ENCLOSURE 1

DPC QA MTG.

Name	Organization
R. Martin	NRR/NRC Project Manager
Jack Spraul	NRC/NRR/QA
Fredrick R. Allenspack	NRC/NRR/LPEB
Eileen McKenna	NRC/NRR/Project Director (Acting)
Stuart Rubin	NRC/Region II/DRS
Albert Gibson	NRC/Region II/DRS
Caudle Julian	NRC/Region II/DRS
Alan R. Herdt	NRC/Region II/DRP
Stewart Ebneter	NRC/Region II/RA
Bill Miller	NRC/RII/DRP - Project Eng.
Mary Hazeltine	Duke
David Jenkins	Duke
Robert Gill	Duke
Morris Sample	Duke - Safety Assurance
Frank Jape	NRC/Region II/TPS

ENCLOSURE 2

MEETING SUMMARY

The licensee discussed changes to the QA Topical Report and planned concurrent revisions to the technical specifications for each Duke nuclear station. It was emphasized that all QA activities within the previous topical program will continue to be performed under the new program. The structure of the corporate and site ongoing actions has been changed.

The roles, responsibilities and activities were discussed. The licensee requested consideration to relocate several program requirements from the technical specifications to the topical QA report. A final answer was not expected nor offered at the meeting. The licensee indicated the benefits for this request. NRC personnel indicative that a decision would be given following a formal request for the change.

Overall, the meeting was beneficial. The information presented will aid in reviewing the changes when formally submitted.

Copies of the hand-out material presented during the meeting is included as enclosure 3.

ENCLOSURE 3

Duke/NRC
Meeting to Discuss QA Topical Revision
October 30, 1991
Agenda

Introduction	Duke/NRC
Overview of Power Generation Group Reorganization (Emphasis will be on areas that are involved in performing activities affecting quality at our nuclear stations.)	Duke
Review of Draft QA Topical Report Revisions and Concurrent Technical Specification Revisions (Using SRP 17.3 as a benchmark, Duke will discuss proposed revisions to the existing Duke QA Topical and planned concurrent revisions to the technical specifications of each Duke nuclear station.)	Duke
Closing Comments/Action Items	NRC/Duke

Attendees:

Morris Sample - Manager, Safety Assurance (effective 11/1)
Robert Gill - Regulatory Compliance
Mary Hazeltine - Regulatory Compliance
David Jenkins - Quality Assurance

ORGANIZATION

Corporate Overall (point out PSM, I/S, PGG)

Power Generation Group (point out NGD, QV
GHR, GS)

Discuss roles, responsibilities, activities of GHR, GS

Discuss roles, responsibilities, activities of QV

Discuss NGD - stations and nuclear services

DOCUMENT HIERARCHY

10CFR - the regulations	Reviewed and approved by the Commission. Establish the generic regulatory requirements. Supplemental guidance provided by Reg Guides, SRP, NUREGs, etc.
NRC Reviewed/Approved Documents	Provide information at a level of detail as required and accepted by the NRC. Plant specific extension of regulatory requirements established by 10CFR. (eg. FOL, Tech Specs, QA Topical, Security Plan, Emergency Plan)
Department Generic Documents	Provides specific responsibilities, functions, activities, and minimum guidance for implementing regulatory requirements. Also, provides specific process for certain generic programs. (eg. APM, 50.59) Approved by SR VP NGD.
Functional Area Specific Documents	Documents that provide more specific information as to responsibilities and process for implementation of regulatory requirements. Organized along a functional basis. (eg. Safety Assurance, Engineering) Approved by Area Managers.
Location Specific Documents	Documents developed and maintained for site-specific identification/implementation of regulatory requirements. (eg. FSAR, procedures) Approved by Location Management.

PHILOSOPHY

Guidance/structure of SRP 17.3

Retain technical elements of existing quality programs

Create a structured document hierarchy

Locate requirements in most appropriate document based in large part on who is responsible for the activity

Technical specifications Administrative Controls aligned with Station Manager directed activities

Implement the SRP 17.3 philosophy with appropriate technical specification revisions

Other technical specification changes as needed to implement organizational changes

PROPOSED LOCATIONS OF ADMINISTRATIVE CONTROLS ACTIVITIES

ACTIVITY	PROPOSED LOCATION
Organization	QA Topical/FSAR
SRG	QA Topical/APM/FSAR
Security Plan Review	Security Plan
Emergency Plan Review	Emergency Plan
NSRB	QA Topical/QV Department Manual
Security Plan Audit	QA Topical/QV Department Manual
Emergency Plan Audit	QA Topical/QV Department Manual
Procedures/Programs (Procedure approval)	QA Topical/APM Security: Security Plan Emergency Preparedness: Emergency Plan

SYNOPSIS OF TECH SPEC CHANGES

AREA	REASON FOR CHANGE
Responsibility	Reorganization
Organization	Reorganization. Also changed HP → RP
Shift Technical Advisor	Title changed to Shift Manager
SRG	Reorganization. Implementation of SRP 17.3 Relocate requirements to licensee document.
Training	Reorganization. Title change
Technical Review & Control Activities	Reorganization.
Security Plan Review	Relocate requirements to Security Plan
Emergency Plan Review	Redundant to 50.54(t). Already in Emergency Plan. Delete from tech specs.
NSRB	Reorganization. Implementation of SRP 17.3 Relocate to QA Topical.
Reportable Event Action	Reorganization
Safety Limit Violation	Reorganization
Procedures/Programs	Reorganization. Implementation of SRP 17.3 'Responsible manager' is consistent with SRP 17.3 and the QA Topical. APM will provide additional details. Site VP is responsible for determining who these are. Security and Emergency Plan procedure review requirements relocated to the respective Plans.
High Radiation Area	Reorganization. Station HP→RP.

IMPLEMENTATION PLAN

October 30	Working Meeting with NRC
November 1991	Submit proposed revisions to Security Plans and Emergency Plans
December 15	Submit proposed Tech Spec changes and QA Topical Report Revisions
February 1992	NRC Approval of Tech Specs and QA Topical (T/S changes approved with 30 day grace period to permit orderly implementation)
March 1992	Department Generic Documents issued

SYNOPSIS OF TECH SPEC CHANGES

AREA	REASON FOR CHANGE
Responsibility	Reorganization
Organization	Reorganization. Also changed HP → RP
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NSRB	Reorganization. Implementation of SRP 17.3 Relocate to QA Topical.
Reportable Event Action	Reorganization
Safety Limit Violation	Reorganization
Procedures/Programs	Reorganization. Implementation of SRP 17.3 'Responsible manager' is consistent with SRP 17.3 and the QA Topical. APM will provide additional details. Site VP is responsible for determining who these are. Security and Emergency Plan procedure review requirements relocated to the respective Plans.
High Radiation Area	Reorganization. Station HP→RP.

SECTION 6.0

ADMINISTRATIVE CONTROLS

6.1 RESPONSIBILITY

6.1.1 The Station Manager shall be responsible for overall unit operation and shall delegate in writing the ~~succession to this responsibility~~ Vice President Catawba Nuclear Site during his absence.

6.1.2 The Shift Supervisor (or during his absence from the control room, a designated individual) shall be responsible for the control room command function. A management directive to this effect, signed by the ~~Vice President of Nuclear Production~~, shall be reissued to all ~~Nuclear Production Department~~ Catawba Nuclear station personnel on an annual basis.

6.2 ORGANIZATION

6.2.1 OFFSITE AND ONSITE ORGANIZATIONS

Onsite and offsite organizations shall be established for unit operation and corporate management, respectively. The onsite and offsite organizations shall include the positions for activities affecting the safety of the nuclear power plant.

a. Lines of authority, responsibility, and communication shall be established and defined for the highest management levels through intermediate levels to and including all operating organization positions. These relationships shall be documented and updated, as appropriate, in the form of organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These requirements shall be documented in the FSAR.

b. The Station Manager shall be responsible for overall unit safe operation and shall have control over those onsite activities necessary for safe operation and maintenance of the plant.

c. The Vice President of ~~Nuclear Production~~ Catawba Nuclear Site shall have ~~corporate~~ responsibility for overall plant nuclear safety and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the plant to ensure nuclear safety.

e. The individuals who train the operating staff and those who carry out ~~health physics~~ radiation protection and quality assurance functions may report to the appropriate onsite manager; however, they shall have sufficient organizational freedom to ensure their independence from operating pressures.

6.2.2 UNIT STAFF

a. Each on-duty shift shall be composed of at least the minimum shift crew composition shown in Table 6.2-1;

b. At least one licensed Operator for each unit shall be in the control room when fuel is in the reactor. In addition, while either unit is in MODE 1, 2, 3, or 4, at least one licensed Senior Operator shall be in the control room;

d. The Senior Vice President Nuclear Generation and the Senior Nuclear Executive Board shall be the Department with responsibility for overall Nuclear Safety corporate responsibility have

No Changes to this page

UNIT STAFF (Continued)

c. A ~~Health Physics Technician*~~ Radiation Protection shall be on site when fuel is in either reactor;

d. All CORE ALTERATIONS shall be observed and directly supervised by either a licensed Senior Operator or licensed Senior Operator Limited to Fuel Handling who has no other concurrent responsibilities during this operation; and

e. (Deleted)

f. Administrative procedures shall be developed and implemented to limit the working hours of unit staff who perform safety-related functions (e.g., licensed Senior Operators, licensed Operators, health physicists, auxiliary operators, and key maintenance personnel).

Exchange outstanding

Adequate shift coverage shall be maintained without routine heavy use of overtime. The objective shall be to have operating personnel work a nominal 40-hour week while the unit is operating. However, in the event that unforeseen problems require substantial amounts of overtime to be used, or during extended periods of shutdown for refueling, major maintenance, or major plant modification, on a temporary basis the following guidelines shall be followed:

1) An individual should not be permitted to work more than 16 hours straight, excluding shift turnover time.

2) An individual should not be permitted to work more than 16 hours in any 24-hour period, nor more than 24 hours in any 48-hour period, nor more than 72 hours in any 7-day period, all excluding shift turnover time.

3) A break of at least 8 hours should be allowed between work periods, including shift turnover time.

4) Except during extended shutdown periods, the use of overtime should be considered on an individual basis and not for the entire staff on a shift.

Any deviation from the above guidelines shall be authorized by the Station Manager or his designee, or higher levels of management, in accordance with established procedures and with documentation of the basis for granting the deviation. Controls shall be included in the procedures such that individual overtime shall be reviewed monthly by the Station Manager or his designee to assure that excessive hours have not been assigned. Routine deviation from the ~~above~~ guidelines is not authorized.

Radiation Protection

*The ~~Health Physics~~ Technician may be less than the minimum requirements for a period of time not to exceed 2 hours, in order to accommodate unexpected absence, provided immediate action is taken to fill the required positions.

No Changes to this page

UNIT STAFF (Continued)

g. The Superintendent of Operations shall hold or have held a Senior Reactor Operator (SRO) license. The ~~Operating Engineer,~~ Shift Supervisor and Assistant Shift Supervisor shall hold an SRO license. The Reactor Operator shall hold a Reactor Operator License.

Shift Operations Manager

~~Amendment No. 56 (Unit 1)~~
~~Amendment No. 49 (Unit 2)~~

Figure 6.2-1 deleted

Figure 6.2-2 deleted

TABLE 6.2-1

MINIMUM SHIFT CREW COMPOSITION

POSITION	NUMBER OF INDIVIDUALS REQUIRED TO FILL POSITION		
	Both Units in Mode 1, 2, 3 or 4	Both Units in Mode 5 or 6 or Defueled	One Unit in Mode 1, 2, 3 or 4 and One Unit in Mode 5 or 6 Defueled
SS	1	1	1
SRO	1	None##	1
RO	3#	2#	3#
NEO (SM)	3#	3#	3#
~~STA~~	1	None	1

SS - Shift Supervisor with a Senior Operator license
SRO - Individual with a Senior Operator license
RO - Individual with an Operator license
NEO - Nuclear Equipment Operator
~~STA - Shift Technical Advisor~~ Shift Manager

(SM)

The Shift Crew Composition may be one less than the minimum requirements of Table 6.2-1 for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements of Table 6.2-1. This provision does not permit any shift crew position to be unmanned upon shift change due to an oncoming shift crewman being late or absent.

During any absence of the Shift Supervisor from the control room while the unit is in MODE 1, 2, 3, or 4, an individual (other than the ~~Shift Technical Advisor~~*) with a valid Senior Operator license shall be designated to assume the control room command function. During any absence of the Shift Supervisor from the control room while the unit is in MODE 5 or 6, an individual with a valid Senior Operator license or Operator license shall be designated to assume the control room command function.

Shift Manager

Shift Manager

*On occasion when there is a need for both the Shift Supervisor and the SRO to be absent from the control room, the ~~STA~~ shall be allowed to assume the control room command function and serve as the SRO in the control room provided that: (1) the Shift Supervisor is available to return to the control room within 10 minutes, (2) the assumption of SRO duties by the ~~STA~~ be limited to periods not in excess of 15 minutes duration and a total time not to exceed 1 hour during any shift, and (3) the ~~STA~~ has a Senior Operator license on the unit.

#At least one of the required individuals must be assigned to the designated position for each unit.

##At least one licensed Senior Operator or licensed Senior Operator Limited to Fuel Handling must be present during CORE ALTERATIONS on either unit, who has no other concurrent responsibilities.

Relocate to APM

6.2.3 CATAWBA SAFETY REVIEW GROUP

FUNCTION

6.2.3.1 The Catawba Safety Review Group (CSRG) shall function to provide the review of plant design and operating experience for potential opportunities to improve plant safety; evaluation of plant operations and maintenance activities; and, to advise management on the overall quality and safety of plant operations. The CSRG shall make recommendations for revised procedures, equipment modifications, or other means of improving plant safety to appropriate station/corporate management.

COMPOSITION

6.2.3.2 The CSRG shall be composed of at least five, dedicated, full-time engineers located onsite. Each shall have either:

(1) A bachelor's degree in engineering or related science and at least 2 years professional level experience in his/her field, at least 1 year of which experience shall be in the nuclear field; or,

(2) At least 5 years of nuclear experience and hold or have held a Senior Reactor Operator license; or

(3) At least 8 years of professional level experience in his/her field, at least 5 years of which experience shall be in the nuclear field.

A minimum of 50% of these personnel shall have the qualifications specified in (1) above.

RESPONSIBILITIES

6.2.3.3 The CSRG shall be responsible for:

a. Review of selected plant operating characteristics and other appropriate sources of plant design and operating experience information for awareness and incorporation into the performance of other duties.

b. Review of the effectiveness of corrective actions taken as a result of the evaluation of selected plant operating characteristics and other appropriate sources of plant design and operating experience information.

c. Review of selected programs, procedures, and plant activities, including maintenance, modification, operational problems, and operational analysis.

~~RESPONSIBILITIES (continued)~~

~~d. Surveillance of selected plant operations and maintenance activities to provide independent verification* that they are performed correctly and that human errors are reduced to as low as practicable.~~

~~e. Investigation of selected unusual events and other occurrences as assigned by Station Management or the Manager of Nuclear Safety Assurance.~~

~~AUTHORITY~~

~~6.2.3.4 The CSRG shall report to and advise the Manager of Nuclear Safety Assurance, on those areas of responsibility specified in Section 6.2.3.~~

~~RECORDS~~

~~6.2.3.5 Records of activities performed by the CSRG shall be prepared and maintained for the life of the station. Summary reports of activities performed by the CSRG shall be forwarded each calendar month to the Manager of Nuclear Safety Assurance.~~

6.2.4 SHIFT ~~TECHNICAL ADVISOR~~ Manager

6.2.4.1 The Shift ~~Technical Advisor~~ Manager shall serve in an advisory capacity to the Shift Supervisor.

6.3 UNIT STAFF QUALIFICATIONS

6.3.1 Each member of the unit staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions, except for the Radiation Protection Manager, who shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975. The licensed Operators and Senior Operators shall also meet or exceed the minimum qualifications of the supplemental requirements specified in Sections A and C of Enclosure 1 of the March 28, 1980 NRC letter to all licensees.**

6.4 TRAINING

6.4.1 A retraining and replacement training program Training for the unit staff shall be maintained under the direction of the Manager, ~~Station Training Services~~ and shall meet or exceed the requirements and recommendations of Section 5.5 of ANSI N18.1-1971 and Appendix A of 10 CFR Part 55 and the supplemental requirements specified in Sections A and C of Enclosure 1 of the March 28, 1980 NRC letter to all licensees, and shall include familiarization with relevant industry operational experience.

*Not responsible for sign-off function.

~~**Except that the experience and other considerations described in Duke Power Company's letters dated August 28, 1985, and July 8, 1986, are acceptable for the six and two applicants for SRO licenses identified therein, respectively.~~

~~Amendment No. 80 (Unit 1)~~
~~Amendment No. 74 (Unit 2)~~

6.5 REVIEW AND AUDIT

6.5.1 TECHNICAL REVIEW AND CONTROL ACTIVITIES

6.5.1.1 Each procedure and program required by Specification 6.8 and other procedures which affect nuclear safety, and changes thereto, shall be prepared by a qualified individual/organization. Each such procedure, and changes thereto, shall be reviewed by an individual/group other than the individual/group which prepared the procedure, or changes thereto, but who may be from the same organization as the individual/group which prepared the procedure, or changes thereto.

6.5.1.2 Proposed changes to the Appendix A Technical Specifications shall be prepared by a qualified individual/organization. The preparation of each proposed Technical Specification change shall be reviewed by an individual/group other than the individual/group which prepared the proposed change, but who may be from the same organization as the individual/group which prepared the proposed change. Proposed changes to the Technical Specifications shall be approved by the Station Manager.

6.5.1.3 Proposed modifications to unit nuclear safety-related structures, systems, and components shall be designed by a qualified individual/organization. Each such modification shall be reviewed by an individual/group other than the individual/group which designed the modification, but who may be from the same organization as the individual/group which designed the modification. Proposed modifications to nuclear safety-related structures, systems, and components shall be approved prior to implementation by the Station Manager; or by the Operating Superintendent, the ~~Technical Services~~ Mechanical Superintendent, the ~~Maintenance~~ Superintendent, or the Superintendent of ~~Integrated Scheduling~~ Work Control, as previously designated by the Station Manager. I&E

6.5.1.~~4~~5 Individuals responsible for reviews performed in accordance with Specifications ~~6.5.1.1~~, 6.5.1.2, and 6.5.1.3 shall be members of the ~~station~~ Catawba Nuclear Site supervisory staff, previously designated by the Station Manager to perform such reviews. Review of environmental radiological analysis procedures shall be performed by the Corporate ~~System Health Physicist~~ Manager of Chemistry/Radiation Protection or his designee. Each such review shall include a determination of whether or not additional, cross-disciplinary, review is necessary. If deemed necessary, such review shall be performed by the ~~appropriate designated station review personnel~~.

6.5.1.~~5~~6 Proposed test ~~and experiments which affect station nuclear safety~~ and are not addressed in the FSAR or Technical Specifications shall be reviewed by the Station Manager or by the Operating Superintendent, the ~~Technical Services~~ Mechanical Superintendent, the ~~Maintenance~~ Superintendent, or the Superintendent of ~~Integrated Scheduling~~ Work Control, as previously designated by the Station Manager. SITE

6.5.1.4 Individuals responsible for reviews performed in accordance with specification 6.5.1.1 shall be members of the Catawba Nuclear Site Supervisory staff previously designated by the Vice President Catawba Nuclear Site.

TECHNICAL REVIEW AND CONTROL ACTIVITIES (Continued)

6.5.1.~~6~~7 All REPORTABLE EVENTS and all violations of Technical Specifications shall be investigated and a report prepared which evaluates the occurrence and which provides recommendations to prevent recurrence. Such reports shall be approved by the Station Manager and transmitted to the Vice President, ~~Nuclear Production~~, and to the Nuclear Safety Review Board.

