

TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

400 Chestnut Street Tower II

August 15, 1979

Mr. Harold R. Denton, Director  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Dear Mr. Denton:

In the Matter of the  
Tennessee Valley Authority

)  
)

Docket Nos. 50-259  
50-260  
50-296

Enclosed are 50 copies of TVA's response to your letter to Reactor Licensees dated June 29, 1979. We apologize for the delay of submitting the enclosed corporate capability information. As you may be aware, the nuclear power operations organization within TVA is undergoing vast reorganization at this time. The enclosed information reflects our nuclear operation corporate structure as it is approved to date. However, as indicated, we will submit an update to the enclosed information as soon as it becomes available. If you have any further questions, please get in touch with us.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

*L. M. Mills*

L. M. Mills, Manager  
Nuclear Regulation and Safety

Enclosure

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## ENCLOSURE

### I. MANAGEMENT RESOURCES (OFFSITE)

The Office of Power is responsible for the overall operation of the nuclear plants. The functions and responsibilities of the positions within the Office of Power which are responsible for the routine operation of nuclear plants are described further in Section I.A below. To supplement this organization, TVA has developed an emergency organization whose purpose is to provide effective, timely response to nuclear plant emergencies. The emergency organization is further described in I.B below.

#### A. Office of Power Organization

The organization chart shown on Figure 1 includes only those Office of Power positions directly involved in the operation and maintenance of TVA's nuclear plants. The responsibilities of each position are described in the following paragraphs. Because the Division of Nuclear Power has been recently established, several of the positions have not been permanently filled. The experience of the persons selected for these positions will be provided when available.

##### Director, Division of Nuclear Power

Responsibilities - is responsible to the Manager of Power Operations for the safe, efficient, and environmentally sound operation and maintenance of TVA nuclear generating plants.

##### Experience - BSEE

- 3 years - operator and instructor, TVA fossil plant
- 6 years - electrical engineer and maintenance supervisor, TVA fossil plant
- 3 years - assistant superintendent, TVA fossil plant
- 6 years - superintendent and assistant project manager, Experimental Gas Cooled Reactor
- 2 years - Assistant Chief, Power Plant Maintenance Branch
- 3 years - Superintendent, Browns Ferry Nuclear Plant
- 6 years - Chief, Nuclear Generation Branch
- 2 years - Assistant Director, Division of Power Production

##### Assistant Director, Nuclear Operations

Responsibilities - is responsible to the Director, Division of Nuclear Power for the overall operation of the nuclear generating plants and the nuclear training facilities within the TVA system. He is responsible for ensuring that planning related to operation of the nuclear generating plants is adequate to provide maximum safety, efficiency, economy, and availability

