring surveys.
- (3) Radiation exposures for all GTRR personnel.
- (4) Fuel inventories and transfers.
- (5) Facility radiation and contamination surveys.
- (6) Updated, corrected, and as-built facility drawings.

- (7) Minutes of nuclear Safeguards Committee meetings.
- (8) Records of radioactive shipments.

6.6 Action to be Taken in the Event of a Reportable Occurrence

In the event of a reportable occurrence, as defined in the Technical Specifications, the following action is taken:

1. Reactor conditions are returned to normal or the reactor shall be shutdown. If it is necessary to shut the reactor down to correct the occurrence, operations are not to be resumed unless authorized by the director of the facility.
2. All reportable occurrences must be promptly reported to the reactor supervisor and the director of the facility.
3. All reportable occurrences must be reported to the Nuclear Regulatory Commission in accordance with Section 6.7.
4. All reportable occurrences are to be reviewed by the Nuclear Safeguards Committee.

6.7 Reporting Requirements

The following information is to be submitted to the U.S.N.R.C. in addition to the reports required by Title 10, Code of Federal Regulations.

6.7.1 Annual Operating Reports

A report covering the previous year is submitted to the office of the Regional Administrator, Region II, with a copy to the Director, Office of Nuclear Reactor Regulation, by March 1 of each year. It includes the following:

(1) Operations Summary

A summary of operating experience occurring during the reporting period including:

- (a) changes in facility design,

- (b) performance characteristics (e.g., equipment and fuel performance),
- (c) changes in operating procedures which relate to the safety of facility operations,
- (d) results of surveillance tests and inspections required by these technical specifications,
- (e) a brief summary of these changes, tests, and experiments which required authorization from the Commission pursuant to 10 CFR 50.59(a), and
- (f) changes in the plant operating staff serving in the following positions:
 - 1. Director, Nuclear Research Center
 - 2. Reactor Supervisor
 - 3. Reactor Engineer
 - 4. Manager, Office of Radiation Safety
 - 5. Nuclear Safeguards Committee members

(2) Power Generation

A tabulation of the thermal output of the facility during the reporting period.

(3) Shutdowns

A listing of unscheduled shutdowns which have occurred during the reporting period, tabulated according to cause, and a brief discussion of the preventive actions taken to prevent recurrence.

(4) Maintenance

A discussion of corrective maintenance (excluding preventative maintenance) performed during the reporting period on safety related systems and components.

(5) Changes, Tests and Experiments

A brief description and a summary of the safety evaluation for those changes, tests, and experiments which were carried out without prior Commission approval, pursuant to the requirements of 10 CFR Part 50.59(b).

(6) Radioactive Effluent Releases

A statement of the quantities of radioactive effluents released from the plant, with data summarized following the general format of USNRC Regulatory Guide 1.21:

(a) Gaseous Effluents

1. Gross Radioactivity Releases

- a. Total gross radioactivity (in Curies), primarily noble and activation gases.
- b. Average concentration of gaseous effluents released during normal steady state operation. (Averaged over the period of reactor operation.)
- c. Maximum instantaneous concentration of gaseous radionuclides released during special operations, tests, or experiments, such as beam tube experiments, or pneumatic tube operation.
- d. Percent of technical specification limit.

2. Iodine Releases

(Required if iodine is identified in primary coolant samples, isotopic analysis required in

(a)l. above or if fuel experiments are conducted at the facility.)

- a. Total iodine radioactivity (in Curies) by nuclide released, based on representative isotopic analyses performed.

- b. Percent of technical specification limit.

3. Particulate Releases

- a. Total gross radioactivity (β , γ) released (in Curies) excluding background radioactivity.
- b. Gross alpha radioactivity released (in Curies) excluding background radioactivity. (Required if the operational or experimental program could result in the release of alpha emitters.)
- c. Total gross radioactivity (in Curies) of nuclides with half-lives greater than eight days.
- d. Percent of efficient concentration for particulate radioactivity with half-lives greater than eight days.

(b) Liquid Effluents

1. Total gross radioactivity (β , γ) released (in Curies) excluding tritium and average concentration released to the unrestricted area or sanitary sewer (averaged over period of release).
2. The maximum concentration of gross radioactivity (β , γ) released to the unrestricted area.
3. Total alpha radioactivity (in Curies) released and average concentration released to the unrestricted area (averaged over the period of release).
4. Total volume (in ml) of liquid waste released.
5. Total volume (in ml) of water used to dilute the liquid waste during the period of release prior to release from the restricted area.
6. Total radioactivity (in Curies), and concentration

(averaged over the period of release) by nuclide released, based on representative isotopic analyses performed for any release which exceed 1×10^{-7} $\mu\text{Ci/ml}$.

7. Percent of technical specification limit for total radioactivity from the site.

(7) Environmental Monitoring

For each medium sampled, e.g., air, surface water, soil, fish, vegetation, include:

- (a) Number of sampling locations and a description of their location relative to the reactor.
- (b) Total number of samples.
- (c) Number of locations at which levels are found to be significantly above local backgrounds.
- (d) Highest, lowest, and the annual average concentrations or levels of radiation for the sampling point with the highest average and the location of that point with respect to the site.
- (e) The maximum cumulative radiation dose which could have been received by an individual continuously present in an unrestricted area during reactor operation from:
 1. direct radiation and gaseous effluent, and
 2. liquid effluent.

When levels of radioactive materials in environmental media, as determined by an environmental monitoring program, indicate the likelihood of public intakes in excess of 1% of those that could result from continuous exposure to the concentration values listed in Appendix B, Table II, 10 CFR Part 20, estimates of

the likely resultant exposure to individuals and to population groups and assumptions upon which estimates are based will be provided.

(8) Occupational Personnel Radiation Exposure

A summary of radiation exposures greater than 500 mrem (50 mrem for persons under 18 years of age) received during the reporting period by facility personnel (faculty, students, or experiments).

6.7.2 Non-Routine Reports

(1) Reportable Occurrence Reports

Notification will be made within 24 hours by telephone and telegraph to the Office of the Regional Administrator, Region II, with a copy to the Director, office of Nuclear Reactor Regulations followed by a written report within 10 days to the Office of the Regional Administrator, Region II, with a copy to the Director, office of Nuclear Reactor Regulations in the event of the reportable occurrences as defined Technical Specifications. The written report on these reportable occurrences, and to the extent possible, the preliminary telephone and telegraph notification must:

- (a) describe, analyze, and evaluate safety implications,
- (b) outline the measures taken to assure that the cause of the condition is determined,
- (c) indicate the corrective action (including any changes made to the procedures and to the quality assurance program) taken to prevent repetition of the occurrence and of similar occurrences involving similar components or systems, and
- (d) evaluate the safety implications of the incident in light of the cumulative experience obtained from the record of previous failures and malfunctions of similar systems and components.

(2) Unusual Events

A written report must be forwarded within 30 days to the Office of the Regional Administrator, Region II, with a copy to the Director, Office of Nuclear Reactor Regulations in the event of:

- (a) Discovery of any substantial errors in the transient or accident analyses or in the methods used for such analyses, as described in the Safety Analysis Report or in the bases for the Technical Specifications.
- (b) Discovery of any substantial variance from performance specifications contained in the Technical Specifications or in the Safety Analysis Report.
- (c) Discovery of any condition involving a possible single failure which, for a system designed against assumed single failures, could result in a loss of the capability of the system to perform its safety function.