Catawba Nuclear Site

6.5.1.~~7~~8 The Station Manager shall assure the performance of special reviews and investigations, and the preparation and submittal of reports thereon, as requested by the Vice President, ~~Nuclear Production~~ Catawba Nuclear Site

~~6.5.1.8 The station security program, and implementing procedures shall be reviewed at least once per 12 months. Recommended changes shall be approved by the Superintendent of Station Services and transmitted to the Vice President, Nuclear Production, and to the Nuclear Safety Review Board.~~

~~6.5.1.9 The station emergency plan, and implementing procedures, shall be reviewed at least once per 12 months. Recommended changes shall be approved by the Station Manager and transmitted to the Vice President, Nuclear Production, and to the Nuclear Safety Review Board.~~

6.5.1.~~8~~9 The Station Manager shall assure the performance of a review by a qualified individual/organization of every unplanned onsite release of radioactive material to the environs including the preparation and forwarding of reports covering evaluation, recommendations, and disposition of the corrective ACTION to prevent recurrence to the Vice President, ~~Nuclear Production~~ and to the Nuclear Safety Review Board.

Catawba Nuclear Site

6.5.1.~~9~~10 The Station Manager shall assure the performance of a review by a qualifed individual/organization of changes to the PROCESS CONTROL PROGRAM, OFFSITE DOSE ~~CALCULATION MANUAL~~, and Radwaste Treatment Systems.

Manager of Human Resources

6.5.1.~~10~~11 The ~~Station Manager shall assure the performance~~ of a review by a qualified individual/organization of the Fire Protection Program and implementing procedures and the submittal of recommended changes to the Nuclear Safety Review Board.

6.5.1.~~11~~12 Reports documenting each of the activities performed under Specifications 6.5.1.1 through 6.5.1.11 shall be maintained. Copies shall be provided to the Vice President, ~~Nuclear Production~~, and the Nuclear Safety Review Board.

Catawba Nuclear Site

~~6.5.2 NUCLEAR SAFETY REVIEW BOARD (NSRB)~~

Relocate to QA topical

~~FUNCTION~~

~~6.5.2.1 The NSRB shall function to provide independent review and audit of designated activities in the areas of:~~

~~a. Nuclear power plant operations,~~

~~b. Nuclear engineering,~~

~~c. Chemistry and radiochemistry,~~

Relocate

FUNCTION (Continued)

d. Metallurgy,

e. Instrumentation and control,

f. Radiological safety,

g. Mechanical and electrical engineering, and

h. Administrative control and quality assurance practices.

The NSRB shall report to and advise the Vice President, Nuclear Production, on those areas of responsibility specified in Specifications 6.5.2.8 and 6.5.2.9.

ORGANIZATION

6.5.2.2 The Director, members, and alternate members of the NSRB shall be appointed in writing by the Vice President, Nuclear Production, and shall have an academic degree in an engineering or physical science field; and in addition, shall have a minimum of 5 years technical experience, of which a minimum of 3 years shall be in one or more areas given in Specification 6.5.2.1. No more than two alternates shall participate as voting members in NSRB activities at any one time.

6.5.2.3 The NSRB shall be composed of at least five members, including the Director. Members of the NSRB may be from the Nuclear Production Department, from other departments within the Company, or from external to the Company. A maximum of one member of the NSRB may be from the Catawba Nuclear Station staff.

6.5.2.4 Consultants shall be utilized as determined by the NSRB Director to provide expert advice to the NSRB.

6.5.2.5 Staff assistance may be provided to the NSRB in order to promote the proper, timely, and expeditious performance of its functions.

6.5.2.6 The NSRB shall meet at least once per calendar quarter during the initial year of unit operation following fuel loading and at least once per 6 months thereafter.

6.5.2.7 The quorum of the NSRB necessary for the performance of the NSRB review and audit functions of these Technical Specifications shall consist of the Director, or his designated alternate, and at least four other NSRB members including alternates. No more than a minority of the quorum shall have line responsibility for operation of Catawba Nuclear Station.

Relocate

REVIEW

6.5.2.8 The NSRB shall be responsible for the review of:

a. The safety evaluation for: (1) changes to procedures, equipment, or systems, and (2) tests or experiments completed under the provision of Section 50.59, 10 CFR to verify that such actions did not constitute an unreviewed safety question.

b. Proposed changes to procedures, equipment, or systems which involve an unreviewed safety question as defined in Section 50.59, 10 CFR;

c. Proposed tests or experiments which involve an unreviewed safety question as defined in Section 50.59, 10 CFR;

d. Proposed changes in Technical Specifications or this Operating License;

e. Violations of Codes, regulations, orders, Technical Specifications, license requirements, or of internal procedures or instructions having nuclear safety significance;

f. Significant operating abnormalities or deviations from normal and expected performance of unit equipment that affect nuclear safety;

g. All REPORTABLE EVENTS;

h. All recognized indications of an unanticipated deficiency in some aspect of design or operation of structures, systems, or components that could affect nuclear safety;

i. Quality Assurance Department audits relating to station operations and actions taken in response to these audits; and

j. Reports of activities performed under the provisions of Specifications 6.5.1.1 through 6.5.1.11.

AUDITS

6.5.2.9 Audits of unit activities shall be performed under the cognizance of the NSRB. These audits shall encompass:

a. The conformance of unit operation to provisions contained within the Technical Specifications and applicable license conditions at least once per 12 months;

b. The performance, training, and qualifications of the entire unit staff at least once per 12 months;

Relocate

AUDITS (Continued)

c. The results of actions taken to correct deficiencies occurring in unit equipment, structures, systems, or method of operation that affect nuclear safety at least once per 6 months;

d. The performance of activities required by the Operational Quality Assurance Program to meet the criteria of Appendix B, 10 CFR Part 50, at least once per 24 months;

e. The Emergency Plan and implementing procedures at least once per 12 months;

f. The Security Plan and implementing procedures at least once per 12 months;

g. The Facility Fire Protection programmatic controls including the implementing procedures at least once per 24 months by qualified licensee QA personnel;

h. The fire protection equipment and program implementation at least once per 12 months utilizing either a qualified offsite licensee fire protection engineer or an outside independent fire protection consultant. An outside independent fire protection consultant shall be used at least every third year;

i. The Radiological Environmental Monitoring Program and the results thereof at least once per 12 months;

j. The OFFSITE DOSE CALCULATION MANUAL and implementing procedures at least once per 24 months;

k. The PROCESS CONTROL PROGRAM and implementing procedures for processing and packaging of radioactive wastes at least once per 24 months;

l. The performance of activities required by the Quality Assurance Program for effluent and environmental monitoring at least once per 12 months; and

m. Any other area of unit operation considered appropriate by the NSRB or the Vice President, Nuclear Production.

RECORDS

6.5.2.10 Records of NSRB activities shall be prepared, approved, and distributed as indicated below:

a. Minutes of each NSRB meeting shall be prepared, approved, and forwarded to the Vice President, Nuclear Production, and to the Executive Vice President, Power Group within 14 days following each meeting;

RECORDS (Continued)

b. Reports of reviews encompassed by Specification 6.5.2.8 above, shall be prepared, approved, and forwarded to the Vice President, Nuclear Production, and to the Executive Vice President, Power Group within 14 days following completion of the review; and

c. Audit reports encompassed by Specification 6.5.2.9 above, shall be forwarded to the Vice President, Nuclear Production, and to the Executive Vice President, Power Group and to the management positions responsible for the areas audited within 30 days after completion of the audit by the auditing organization.

6.6 REPORTABLE EVENT ACTION

6.6.1 The following actions shall be taken for REPORTABLE EVENTS:

a. The Commission shall be notified and a report submitted pursuant to the requirements of Section 50.73 to 10 CFR Part 50 and

b. Each REPORTABLE EVENT shall be reviewed by the Station Manager; or by (1) Operating Superintendent; (2) Technical Services Superintendent; (3) Maintenance Superintendent; or (4) Superintendent of Integrated Scheduling, as previously designated by the Station Manager, and the results of this review shall be submitted to the NSRB and the Vice President Nuclear Production.

6.7 SAFETY LIMIT VIOLATION

6.7.1 The following actions shall be taken in the event a Safety Limit is violated:

a. The NRC Operations Center shall be notified by telephone as soon as possible and in all cases within 1 hour. The Vice President Nuclear Production and the NSRB shall be notified within 24 hours.

b. A Safety Limit Violation Report shall be prepared. The report shall be reviewed by the Operating Superintendent and Station Manager. This report shall describe: (1) applicable circumstances preceding the violation, (2) effects of the violation upon facility components, systems, or structures, and (3) corrective action taken to prevent recurrence;

c. The Safety Limit Violation Report shall be submitted to the Commission, the NSRB and the Vice President Nuclear Production within 14 days of the violation; and

d. Critical operation of the unit shall not be resumed until authorized by the Commission.

6.8 PROCEDURES AND PROGRAMS

6.8.1 Written procedures shall be established, implemented, and maintained covering the activities referenced below:

a. The applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978;

b. The emergency operating procedures required to implement the requirements of NUREG-0737 and Supplement No. 1 to NUREG-0737 as stated in Generic Letter No. 82-33;

~~c. Security Plan implementation;*~~

~~d. Emergency Plan implementation;~~

~~e.~~ c PROCESS CONTROL PROGRAM implementation;

~~f.~~ d OFFSITE DOSE CALCULATION MANUAL implementation;

~~g.~~ e Quality Assurance Program implementation for effluent and environmental monitoring;

~~h.~~ f Fire Protection Program implementation;

~~i.~~ g Commitments contained in FSAR Chapter 16.0.

Responsible implementing Manager.

6.8.2 Each procedure of Specification 6.8.1, and changes thereto, shall be reviewed and approved by the ~~Station Manager; or by: (1) Operating Superintendent, (2) Technical Services Superintendent, (3) Maintenance Superintendent, or (4) Superintendent of Integrated Scheduling, as previously designated by the Station Manager;~~ prior to implementation and shall be reviewed periodically as set forth in administrative procedures.

TS pending

6.8.3 Temporary changes to procedures of Specification 6.8.1 may be made provided:

a. The intent of the original procedure is not altered;

b. The change is approved by two members of the plant management staff, at least one of whom holds a Senior Operator license on the unit affected; and

c. The change is documented, reviewed, and approved by the ~~Station Manager; or by: (1) Operating Superintendent, (2) Technical Services Superintendent, (3) Maintenance Superintendent, or (4) Superintendent of Integrated Scheduling, as previously designated by the Station Manager;~~ within 14 days of implementation.

6.8.4 The following programs shall be established, implemented, and maintained:

a. Primary Coolant Sources Outside Containment

A program to reduce leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to as low as practical levels. The systems include the containment spray, Safety Injection, chemical

~~*Review and approval may be performed by the Superintendent of Station Services.~~

PROCEDURES AND PROGRAMS (Continued)

and volume control, and nuclear sampling. The program shall include the following:

1) Preventive maintenance and periodic visual inspection requirements, and

2) Integrated leak test requirements for each system at refueling cycle intervals or less.

b. In-Plant Radiation Monitoring

A program which will ensure the capability to accurately determine the airborne iodine concentration in vital areas under accident conditions. This program shall include the following:

1) Training of personnel,

2) Procedures for monitoring, and

3) Provisions for maintenance of sampling and analysis equipment.

c. Secondary Water Chemistry

A program for monitoring of secondary water chemistry to inhibit steam generator tube degradation. This program shall include:

1) Identification of a sampling schedule for the critical variables and control points for these variables,

2) Identification of the procedures used to measure the values of the critical variables,

3) Identification of process sampling points, which shall include monitoring the discharge of the condensate pumps for evidence of condenser in-leakage,

4) Procedures for the recording and management of data,

5) Procedures defining corrective actions for all off-control point chemistry conditions, and

6) A procedure identifying: (a) the authority responsible for the interpretation of the data, and (b) the sequence and timing of administrative events required to initiate corrective action.

d. Backup Method for Determining Subcooling Margin

A program which will ensure the capability to accurately monitor the Reactor Coolant System subcooling margin. This program shall include the following:

1) Training of personnel, and

2) Procedures for monitoring.

PROCEDURES AND PROGRAMS (Continued)

e. Post-Accident Sampling

A program which will ensure the capability to obtain and analyze reactor coolant, radioactive iodines and particulates in plant gaseous effluents, and containment atmosphere samples under accident conditions. The program shall include the following:

1) Training of personnel,

2) Procedures for sampling and analysis, and

3) Provisions for maintenance of sampling and analysis equipment.

6.9 REPORTING REQUIREMENTS

ROUTINE REPORTS

6.9.1 In addition to the applicable reporting requirements of Title 10, Code of Federal Regulations, the following reports shall be submitted to NRC in accordance with 10 CFR 50.4.

STARTUP REPORT

6.9.1.1 A summary report of plant startup and power escalation testing shall be submitted following (1) receipt of an Operating License, (2) amendment to the license involving a planned increase in power level, (3) installation of fuel that has a different design or has been manufactured by a different fuel supplier, and (4) modifications that may have significantly altered the nuclear, thermal, or hydraulic performance of the unit.

6.9.1.2 The Startup Report shall address each of the tests identified in the Final Safety Analysis Report and shall include a description of the measured values of the operating conditions or characteristics obtained during the test program and a comparison of these values with design predictions and specifications. Any corrective actions that were required to obtain satisfactory operation shall also be described. Any additional specific details required in license conditions based on other commitments shall be included in this report.

6.9.1.3 Startup Reports shall be submitted within: (1) 90 days following completion of the Startup Test Program, (2) 90 days following resumption or commencement of commercial power operation, or (3) 9 months following initial criticality, whichever is earliest. If the Startup Report does not cover all three events (i.e., initial criticality, completion of Startup Test Program, and resumption or commencement of commercial operation), supplementary reports shall be submitted at least every 3 months until all three events have been completed.

ANNUAL REPORTS [1/]

6.9.1.4 Annual Reports covering the activities of the unit as described below for the previous calendar year shall be submitted prior to March 1 of each year. The initial report shall be submitted prior to March 1 of the year following initial criticality.

6.9.1.5 Annual Reports shall include the activities of the unit as described below:

a. Personnel Exposures

Reports required on an annual basis shall include a tabulation on an annual basis of the number of station, utility, and other personnel (including contractors) receiving exposures greater than 100 mrem/yr and their associated man-rem exposure according to work and job functions [2/], e.g., reactor operations and surveillance, inservice inspection, routine maintenance, special maintenance (describe maintenance), waste processing, and refueling. The dose assignments to various duty functions may be estimated based on pocket dosimeter, TLD, or film badge measurements. Small exposures totalling less than 20% of the individual total dose need not be accounted for. In the aggregate, at least 80% of the total whole-body dose received from external sources should be assigned to specific major work functions.

b. Primary Coolant Specific Activity

Reports required on an annual basis shall include the results of specific activity analysis in which the primary coolant exceeded the limits of Specification 3.4.8. The following information shall be included: 1) Reactor power history starting 48 hours prior to the first sample in which the limit was exceeded; 2) Results of the last isotopic analysis for radioiodine performed prior to exceeding the limit, results of analysis while limit was exceeded and results of one analysis after the radioiodine activity was reduced to less than limit. Each result should include date and time of sampling and the radioiodine concentrations; 3) Clean-up system flow history starting 48 hours prior to the first sample in which the limit was exceeded; 4) Graph of the I-131 concentration and one other radioiodine isotope concentration in microcuries per gram as a function of time for the duration of the specific activity above the steady-state level; and 5) The time duration when the specific activity of the primary coolant exceeded the radioiodine limit.

ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT***

6.9.1.6 Routine Annual Radiological Environmental Operating Reports covering the operation of the unit during the previous calendar year shall be submitted prior to May 1 of each year. The initial report shall be submitted prior to May 1 of the year following initial criticality.

1/ A single submittal may be made for a multiple unit station. The submittal should combine those sections that are common to all units at the station.
2/ This tabulation supplements the requirements of § 20.407 of 10 CFR Part 20.
***A single submittal may be made for a multiple unit station.

ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT (Continued)

The Annual Radiological Environmental Operating Reports shall include summaries, interpretations, and an analysis of trends of the results of the radiological environmental surveillance activities for the report period, including a comparison with preoperational studies, with operational controls as appropriate, and with previous environmental surveillance reports, and an assessment of the observed impacts of the plant operation on the environment. The reports shall also include the results of the land use census required by Specification 3.12.2.

The Annual Radiological Environmental Operating Reports shall include the results of analysis of all radiological environmental samples and of all environmental radiation measurements taken during the period pursuant to the locations specified in the Table and Figures in the ODCM, as well as summarized and tabulated results of these analyses and measurements in the format of the table in the Radiological Assessment Branch Technical Position, Revision 1, November 1979. In the event that some individual results are not available for inclusion with the report, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted as soon as possible in a supplementary report.

The reports shall also include the following: a summary description of the Radiological Environmental Monitoring Program; at least two legible maps* covering all sampling locations keyed to a table giving distances and directions from the centerline of one reactor; the results of licensee participation in the Interlaboratory Comparison Program, required by Specification 3.12.3; discussion of all deviations from the sampling schedule of Table 3.12-1; and discussion of all analyses in which the LLD required by Table 4.12-1 was not achievable.

SEMIANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT**

6.9.1.7 Routine Radioactive Effluent Release Reports covering the operation of the unit during the previous 6 months of operation shall be submitted within 60 days after January 1 and July 1 of each year. The period of the first report shall begin with the date of initial criticality. The Radioactive Effluent Release Reports shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit as outlined in Regulatory Guide 1.21, "Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light-Water-Cooled Nuclear Power Plants," Revision 1, June 1974, with data summarized on a quarterly basis following the format of Appendix B thereof.

*One map shall cover stations near the SITE BOUNDARY; a second shall include the more distant stations.

**A single submittal may be made for a multiple unit station. The submittal should combine those sections that are common to all units at the station; however, for units with separate radwaste systems, the submittal shall specify the releases of radioactive material from each unit.

SEMIANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (Continued)

The Radioactive Effluent Release Report to be submitted within 60 days after January 1 of each year shall include an annual summary of hourly meteorological data collected over the previous year. This annual summary may be either in the form of an hour-by-hour listing on magnetic tape of wind speed, wind direction, atmospheric stability, and precipitation (if measured), or in the form of joint frequency distributions of wind speed, wind direction, and atmospheric stability.* This same report shall include an assessment of the radiation doses due to the radioactive liquid and gaseous effluents released from the unit or station during the previous calendar year. This same report shall also include an assessment of the radiation doses from radioactive liquid and gaseous effluents to MEMBERS OF THE PUBLIC due to their activities inside the SITE BOUNDARY (Figures 5.1-3 and 5.1.4) during the report period. All assumptions used in making these assessments, i.e., specific activity, exposure time and location, shall be included in these reports. The meteorological conditions concurrent with the time of release of radioactive materials in gaseous effluents, as determined by sampling frequency and measurement, shall be used for determining the gaseous pathway doses. The assessment of radiation doses shall be performed in accordance with the methodology and parameters in the OFFSITE DOSE CALCULATION MANUAL (ODCM).

The Radioactive Effluent Release Report to be submitted 60 days after January 1 of each year shall also include an assessment of radiation doses to the likely most exposed MEMBER OF THE PUBLIC from reactor releases and other nearby uranium fuel cycle sources, including doses from primary effluent pathways and direct radiation, for the previous calendar year to show conformance with 40 CFR Part 190, "Environmental Radiation Protection Standards for Nuclear Power Operation." Acceptable methods for calculating the dose contribution from liquid and gaseous effluents are given in Regulatory Guide 1.109, Rev. 1, October 1977.