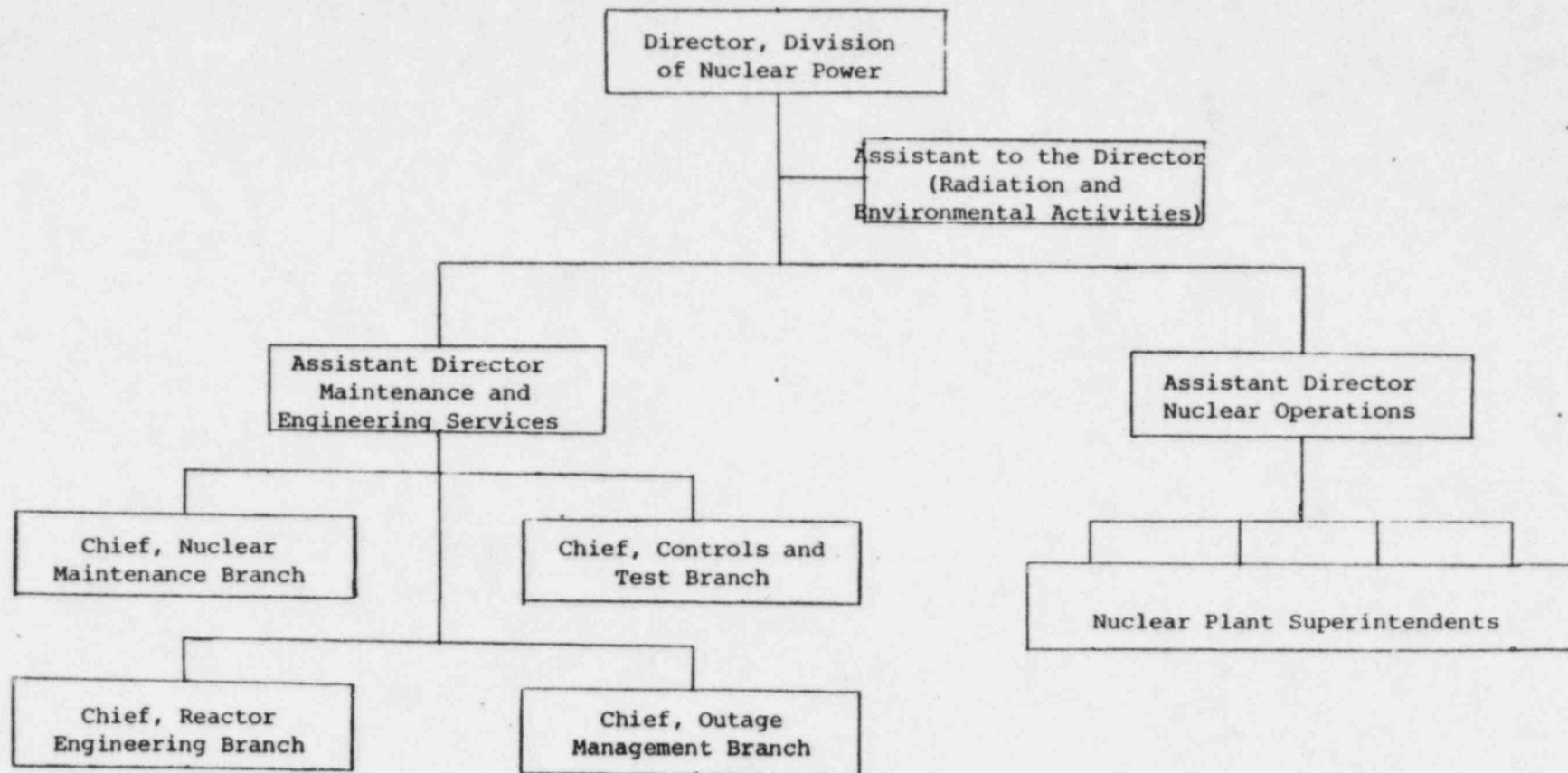


Figure 1

of equipment, and that training of division personnel is consistent with regulatory requirements and TVA policy. He provides direct supervision of each nuclear plant superintendent.

Experience - BSEE, various GE-BWR training courses

- 3 1/2 years - Electrical Engineer, TVA fossil plant
- 3 years - Assistant Electrical Maintenance Supervisor, TVA fossil plant
- 3 years - Instrument Engineer, Browns Ferry Nuclear Plant
- 3 years - Assistant Results Supervisor, Browns Ferry Nuclear Plant
- 1 1/2 years - QA Supervisor, Browns Ferry Nuclear Plant
- 1 1/2 years - Assistant Superintendent, Browns Ferry Nuclear Plant
- 2 years - Superintendent, Browns Ferry Nuclear Plant

Assistant Director, Maintenance and Engineering Services

Responsibilities - is responsible to the Director, Division of Nuclear Power for the overall planning, organization, control, and implementation of division support activities related to nuclear generating plant maintenance, engineering, and outage management. He provides direct supervision of the Nuclear Maintenance Branch, the Controls and Test Branch, the Reactor Engineering Branch, and the Outage Management Branch.

Experience - BS Engineering Physics, Oak Ridge School of Reactor Technology, various GE-BWR training courses

- 6 years - Nuclear Engineer, Experimental Gas Cooled Reactor Project
- 2 years - Mechanical Engineer, Power Production Central Office
- 3 years - Assistant Results Supervisor, Browns Ferry Nuclear Plant
- 2 years - Assistant to Chief, Plant Engineering Branch
- 4 years - Assistant to Chief, Nuclear Generation Branch
- 2 years - Assistant Chief, Nuclear Generation Branch

Assistant to the Director, Radiation and Environmental Activities

Responsibilities - serves as the principal staff assistant to the Director, Division of Nuclear Power, for radiation and environmental matters associated with the operation of nuclear generating plants. He coordinates radiological emergency planning activities for the division.

Experience - To be provided later.

Chief, Controls and Test Branch

Responsibilities - is responsible to the Assistant Director, Maintenance and Engineering Services, for developing engineering

standards and providing a variety of mechanical, chemical, controls, instrumentation, environmental, and metallurgical services for the division. He is responsible for providing technical assistance and advice on the more difficult systems engineering problems at the nuclear plants.

Experience - To be provided later.

Chief, Nuclear Maintenance Branch

Responsibilities - is responsible to the Assistant Director, Maintenance and Engineering Services, for developing programs, standards, and procedures for the maintenance of all electrical and mechanical nuclear plant equipment to ensure maximum safety, economy, efficiency, and availability of the generating units. He is responsible for reviewing the maintainability aspects of new plant designs and recommending modifications to improve the maintainability of existing plants. He is responsible for providing technical assistance and guidance to the nuclear plants on difficult maintenance engineering problems.

Experience - To be provided later.

Chief, Outage Management Branch

Responsibilities - is responsible to the Assistant Director, Maintenance and Engineering Services, for scheduling, planning, and implementing major maintenance and refueling outages; and for coordination and installation of all design changes and equipment modifications at nuclear plants. He is also responsible for providing maintenance engineering manpower support to the plant staffs, as necessary.

Experience - To be provided later.

Chief, Reactor Engineering Branch

Responsibilities - is responsible to the Assistant Director, Maintenance and Engineering Services, for ensuring the adequacy of engineering plans and methods used in the operation of TVA's reactors and reactor-related systems; for providing assistance to the plants for core operation to achieve maximum energy output while maintaining fuel integrity; for providing rod patterns, operating strategies, and core performance analyses; for acquiring or developing calculational methods for this work; and for maintaining process computer software. He is responsible for ensuring the overall adequacy and consistency of startup test and retest programs and for developing requirements and programs for fuel accountability and low-level radioactive waste management. He is also responsible for coordinating the division's safety analysis report review; performing operational safety analyses; and evaluating the adequacy of design and operation of safety-related systems.

Experience - To be provided later.



## B. Emergency Organization

To provide the quick response which might be required in the event of a nuclear plant emergency, TVA has developed an emergency organization which is explained in detail in the RADIOLOGICAL EMERGENCY PLAN for each nuclear plant. This emergency organization supplements, rather than replaces, the organization for routine operation and maintenance of TVA's nuclear plants. It is designed to allow more direct communication within TVA and outside of TVA to ensure a timely flow of information and assistance. The Division Emergency Control Center (DECC) Director is authorized to request assistance directly from any other organization within TVA and to commit the resources of TVA as necessary to respond to an emergency. The Central Emergency Control Center Director communicates directly with outside State, local, and Federal government agencies to ensure proper coordination of efforts and timely flow of accurate information.