The Radioactive Effluent Release Reports shall include the following information for each type of solid waste shipped offsite during the report period:

a. Total Container volume, in cubic meters,

b. Total Curie quantity (determined by measurement or estimate),

c. Principal radionuclides (determined by measurement or estimate),

d. Type of waste (e.g., dewatered spent resin, compacted dry waste, evaporator bottoms),

e. Number of shipments, and

f. Solidification agent or absorbent [e.g., cement or other approved agents (media)].

*In lieu of submission with the first half year Radioactive Effluent Release Report, the licensee has the option of retaining this summary of required meteorological data on site in a file that shall be provided to the NRC upon request.

SEMIANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (Continued)

The Radioactive Effluent Release Reports shall include a list and description of unplanned releases from the site to UNRESTRICTED AREAS of radioactive materials in gaseous and liquid effluents made during the reporting period.

The Radioactive Effluent Release Reports shall include any changes made during the reporting period to the PROCESS CONTROL PROGRAM (PCP) and to the OFFSITE DOSE CALCULATION MANUAL (ODCM), as well as a listing of new locations for dose calculations and/or environmental monitoring identified by the land use census pursuant to Specification 3.12.2.

MONTHLY OPERATING REPORTS

6.9.1.8 Routine reports of operating statistics and shutdown experience, including documentation of all challenges to the PORVs or safety valves, shall be submitted on a monthly basis to the NRC in accordance with 10 CFR 50.4, no later than the 15th of each month following the calendar month covered by the report.

CORE OPERATING LIMITS REPORT

6.9.1.9 Core operating limits shall be established and documented in the CORE OPERATING LIMITS REPORT before each reload cycle or any remaining part of a reload cycle for the following:

1. Moderator Temperature Coefficient BOL and EOL limits and 300 ppm surveillance limit for Specification 3/4.1.1.3,
2. Shutdown Bank Insertion Limit for Specification 3/4.1.3.5,
3. Control Bank Insertion Limits for Specification 3/4.1.3.6,
4. Axial Flux Difference Limits, target band*, and APL^{ND*} for Specification 3/4.2.1,
5. Heat Flux Hot Channel Factor, F_Q^{RTP}, K(Z), W(Z)**, APL^{ND**} and $W(Z)_{BL}$ for Specification 3/4.2.2, and
6. Nuclear Enthalpy Rise Hot Channel Factor, $F\Delta HR^{L***}$ or, $F_{\Delta H}^{RTP****}$, and Power Factor Multiplier, $MF\Delta H^{****}$, limits for Specification 3/4.2.3.

The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by NRC in:

1. WCAP-9272-P-A, "WESTINGHOUSE RELOAD SAFETY EVALUATION METHODOLOGY," July 1985 (W Proprietary).

   (Methodology for Specifications 3.1.1.3 - Moderator Temperature Coefficient, 3.1.3.5 - Shutdown Bank Insertion Limit, 3.1.3.6 - Control Bank Insertion Limits, 3.2.1 - Axial Flux

*Reference 5 is not applicable to target band and APL^{ND}.

**References 5 and 6 are not applicable to W(Z), and APL^{ND}, and $W(Z)_{BL}$.

***Reference 1 is not applicable to $F\Delta HR^{L}$.

****Reference 5 is not applicable to $F_{\Delta H}^{RTP}$ and $MF_{\Delta H}$.

CORE OPERATING LIMITS REPORT (Continued)

Difference, 3.2.2 - Heat Flux Hot Channel Factor, and 3.2.3 - Nuclear Enthalpy Rise Hot Channel Factor.)

2. WCAP-10216-P-A, "RELAXATION OF CONSTANT AXIAL OFFSET CONTROL FQ SURVEILLANCE TECHNICAL SPECIFICATION," June 1983 (W Proprietary).

   (Methodology for Specifications 3.2.1 - Axial Flux Difference (Relaxed Axial Offset Control) and 3.2.2 - Heat Flux Hot Channel Factor (W(Z) surveillance requirements for F_Q Methodology.)

3. WCAP-10266-P-A Rev. 2, "THE 1981 VERSION OF WESTINGHOUSE EVALUATION MODEL USING BASH CODE," March 1987, (W Proprietary).

   (Methodology for Specification 3.2.2 - Heat Flux Hot Channel Factor.)

4. BAW-10152-A, "NOODLE - A Multi-Dimensional Two-Group Reactor Simulator," June 1985.

   (Methodology for Specification 3.1.1.3 - Moderator Temperature Coefficient.)

5. BAW-10163P-A, "Core Operating Limit Methodology for Westinghouse-Designed PWR's," June 1989.

   (Methodology for Specifications 3.1.3.5 - Shutdown Rod Insertion Limits, 3.1.3.6 - Control Bank Insertion Limits, 3.2.1 - Axial Flux Difference, 3.2.2 - Heat Flux Hot Channel Factor, and 3.2.3 - Nuclear Enthalpy Rise Hot Channel Factor.)

6. BAW-10168P, Rev. 1, "B&W Loss-of-Coolant Accident Evaluation Model for Recirculating Steam Generator Plants," September, 1989.
   (Methodology for Specification 3.2.2 - Heat Flux Hot Channel Factor.)

The core operating limits shall be determined so that all applicable limits (e.g., fuel thermal-mechanical limits, core thermal-hydraulic limits, ECCS limits, nuclear limits such as shutdown margin, and transient and accident analysis limits) of the safety analysis are met.

The CORE OPERATING LIMITS REPORT, including any mid-cycle revisions or supplements thereto, shall be provided upon issuance, for each reload cycle, to the NRC in accordance with 10 CFR 50.4.

SPECIAL REPORTS

6.9.2 Special reports shall be submitted to the NRC in accordance with 10 CFR 50,4 within the time period specified for each report.

6.10 RECORD RETENTION

6.10.1 In addition to the applicable record retention requirements of Title 10, Code of Federal Regulations, the following records shall be retained for at least the minimum period indicated.

The following records shall be retained for at least 5 years:

a. Records and logs of unit operation covering time interval at each power level;

b. Records and logs of principal maintenance activities, inspections, repair, and replacement of principal items of equipment related to nuclear safety;

c. All REPORTABLE EVENTS;

d. Records of surveillance activities, inspections, and calibrations required by these Technical Specifications;

e. Records of changes made to the procedures required by Specification 6.8.1;

f. Records of radioactive shipments;

g. Records of sealed source and fission detector leak tests and results; and

h. Records of annual physical inventory of all sealed source material of record.

6.10.2 The following records shall be retained for the duration of the unit Operating License:

a. Records and drawing changes reflecting unit design modifications made to systems and equipment described in the Final Safety Analysis Report;

b. Records of new and irradiated fuel inventory, fuel transfers, and assembly burnup histories;

c. Records of radiation exposure for all individuals entering radiation control areas;

d. Records of gaseous and liquid radioactive material released to the environs;

e. Records of transient or operational cycles for those unit components identified in Table 5.7-1;

f. Records of reactor tests and experiments;

g. Records of training and qualification for current members of the unit staff;

RECORD RETENTION (Continued)

h. Records of inservice inspections performed pursuant to these Technical Specifications;

i. Records of reviews performed for changes made to procedures or equipment or reviews of tests and experiments pursuant to 10 CFR 50.59;

j. Records of meetings of the NSRB and reports required by Specification 6.5.1.10;

k. Records of the service lives of all hydraulic and mechanical snubbers required by Specification 3.7.8 including the date at which the service life commences and associated installation and maintenance records;

l. Records of secondary water sampling and water quality; and

m. Records of analyses required by the Radiological Environmental Monitoring Program that would permit evaluation of the accuracy of the analysis at a later date. This should include procedures effective at specified times and QA records showing that these procedures were followed.

6.10.3 Records of quality assurance activities required by the Operational Quality Assurance Manual shall be retained for a period of time as recommended by ANSI N.45.2.9-1974.

6.11 RADIATION PROTECTION PROGRAM

6.11 Procedures for personnel radiation protection shall be prepared consistent with the requirements of 10 CFR Part 20 and shall be approved, maintained, and adhered to for all operations involving personnel radiation exposure.

6.12 HIGH RADIATION AREA

6.12.1 In lieu of the "control device" or "alarm signal" required by paragraph 20.203(c)(2) of 10 CFR Part 20, each high radiation area, as defined in 10 CFR Part 20, in which the intensity of radiation is equal to or less than 1000 mR/h at 45 cm (18 in.) from the radiation source or from any surface which the radiation penetrates shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit (RWP). Individuals qualified in radiation protection procedures (e.g., ~~Health Physics Technician~~ Radiation Protection) or personnel continuously escorted by such individuals may be exempt from the RWP issuance requirement during the performance of their assigned duties in high radiation areas with exposure rates equal to or less than 1000 mR/h, provided they are otherwise following plant radiation protection procedures for entry into such high radiation areas. Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by ~~one or more of the~~ following:

a. A radiation monitoring device which continuously indicates the radiation dose rate in the area; or

b. A radiation monitoring device which continuously integrates the radiation dose rate in the area and alarms when a preset integrated

HIGH RADIATION AREA (Continued)

dose is received. Entry into such areas with this monitoring device may be made after the dose rate levels in the area have been established and personnel have been made knowledgeable of them; or

c. An individual qualified in radiation protection procedures with a radiation dose rate monitoring device, who is responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by the ~~Station Health Physicist~~ Radiation Protection Manager in the RWP.

6.12.2 In addition to the ~~requirements of Specification~~ 6.12.1, areas accessible to personnel with radiation levels greater than 1000 mR/h at 45 cm (18 in.) from the radiation source or from any surface which the radiation penetrates shall be provided with locked doors to prevent unauthorized entry, and the keys shall be maintained under the administrative control of the Shift Supervisor on duty and/or health physics supervision. Doors shall remain locked except during periods of access by personnel under an approved RWP which shall specify the dose rate levels in the immediate work areas and the maximum allowable stay time for individuals in that area. In lieu of the stay time specification of the RWP, direct or remote (such as closed circuit TV cameras) continuous surveillance may be made by personnel qualified in radiation protection procedures to provide positive exposure control over the activities being performed within the area.

For individual high radiation areas accessible to personnel with radiation levels of greater than 1000 mR/h that are located within large areas, such as PWR containment, where no enclosure exists for purposes of locking, and where no enclosure can be reasonably constructed around the individual area, that individual area shall be barricaded, conspicuously posted, and a flashing light shall be activated as a warning device.

6.13 PROCESS CONTROL PROGRAM (PCP)

6.13.1 The PCP shall be approved by the Commission prior to implementation.

6.13.2 Licensee-initiated changes to the PCP:

a. Shall be submitted to the Commission in the Semiannual Radioactive Effluent Release Report for the period in which the change(s) was made. This submittal shall contain:

1) Sufficiently detailed information to totally support the rationale for the change without benefit of additional or supplemental information;

2) A determination that the change did not reduce the overall conformance of the solidified waste product to existing criteria for solid wastes; and

3) Documentation of the fact that the change has been reviewed and found acceptable by the Station Manager.

6.13 PROCESS CONTROL PROGRAM (PCP) (Continued)

b. Shall become effective upon review and acceptance by a qualified individual/organization.

6.14 OFFSITE DOSE CALCULATION MANUAL (ODCM)

6.14.1 The ODCM shall be approved by the Commission prior to implementation.

6.14.2 Licensee-initiated changes to the ODCM:

a. Shall be submitted to the Commission in the Semiannual Radioactive Effluent Release Report for the period in which the change(s) was made effective. This submittal shall contain:

1) Sufficiently detailed information to totally support the rationale for the change without benefit of additional or supplemental information. Information submitted should consist of a package of those pages of the ODCM to be changed with each page numbered, dated, and containing the revision number, together with appropriate analyses or evaluations justifying the change(s);

2) A determination that the change will not reduce the accuracy or reliability of dose calculations of Setpoint determinations; and

3) Documentation of the fact that the change has been reviewed and found acceptable by the Station Manager.

b. Shall become effective upon review and acceptance by a qualified individual/organization.

6.15 MAJOR CHANGES TO LIQUID, GASEOUS, AND SOLID RADWASTE TREATMENT SYSTEMS*

6.15 Licensee-initiated major changes to the Radwaste Treatment Systems (liquid, gaseous, and solid):

a. Shall be reported to the Commission in the Semiannual Radioactive Effluent Release Report for the period in which the evaluation was reviewed by the Station Manager. The discussion of each change shall contain:

1) A summary of the evaluation that led to the determination that the change could be made in accordance with 10 CFR 50.59;

*Licensees may choose to submit the information called for in this Specification as part of the annual FSAR update.

MAJOR CHANGES TO LIQUID, GASEOUS, AND SOLID RADWASTE TREATMENT SYSTEMS (Continued)

2) Sufficient detailed information to totally support the reason for the change without benefit of additional or supplemental information;

3) A detailed description of the equipment, components, and processes involved and the interfaces with other plant systems;

4) An evaluation of the change, which shows the predicted releases of radioactive materials in liquid and gaseous effluents and/or quantity of solid waste that differ from those previously predicted in the License application and amendments thereto;

5) An evaluation of the change, which shows the expected maximum exposures to a MEMBER OF THE PUBLIC in the UNRESTRICTED AREA and to the general population that differ from those previously estimated in the License application and amendments thereto;

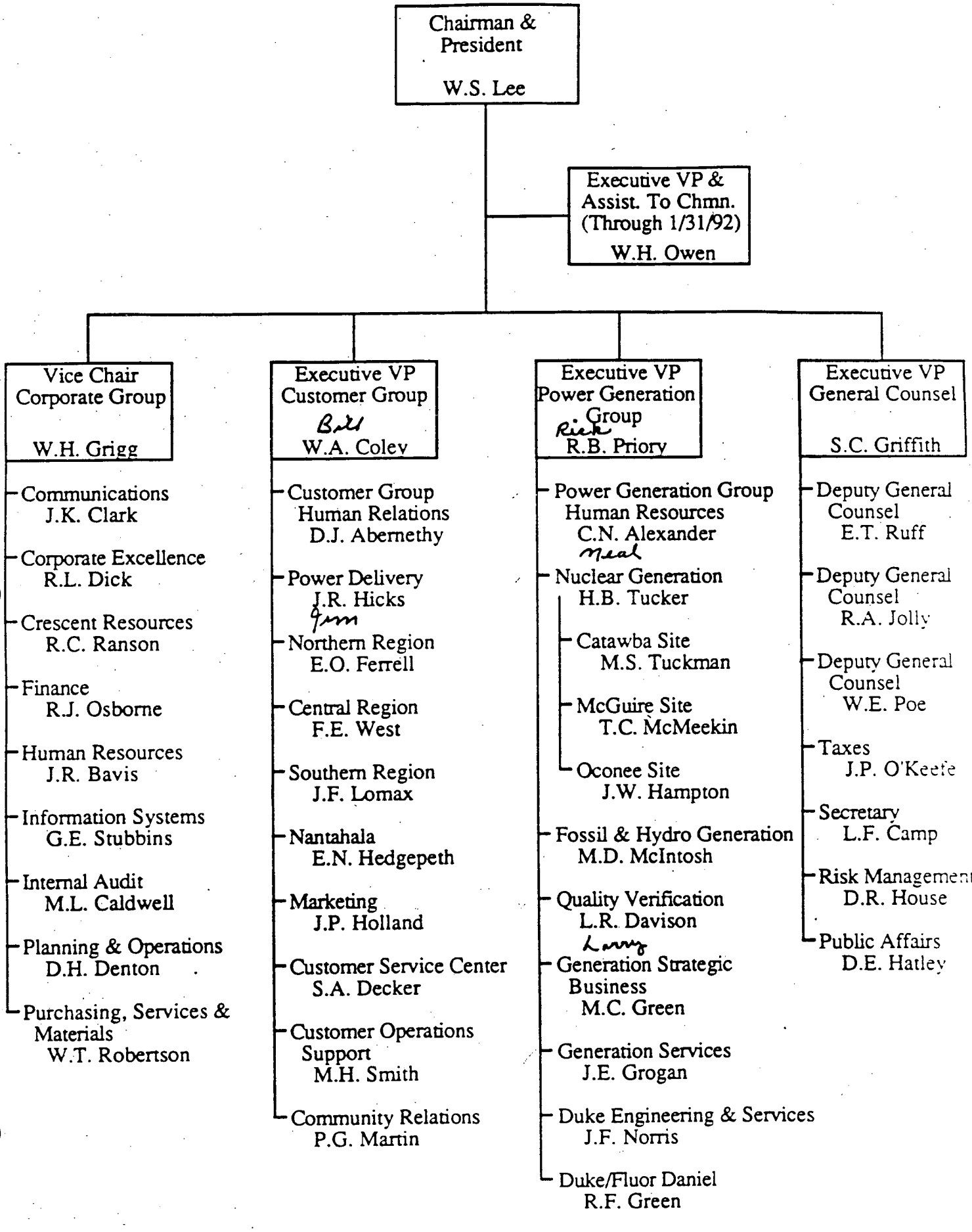
6) A comparison of the predicted releases of radioactive materials, in liquid and gaseous effluents and in solid waste, to the actual releases for the period prior to when the changes are to be made;

7) An estimate of the exposure to plant operating personnel as a result of the change; and

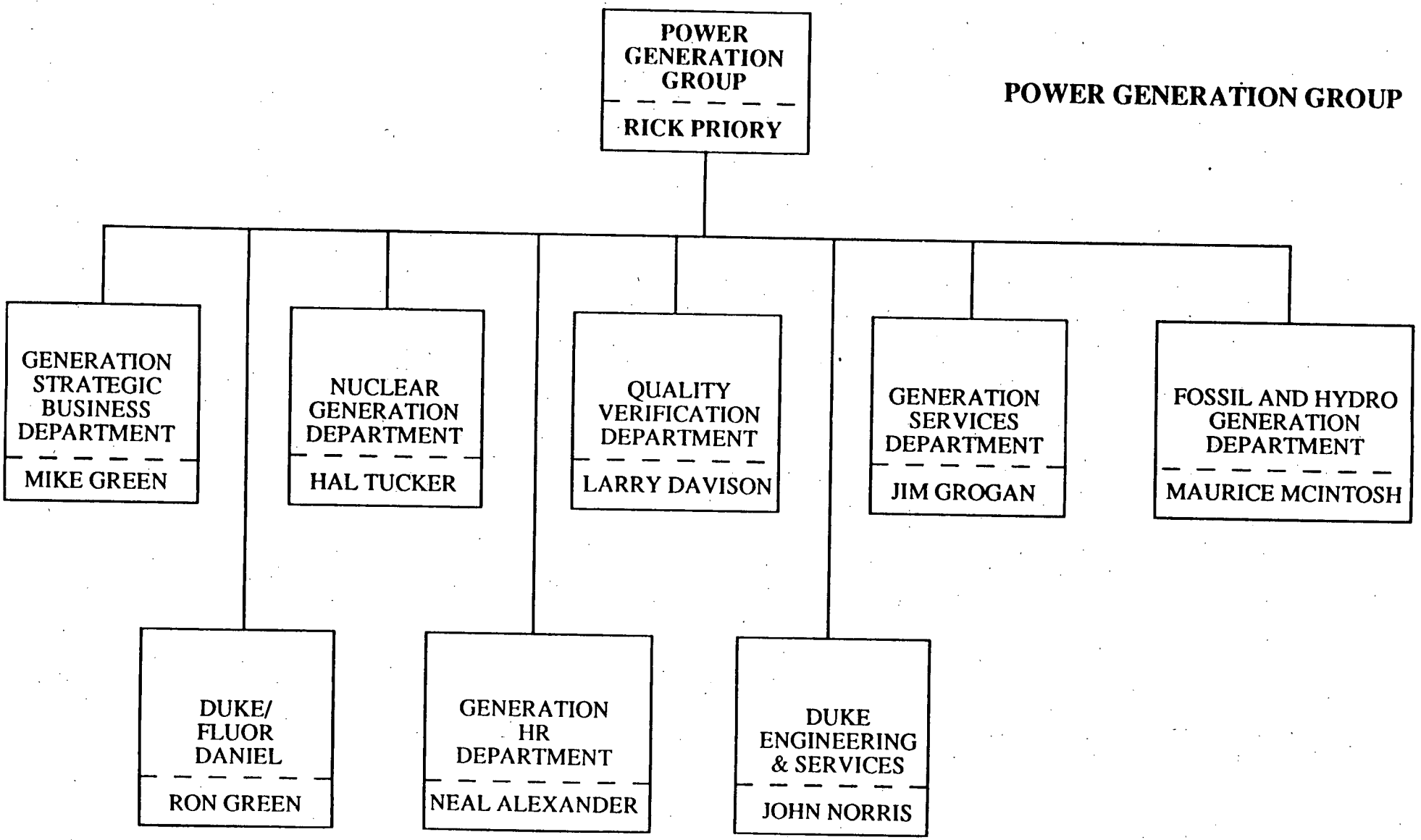
8) Documentation of the fact that the change was reviewed and found acceptable by the Station Manager.

b. Shall become effective upon review and acceptance by a qualified individual/organization.

Duke Power Company Corporate Organization
November 1, 1991



POWER GENERATION GROUP



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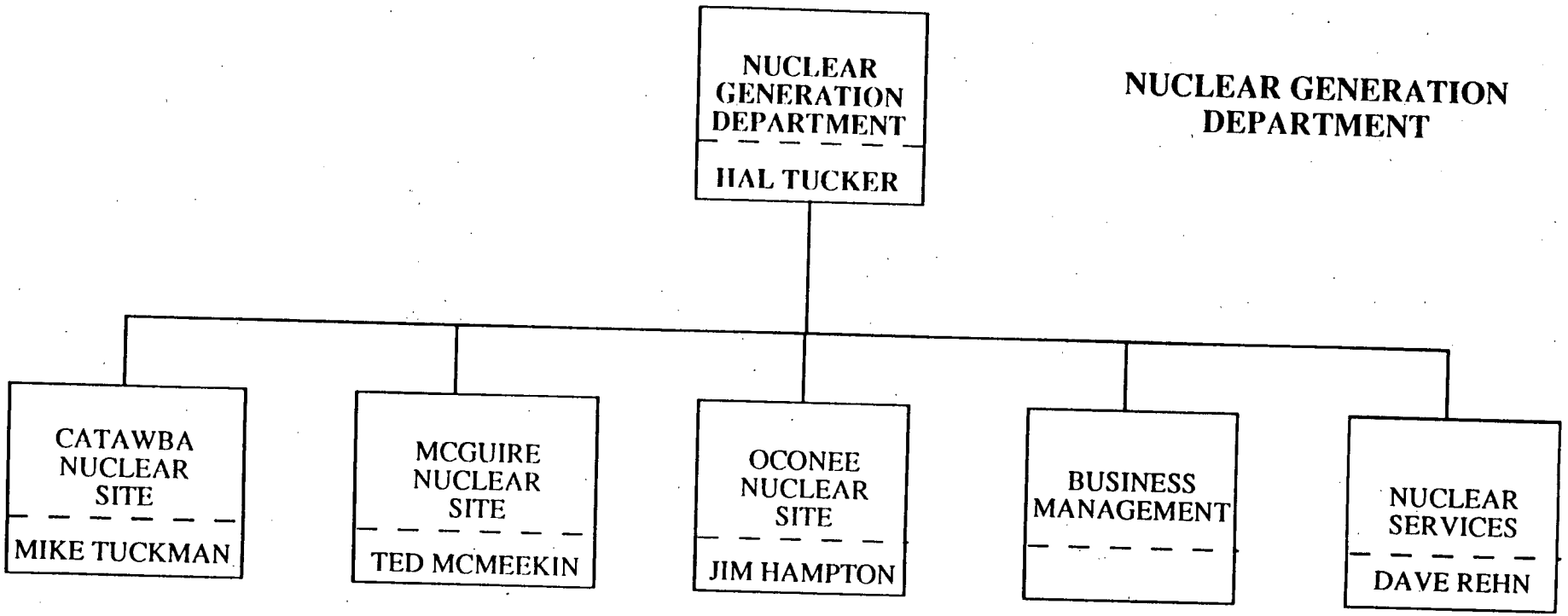
NUCLEAR GENERATION DEPARTMENT



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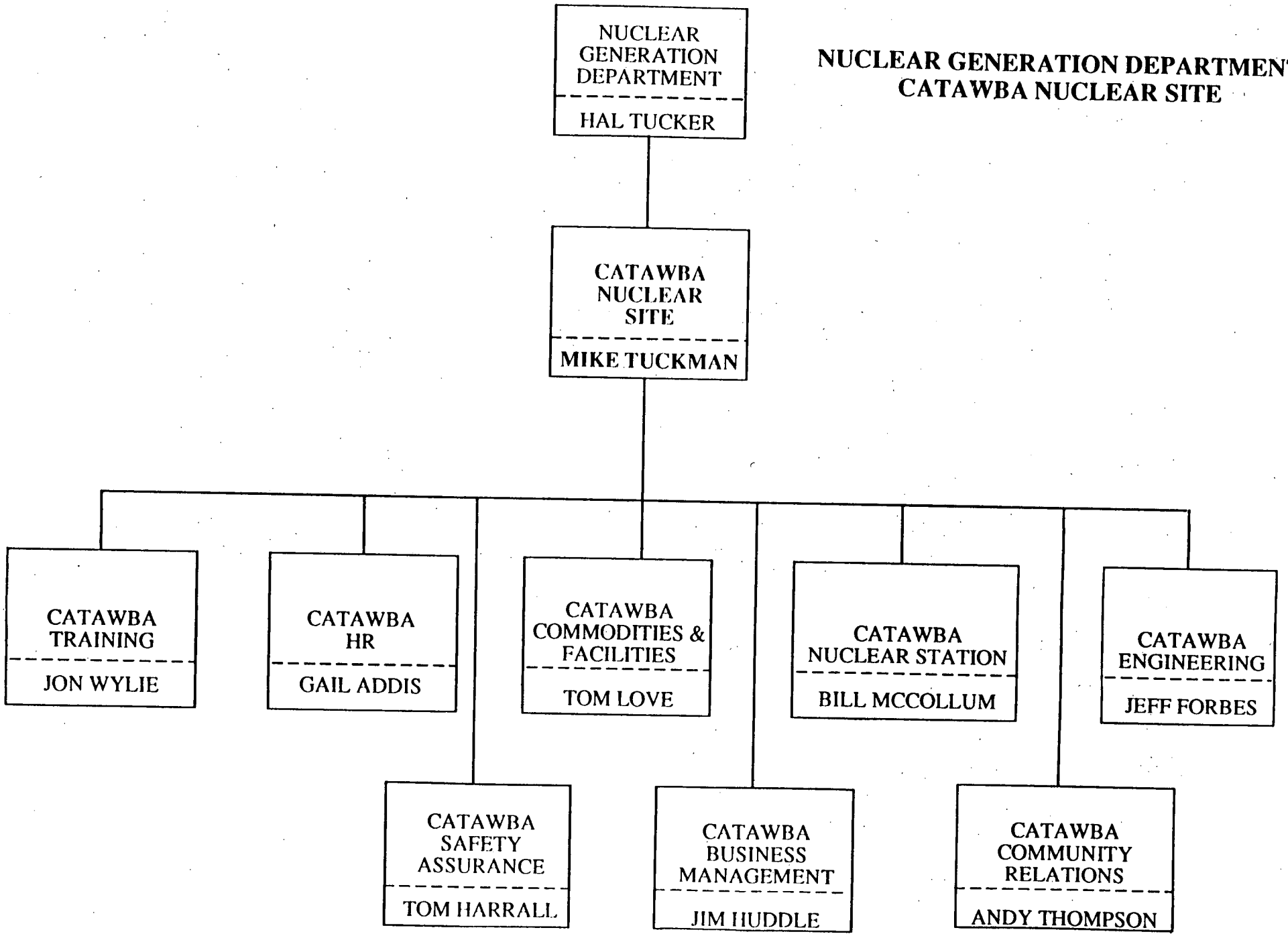
NUCLEAR GENERATION DEPARTMENT
CATAWBA NUCLEAR SITE



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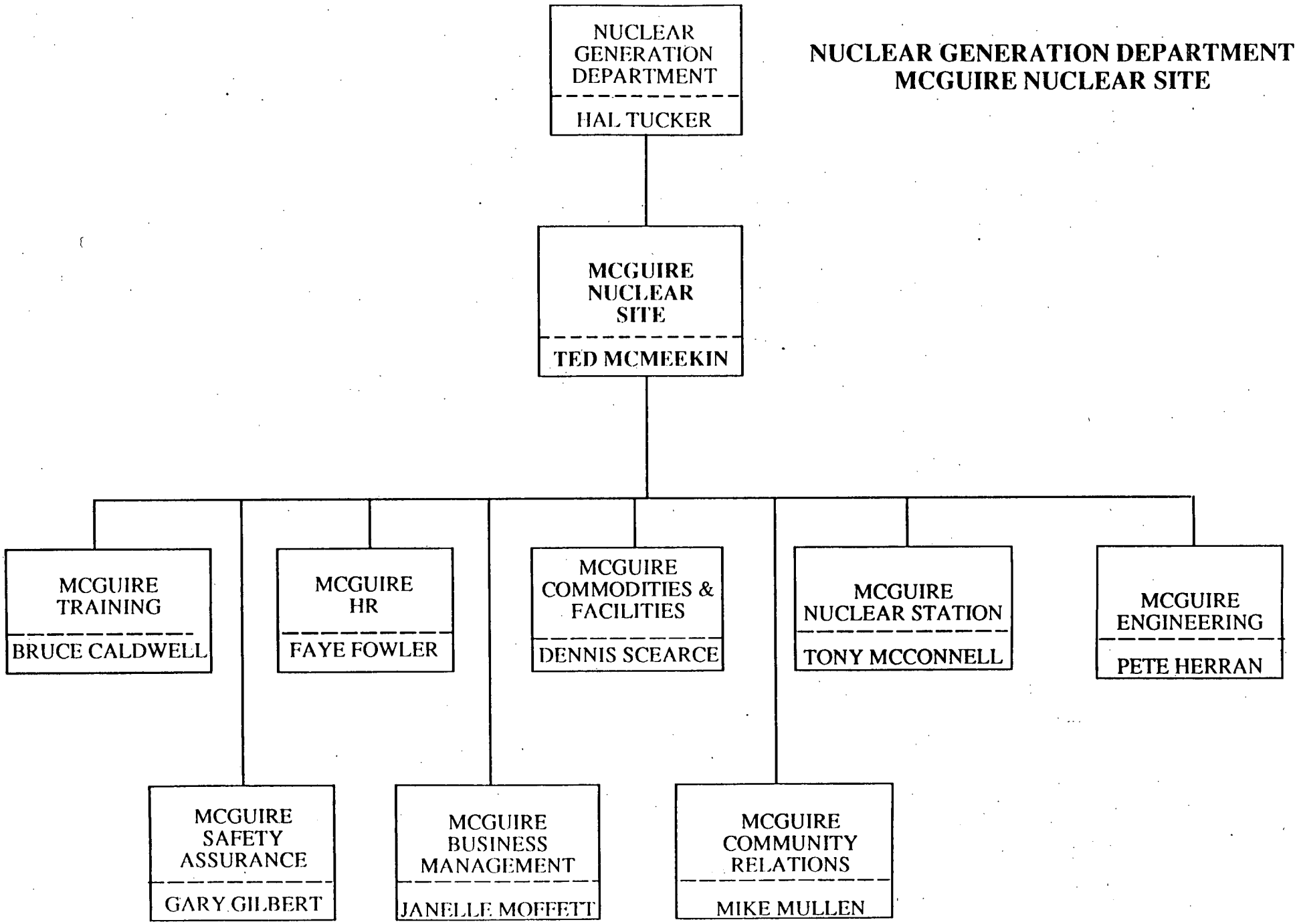
MCGUIRE NUCLEAR SITE



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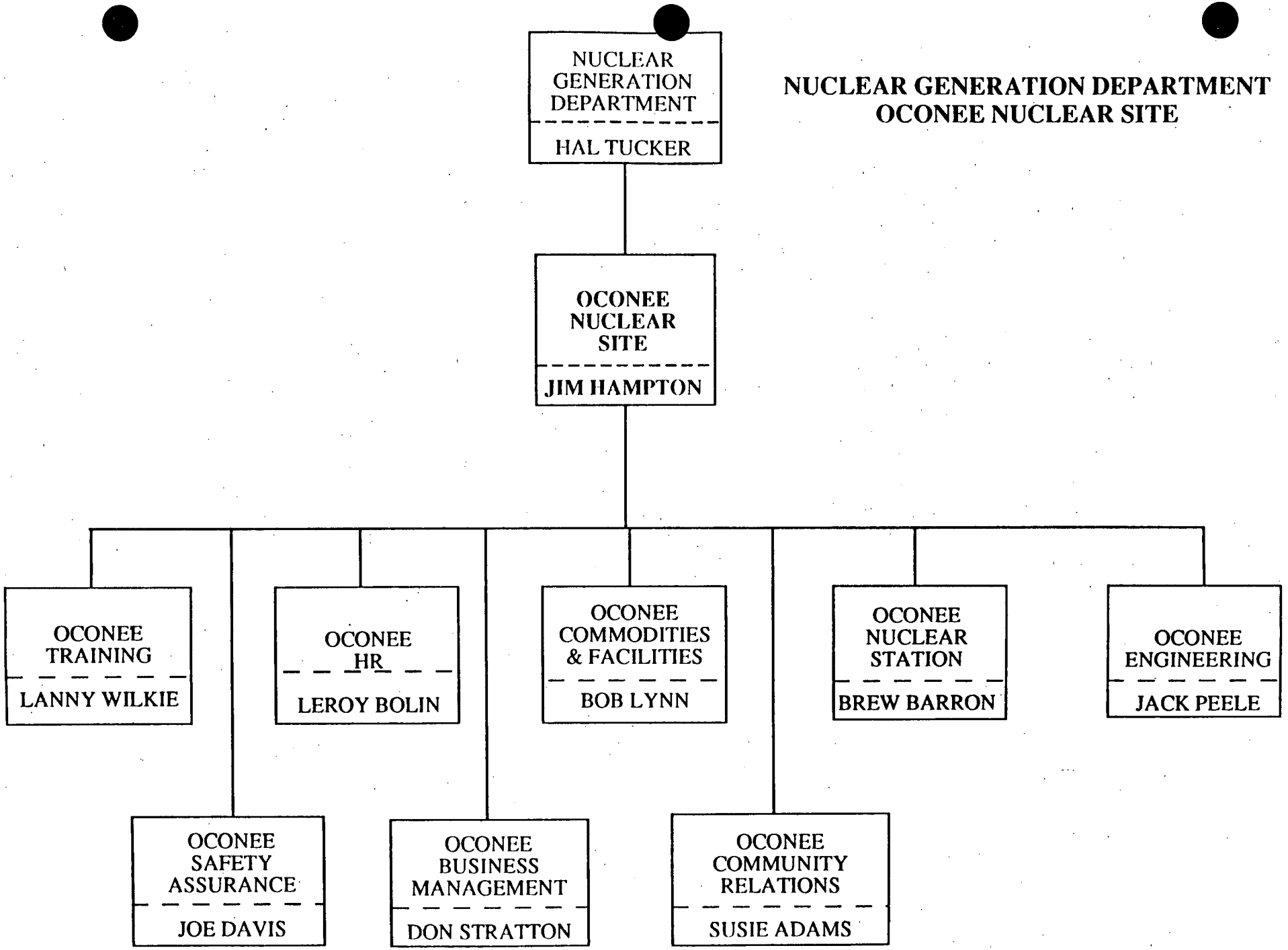
OCONEE NUCLEAR SITE



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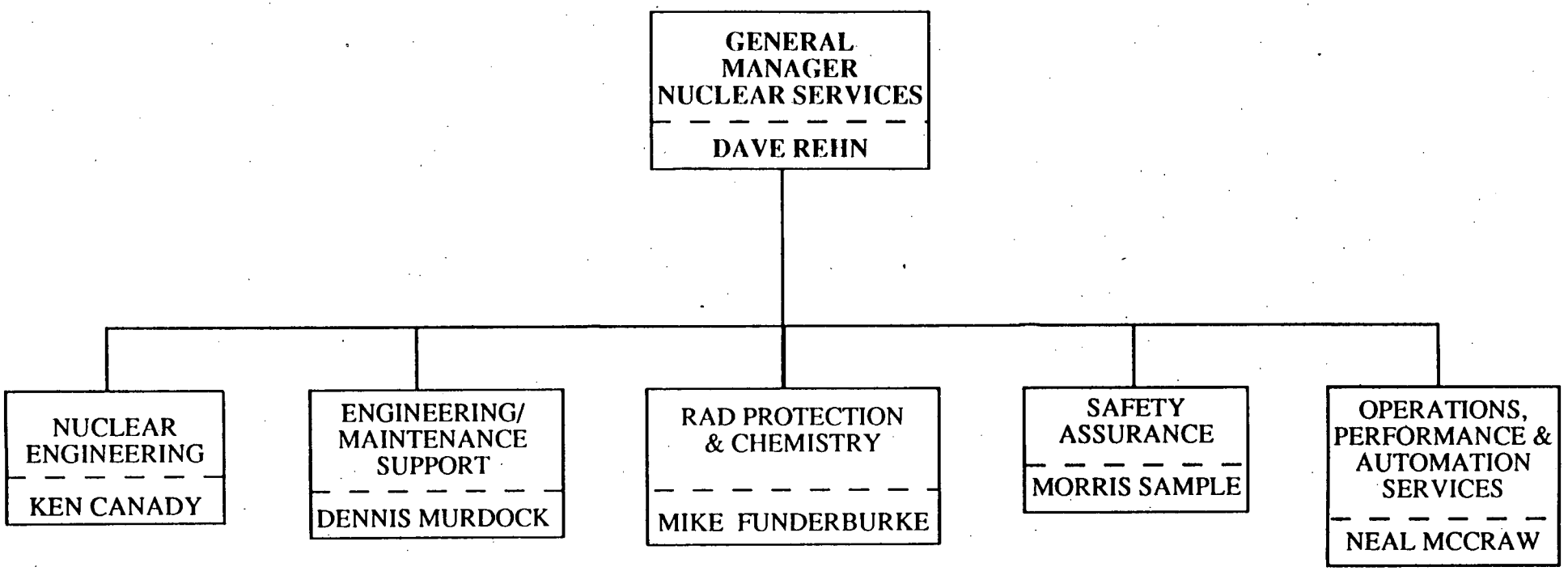


11/1/91

Summary of Changes
Amendment 15 to Duke Power Topical Report
October 28, 1991

Abstract: Reflects adoption of Standard Review Plan 17.3

17.0: Changed 17.2 to 17.3 (all references)

17.0.1.1: Changed title from Vice President QA to Executive Vice President Power Generation Group

Figure 17.3-1: New Corporate Organization (Departments performing quality related functions)

		Section References From SRP 17.3	Correlating Sections In Duke Topical	Comments
A.		**Management**	**17.3.1**	
	1.	Methodology	17.3.1.1	Wording, title changes
	2.	Organization	17.3.1.2	Description of new organization
	3.	Responsibility	17.3.1.3	Wording, title changes
	4.	Authority	17.3.1.4	Expanded current wording
	5.	Personnel Training and Qualification	17.3.1.5	Modified wording
	6.	Corrective Action	17.3.1.6	Wording reflects Section 17.3.2.13
	7.	Regulatory Commitments	17.3.1.7	
B.		**Performance/ Verification**	**17.3.2**	

	Section References From SRP 17.3	Correlating Sections In Duke Topical	Comments
1.	Methodology	17.3.2.1	Wording, title changes
2.	Design Control	17.3.2.2	Title changes, reference to 17.1
3.	Design Verification	17.3.2.3	Title changes, expanded wording
4.	Procurement Control	17.3.2.4	Title changes, expanded wording
5.	Procurement Verification	17.3.2.5	Title changes, expanded wording, relocation of wording
6.	Identification and Control of Items	17.3.2.6	Title changes
7.	Handing, Storage, and Shipping	17.3.2.7	Expanded wording
8.	Test Control	17.3.2.8	Expanded wording
9.	Measuring and Test Equipment Control	17.3.2.9	Title changes
10.	Inspection, Test, and Operating Status	17.3.2.10	Title changes
11.	Special Process Control	17.3.2.11	Title changes
12.	Inspection	17.3.2.12	Title changes, expanded wording
13.	Corrective Action	17.3.2.13	Title changes, expanded wording

	Section References From SRP 17.3	Correlating Sections In Duke Topical	Comments
14.	Document Control	17.3.2.14	Title changes, added new controlling manual descriptions
15.	Records	17.3.2.15	Wording modifications, new departments and records responsible for
C.	**Self-Assessment**	**17.3.3**	
1.	Methodology	17.3.3.1	Description reflects new organization and responsibilities
2.	Assessment	17.3.3.2	Title changes, added NSRB info from Tech Spec, description of new/revised responsibilities

D A Jenkins
Quality Assurance
10-28-91

Duke Power Topical Report
Amendment 15
Synopsis
October 28, 1991

1. Due to company re-organization and needed revision to the Topical, decision was made to also upgrade our Topical to Standard Review Plan 17.3.