In addition to the onsite and offsite technical resources described in Part II, the organizations described below can provide assistance during emergencies as requested by the DECC Director. The capabilities and responsibilities of these organizations are described in more detail in the Radiological Emergency Plan for each nuclear plant.

Division of Medical Services - provides guidance and planning for first aid and medical problems arising from emergencies.

Office of General Counsel - provides advice on all legal matters connected with the emergency.

Division of Water Management - schedules the operation of the reservoir system to assist in reducing the concentration and duration of radioactive contamination during an emergency.

Division of Power System Operations - assists in the operation and procurement of communication services and facilities.

Division of Property and Services - provides supplies and transportation services as necessary during an emergency.

Division of Engineering Design - provides engineering assistance in obtaining system design information and designing special tools, equipment, shielding, containers, or other devices needed during an emergency.

Division of Power Construction - can provide personnel, material, and heavy equipment to site if required during an emergency.

Division of Occupational Health and Safety - provides onsite and offsite health physics assistance as requested by the DECC Director, the CECC Director, or the Environs Emergency Director.

## II. TECHNICAL RESOURCES

### A. Plant Staff

Table 1 contains an organization chart for the Browns Ferry Nuclear Plant, and a description of the duties and responsibilities of each of the major plant sections. Table 2 contains education and experience summaries for "Managers" and "Professional-Technical" personnel at the plant.

### B. Offsite (Nonplant staff)

Because of a reorganization in progress within TVA's operating divisions, the information requested on technical resources is not currently available. Table 3 contains a summary of the education and experience of the offsite technical staff which was prepared in April 1978. An updated table will be submitted when the current reorganization is complete and the information becomes available.

## 13.2 Organization and Responsibility

### 13.2.1 Plant Operation, Organization, and Responsibility

#### 13.2.1.1 General

TVA is a corporate agency of the Federal Government whose major policies, programs, and organization are determined by a full-time, three-member Board of Directors. Members of the Board are appointed by the President and confirmed by the Senate for 9-year terms. The general organization of the Tennessee Valley Authority is shown in figure 13.2-1.

The Division of Power Production within the Office of Power is responsible for operating and maintaining TVA's power plants. The organizations of the Office of Power and the Division of Power Production are shown in figures 13.2-2 and 13.2-3, respectively.

#### 13.2.1.2 Plant Organization

The Browns Ferry Nuclear Plant organization chart is shown in figure 13.2-4. The principal groups that function directly under the supervision of the plant superintendent and assistant plant superintendent are the operations section, the power plant results section, the mechanical maintenance section, and the electrical maintenance section. Staff services are provided by an Administrative Staff, a Quality Assurance Staff, and a health physics unit. The latter is under the administrative supervision of the TVA Radiological Hygiene Branch. The Browns Ferry Plant organization follows the pattern developed through experience and in use at all TVA steam generating plants. The responsibilities and personnel qualification requirements of each of these groups are generally described in the following paragraphs.

#### 13.2.1.3 Plant Superintendent

The plant superintendent is responsible for the management of the Browns Ferry Nuclear Plant. He is responsible for safeguarding the general public and station personnel from radiation exposure, and for adherence to all requirements of the operating licenses and technical specifications. The plant superintendent shall have 10 years of responsible power plant experience, of which a minimum of 3 years shall be nuclear power plant experience. A maximum of 4 years of the remaining 7 years of experience may be fulfilled by academic training on a one-for-one time basis. This academic training shall be in an engineering or scientific field generally associated with power production. The plant superintendent shall have acquired the experience and training normally required for examination by the NRC for a Senior Reactor Operator's License whether or not the examination is taken.



If the assistant plant superintendent meets the nuclear power plant experience and NRC examination requirements established for the plant superintendent, the requirements of the plant superintendent may be reduced, so that only 1 of his 10 years of experience need be nuclear power plant experience and he need not be eligible for NRC examination.

The plant superintendent or the assistant plant superintendent should have a recognized baccalaureate or higher degree or the equivalent in an engineering or scientific field generally associated with power production.

#### 13.2.1.4 Assistant Plant Superintendent

The assistant plant superintendent assists the plant superintendent in planning, coordinating, and directing the plant activities. In the absence of the plant superintendent, he is responsible for management of the plant activities.

The assistant superintendent must have a good knowledge of the nuclear processes involved in the generation of steam, reactor safety, and control systems. He shall have a minimum of 8 years responsible power plant experience of which a minimum of 3 years shall be nuclear plant experience. A maximum of 4 years of the remaining 5 years of the power plant experience may be fulfilled by satisfactorily completing academic or related technical training on a one-for-one time basis. A degree in science or engineering is desirable. He or the plant superintendent shall be capable of fulfilling the requirements of a Senior Reactor Operator License whether or not the examination is taken. If the plant superintendent has the required 3 years nuclear plant experience, the requirements of the assistant plant superintendent may be reduced so that only 1 of his 8 years of experience needs to be nuclear plant experience.

#### 13.2.1.5 Operations Section

The operations section is responsible for all plant operations. It provides operating personnel for the preoperational testing, fuel loading, startup, and operational testing performed under the technical direction of the General Electric Company. It is responsible for coordinating and scheduling the training program for all operations personnel. It provides the nucleus of emergency teams such as the plant rescue and fire fighting organizations.