2. No changes in any program commitments as currently documented (10CFR50 Appendix B, ANSI N18.7). Do not view this as a reduction in the quality program.

3. Decision was made to leave chapters 17.0 and 17.1 intact. Re-write 17.2 to 17.3 guidelines. Will add statement to 17.1 that it no longer reflects current organization.

4. Used as much of the previous wording as possible. Supplemented as necessary to meet 17.3 requirements.

5. Added NSRB information currently contained in Technical Specifications to chapter 17.3.3 of the re-write.

6. Removed individual department organization charts, stated where they could be found (FSAR, department manuals).

7. Draft 1 wording changes are in **Bold** type. Draft 2 wording changes are in ***Italic***.

8. Draft 2 may require some minor modification as the organization and responsibility details are finalized. However, we view this draft to be the final product at the present.

D A Jenkins
Quality Assurance
10-28-91

ABSTRACT

This topical report describes the Duke Power Company quality assurance program for all phases of its nuclear power plants. The report is organized like and is generally used for Chapter 17 - Quality Assurance of Duke's Safety Analysis Reports.

The Duke Quality Assurance Program conforms to applicable regulatory requirements such as 10CFR50, Appendix B and to approved industry standards such as ANSI N45.2-1971 and ANSI N18.7-1976 and corresponding daughter standards, or to equivalent alternatives. The Duke Power Quality Assurance Program also conforms to the regulatory position of the NRC Regulatory Guides listed in Table 17.0-1 of this report with the exception of the clarifications, modifications, and alternatives stated therein.

Section 17.0 describes the purpose of this report, provides definitions, and shows conformance to regulations, standards, and guides.

Section 17.1 describes the organization and program for quality assurance during the design, initial procurement, and construction phases of nuclear power plant development. Included in this section are organization charts, a listing of quality assurance and technical functions, and point-by-point comparisons of the Engineering Quality Assurance Program and Construction Quality Assurance Program with the 18 criteria of 10CFR50, Appendix B.

Section **17.3** describes the quality assurance program and organization for station operation.

The descriptions in Section 17.1 follow the format of 10CFR50, Appendix B. **Section 17.3 follows the format of NUREG-0800, Standard Review Plan For The The Review of Safety Analysis Reports for Nuclear Power Plants, Section 17.3.** The topical is intended to be a comprehensive up-to-date description of Duke's Quality Assurance Program for nuclear power plants.

DRAFT
REV. 15 DRAFT 2
BY DAG DATE 10-28-91

17 QUALITY ASSURANCE

17.0 INTRODUCTION

Duke Power Company maintains full responsibility for assuring that its nuclear power plants are designed, constructed, tested and operated in conformance with good engineering practices, applicable regulatory requirements and specified design bases and in a manner to protect the public health and safety. To this end Duke has established and implemented a quality assurance program which conforms to the criteria established in Appendix B to 10CFR, Part 50, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants" published June 27, 1970 (35 F. R. 10499) and amended September 17, 1971 (36 F. R. 18301) and amended January 20, 1975 (40 F. R. 3210D).

This topical report is written in the format of a Safety Analysis Report (SAR) Chapter 17, "Quality Assurance", in accordance with Revision 2 of the NRC's Regulatory Guide 1.70, "Standard Format and Content of Safety Analysis Reports for Nuclear Power Plants - LWR Edition" and subsequent NRC guidelines. The quality assurance program described herein is applicable to all Duke nuclear power plants as referenced by Chapter 17 of the plants' SAR's. The report is divided into two sections as follows: 17.1 Quality Assurance During Design and Construction, **17.3** Operational Quality Assurance.

Section 17.1 describes quality assurance up to, but not including, preoperational testing and Section **17.3** applies to events beginning with startup and operation. Section 17.1 is intended to be applicable to PSAR's, and Section **17.3** is applicable to FSAR's.

This Topical Report describes the Quality Assurance Program for those systems, components, items, and services which have been determined to be safety related. In addition, Duke's Quality Assurance Program provides a method of applying a graded Quality Assurance Program to certain non-safety related systems, components, items, and services. This method involves defining a Quality Assurance "Condition" for each level of quality assurance required. These will be designated as "QA Condition _____". The following conditions have been defined.

QA Condition 1 covers those systems and their attendant components, items, and services which have been determined to be safety related. These systems are detailed in the Safety Analysis Report applicable to each nuclear station. The Topical Report applies in its entirety to systems, components, items, and services identified as QA Condition 1.

QA Condition 2 covers those systems and their attendant components, items, and structures important to the management and containment of liquid, gaseous, and solid radioactive waste.

QA Condition 3 covers those systems, components, items, and services which are important to fire protection as defined in the Hazards Analysis for each station. The Hazards Analysis is in response to Appendix A of NRC Branch Technical Position APCSB 9.5-1.

QA Condition 4 covers those seismically designed/restrained systems, components, and structures whose continued functions are not required during and after the seismic event. The general scope of these systems, components, and structures, identified as Seismic Category II (SCII) are defined in Regulatory Guide 1.29, Seismic Design Classification.

Subsequent changes to Duke's Quality Assurance Program shall be incorporated in this topical report. The topical report is intended to be a comprehensive up-to-date description of Duke's Quality Assurance Program for nuclear power plants.

Any programmatic changes to the Quality Assurance Program will be submitted for review and acceptance prior to implementation. Significant organizational changes will be submitted no later than thirty (30) days after announcement.

17.0.1.1 Explanation of "Quality Assurance"

Quality Assurance as used in this document includes: 1) the independent assurance activities associated with items and tasks critical to the safety and integrity of the facility and 2) quality verifications performed by the Quality ***Verification*** Department. The Quality Assurance program as defined above is not an alternative to good technical work. Rather, it is a system of controls to verify that quality is achieved. The Quality Assurance program ***places the responsibility*** on line management of achieving ***and*** assuring quality in all areas of their operation. As defined, the **Executive Vice President, Power *Generation* Group** has been given the responsibility to develop and manage a Quality Assurance Program for the Company.

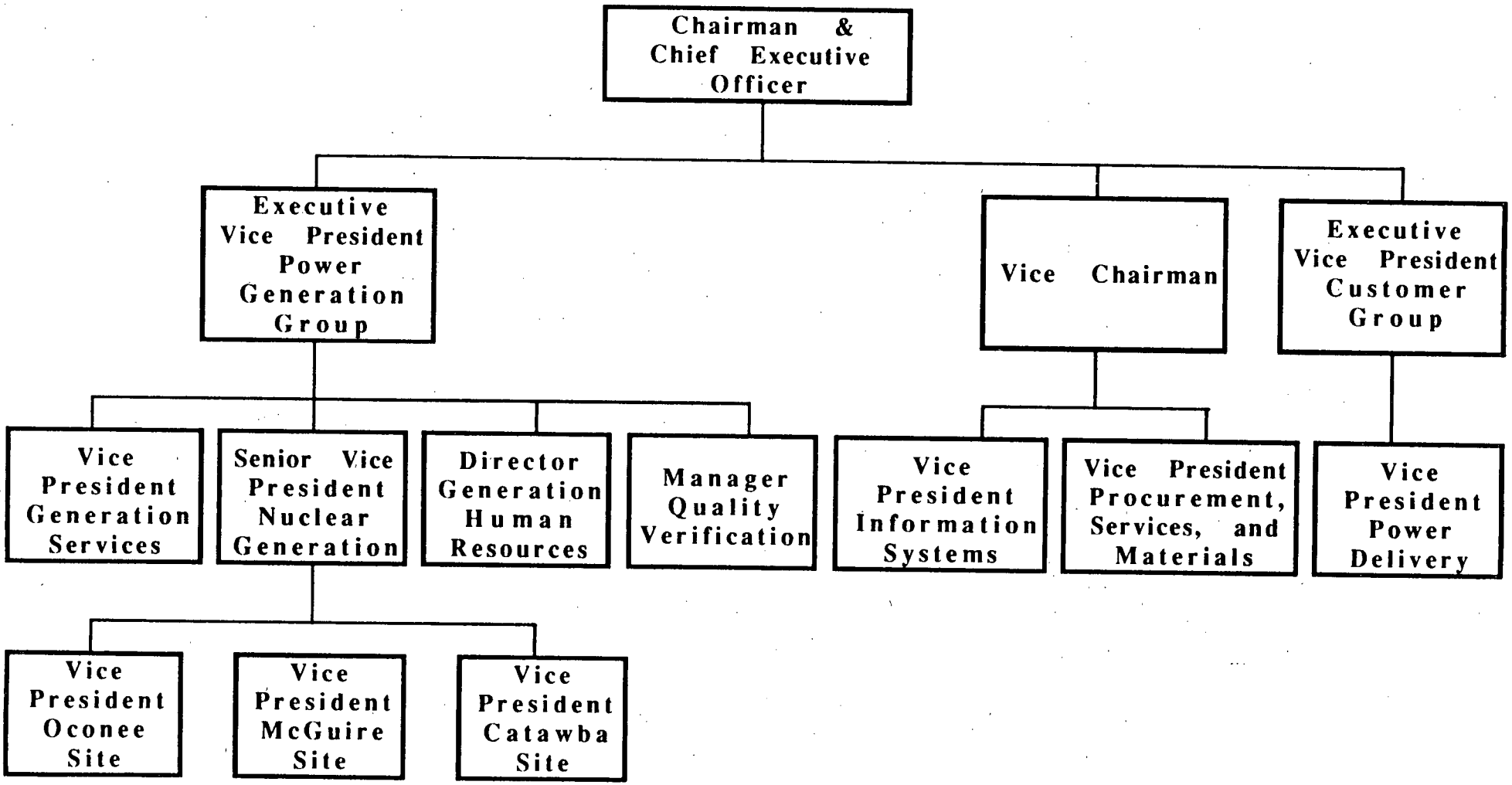
17.0.2 QUALITY ASSURANCE STANDARDS AND GUIDES

The Duke Quality Assurance Program conforms to Appendix B of 10CFR50, as discussed in Section 17.0. The Quality Assurance Program also conforms to applicable NRC Regulatory Guides and approved ANSI Standards, or applicable alternatives. Table 17.0-1 addresses quality assurance program conformance to the provisions of the NRC Gray Book (WASH 1283, Revision 1)[1] "Guidance on Quality Assurance Requirements During Design and Procurement Phase of Nuclear Power Plants", Green Book (WASH 1309)[1] "Guidance on Quality Assurance Requirements During the Construction Phase of Nuclear Power Plants", and the Orange Book (WASH 1284)[1] "Guidance on Quality Assurance Requirements During the Operations Phase of Nuclear Power Plants" are also indicated, by reference to Regulatory Guides and standards, in Table 17.0-1.

Quality Assurance Program conformance with the documents identified in Table 17.0-1 may, however, be modified contingent upon future NRC or ANSI action. For example, if a draft document is subsequently approved and issued or if an approved document is revised, provisions of the more recent issue of such a document may be complied with in lieu of those contained in the version listed in Table 17.0-1, provided the more recent issue has been endorsed by the NRC. Also, formal regulatory actions of the NRC (e.g., issuance or amendment of a station's Facility Operating License) are considered to supersede the contents of 17.0-1, as applicable.

[1] These manuals represent the original guidelines used in program development. The current guidelines can be found in NUREG-0800, Standard Review Plan.

DUKE POWER COMPANY
CORPORATE ORGANIZATION



TOPICAL REPORT
QUALITY ASSURANCE PROGRAM
FIGURE 17.3-1
AMENDMENT 15

17.3.1 MANAGEMENT

17.3.1.1 Methodology

The **Executive Vice President, Power *Generation* Group** is the corporate executive responsible for quality assurance and is the highest level of management responsible for establishing Duke's quality assurance policies, goals, and objectives. Directives have been issued by the Chief Executive Officer requiring development of and compliance with procedures in all safety related matters **thereby binding all organizations performing quality affecting activities.**

The individuals who constitute Duke Power Company have full personal and corporate responsibility to assure that nuclear power plants are designed, constructed, tested and operated in a manner to protect the public health and safety. The comprehensive program to assure this begins with initial design and continues throughout the life of the station. The Duke Power Quality Assurance Program must assure that the necessary quality requirements for safety-related structures, systems, components and materials are achieved. All special equipment, environmental conditions, skills and processes that are determined to be nuclear safety related will be provided within the scope of the Quality Assurance Program.

A controlled listing of safety related structures, systems, and components is approved, issued, and ***periodically*** updated. ***Each Site Officer is*** responsible for approval and issuance after issuance of the operating license.

This program applies to the nuclear safety related portions of the plant but may also be optionally applied, in whole or in part, to other selected items necessary for reliable operation. **Section 17.0 identifies those items currently included under Duke Power's Quality Assurance Program.**

17.3.1.2 Organization

17.3.1.2.1 Corporate Organization

The Duke Power Company corporate organization is shown in ***Figure 17.3-1***. The Chief Executive Officer has overall responsibility for Design, Construction, and Operation of generation and transmission facilities. Reporting to the Chief Executive Officer is the **Executive Vice President, Power Generation Group, *who has the overall authority and responsibility for the quality assurance program***, and who directs ***several*** activities ***including*** **the Nuclear Generation, Generation Services, Quality Verification, and Generation Human Resources Departments.** ***Also reporting to***

the Chief Executive Officer are the Vice Chairman and the Executive Vice President, Customer Group. The Vice Chairman directs several activities including the Information Systems and Procurement, Services and Materials Departments. The Executive Vice President, Customer Group directs several activities including the Power Delivery Department.

Duke's organization reflects the concept of quality assurance as an interdisciplinary function involving various groups. As such the attainment of quality rests with those assigned the responsibility of performing the activity. The verification of quality is assigned to qualified personnel independent of the responsibility for performance or supervision of the activity. The degree of independence varies commensurate with the activity's importance to safety.

The policies described **in this document** are implemented through departmental program manuals and procedures, and are, therefore, transmitted to all levels of management.

Organization charts for the various departments / locations are contained in the respective Station Final Safety Analsis Report.

17.3.1.2.2 Nuclear Generation Department

The **Nuclear Generation Department** has direct line responsibility for all Duke Power Company nuclear station operations. The **Nuclear Generation Department** is responsible for achieving quality results during ***engineering,*** preoperational testing, operation, testing, maintenance ***and modification*** of the Company's nuclear stations and with complying with applicable codes, standards and NRC regulations. The functions of **Nuclear Generation** are directed by the **Senior Vice President, Nuclear Generation.**

The **Senior Vice President, Nuclear Generation** formulates, recommends, and carries out plans, policies, and programs related to the **nuclear** generation of electric power; and reports to the **Executive Vice President, Power Generation Group.** The **Senior Vice President, Nuclear Generation** is informed of significant problems or occurrences relating to safety and quality assurance through established administrative procedures, and participates directly in their resolution, where necessary.

a) **Nuclear Site Organization**

The **Nuclear Site Vice Presidents** *(Site Officer)* report to the **Senior Vice President, Nuclear Generation.** The **Site Officer** is also responsible for the administration, implementation, ***and assessment*** of the quality assurance program as it applies to station operation. In the

discharge of their responsibilities, the **Site Officers** direct the activities of the station organizations.

Reporting to the Site Officer for each nuclear station, is a Manager, Nuclear Station who is assigned the direct responsibility for the safe operation of the facility. The qualification requirements for the Manager, Nuclear Station are in accordance with the provision of ANSI N18.1-1971 and are presented in each station's FSAR.

b) Nuclear Generation Department, Nuclear Services

The Nuclear Generation Department, Nuclear Services is divided into various sections. The activities of each section are directed by a manager who reports to the **General Manager, Nuclear Services. The General Manager, Nuclear Services** reports to the **Senior Vice President, Nuclear Generation**. These sections are staffed with professional personnel experienced in ***various*** phases of station operation who provide technical support to each nuclear station.

17.3.1.2.3 Generation Services Department

The Generation Services Department provides centralized services to the Power Generation Group in areas such as environmental engineering, NDE, measuring and test equipment calibration, craft support, and others. The Generation Services Department is directed by the Vice President, Generation Services who reports to the Executive Vice President, Power Generation *Group*.

17.3.1.2.4 Generation Human Resources Department

The Generation Human Resources Department provides leadership to the Power Generation Group in such areas as security, fire protection, Fitness For Duty and others. The Generation Human Resources Department is directed by the *Director*, Generation Human Resources who reports to the Executive Vice President, Power Generation Group.

17.3.1.2.5 Quality Verification Department

The Quality Verification Department is responsible for performing the self-assessment functions, including the *Nuclear Safety Review Board* (NSRB), audits, and qualifying suppliers. The activities of the Quality Verification Department are directed by the Manager, Quality Verification who reports to the Executive Vice President, Power Generation *Group*. The Quality Verification Department has the authority and organizational freedom to:

(a) Identify quality problems.

(b) Initiate, recommend or provide solutions to quality problems through designated channels.

(c) Verify the implementation of solutions to quality problems.

(d) Ensure cost and schedule do not unduly influence decision making involving quality.

If significant quality problems are identified by **Quality Verification Department** personnel, the **Manager, Quality Verification** or designee, has the responsibility and authority to notify ***Management***, to direct the affected work activity to cease pending satisfactory resolution of the identified problem.

17.3.1.2.6 Procurement, Services and Materials (PSM) Department

PSM is responsible for the Materials and Equipment Database (*MEDB*), which is the computer database containing necessary attributes for purchase of a commodity; and the purchasing function. These activities in PSM are directed by the Manager-Technical Services and the General Manager-Purchasing respectively who report to the Vice President, PSM.

17.3.1.2.7 Information Systems (IS) Department

IS is responsible for the development and maintenance of *mainframe computer* software *and data* which supports QA Condition activities. These activities in IS are directed by managers and directors reporting to the Vice President, IS.

17.3.1.2.8 Power Delivery Department

The Power Delivery Department is responsible for providing maintenance and testing services to the nuclear station for selected high voltage equipment. These activities are directed by the Vice President, Power Delivery.

17.3.1.2.9 Department Interfaces

Quality related activities are performed by the **Nuclear Generation, Generation Services, Generation Human Resources, Quality Verification, *Procurement Services and Materials, Information Systems and Power Delivery Departments.*** Departmental interfaces are identified in the quality assurance program manuals associated with these areas.

Organization charts for these departments are maintained in appropriate manuals for the respective departments.

17.3.1.3 Responsibility

The individuals who constitute Duke Power Company have full personal and corporate responsibility to assure nuclear power plants are designed, constructed, maintained, tested and operated in a manner to protect the public health and safety; **and to assure the effectiveness of the Quality *Assurance* Program.**

Corporate audits are initiated and directed by the **Executive Vice President, Power Generation Group.** This audit is performed **annually** to assess the adequacy of the ***Quality Verification Department Quality Program.*** **This audit is discussed in greater detail in Section 17.3.3.2.4.**

Applicable procedures *are* developed, approved by the responsible implementing manager, issued for use, with sufficient personnel available and trained *with necessary resources* prior to performing quality affecting activities.

17.3.1.4 Authority

Anyone involved in quality activities in the Duke organization has the authority and responsibility to stop work if *they* discover deficiencies in quality. Personnel performing quality assurance and quality control functions have the authority and responsibility to stop unsatisfactory work and to assure the item/activity is controlled to prevent further processing, delivery, installation, or use until authorized by appropriate management. *If a member of the group performing the work disagrees, they are instructed to take the matter to their management. The disagreement may either be resolved at this level or at any level up to and including the Chief Executive Officer.*

17.3.1.5 Personnel Training and Qualification

A training program is established for each nuclear station ***and support organizations*** to develop and maintain an organization qualified to be responsible for operation, ***engineering***, testing, inspection, maintenance, ***modification*** and other technical aspects of the nuclear station involved. The program is formulated to provide the required training based on individual employee experience and intended position. The program is in compliance with Nuclear Regulatory Commission licensing requirements, where applicable. The training program is such that trained and qualified operating, maintenance, ***engineering***, inspection, testing, technical support and supervisory personnel are available in necessary numbers at the times

required. In all cases, the objectives of the training program shall be to assure safe and reliable operation of the station.

The training program is kept current to reflect station modifications and changes in procedures. A continuing effort is used after a station goes into commercial operation for training of replacement personnel and for periodic retraining, reexamining, and/or recertifying as required to assure that personnel remain proficient. Personnel receive formal orientation training in basic quality assurance policies and practices.

Personnel receive additional formal training, as appropriate, which addresses specific topics such as NRC regulations and guides, quality assurance procedures, auditing and applicable codes and standards. Special training of personnel in quality assurance related matters, particularly new or revised requirements, is conducted as necessary. Training ***and qualification*** records are maintained for each employee. Documentation of formal training includes the objectives, content of the program, attendees, and date of attendance.

17.3.1.6 Corrective Action

Duke Power has established a corrective action process whereby all personnel are to assure conditions adverse to quality are promptly identified, controlled, and corrected. ***This process is administered to correct the problem and its cause rather than establish blame or fault.*** **This process also provides for trending of problems to detect adverse trends in quality performance. This process is discussed in Section 17.3.2.13.**

17.3.1.7 Regulatory Commitments

Duke management is committed to applicable quality assurance regulations, codes, and standards as identified in 17.0.2 of this report.

17.3.2 PERFORMANCE / VERIFICATION

17.3.2.1 Methodology

The Duke Power Company **operational quality assurance program** is described in various Company manuals. Procedures and work instructions necessary to implement the requirements of the **operational quality assurance program** are developed **and approved** by the organization responsible for the activity. These procedures and instructions may be contained in manuals, station procedures and directives, administrative instructions and/or other documents. These documents identify the criteria to determine acceptable quality for the activity being performed. On-site implementation of procedures and work instructions is the responsibility of the **Site Officer. Verification of quality against these documents is performed** by means of inspections, tests, audits, and reviews. Procedures for such inspections, audits and ***reviews*** are developed and approved by the **responsible implementing manager.**

The program receives on-going review and is revised as necessary to assure its continued effectiveness.

17.3.2.2 Design Control

Section 17.1.3 describes the design controls which were applied during the design and construction phases of Duke Nuclear Stations.

In order to provide for the continued safe and reliable operation of a nuclear station's nuclear safety-related structures, systems and components, design control measures commensurate with those applied to the original design are implemented during the operational phase to assure that the quality of such structures, systems and components is not compromised by modifications.

Duke has assigned the responsibility for design activities during the operational phase of nuclear stations to the **Nuclear Generation Department.**

The **operational quality assurance program** establishes procedures and instructions for implementation and assurance of design control during the operational phases for nuclear safety related items. These procedures and instructions assure the design is performed in accordance with approved criteria, and that deviations and nonconformances are controlled.

Each safety-related design document, such as a calculation, specification, or drawing, is prepared by a qualified individual who specifies and includes the

appropriate codes, standards, SAR commitments, **and other design input** within the design documents. **The preparer** notes any deviations or changes from such standards within the design documentation package. Each design document is then checked by another individual qualified in the same discipline and is reviewed for concept and conformity with applicable codes standards, **and other design inputs** (as specified within the design documentation package). The document is approved by the ***individual*** having overall responsibility for the design function. A review of each specification is made to assure incorporation of necessary quality assurance information. The entire review process is documented.

Prior to the release of any safety-related design document, it is reviewed to assure coordination of **disciplines**. If the document clearly involves no coordination with the other disciplines, this review may be waived by the sponsor, with documented concurrence by the other **disciplines**.

In order to assure proper interface control, the responsibilities of the various individuals/organizations involved in modifications are formally identified. The assignment of responsibility for the evaluation and design of a particular modification to a specific individual/organization is documented. Also, the written instructions addressing the control of modifications address the communication of information between involved individuals/organizations and, where appropriate, require documentation of such communications.

For each proposed modification, the individual/organization assigned responsibility for evaluation and design of the modification considers the following in the design of the modification:

(a) Necessary design analyses, e.g., physics, stress, thermal, hydraulic, accident, etc.

(b) Compatibility of materials.

(c) Accessibility for operation, testing, maintenance, inservice inspection, etc. .

(d) Necessary installation and periodic inspections and tests, and acceptance criteria therefor.

(e) The suitability of application of materials, parts, components, and processes that are essential to the function of the structure(s), system(s) and/or component(s) to be modified.

Final approval of each station modification is the responsibility of the applicable **Site Officer** ***or designee*** Modifications are then executed in accordance with approved checklists, instructions, procedures, drawings, etc., appropriate to the nature of the work to be performed. These checklists,

instructions, procedures, drawings, etc. include criteria for determining the acceptability of the modification.

Errors and deficiencies noted in the design of a modification are corrected by means of a variation notice or a revision to the modification. The control measures applied to each such modification revision or variation notice are equivalent to the control measures applied to the modification originally. Each modification revision or variation notice and the review and approval thereof, is documented.

Prior to a modification being declared operable and returned to service, all procedures governing the operation of the modification are reviewed and revised as necessary. If the modification significantly alters the function, operating procedure, or operating equipment, then additional training is administered as necessary.

Adequate identification and retrievable documentation of station modifications is retained for the life of the station.

Computer programs are controlled in accordance with ***appropriate*** **department manuals,** whereby programs are certified to demonstrate their applicability and validity.

17.3.2.3 Design Verification

During the check and review, **of design documents,** particular emphasis is placed on assuring conformance with applicable codes, standards, SAR design commitments, **and other design input.** The individuals assigned to perform the check and review of a nuclear safety related document have full authority to withhold approval of the document until every question concerning the work has been resolved. If required, the matter can be carried up to the **Senior Vice President, Nuclear Generation Department** by individuals in **Nuclear Services** or to the **Site Officer** by individuals in **Site Engineering** for resolution. The checker verifies calculations by checking or by alternate computations. Analytical models, theories, examples, tables, codes, computer programs, etc., used as bases for design must be referenced in the design document and their application verified during check and review. Model tests, when required, to prove the adequacy of concept or design are reviewed and approved by the responsible engineer. The tests used for design verification must meet all the requirements of the designing activity. Computer programs are controlled in accordance with the ***applicable*** **Quality Assurance Manual** whereby programs are certified to demonstrate their applicability and validity.

Design verification may consist of reviews, alternate calculations, and/or qualification testing. Design reviews are intended to verify the correctness of design inputs, logic, calculations, and analyses. Calculations by alternate

methods provide assurance that, for instance, computer codes are performing as expected, and that no systematic error in calculational procedure exists. Qualification testing, when suitable, is guided by Duke Power's adoption of various regulatory guides which deal with qualification testing. **Qualification testing will simulate the most adverse design conditions that are expected to be encountered.** Design verification is performed by qualified individuals in accordance with approved procedures which identify the responsibilities, features and pertinent considerations to be verified ***such as verification method, design parameters, acceptance criteria***, and documentation requirements. **Design verification is required to be completed before relying on the item to perform its function and before its installation becomes irreversible.** The use of the originator's immediate supervisor for verification is: 1) restricted and justified to special situations where the immediate supervisor is the only individual ***capable of performing*** the verification **2) the need is individually documented and approved in advance by the supervisor's management and 3) the frequency and effectiveness of the supervisor's use as design verifier are independently verified to guard against abuse.**

The individual/organization assigned responsibility for evaluation and design of a modification performs a safety evaluation of the proposed modification. This evaluation provides the bases for the determination that the modification does or does not involve an unreviewed safety question. This evaluation is reviewed by an individual/group other than the individual/group performing the safety evaluation, but who may be from the same organization as the individual/group which performed the safety evaluation. This evaluation and the review thereof are documented.

Following completion of design and evaluation of a modification, the responsible individual/organization summarizes the modification design and identifies the design documents and information which has been issued to the station for modification implementation. This addresses such items as:

(a) A description of the modification.

(b) References utilized in the evaluation and design of the modification, and necessary for the implementation of the modification.

(c) Special installation instructions.

(d) Operational, test, maintenance and inspection requirements.

(e) Materials, parts and components required in order to implement the modification.

(f) Drawings revised and/or requiring revision.

(g) FSAR revision(s) and/or Technical Specifications amendment(s) necessary.

(h) Whether or not the modification involves an unreviewed safety question.

The reviews of the proposed modification, including applicable implementing procedures associated therewith, certifies that quality assurance requirements have been met and determines inspection requirements prior to implementation of the modification. Modifications which are determined to involve an unreviewed safety question are reviewed by the Nuclear Safety Review Board and must be authorized by the Nuclear Regulatory Commission prior to implementation.

17.3.2.4 Procurement Control

Duke's Quality Assurance Program requires the control of safety-related items or services purchased from a vendor, subvendor or consultant.

Nuclear Generation or Generation Services is responsible for the technical qualification of vendors and control of the initial procurement of all safety-related items and services. Specifications are prepared, checked, and approved by appropriate personnel and forwarded to Purchasing, who prepares an inquiry and forwards it to approved vendors. The **Quality Verification Department** is responsible for qualification of vendor's quality assurance programs.

Nuclear safety-related material, equipment and services may be procured only from qualified vendors. Vendor qualification is accomplished by a **Quality Verification Department** evaluation of the vendor's quality assurance program. **Vendor qualification for commercial grade items is the responsibility of the responsible engineer.** The responsible engineer initiates a request for an evaluation of a potential vendor. The request lists applicable codes, standards, regulations and items of services to be supplied. When required, an audit or preaward survey is performed by the **Quality Verification Department**. The audit or preaward survey is carried out in accordance with a comprehensive vendor audit checklist to determine the ability of the vendor's quality assurance program and manual(s) to meet applicable criteria of 10CFR50, Appendix B. The audit team prepares a formal audit report which states whether or not the vendor is qualified to supply the specific items or services. This includes a review of the vendor's quality assurance manuals. The audit report is reviewed and approved or disapproved by the ***Vendor Quality Verification Manager***. An approved vendor may then be included on the Approved Vendor's List. This approval is a prerequisite for vendor acceptance by the responsible engineer. Technical and commercial qualifications are determined by the responsible engineer and the Purchasing Department. Vendor selection is based on bid evaluations by

the responsible engineer, Purchasing, and **Quality Verification Department**. The evaluation includes conformance to specifications, quality assurance requirements, and technical and commercial qualifications of the vendor.

When the nature of an item is such that there is adequate experience and/or historical evidence to verify vendor capability, a vendor may be determined to be acceptable by the Vendor Quality Verification Manager without performance of a formal audit.

Quality Verification Department shall complete a satisfactory reevaluation of a vendor no later than 12 months since the previous evaluation in order to keep the vendor on the Approved Vendors List. When reevaluations are performed by audit, the reevaluation may be extended from 12 to 15 months with written approval of the ***Vendor Quality Verification Manager.***

Materials, parts and components shall be procured to specifications and codes at least equivalent to those applicable to the original equipment or those specified by a properly reviewed and approved revision. As required by the applicable purchase documents, vendors furnish documentation which identifies the material and equipment purchased and the specific procurement requirements met by the items. Also, as required by the applicable purchase documents, vendors provide documentation which identifies any procurement requirements which have not been complied with, together with a description of any deviations and repair records. Vendor evaluation and reevaluation are done in accordance with procedures to assure their certificates of conformance are valid.

When an item being qualified is: (a) not subject to design or specification requirements which are unique to nuclear plants, (b) used in applications other than nuclear plants, and (c) can be ordered from the manufacturer/supplier on the basis of specifications set forth in the manufacturer's published product description, the item may be procured without the performance of a supplier qualification audit or the existence of a documented supplier Quality Assurance Program. These commercial grade items used in nuclear safety related designs require evaluation and approval by **Nuclear Generation Department personnel**. These items are subject to the same verification and checking process for suitability of application as other safety related items.

Procurement of materials, parts, components and services associated with a station's nuclear safety related structures, systems, and components is controlled during the operational life of the station so as to assure ***the suitability for their intended service*** and that the safety and reliability of the station are not compromised.

Each **requisitioning document** for materials, parts, and components associated with nuclear safety related structures, systems and components is identifiably designated as such. The **procurement requirements** applicable to each item is determined by a cognizant individual. This determination is reviewed by an individual other than the individual which determined the applicable **procurement requirements,** but which may be from the same organization as the individual/group making the determination. **Requisitioning documents** ***must*** include on the **document** or reference ***other documents to assure*** sufficient information ***is fully identified to*** specify the items ***being procured.*** Subsequent to preparation, purchasing information is approved by the Manager, **Commodities & Facilities Management**, or his designee, or by a manager in the General Office.

Purchasing information for nuclear safety related materials, parts and components are reviewed to assure that quality assurance, ***technical and regulatory*** requirements including vendor documentation requirements are adequately incorporated into the purchase document(s). Significant changes to the content of such **purchasing information are reviewed and approved by qualified individuals.** Review of procurement documents and changes thereto assures the documents are prepared, reviewed, and approved in accordance with ***approved*** procedures.

Where necessary, procurement documents require that nuclear safety related materials, parts, and components be acquired from vendors determined to be acceptable by the **Quality Verification Department - see Section 17.3.3.2.7.** Determination of acceptability requires that a vendor provide Duke the right of access to the vendor's facilities and records for inspection and audit.

Except for some "commercial grade" items each shipment of items procured from a vendor must be accompanied by a certificate of conformance (or equivalent) which identifies the applicable procurement documents and item(s). The certificate specifies that the item meets the procurement requirements and lists the documentation transmitted, including repair records and a description of any deviations. ***This documentary evidence must be on site and all procurement, inspection, and testing requirements satisfied before the item is placed in service or used.***

The **Commodities & Facilities Management Group** reviews and approves this documentary evidence of item conformance with procurement requirements.

Consultant services are utilized by Duke to provide technical assistance and are controlled by similar procedures and documents as are vendors of nuclear safety-related materials and equipment except the using department may handle the purchase administration rather than the Purchasing Department. Documentation of such services is controlled by the Quality Assurance

Program. Results of consultant services are ***documented, reviewed, and incorporated, as required, by the responsible organization.***

17.3.2.5 Procurement Verification

After vendor selection is made, **Nuclear Generation Department** ***or Generation Services Department personnel*** prepares a **requisitioning document. Reviews** include **a check for** applicable quality assurance requirements. The **requisitioning document** is checked and approved. The approved **requisitioning document** is forwarded to Purchasing who prepares a purchase order including quality assurance requirements for forwarding to the successful vendor.

As required by procurement criteria, in order to assure that material and equipment are fabricated in accordance with applicable requirements, vendor review, audit and surveillance are performed by the **Quality Verification Department**. This review, audit and surveillance includes witnessing of tests and fabrication checkpoints, and evaluation of overall vendor performance and is documented.

Procedures outlined in the Quality Assurance Program have been established which implement the surveillance program for vendors. This assures that items and services procured for use in nuclear safety-related applications are in compliance with applicable procurement specifications.

These procedures provide for surveillance of those characteristics or processes to be witnessed, inspected or verified. Surveillance activities assure that the vendor complies with all quality requirements outlined on the purchase specification and purchase **document**. The surveillance report becomes a part of the quality **verification** file for the item or service. The surveillance representative has the authority and responsibility to stop work when the required quality standards are not met.

Upon receipt at a station, the Manager, Commodities & Facilities Management is responsible for the control of nuclear safety-related materials, parts and components. Such items are placed in a controlled, designated area and are subjected to a receipt inspection by station Commodities & Facilities Management Personnel. This inspection is intended to determine whether or not each item received conforms with applicable procurement requirements. Such inspections and the subsequent determination of conformance or nonconformance are documented by means of reports, which are retained on file by the Commodities & Facilities Management Personnel, and, as appropriate, by tags attached to the items. Until a determination of conformance is made by the Commodities & Facilities Management Personnel, a nuclear safety-

related material, part or component cannot be issued and installed.

17.3.2.6 Identification and Control of Items

Control of materials, parts, and components at nuclear stations is the ultimate responsibility of the **Senior Vice President, Nuclear Generation Department** with responsibilities delegated to each **nuclear site** through the respective **nuclear Site Officer**.

Identification requirements for materials, parts and components important to nuclear safety are stated in specifications, drawings and purchase documents. Specific identification requirements are as follows:

(a) Materials, parts, components, assemblies, and subassemblies shall be identified either on the item or records traceable to the item to show that only correct and accepted items are used and installed.

(b) Some components, such as pressure vessels are identifiable by nameplates as required by applicable codes, or Duke specifications. Materials, parts, and components are traceable from such identification to a specific purchase order to manufacturer's records and to quality assurance records and documentation.

(c) When required by procurement documents, materials are identified by heat, batch or lot numbers which are traceable to the original material. Care is exercised to prevent the duplication of serial numbers. When several parts are assembled, a list of parts and corresponding numbers is included in the documentation.

(d) When required by specifications or codes and standards, identification of material or equipment with the corresponding mill test reports, certifications and other required documentation is maintained throughout the operating life of the material or equipment.

(e) Sufficient precautions will be taken to preclude identifying materials in a manner that will affect the function or quality of the item being identified.

Control of material, parts and components is governed by approved procedures. Specific control requirements include:

(a) Nonconforming or rejected materials, parts, or components are identified to assure that they will not be inadvertently used.

(b) The verification of correct identification of material, parts, and components is required prior to release for assembling, shipping and installation.

(c) Upon receipt, procedures require that materials, parts or components undergo a receipt inspection to assure they are properly identified and that the supporting documentation is available as required by the procurement specifications. ***Items having limited shelf or use life are identified and controlled.***

(d) Each organization which performs an operation that results in a change in the material, part or component is required to make corresponding revisions and/or additions to the documentation record as applicable.