Within the operations section are five shift crews. The minimum shift crew requirements for 1, 2, and 3 unit plant operation are given in table 6.8.A of the Browns Ferry Technical Specifications.

A licensed senior operator will be on duty at the station at all times. There will also be one licensed operator in the control

operators or others assigned to him. He is responsible for the safe and efficient operation of one unit and appurtenant equipment which he normally operates from the main control room. He may perform work outside the main control room as assigned.

The unit operator has completed the requirements of TVA's conventional operator training plan to the unit operator level of competence. This is the same comprehensive work-study program described for the shift engineers in paragraph 13.2.1.5.3. Specialized training, as indicated in Section 13.3, is used to supplement work experiences, as required, to ensure that nuclear knowledge is adequate for the responsibilities of the position. At the time of the initial fuel loading, the unit 1 operators shall have a high school diploma or equivalent and two years of power plant experience, of which a minimum of one year shall be nuclear power plant experience. The latter will consist of a basic nuclear course, a plant technology course, the simulator course, and an extensive prestartup, onsite plant familiarization training phase. It is planned for these operators to take the hot license extra after the initial startup of unit 1. Subsequently, unit operators will complete comparable training and be licensed before assuming the responsibilities of the position on a licensed unit.

#### 13.2.1.5.6 Assistant Unit Operators

The assistant unit operator is under the immediate supervision of the unit operator and the general supervision of the assistant shift engineer. He normally has very little supervision of others, but may supervise the work of laborers or others assigned to him. He performs work requirements and assists in the operation of equipment within well-defined areas throughout the plant. He must have completed the 2-year Student Generating Plant Operator Training Program as stipulated in the formal TVA training plan or have had three years of steam plant operating experience, six months of which was in a position similar to that of assistant unit operator. At the time of the initial fuel loading or of assuming the full responsibilities of the position in the licensed plant, the assistant unit operators working within the plant (water treatment plant excepted), will have minimum of a high school diploma or equivalent and have completed a basic nuclear course, plant technology course and have had several weeks onsite plant familiarization. This position does not require a reactor operator license.

#### 13.2.1.5.7 Technicians and Repairmen

Each TVA technical and repairman is a skilled journeyman. These experienced journeymen will predominately be transferees from other TVA generating plants and installations. The primary source of new journeymen is the TVA apprenticeship program. This program, jointly administered by a TVA labor-management council, normally requires in excess of four years for completion. The

program requires the apprentice to progress through a series of on-the-job work and written assignments designed so that he will develop skills equal to the recognized journeyman standard. Related classroom and correspondence lesson assignments provide the technical information needed in the actual work being done on the job. Only employees who successfully complete the apprenticeship program are promoted to journeymen.

In addition, the TVA Service Shops Section, located some 40 miles distant at Muscle Shoals, Alabama, is the principal offsite source of manpower for planned or emergency plant outages. This section provides shop and field services for major repairs at all TVA generating plants. The work force of this section varies as the workload demands, but it usually consists of approximately 50 electricians, 54 machinists, 13 machinist welders, 2 blacksmiths, 9 boilermakers, 9 iron workers, and 7 steamfitters.

#### 13.2.1.6 Power Plant Results Section

The power plant results section is responsible for plant and equipment performance tests, in-plant fuel operations involving fuel receipt and storage, core loading, core calculations, and power distribution control; other responsibilities include waste management, chemical control, and instrument maintenance which includes the instrumentation associated with the computer, reactor, and turbine control equipment. It is responsible for the preparation and maintenance of up-to-date procedures related to these responsibilities.

The power plant results section provides technical support for plant operations. It carries out a comprehensive program of plant tests, studies, and investigation for the purpose of monitoring the reactor, engineered safeguards, and plant operating conditions to assure compliance with the operating licenses and technical specifications and to improve the efficiency of the plant. The plant results section is under the direction of the power plant results supervisor. He is assisted by a chemical engineer, an instrument engineer, a physicist, and engineering associates.

#### Power Plant Results Supervisor

The Power Plant Results Supervisor serves as supervisor of the Plant Results Section and as a staff engineer in providing engineering advice and assistance to the power superintendent. He is responsible for initiating, planning, and coordinating the technical support function of the plant including technical training programs. His experience and training must provide him with a good understanding of nuclear reactor technology, hazards, safeguards, and licensing requirements, and a knowledge of the control systems used in a nuclear plant. The results supervisor will be particularly concerned with reactor engineering. He will



be responsible for analysis of the performance of the reactor and turbine cycle and associated equipment during the test, startup, and operation of the plant.

The Power Plant Results Supervisor should have a minimum of 8 years of responsible power plant experience of which a minimum of 2 years shall be nuclear power plant experience. He should be a graduate with a degree in science or engineering. A maximum of 4 years of the remaining 6 years of power plant experience may be fulfilled by satisfactorily completing academic training on a one-for-one basis.

#### 13.2.1.7 Power Plant Maintenance Section

The power plant maintenance section is responsible for all plant maintenance work and inspection in the plant. This includes the coordination of scheduling and conduct of the periodic tests on the systems assigned to this section which are associated with the reactor and engineered safeguards, as required by the technical specifications and licenses. The section develops and carries out a preventative maintenance that assures all repair work and replacement parts are consistent with the intent of applicable codes and basic requirements of the original equipment. This section maintains a record file on all electrical and mechanical equipment, inservice tests, inspections, and maintenance reports.