Following receipt inspection, materials, parts and components which are determined to be acceptable are assigned an identifying designation (such as a serial number), as appropriate, in order to provide traceability of each item. In the event that the identification of an item becomes lost or illegible, the item is considered nonconforming and not utilized until proper resolution of the nonconformance. When a designated item is subdivided, each subdivision is identified in accordance with the above requirements. Where physical identification of an item is impractical or insufficient, physical separation, administrative controls or other appropriate means are utilized.

17.3.2.7 Handling, Storage, and Shipping

The quality assurance program requires that nuclear safety-related materials, parts and components be handled, stored and shipped in such a manner that the serviceability and quality assurance traceability of an item is not impaired. Handling, storage and shipping of an item is in accordance with any special requirements identified in documents pertaining to the item. Such requirements may include special handling tools and equipment, special protective coverings and/or special protective environments. ***Items are to be marked or labeled to preserve the item's integrity and indicate the need for any special controls.*** Procedures identify predetermined requirements for handling, preservation, storage, cleaning, packaging, and shipping and are utilized by suitably trained individuals.

Conforming nuclear safety-related materials, parts and components are stored in controlled, segregated areas designated for the storage of such items. Inspections and examinations are performed on a periodic basis to assure that recommended manufacturing shelf life of chemicals, reagents, lubricants, and other consumable materials are not exceeded. These items shall be stored in well ventilated areas which are not in close proximity to safety related structures, systems, or components.

Nonconforming items are identified, segregated, or otherwise controlled in such a manner as to preclude their inadvertent substitution for and use as conforming materials parts and components.

17.3.2.8 Test Control

The operational quality assurance program addresses both preoperational and periodic (surveillance) testing. The program requires that such testing associated with nuclear safety-related structures, systems and components be accomplished in accordance with approved, written procedures and that schedules be provided and maintained in order to assure that all necessary testing is performed and properly evaluated on a timely basis.

Test controls include requirements on the review and approval of test procedures, and on the review and approval of changes to such procedures, as discussed in **section 17.3.2.14**. Also, specific criteria are established with regard to procedure content. Examples of items which must be considered in the preparation and review of procedures include:

(a) References to material necessary in the preparation and performance of the procedure, including applicable design documents.

(b) Tests which are required to be completed prior to, or concurrently with, the specified testing.

(c) Special test equipment required to perform the specified testing.

(d) Limits and precautions associated with the testing.

(e) Station, unit and/or system status or conditions necessary to perform the specified testing.

(f) Criteria for evaluating the acceptability of the results of the specified testing, compatible with any applicable design specifications.

Test procedures contain the following information or require this information be documented:

(a) Requirements and acceptance limits contained in applicable Design and procurement documents.

(b) Instructions for performing the test.

(c) Test prerequisites such as calibrated instrumentation, adequate test equipment and instrumentation including their accuracy requirements, completeness of the item to be tested, suitable and controlled environmental conditions, and provisions for data collection and storage.

(d) Mandatory inspection hold points.

(e) Acceptance and rejection criteria.

(f) Methods of documenting or recording test data and results.

(g) Provisions to assure test prerequisites have been met.

Requirements are also established for verification of test completion and for determining acceptability of tests results. **Test results are reviewed *and accepted* by the testing organization and the *organization* responsible for the item being tested.** In the event that test results do not meet test acceptance criteria, a review of the test, test procedure and/or test results is conducted to determine the cause, required corrective action, **and retest as necessary.**

In addition to the above, after maintenance to, or modification of, nuclear safety-related structures, systems and components certain proof tests, electrical tests, operational tests or other special tests are performed and documented as required to verify the satisfactory performance of the affected items.

17.3.2.9 Measuring and Test Equipment Control

The ***organizations performing safety related work activities have the*** responsibility to assure the required accuracy of tools, gauges, instruments, radiation measuring equipment, and other measuring and test devices affecting the proper functioning of nuclear safety-related structures, systems and components and that a program of control and calibration for such devices is provided. This program includes the following:

(a) Devices are assigned permanent, identifying designations.

(b) Devices are calibrated at prescribed intervals, and/or prior to use, against certified equipment having known, valid relationships to nationally recognized standards. The calibration interval for a device is based on the applicable manufacturer's recommendations. If experience dictates that the manufacturer's recommendations are not appropriate, the calibration interval is changed as necessary.

(c) Devices that have been acceptably calibrated are affixed, where practical, with a tag, or tags, showing the date of calibration, the date the next calibration is due, an indication that the device is within calibration specifications and the identification of the individual who was responsible for performing the calibration. When attaching tags is not practical, the device is traceable by unique identification to the applicable calibration records.

(d) Devices which fail to meet calibration specifications are affixed with a tag, or tags, showing the date of rejection, the reason for rejection and the identification of the individual rejecting the device. "Accepted" and "Rejected" calibration tags are sufficiently different to preclude confusion between them.

(e) Items and processes determined to be acceptable based on measurements made with devices subsequently found to be out of calibration are re-evaluated.

(f) Devices stored under conditions which are in accordance with, or more conservative than, the applicable manufacturer's recommendations.

(g) Devices are issued under the control of responsible personnel so as to preclude unauthorized use.

(h) Devices are shipped in a manner that is in accordance with, or more conservative than, the applicable manufacturer's recommendations.

(i) Records are maintained on each device which identify such items as the device designation and the calibration frequency and specifications. Records are maintained to reflect current calibration status.

(j) As a rule, the calibration program achieves a minimum ratio of 4-to-1 calibration standard accuracy to measuring and test equipment accuracy unless limited by the state of the art; however, when an accuracy ratio of less than 4-to-1 is utilized, an evaluation of the specific case is made and documented.

Installed instrumentation is subject to the requirements of the Technical Specification and is not subject to the tagging requirements discussed in (c) and (d) above. The **Quality Verification Department** verifies implementation of the calibration program through periodic audits.

17.3.2.10 Inspection, Test, and Operating Status

In order to assure that equipment status is clearly evident, and to prevent inadvertent operation, the **operational quality assurance program** requires nuclear safety-related structures, systems and components which are in an other than operable status to be identified as such. This identification may be means of tags, labels, stamps or other suitable methods. Where appropriate, an independent verification of the correct implementation of such identification measures is performed. When tags, labels or stamps are utilized for the identification of equipment status, the issuance and removal thereof is documented in order to assure proper control of such identification

measures. Also, procedures require that the operability of an item removed from operation for maintenance or testing be verified prior to returning the item to normal service.

Inspections and tests required by the written approved procedures which address work activities are infrequently, temporarily deferred. When such a deferral does occur, a discrepancy is considered to exist and documentation of the acceptable completion of the affected work activity is not performed until the discrepancy is resolved.

Measures taken to identify equipment **inspection and test** status by **Nuclear Generation Department** personnel are controlled by the **Nuclear *Generation* Department.** Measures taken by **Generation Services Department** personnel, during the performance of required inspections and quality control activities, to identify equipment status are controlled by the **Generation Services Department.**

17.3.2.11 Special Process Control

The **Nuclear Station Manager** is responsible for directing the organization and performance of the station's program for the control of special processes, and for assuring the necessary qualified personnel are available.

The Generation Services *and Nuclear Generation Departments* are responsible for furnishing qualified personnel, performance of and documentation of Non Destructive *Examination* (NDE).

The **operational quality assurance program** contains or references procedures for the control of special processes such as welding, heat treating, non-destructive examination, coatings, crimping, and cleaning. The program requires that approved, written procedures, qualified in accordance with applicable codes and standards, be utilized when the performance of such processes affects the proper functioning of a station's nuclear safety-related structures, systems, and components. These procedures shall provide for documented evidence of acceptable accomplishment of special processes using qualified procedures, equipment, and personnel.

Personnel performing such activities must be qualified in accordance with applicable codes and standards. Adequate documentation of personnel qualifications is required prior to performance of the applicable special process. Non-destructive examination personnel are certified to required codes and standards.

17.3.2.12 Inspection

In order to assure safe and reliable operation, a program of inspections for nuclear safety-related structures, systems and components is established at each nuclear station. The program addresses:

(a) Inservice inspections required by Section XI of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code.

(b) Inspections to verify compliance with cleanliness criteria.

(c) Inspections to verify compliance with certain instrument and maintenance procedures.

(d) Inspections to verify conformance of materials, parts, and components received at a nuclear station with applicable specifications and requirements.

(e) Inspections to verify the integrity of safety-related structures, systems and components during and/or after maintenance and modification.

The personnel performing these inspections are **examined and certified in their particular category. Current qualification and certification files are maintained for each inspector. Nondestructive examination inspectors are certified in accordance with American Society for Non-destructive Testing (SNT-TC-1A) recommended practice. Written procedures require the test and certification of inspectors in other categories such as Mechanical, Electrical, and Structural as described in the *appropriate* quality assurance *manual*. For cases where inspectors will perform limited functions within a category, they are tested and certified to those limitations. These inspectors are only allowed to perform inspections specifically defined in this limited certification.**

Certification procedures and certifications are approved by Nuclear Generation or Generation Services Department personnel responsible for these processes. These procedures comply with the requirements of applicable codes and standards.

Modifications, repairs and replacements are inspected in accordance with the original design and inspection requirements, or acceptable alternatives. Mandatory inspection hold points are included in the documents addressing the activities being performed, as necessary, and work does not proceed beyond such hold points until satisfactory completion of the required inspection, **disposition of any item not meeting the acceptance criteria, *and any required reinspection*.** Inspection procedures, instructions, and

checklists contain the following information or require this information on inspection reports:

(a) Characteristics to be inspected.

(b) Method of inspection.

(c) Measuring and test equipment information.

(d) Responsibility for the inspection.

(e) Acceptance or rejection criteria.

(f) Identification of required procedures, drawings, specifications, etc..

(g) Signature or initials of inspector.

(h) Record of results of the inspection.

After inspection data is collected and reviewed by **the inspector**, the reports are technically reviewed by ***Site*** **Engineering**.

Inspection activities involving the vendor quality assurance program are evaluated and approved by the **Quality Verification Department**.

17.3.2.13 Corrective Action

Station personnel are responsible for the implementation of the operational quality assurance program as it pertains to the performance of their activities. Specific to this responsibility is the requirement for informing the responsible supervisory personnel and/or for taking appropriate corrective action whenever any deficiency in the implementation of the requirements of the program is determined.

Procedures require that conditions adverse to quality be corrected and action be taken to preclude repetition. **Performance and verification personnel are to:**

(a) Identify conditions that are adverse to quality.

(b) Suggest, recommend, or provide solutions to the problems.

(c) Verify resolution of the issue.

Additionally, performance and verification personnel are to ensure that reworked, repaired, and replacement items are to be inspected and tested in accordance with the original inspection and test requirements or specified alternatives.

For significant incidents occurring during operation which are, or could be, related to the nuclear safety of the station special reports ***are generated.*** These reports:

(a) Contain a summary description of the information relating to the subject incident.

(b) Contain an evaluation of the effects of the incident.

(c) Describe corrective action taken or recommended as a result of the incident.

(d) Describe, analyze and evaluate any significant nuclear safety-related implications of the incident.

Each such report is approved by the responsible **Management** and transmitted to **Site Safety Assurance** ***Manager, Senior Vice President Nuclear Generation***, and to the Nuclear Safety Review Board. Outstanding corrective action commitments made with regard to such incidents are identified and periodically reviewed to assure that the identified corrective actions are properly completed and documented. An identified corrective action commitment is closed out upon written notification by a cognizant, responsible individual or other written documentation, of the satisfactory completion thereof. Closure of corrective action commitments which specifically involve ***other*** **Department(s)** require written notification by the ***other*** **Department(s)** of the satisfactory completion thereof.

Discrepancies revealed during the performance of station operation, maintenance, inspection and testing activities must be resolved prior to verification of the completion of the activity being performed. In the event of the failure of nuclear safety-related structures, systems, and components, the cause of the failure is evaluated and appropriate corrective action taken. Items of the same type are evaluated to determine whether or not they can be expected to continue to function in an appropriate manner. ***This evaluation*** is documented in accordance with applicable procedures.

Nuclear safety-related materials, parts and components which are determined to be nonconforming are identified, segregated or otherwise controlled in such a manner as to prevent installation and/or use. The determination of an item's nonconformance is documented by means of a Problem Investigation Report, which is retained on file by the Nuclear **Generation** Department, and, as appropriate, by tags attached to the item. Nuclear **Generation** Department personnel are notified of any nonconformances identified in accordance with approved procedures.

The **Nuclear Generation Department** maintains a listing of the status of all Problem Investigation Reports. These reports, when complete, identify the

nonconforming material, part or component; applicable inspection requirements; and the resolution, and approval thereof, of the nonconformance. Provisions are established for identifying those personnel with the responsibility and authority for approving the resolution of nonconformances. Until a determination of conformance is made, a nuclear safety-related material, part or component cannot be issued or installed. Tags which are placed on items to identify nonconformances are removed upon resolution.

Information relating to nonconforming materials, parts and components is analyzed by **Nuclear Services** to determine if any discernible trends which might affect quality exist. When recurring nonconformances indicate possible vendor deficiencies, such information is considered in evaluation of vendor acceptability by the **Quality Verification Department.**

17.3.2.14 Document Control

The Topical Report describes Duke's Quality Assurance Program for all phases of Duke's Nuclear Power Plants. This document is certified to meet NRC Quality Assurance Regulations by the **Executive Vice President, Power** ***Generation*** **Group.** ***The Power Generation Administrative Policy Manual establishes the policies and instructions governing activities associated with Duke's nuclear stations and identifies the various departments performing these activities. This manual is approved by the Executive Vice President, Power Generation Group or designee.*** These manuals are considered controlled documents and numbered copies are distributed by cover letter from the **General Manager, Nuclear Services or designee.**

The Safety Analysis Reports are considered controlled documents and are distributed by cover letter from the ***Site Officer*** or his designee.

The Power Generation Administrative Policy Manual and the manuals listed below specify the requirements for the development, review, approval, issue, control, and use of manuals and procedures to implement the requirements contained within the Topical Report.

The Nuclear Procurement Engineering Program Manual (NPEP) contains the policies and procedures that control nuclear procurement. This manual imposes requirements on all departments involved with procurement, including Procurement, Services, and Materials (PSM). This manual is approved by the Senior Vice President, Nuclear Generation or designee.

The Information Systems Quality Assurance Program Manual (ISQAP) is Information Systems' governing procedure for the

development and maintenance of software which supports QA Condition activities (activities associated with nuclear safety, radwaste, fire protection, and seismic structures, systems, and components) as identified in each station's Quality Standards Manual. This manual is approved by the Vice President, *Information Systems* or designee.

The Generation Services Department Manual contains the policies and procedures governing the functions that this department performs such as NDE, calibration, and soils testing in support of the nuclear stations. This manual is approved by the Vice President, *Generation Services* or designee.

The Generation Human Resources Department Manual contains the policies and procedures governing the functions that this department performs such as fitness for duty, security, and fire protection. This manual is approved by the *Director, Generation Human Resources or designee.*

The Power Delivery Department Manual contains the policies and procedures governing the functions this department performs such as maintenance and testing of high voltage equipment. This manual is approved by the Vice President, Power Delivery or designee.

The Quality Verification Department Manual contains the policies and procedures governing the functions this department performs including audits, vendor qualification, and NSRB activities. This manual is approved by the Manager, Quality Verification or designee.

With regard to specific operational activities associated with nuclear safety related structures, systems and components, it is required that such activities be accomplished in accordance with procedures, instructions, drawings, checklists, etc. appropriate to the nature of the activities being performed. As necessary, such documents identify equipment necessary to perform an activity, specify conditions which must exist prior to and during performance of an activity, and include quantitative and/or qualitative acceptance criteria, compatible with any applicable design specifications, for determining that the activity addressed is satisfactorily accomplished. Also, the procedure will require independent verification by qualified personnel of the performance of specific procedural steps. Examples of documents established concerning quality related operational activities are:

(a) Preoperational Test Procedures

(b) Periodic Test Procedures

(c) Operating Procedures

(d) Emergency Procedures

(e) Maintenance Procedures

(f) Instrument Procedures

(g) ***Radiation Protection*** Procedures

(h) Alarm Responses

(i) Chemistry Procedures

The frequency of procedure reviews shall be specified and may vary depending on the type and complexity of the activity involved, and may vary with time as a given plant reaches operational maturity. Review of procedures can be accomplished in several ways, including (but not necessarily limited to) documented step-by-step use of the procedure (such as occurs when the procedure has a step-by-step checkoff associated with it), or detailed scrutiny of the procedure as part of a documented training program, drill, simulator exercise, or other such activity. A revision of a procedure can constitute a procedure review.

In addition to the above, files of drawings and vendor documents applicable to the station's structures, systems and components are maintained at each nuclear station and are utilized, as appropriate, in the performance of quality related activities.

Station procedures which address activities associated with nuclear safety related structures, systems and components are subjected to a well-defined, established review and approval process. This process includes the requirement that each procedure be reviewed ***for adequacy*** by an individual/group other than the individual/group which prepared the procedure, but who may be from the same organization as the individual/group which prepared the procedure. As appropriate, such procedures are also reviewed by personnel from **Nuclear Services,** by other departments within the Company, by the Nuclear Safety Review Board or by vendor personnel. Final approval of a procedure is by ***designated*** **station management.** Major changes to approved procedures also require final approval by ***designated*** station management. Maintenance, instrumentation and modification procedures are reviewed by **Engineering** to determine the need for inspections. Procedures developed and implemented **for inspection** identify the certifications, inspection methods, acceptance criteria, and provide means for documenting inspection results.

In the case of station activities of a non-recurring nature, e.g., preoperational tests, only an original copy of an approved procedure is available for use. Such copies are controlled and are replaced whenever the procedure is superseded by a new issue. For activities which are of a recurring nature, e.g., surveillance testing, current original copies of approved procedures are maintained in a controlled manner. Copies of these original copies are then utilized in the performance of work activities. When such "working copies" involve the documentation of compliance with acceptance criteria contained in the procedure, the "working copy" of the procedure utilized is compared with the applicable original copy to assure validity. Station procedures administratively control and provide means to document this comparison. Such completed procedures are retained - See **Section 17.3.2.15**. When recurring work activities do not involve documentation of compliance with acceptance criteria within the procedure, e.g., certain operating activities, issuance of the applicable "working copies" is controlled to assure that only current copies are available for use.

Drawings and vendor documents, as-built drawings and changes thereto, are normally received from **Engineering** for distribution and use. Distribution indices are established and utilized for such documents within each station in order to assure their proper distribution and use. A master file of drawings is maintained and a master index, updated regularly, is used to identify drawings, revisions, number of copies, and distribution. Design and procurement documents are maintained, controlled, and are updated, as necessary, by **Engineering.** As ***documents*** are received from **Engineering** all superseded copies shall be destroyed or clearly marked superseded.

A master copy of all controlled documents is maintained in the document control area of each station. Copies of controlled documents are distributed by station document control personnel utilizing a distribution index to assure proper distribution and use. Reviews are performed regularly and documented to assure proper functioning of the control system.

17.3.2.15 Records

Each nuclear station is required to maintain adequate identifiable and retrievable quality assurance records. Such records are managed in a controlled and systematic manner by means of a station Master File. Access to, and use of, this file is controlled. Records required to be retained include:

(a) Nuclear safety-related preoperational testing records.

(b) Records of modifications to station nuclear safety-related structures, systems and components.

(c) Radiation monitoring records.

(d) Personnel radiation exposure records.

(e) Records of radioactive releases and waste disposal.

(f) Isotopic and physical inventory records of special nuclear materials.

(g) Records of the qualifications, experience and training of appropriate station personnel.

(h) Current calibrations for measuring and test devices.

(i) Copies of approved ***purchasing documents*** for items requiring quality assurance certification.

(j) Maintenance histories on nuclear safety-related instrumentation and electrical and mechanical equipment.

(k) Records of special processes affecting nuclear safety-related structures, systems and components.

(l) Copies of purchase specifications.

(m) Operating records and logbooks.

(n) Periodic testing records.

(o) Records of inspections.

(p) Copies of approved and of completed station procedures.

(q) Copies of audit reports received from the **Quality Verification Department**, and responses thereto.

(r) Copies of reports concerning station activities sent to the Nuclear Regulatory Commission.

(s) Copies of drawings and vendor documents.

(t) Copies of station incident reports.

(u) Records of inservice inspections.

(v) Records of quality control inspections.

(w) Records such as vendor documentation packages and inspection reports, piping isometric drawings, welding records, etc. compiled during the design and construction of a nuclear station.

(x) Records of ***in-plant reviews*** performed on station activities.

(y) Records of the qualifications of quality control and other appropriate personnel.

Test **inspection, *and* *NDE*** records maintained by the station contain the following:

(a) A description of the activity performed.

(b) The date and results of the activity.

(c) Information relating to discrepancies identified with regard to the activity.

(d) An identification of the data recorder(s) or inspector(s) involved in the activity.

(e) Evidence of the completion, and verification thereof, of the activity.

(f) An identification of the acceptability of the results of the activity.

Records of activities within the purview of the Quality Verification Department are maintained by the Quality Verification Department in a manner similar to that described above for station quality assurance records. These records include:

(a) *Nuclear Safety Review Board meeting minutes.*

(b) Nuclear Safety Review Board Reports.

(c) Audit reports for audits conducted under the cognizance of the Nuclear Safety Review Board.

(d) Vendor audit reports and surveillances.

(e) Audit reports of Duke Power Company activities.

(f) Audit and Vendor personnel qualification records.

Records of activities within the purview of the Generation Services Department are maintained by the Generation Services Department in a manner similar to that described above for station quality assurance records. These records include:

(a) NDE inspection personnel certification records.

(b) Calibration standard records and *Measuring and Test Equipment* (M & T E) calibration records.

(c) Environmental compliance records.

Records of activities within the purview of the Information Systems Department are maintained by the Information Systems Department in a manner similar to that described above for station quality assurance records. These records include:

(a) Software requirements.

(b) Software test plans.

(c) Software test results.

(d) Program/Module specifications and source codes.

Records of activities within the purview of the Procurement, Services and Materials Department are maintained by the Procurement, Services and Materials Department in a manner similar to that described above for station quality assurance records. These records include:

(a) Records of Materials and Equipment (*MEDB*) Catalog.

The retention times for the various quality assurance records are in accordance with applicable requirements, including those of the Code of Federal Regulations, a station's Technical Specifications and established national codes and standards. To the maximum extent practicable, records are stored such that they are protected from possible destruction by causes such as fire, flooding, theft, insects and rodents and from possible deterioration due to a combination of extreme variations in temperature and humidity conditions.

Record storage areas shall be evaluated by a qualified Fire Protection Engineer to assure the records are adequately protected from damage. The evaluation shall include the following considerations as a minimum:

(a) Structural collapse.

(b) Unprotected steel (suspended floor slab or roof).

(c) Fire frequency of similar occupancies.

(d) Quantities of combustible materials.

(e) Ceiling height/Room configuration which would contribute to heat dissipation.

(f) Fire detection.

(g) Fixed fire suppression systems.

(h) On-site fire fighting organizations including available equipment.

This evaluation shall be documented for each record storage area (includes satellite file locations).

17.3.3 SELF ASSESSMENT

17.3.3.1 Methodology

The Self-Assessment process encompasses internal and corporate audits, independent review committee activities, *in-plant reviews*, and other independent assessments. This process is to *confirm to management that activities affecting quality comply with the quality assurance program and that the quality assurance program has been implemented effectively.* These functions are directed by the Manager, Quality Verification and the *Managers of Safety Assurance.* The assessment activities are performed in accordance with instructions and procedures *by organizations independent of the areas being assessed. Organizations performing self-assessment activities are technically and performance oriented, with the primary focus on the quality of the end product and a secondary focus on procedures and processes.*

17.3.3.2 Assessment

17.3.3.2.1 Nuclear Safety Review Board

The *Executive Vice President, Power Generation Group*, appoints a Nuclear Safety Review Board to serve as a nuclear safety review and audit backup to the normal operating organization. The Nuclear Safety Review Board reviews proposed tests and experiments, proposed station modifications, and proposed changes to procedures, when such involve an unreviewed safety question. Also, the Board reviews reportable occurrences and violations of a station's Technical Specifications and makes recommendations to prevent recurrence. **The organizational structure, administrative requirements, responsibilities and authorities specific to the Board are detailed below.**

The NSRB shall function to provide independent review and audit of designated activities in the areas of:

(a) Nuclear power plant operations.

(b) Nuclear engineering.

(c) Chemistry and radiochemistry.

(d) Metallurgy.

(e) Instrumentation and control.

(f) Radiological safety.

(g) Mechanical and electrical engineering.

(h) Administrative control and quality assurance practices.

The NSRB shall report to and advise the Executive Vice President Power Generation Group on those areas of responsibility specified below.

The Director, members, and alternate members of the NSRB shall be appointed in writing by the Executive Vice President Power Generation Group; and shall have an academic degree in an engineering or physical science field; *or equivalent training and experience* and in addition, shall have a minimum of 5 years technical experience, of which a minimum of 3 years shall be in one or more areas given above.

No more than two alternates shall participate as voting members in NSRB activities at any one time.

The NSRB shall be composed of at least five members, including the Director. Members of the NSRB may be from the Nuclear Generation Department, from other departments within the Company, or from external to the Company. A maximum of one member of the NSRB may be from the Nuclear Station staff.

Staff assistance may be provided to the NSRB in order to *perform its function in an expeditious manner.*

The NSRB shall meet at least once per 6 months *at intervals not to exceed eight months.*

The quorum of the NSRB necessary for the performance of the NSRB review and audit functions shall consist of the Director, or his designated alternate, and at least four other NSRB members including alternates.

The NSRB shall be responsible for the review of:

(a) The safety evaluation for: (1) changes to procedures, equipment, or systems, and (2) tests or experiments completed under the provision of Section 50.59, 10 CFR to verify that such actions did not constitute an unreviewed safety question.

(b) Proposed changes to procedures, equipment, or systems which involve an unreviewed safety question as defined in Section 50.59, 10 CFR.

(c) Proposed tests or experiments which involve an unreviewed safety question as defined in Section 50.59, 10 CFR.

(d) Proposed changes in Technical Specifications or the Operating License.

(e) Violations of Codes, regulations, orders, Technical Specifications, license requirements, or of internal procedures or instructions having nuclear safety significance.

(f) Significant operating abnormalities or deviations from normal and expected performance of unit equipment that affect nuclear safety.

(g) All reportable events.

(h) All recognized indications of an unanticipated deficiency in some aspect of design or operation of structures, systems, or components that could affect nuclear safety.

(i) Quality Verification Department audits relating to station operations and actions taken in response to these audits.

(j) Reports of activities performed under the provisions of *the* Technical Specifications.

Audits of unit activities shall be performed under the cognizance of the NSRB. These audits shall encompass:

(a) The conformance of unit operation to provisions contained within the Technical Specifications and applicable license conditions.

(b) The performance, training, and qualifications of the entire unit staff.

(c) The results of actions taken to correct deficiencies occurring in unit equipment, structures, systems, or method of operation that affect nuclear safety.

(d) The performance of activities required by the Operational Quality Assurance Program to meet the criteria of Appendix B, 10 CFR Part 50.

(e) The Emergency Plan and implementing procedures.

(f) The Security Plan and implementing procedures.

(g) The Facility Fire Protection programmatic controls including the implementing procedures by qualified licensee personnel.

(h) The fire protection equipment and program implementation utilizing either a qualified offsite licensee fire protection engineer or an outside independent fire protection consultant. An outside independent fire protection consultant shall be used at least every third year.

(i) The Radiological Environmental Monitoring Program and the results thereof.

(j) The Offsite Dose Calculation Manual and implementing procedures.

(k) The Process Control Program and implementing procedures for processing and packaging of radioactive wastes.

(1) The performance of activities required by the Quality Assurance Program for effluent and environmental monitoring.

(m) Any other area of unit operation considered appropriate by the NSRB or Manager, Quality Verification.

Records of NSRB activities shall be prepared, approved, and distributed as indicated below:

(a) Minutes of each NSRB meeting shall be prepared, approved, and forwarded to the Senior Vice President, Nuclear Generation, Vice President, Nuclear Site, Manager, Quality Verification; and to the Executive Vice President, Power Generation Group within 14 days following each meeting.

(b) Reports of NSRB reviews shall be prepared, approved, and forwarded to the Manager, Quality Verification, and to the Executive Vice President, Power Generation Group within 14 days following completion of the review.

(c) Audit reports for audits under the cognizance of the NSRB shall be forwarded to the Senior Vice President, Nuclear Generation; Executive Vice President, Power Generation Group; and to the management positions responsible for the areas audited within 30 days after completion of the audit by the auditing organization.

17.3.3.2.2 **Internal** Audits

Duke's Quality Assurance Program requires a comprehensive system of planned and periodic internal audits for all phases of station operations and supporting activities.

All organizational units conducting quality assurance activities are evaluated with a system of audits. These audits are performed to determine the effective implementation of all applicable criteria of 10CFR50, Appendix B. Periodic audits of activities or records of processes (e.g., welding, maintenance, development of design, record management, or system testing), to verify compliance and effectiveness of the implementation of the Quality Assurance Program are performed. **Internal** audits are initiated under the direction of the ***Audit Quality Verification Manager***. The **Quality Verification** ***Department Manager*** may initiate special audits or expand upon the scope of an existing audit. The scope of each audit is determined by the responsible ***Lead Auditor***, under the direction of the ***Audit Quality Verification Manager***. Additionally, the scope of audits performed under the cognizance of the Nuclear Safety Review Board (NSRB) are evaluated for compliance with **NSRB** requirements by the NSRB staff. The lead auditor directs the audit team in developing checklists, instructions, plans and in the performance of the audit. The audit shall be conducted in accordance with checklists; the scope may be expanded upon by the audit team during the audit, if needed. One or more persons comprise an audit team, one of whom shall be qualified lead auditor.

Audits of selected aspects of operational phase activities are performed with a frequency commensurate with safety significance and in such a manner as to assure that an audit of all safety related functions is completed within a period of two (2) years. The audit system is reviewed periodically and revised as necessary to assure coverage commensurate with current and planned activities.

The audit team concludes with a post-audit conference between the audit team and responsible management. The conference includes a brief discussion of audit results, including any deficiencies and recommendations. The audit results are documented in a report.

Within thirty (30) days of the post-audit conference, a report is issued to the responsible management with copies sent to the Vice President of the audited ***Site or*** department and **other management as appropriate**.

Within thirty days after receipt of the audit report, responsible management replies in writing to the ***Audit Quality Verification Manager***, describing corrective action and an implementation schedule. When necessary, after receipt of the management reply, a re-evaluation is made to verify implementation of corrective action. This re-evaluation is documented. **The**

audit is closed with a letter to the responsible management. All pertinent correspondence, checklists, and reports related to the audit are placed in the Quality **Verification** file.

Audit data are analyzed and the resulting reports indicating any quality problems and the effectiveness of the QA program are reported to management ***through the Integrated Safety Assessments,*** for review and assessment. **This data is also used to modify the audit schedule as necessary to assess potential weaknesses.**

17.3.3.2.3 Safety Assurance

Safety Assurance, through Safety Review Group, and Compliance, monitors the day to day overall performance of each nuclear station.

The Safety Review Group investigates significant occurrences and problems to determine the root cause(s) and to identify actions necessary to prevent recurrence. The Safety Review Group also performs in-plant reviews consisting of checking documents, records, and work in progress to determine that quality assurance requirements are being properly implemented. Work in progress includes such activities as welding, maintenance, system testing, station operation, station modifications, refueling, and record management. These investigations and reviews are documented in reports and submitted to Management, NRC, and other authorities as appropriate. The coordination of the identification and correction of problems under Duke's Corrective Action process is also performed within the Safety Review Group.

The Regulatory Compliance Group is responsible for the preparation, issue, and maintenance of all site licensing documents; providing site personnel with interpretations on the licensing documents, and the preparation and submittal of violation responses.

The Environmental Compliance Group is responsible for the overall coordination of the site Environmental Management Programs to assure compliance with applicable Federal, State, and Local requirements.

The Emergency Preparedness Group is responsible for the overall coordination of the Site Emergency Plan to assure compliance with applicable FEMA and NRC requirements.

17.3.3.2.4 Corporate Audit

Corporate audits are initiated and directed by the **Executive Vice President, Power Generation Group.** This audit is performed **annually** on the Quality **Verification** Department.

The **Executive Vice President, Power Generation Group** selects the audit team and appoints a team leader. The audit team consists of at least three qualified individuals, none of which is from the area audited.

The scope of the audit is determined by the **Executive Vice President, Power Generation Group** and the audit team. In each a review of **Internal** Quality ***Verification*** audits is included. The audit is performed with preapproved checklists, instructions, or plans.

The audit team conducts a post-audit conference with the responsible management of the area audited to discuss the audit results, including deficiencies. The audit team prepares checklists and the audit report. The report is sent to the **Executive Vice President, Power Generation Group and the Senior Vice President, Nuclear Generation.**

The **Executive Vice President, Power Generation Group** determines the need for corrective action and reevaluation. Necessary corrective action and reevaluation are performed as required.

All pertinent correspondence, checklists, and reports related to the audit are placed in the quality verification file.

17.3.3.2.5 Integrated Safety Assessments

Integrated Safety Assessments are performed **twice annually** to assess the operational performance from a nuclear safety point of view. The ***Nuclear Generation*** **Department** has the lead responsibility for coordinating these assessments. The Integrated Safety Assessment Group is composed of representatives from **Quality Verification, and** ***Nuclear Generation*** all of which are independent of station line management. Assessment results are provided to nuclear station management teams, Department Heads, **Executive Vice President, Power Generation Group**, and the Nuclear Safety Review Board.

17.3.3.2.6 Self-Initiated Technical Audits

Self-Initiated Technical Audits are performed to assess the operational readiness and functionality of a safety system, component, or structure at a nuclear station. The **Manager, Quality Verification** is responsible for the development of the audit plan and has the responsibility for organizing and

directing the audits and providing audit team leaders. Appropriate departments will supply audit team members who have the needed expertise and level of experience. Audit Reports will be distributed to the appropriate management and the Nuclear Safety Review Board.

17.3.3.2.7 Vendors

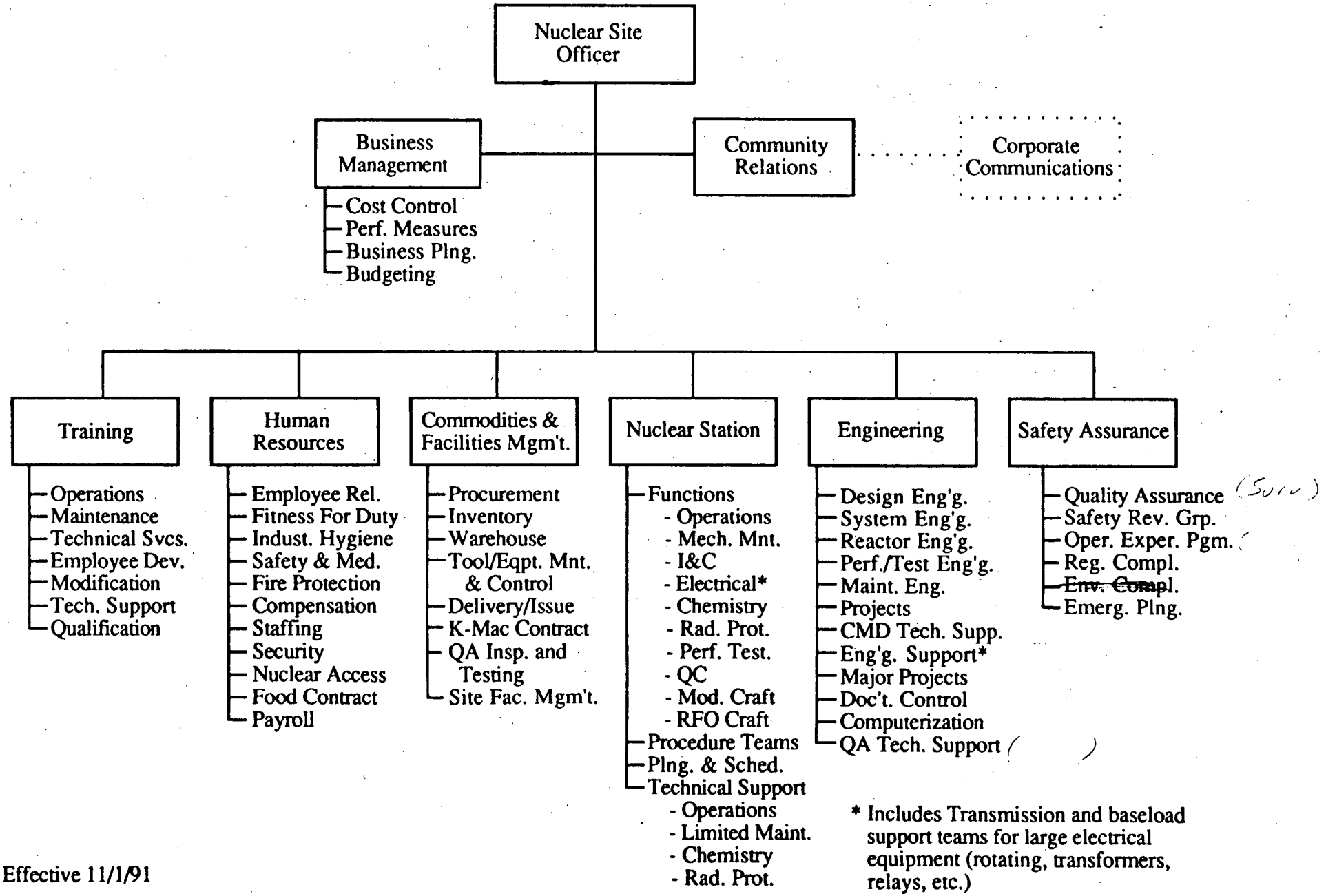
The vendor quality assurance programs are evaluated and monitored by the ***Quality Verification Department, Vendors*** to assure that quality assurance requirements are met. Vendor Quality Assurance Programs require a system of periodic and planned vendor and sub-vendor audits conducted by persons not directly involved in the activity being audited.

Duke assures that vendor quality assurance programs provide for surveillance, evaluation and approval of subvendors supplying items and services. This assurance is accomplished by reviewing vendor audits of subvendors as part of the pre-bid audit, by making vendor control of subvendor work a criterion for vendor approval or disapproval, and by making vendor surveillance of subvendor a requirement of the purchase requisition.

Quality Verification Department, Vendors maintains surveillance and performs audits on suppliers' quality assurance programs including the activities of their vendors and subvendors, to assure that operations are in compliance with specified quality assurance requirements. In the case of an audit of a supplier, any deficiencies noted by the auditor are clearly outlined in writing and given to the suppliers quality assurance organization, which takes appropriate steps to resolve the deficiencies.

A reaudit is performed, **if appropriate**, to verify the implementation of the corrective action.

Typical Nuclear Site Organization



* Includes Transmission and baseload support teams for large electrical equipment (rotating, transformers, relays, etc.)

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