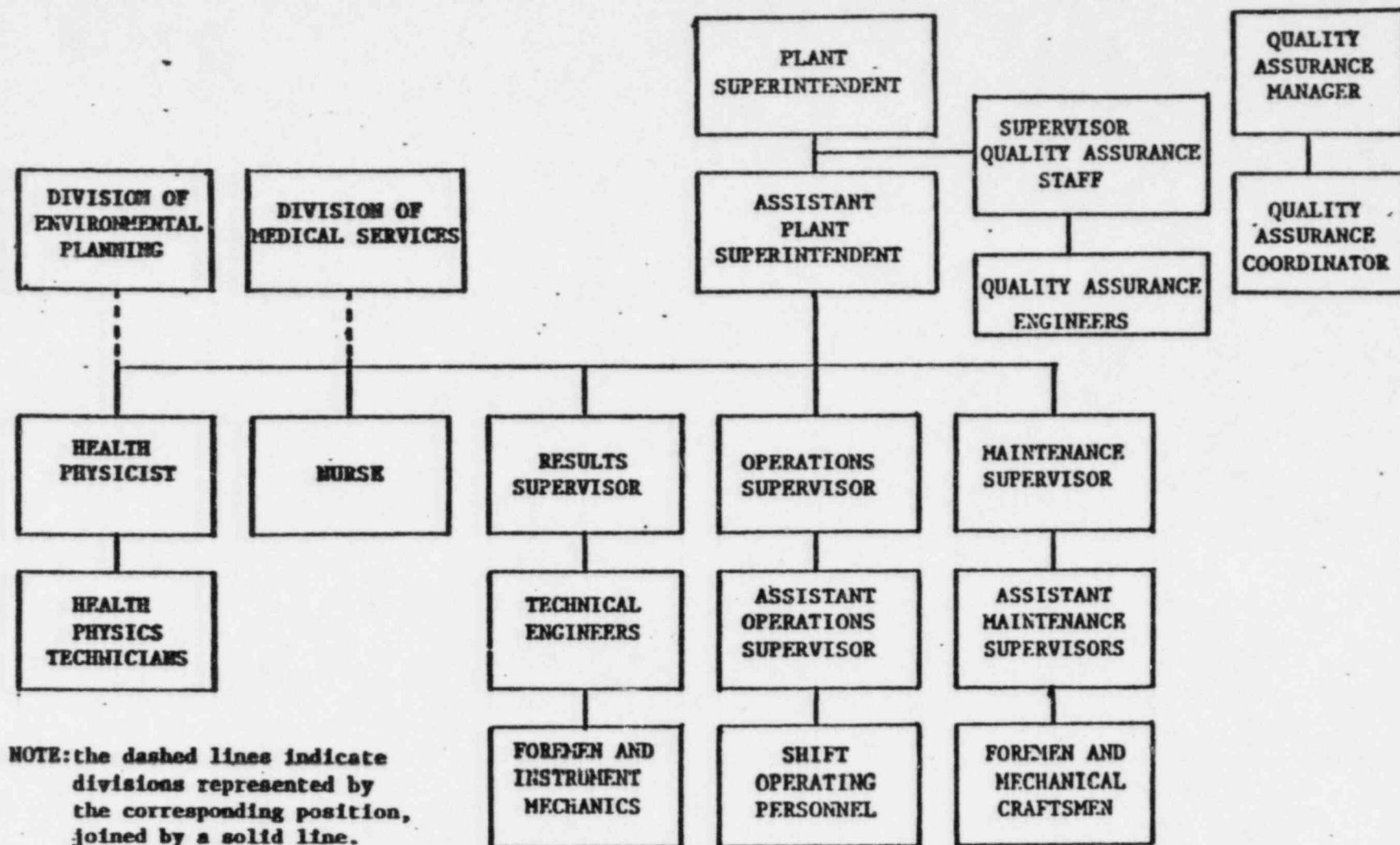
#### Power Plant Maintenance Supervisor

The power plant maintenance supervisor is responsible for all maintenance work and inspection in the plant. He is responsible for maintaining safe working conditions for his employees and for their adherence to safe working practices. He is assisted in his work by two assistant maintenance supervisors. The maintenance supervisor must have a thorough knowledge of the operation and maintenance of all plant equipment.

He shall have a minimum of 7 years of responsible power plant experience or applicable industrial experience, including at least 1 year of nuclear power plant experience. A maximum of 2 years of the remaining 6 years of power plant or industrial experience may be fulfilled by satisfactory completion of academic or related training on a one-for-one basis.

#### 13.2.1.8 Radiological Hygiene Branch

The Radiological Hygiene Branch is responsible for radiological hygiene activities at the plant. It develops and applies radiation standards and procedures; reviews proposed methods of plant operation; participates in development of plant documents and assists in the plant training program, providing specialized training in radiation protection. It conducts comprehensive environmental monitoring before, during, and after plant startup



BFP-67

**BROWNS FERRY NUCLEAR PLANT  
FINAL SAFETY  
ANALYSIS REPORT**

**FUNCTIONAL ORGANIZATION  
FOR BROWNS FERRY NUCLEAR PLANT  
FIGURE 13.2-4  
(Revised by Amendment 67)**



Table 2-1

PLANT STAFF POSITIONS

1. Superintendent

A. Education -

BS Electrical Engineering  
11 weeks BWR Product Service Training  
12 weeks BWR Nuclear Control and Instrument Course  
13 weeks Nuclear Instrumentation Training - AEC-ORNL  
3 1/2 years Electrical Engineer, fossil plant

B. Experience -

3 years Assistant Electrical Maintenance Supervisor,  
fossil plant  
3 1/2 years Electrical Engineer, fossil plant  
13 weeks Nuclear Instrumentation Training - AEC-ORNL  
3 years Instrument Engineer, Browns Ferry Nuclear Plant  
3 years Assistant Results Supervisor, BFNP  
1 1/2 years Quality Assurance Supervisor, BFNP  
1 1/2 years Assistant Plant Superintendent, BFNP

2. Assistant Plant Superintendent

A. Education -

2 years undergraduate study, BWR Technology Course

B. Experience -

3 years Shift Engineer, fossil plant  
2 years Personnel Officer, TVA  
2 years Power Plant Operations Specialist, TVA  
14 1/2 years Fossil Power Plant Operator  
7 years Operations Supervisor, Sequoyah Nuclear Plant

3. Assistant Plant Superintendent

A. Education -

BS Physics/Math  
MS Radiation Biology  
U.S. Navy Nuclear Propulsion School  
U.S. Navy Electronics School  
U.S. NRC Operations License

Table 2-2

B. Experience -

- 1 year Electronics Technician
- 5 years Navy Reactor Operator
- 6 years Sr. Instrumentman/Reactor Supervisor
- 1 year Radiation Safety Officer
- 1 year Sr. Nuclear Engineer, Carolina Power and Light
- 3 years Environmental and Radiation Control Supervisor,  
H. B. Robinson Nuclear Plant
- 1 year Radiation Waste Management, INEL
- 1 year Sr. Health Physicist, INEL
- 1 year Health Physics Supervisor, BFNP
- 2 years Quality Control Supervisor, BFNP

4. Operations Supervisor

A. Education -

TVA Steam Plant Operator Training Program

B. Experience -

- 2 years Shift Engineer, TVA fossil plant
- 4 years Assistant Shift Engineer, TVA fossil plant
- 2-1/2 years Instructor TVA Steam Plant Operator Training  
Program
- 5 years Shift Engineer, Experimental Gas Cooled Reactor
- 3 years Assistant Operations Supervisor, BFNP

5. Assistant Operations Supervisor

A. Education -

TVA Steam Plant Operator Training Program  
12-week Basic Nuclear Course  
5-week BWR Technology

B. Experience -

- 4-1/2 years Assistant Shift Engineer, TVA fossil plant
- 1-1/2 years Instructor TVA Steam Plant Operator Training  
Program
- 7 years Shift Engineer, BFNP

6. Mechanical Engineer

A. Education -

BS Mechanical Engineering BWR Technology Course

Table 2-3`

B. Experience -

7 years Instrument Engineer, fossil plant  
15 years Design Engineer (Aircraft)  
2 years Instrument Engineer BFNP  
9 months Test Engineering, BFNP

7. Nuclear Engineer

A. Education -

BS Nuclear Engineering

B. Experience -

4 months Mechanical Results Section, BFNP

8. Nuclear Engineer

A. Education -

BS Nuclear Engineering  
BS Mechanical Engineering  
MS Nuclear Engineering  
MS Mechanical Engineering

B. Experience -

1 year Graduate Teaching Assistant in Thermodynamics and  
Heat Transfer  
2 years Graduate Teaching Assistant in Reactor Physics Lab  
4 months Chemical Results Section, BFNP  
4 months Reactor Engineering Section, Chattanooga  
1 year Mechanical Results Section, BFNP

9. Mechanical Engineer

A. Education -

BS Nuclear Engineering

B. Experience -

4 years Nuclear Engineering Department, Union Electric  
1 1/2 years Mechanical Results Section, BFNP

Table 2-4

10. Chemical Engineer

A. Education -

AB Chemistry

B. Experience -

1 year Radiological Support Officer, Army  
1 1/2 years Chemical Lab Analyst, BFNP  
5 years Chemical Engineer, BFNP

11. Chemical Engineer

A. Education -

BS Chemistry  
USN Basic Nuclear Power School  
USN Nuclear Prototype Training

B. Experience -

1 year Chemical and Radiological Controls Officer, Navy  
1 year Reactor Controls Officer, Navy  
1 1/2 years Electrical Officer, Navy  
2 years Chemical Engineer, BFNP

12. Chemical Engineer

A. Education -

BS Chemical Engineering

B. Experience -

2 months Chemical Engineer, BFNP

13. Chemical Engineer

A. Education -

BS Chemical Engineering

B. Experience -

1 year Chemical Engineer, BFNP

14. Chemical Engineer

A. Education -

BS Chemical Engineering  
BS Chemistry

Table 2-5

B. Experience -

9 months Research in dielectrophoresis, U.S. Bureau of  
Mines

1 1/2 years Chemical Engineer Trainee, BFNP

15. Chemical Engineer

A. Education -

BS Chemical Engineer

B. Experience -

3 years Chemical Engineer, BFNP

16. Nuclear Engineer

A. Education -

BS Nuclear Engineering

B. Experience -

1 1/3 years Nuclear Engineer, BFNP

2 1/2 years Radiological Engineer, Navy

17. Nuclear Engineer

A. Education -

BS Nuclear Engineering  
U.S. Navy Advanced Electronics School

B. Experience -

2 years Nuclear Engineer, BFNP

18. Nuclear Engineer

A. Education -

BS Nuclear Engineering

B. Experience -

2 1/2 years Nuclear Engineer, BFNP

19. Nuclear Engineer

A. Education -

BS & MS Nuclear Engineering



Table 2-6

- B. Experience -
  - 2 years Nuclear Engineer, BFNP
- 20. Nuclear Engineer
  - A. Education -
    - BS Physics
    - MS Nuclear Engineer
  - B. Experience -
    - 1 1/2 years Nuclear Engineer, BFNP
- 21. Nuclear Engineer
  - A. Education -
    - BS Engineering Science
    - MS Nuclear Science and Engineering
  - B. Experience -
    - 6 months Quality Control, BFNP
    - 3 years Nuclear Engineer, BFNP
    - 1 year Reactor Engineer Supervisor, BFNP
- 22. Nuclear Engineer
  - A. Education -
    - BS Nuclear Engineer
  - B. Experience -
    - 3 years PWR Design Engineer, Combustion Engineering
    - 1 1/2 years Nuclear Engineer, BFNP
- 23. Assistant Power Plant Results Supervisor
  - A. Education -
    - BS Chemical Engineering
    - 16 Weeks BFNP Radio-Chemistry Course
  - B. Experience -
    - 4 years Chemical Engineer, Dow Chemical Company
    - 7 years Chemical Engineer, BFNP

Table 2-7

24. Power Plant Results Supervisor

A. Education -

BS Mechanical Engineering  
BS Administrative Engineering  
TVA Steam Plant Operator Training Program  
5 months ORSORT Student  
GE Station Nuclear Engineers Course

B. Experience -

2 years Instrument and Test Engineer, TVA fossil plant  
7 years Engineering Laboratory Supervisor, TVA fossil plant  
2 years Staff Engineer, TVA Central Office  
6 years Operations Supervisor, EGCR  
11 years Power Plant Results Supervisor, BFNP

25. Power Plant Electrical Maintenance Supervisor

A. Education -

BS Electrical Engineering

B. Experience -

2 years Electronics Maintenance  
2 1/2 years Electrical Engineer, Maintenance, BFNP  
3 years Assistant Electrical Maintenance Supervisor,  
BFNP

26. Electrical Engineer

A. Education -

BS Electrical Engineering

B. Experience -

1 year Civil Engineering Technician  
6 months Electrical Maintenance Engineer, fossil  
1 1/2 years TVA Division of Engineering Design  
4 years Electrical Maintenance Engineer, BFNP

27. Electrical Engineer

A. Education -

BS Electrical Engineering

B. Experience -

Electrical Engineer, BFNP

Table 2-3

28. Electrical Engineer

A. Education -

BS Electrical Engineering

B. Experience -

Electrical Engineer, Alabama Power Company  
Electrical Engineer, Southern Co. Services  
Electrical Engineer, Engelhard Ind.  
Electrical ENGINEER, BFNP

29. Electrical Engineer

A. Education -

BS Electrical Engineering

B. Experience -

1 1/2 years Electrical Engineer, BFNP

30. Electrical Engineer

A. Education -

BS Electrical Engineering

B. Experience -

4 years Field Test Engineer, BFNP  
1 1/2 years Electrical Engineer, Maintenance, BFNP

31. Electrical Engineer

A. Education -

BS Electrical Engineering

B. Experience -

2 years Electrical Construction Engineer, BFNP  
7 years Electrical Maintenance Engineer, BFNP

32. Assistant Power Plant Electrical Maintenance Supervisor

A. Education -

High School

Table 2-9

B. Experience -

- 5 years Electrical Apprenticeship
- 9 years Electrician in Powerhouse Maintenance
- 4 years Maintenance Electrician, BFNP
- 4 years Maintenance Electrical Foreman, BFNP

33. Instrument Engineer

A. Education -

BS Electrical Engineering

B. Experience -

- 4 years U.S. Navy Electronics Technician
- 1 year Test Engineer, GE
- 2 years Field Engineer, GE
- 4 years Instrument Engineer, BFNP

34. Instrument Engineer

A. Education -

BS Electrical Engineering

B. Experience:

- 9 months Electronics Control Systems
- 2 years Electronics and Electrical Equipment, fossil

35. Power Plant Instrument Maintenance Supervisor

A. Education -

BS Electrical Engineering  
5 weeks BWR Technology

B. Experience -

- 8 years Computer and Instrumentation
- 11 years Instrument Engineer, BFNP

36. Instrument Engineer

A. Education -

BS Electrical Engineering

B. Experience -

- 3 years Instrument Engineering Support, Central Office
- 1 year Nuclear Power Plant Simulator, TVA
- 2 years Instrument Maintenance Engineer, BFNP

Table 2-10

37. Assistant Instrument Maintenance Supervisor

A. Education -

5 weeks BWR Technology

B. Experience -

8 years Operations and Instrumentations at TVA plants  
7 years Instrumentation Maintenance, BFNP

38. Assistant Instrument Maintenance Supervisor (Computer)

A. Education -

8 weeks BWR Instrumentation  
8 weeks BWR Process Computer Software  
4 weeks NSS Software Technology  
4 weeks Reactor Operations Sem.

B. Experience -

6 years Programming, North American Rockwell Corporation  
1 year Reactor Simulation Design, GE  
5 years Design and Implementation of NSS Computer Software,  
GE  
2 years Computer Engineer, BFNP

39. Mechanical Engineer

A. Education -

BS Mechanical Engineering

B. Experience -

5 years Construction Engineer, BFNP  
6 months System Engineer, BLNP  
1 year Maintenance Engineer, BFNP

40. Assistant Maintenance Supervisor

A. Education -

Supervisor Training Course

B. Experience -

30 years total Pipe Fitter  
9 years Supervisor for Mechanical Constructor  
2 years Steamfitter Foreman, BFNP  
6 years Piping Assistant Superintendent, BFNP  
1 year Piping Assistant Superintendent, WBNP  
1 1/2 years Steamfitting Foreman, BFNP



Table 2-11

41. Mechanical Engineering

A. Education -

BS Engineering Science

B. Experience -

2 years Mechanical Maintenance, BFNP

42. Mechanical Engineer

A. Education -

BS Mechanical Engineering

B. Experience -

21 months fossil plant

17 months Mechanical Maintenance Section, BFNP

43. Mechanical Engineer

A. Education -

BS Mechanical Engineering

B. Experience -

2 years Nuclear Power Plant Maintenance, BFNP

44. Maintenance Supervisor (Mechanical)

A. Education -

BS Mechanical Engineering

B. Experience -

1 year Staff Engineer, Central Office

1 year Mechanical Maintenance Engineer, fossil

5 years Mechanical Engineer, BFNP

4 years Assistance Maintenance Supervisor, BFNP

TABLE 3 - EDUCATION SUMMARY  
EFFECTIVE APRIL 1978 (sheet 1)

GROUP AND NUMBER OF PERSONNEL	DEGREES HELD		
	BACCALAUREATE LEVEL	MASTERS LEVEL	DOCTORATE LEVEL
Reactor Engineering Staff Nuclear Generation Branch - 23	Nuclear Engineering - 14 Electrical Engineering - 2 Engineering Physics - 2 Chemical Engineering - 1 Chemistry - 1 Engineering Science - 1 Physics - 1 Physics and Math - 1 Mechanical Engineering - 1	Nuclear Engineering - 7 Nuclear Science and Engineering - 1	
Preoperational Test Staff Nuclear Generation Branch - 40	Electrical Engineering - 16 Mechanical Engineering - 11 Nuclear Engineering - 6 Marine Engineering - 1 Engineering Physics - 1 Physics - 1	Electrical Engineering - 2 Nuclear Engineering - 1	
Nuclear Operations Staff Nuclear Generation Branch - 3			
Chemical Section Plant Engineering Branch - 12	Chemistry - 5 Chemical Engineering - 4	Chemistry - 2 Physics - 1	Chemistry - 2 Nuclear Chemistry - 1 Environmental Hygiene - 1
Mechanical Section Plant Engineering Branch - 12	Mechanical Engineering - 9 Engineering Physics - 1 Marine Engineering - 1		

TABLE 3

(sheet 2)

GROUP AND NUMBER OF PERSONNEL	DEGREES HELD		
	BACCALAUREATE LEVEL	MASTERS LEVEL	DOCTORATE LEVEL
Structural Section Plant Engineering Branch - 11	Mechanical Engineering - 3 Civil Engineering - 2 Engineering - 2 Industrial Engineering - 1 Engineering Physics - 1 Engineering Mechanics - 1		
Instrument and Controls Sections Plant Engineering Branch - 61	Electrical Engineering - 41 Nuclear Engineering - 2 Math - 3 Business Management - 2 Mechanical Engineering - 2 Computer Science - 1 Technical Training - 3 High School - 5	Electrical Engineering - 1 Business Administration - 1	
Special Projects Section Plant Engineering Branch - 11	Mechanical Engineering - 6 Chemical Engineering - 2 Biology - 1 Industrial Technology - 1 Accounting - 1	Mechanical Engineering - 3 Chemical Engineering - 1 Safety Engineering - 1	
Test Section Plant Engineering Branch - 22	Mechanical Engineering - 12 Math - 1 Aeronautical Engineering - 1 Pre Law - 1	Mechanical Engineering - 1	
Economy and Statistical Section Plant Engineering Branch - 8	Mechanical Engineering - 3 Math - 2	Nuclear Science - 1 Math - 1	Statistics - 1
211 TOTAL TECHNICAL SUPPORT PERSONNEL			

TABLE 3 - EXPERIENCE SUMMARY  
EFFECTIVE APRIL 1978

(sheet 3)

GROUP AND NUMBER OF PERSONNEL	MANYEARS OF EXPERIENCE			
	TOTAL UTILITY EXPERIENCE		NON-UTILITY EXPERIENCE	
	NUCLEAR POWER FIELD	OTHER UTILITY EXPERIENCE	NUCLEAR POWER FIELD	OTHER ENGINEERING FIELDS
Reactor Engineering Staff Nuclear Generation Branch - 23	91.25	6.0	41	7
Preoperational Test Staff Nuclear Generation Branch - 40	180.25	130.25	43.75	95
Nuclear Operations Staff Nuclear Generation Branch - 3	24	25	0	0
Chemical Section Plant Engineering Branch - 12	63.25	82.50	37.50	44.00
Mechanical Section Plant Engineering Branch - 12	31.50	161.5	5	53
Structural Section Plant Engineering Branch - 11	40.75	148.25	6.50	25.00
Instrument and Controls Section Plant Engineering Branch - 61	106.85	121.5	42.5	171.5

TABLE 3 (sheet 4)

GROUP AND NUMBER OF PERSONNEL	MANYEARS OF EXPERIENCE			
	TOTAL UTILITY EXPERIENCE		NON-UTILITY EXPERIENCE	
	NUCLEAR POWER FIELD	OTHER UTILITY EXPERIENCE	NUCLEAR POWER FIELD	OTHER ENGINEERING FIELDS
Special Projects Section Plant Engineering Branch - 11	0	61	0	49
Test Section Plant Engineering Branch - 22	29	76.25	1	69.5
Economy & Statistical Section Plant Engineering Branch - 8	0	13	0	0
TOTALS FOR 211 TECHNICAL SUPPORT PERSONNEL	566.85	825.25	177.25	514.0