

September 11, 1987

Docket Nos. 50-259/260/296

Mr. S. A. White
Manager of Nuclear Power
Tennessee Valley Authority
6N 38A Lookout Place
1101 Market Street
Chattanooga, Tennessee 37402-2801

Dear Mr. White:

SUBJECT: CHANGES TO ADMINISTRATIVE CONTROLS SECTION OF TECHNICAL SPECIFICATIONS (TAC 56027, 56028, 56029)

Re: Browns Ferry Nuclear Plant Units 1, 2, and 3

The Commission has issued the enclosed Amendments Nos. 138, 134, and 109 to Facility Operating Licenses Nos. DPR-33, DPR-52, and DPR-68 for the Browns Ferry Nuclear Plant, Units 1, 2, and 3, respectively. These amendments are in response to your application dated September 27, 1984 as supplemented January 17, June 2, and December 10, 1986 (TS-201). Minor changes were made to proposed Specifications 6.5.1.6.b and k, 6.5.3.1 and 6.8.1.1 to clarify the Specifications. These changes were discussed between the Office of Special Projects, Project Managers and Mike May (licensee) on September 8, and September 11, 1987, and accepted by the licensee.

The amendments change the Technical Specifications to show recent organization changes, provide improvements and clarification to the administrative controls section and reformat the administrative controls section to be more in line with Standard Technical Specifications.

A copy of the Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's Bi-Weekly Federal Register Notice.

Sincerely,
Original signed by: Gerald E. Gears for

John A. Zwolinski, Assistant Director
for Projects
TVA Projects Division
Office of Special Projects

- Enclosures: *see Lic Amnds*
1. Amendment No. 138 to License No. DPR-33
 2. Amendment No. 134 to License No. DPR-52
 3. Amendment No. 109 to License No. DPR-68
 4. Safety Evaluation

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John with changes discussed with G.G. 9/11/87

JG

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JAZwolinski
9/11/87

Gerald E. Gears



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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Manager of Nuclear Power
Tennessee Valley Authority
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Chattanooga, Tennessee 37402-2801

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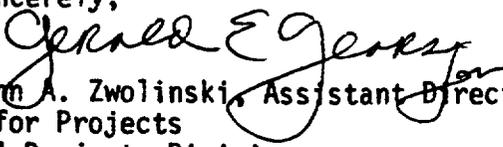
Re: Browns Ferry Nuclear Plant Units 1, 2, and 3

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John A. Zwolinski, Assistant Director
for Projects
TVA Projects Division
Office of Special Projects

Enclosures:

1. Amendment No. 138 to License
No. DPR-33
2. Amendment No. 134 to License
No. DPR-52
3. Amendment No. 109 to License
No. DPR-68
4. Safety Evaluation

cc w/enclosures:
See next page

Mr. S. A. White
Tennessee Valley Authority

Browns Ferry Nuclear Plant
Units 1, 2, and 3

cc:
General Counsel
Tennessee Valley Authority
400 West Summit Hill Drive
E11 B33
Knoxville, Tennessee 37902

Regional Administrator, Region II
U.S. Nuclear Regulatory Commission
101 Marietta Street, N.W.
Atlanta, Georgia 30323

Mr. R. L. Gridley
Tennessee Valley Authority
5N 157B Lookout Place
Chattanooga, Tennessee 37402-2801

Resident Inspector/Browns Ferry NP
U.S. Nuclear Regulatory Commission
Route 12, Box 637
Athens, Alabama 35611

Mr. H. P. Pomrehn
Tennessee Valley Authority
Browns Ferry Nuclear Plant
P.O. Box 2000
Decatur, Alabama 35602

Mr. Richard King
c/o U.S. GAO
1111 North Shore Drive
Suite 225, Box 194
Knoxville, Tennessee 37919

Mr. M. J. May
Tennessee Valley Authority
Browns Ferry Nuclear Plant
P.O. Box 2000
Decatur, Alabama 35602

Mr. D. L. Williams
Tennessee Valley Authority
400 West Summit Hill Drive
W10 B85
Knoxville, Tennessee 37902

Chairman, Limestone County Commission
P.O. Box 188
Athens, Alabama 35611

Claude Earl Fox, M.D.
State Health Officer
State Department of Public Health
State Office Building
Montgomery, Alabama 36130



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-259

BROWNS FERRY NUCLEAR PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No.138
License No. DPR-33

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Tennessee Valley Authority (the licensee) dated September 27, 1984 as supplemented January 17, June 2 and December 10, 1986, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-33 is hereby amended to read as follows:

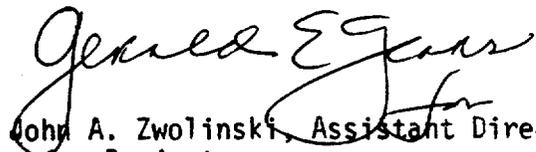
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(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 138, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 90 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION


John A. Zwolinski, Assistant Director
for Projects
TVA Projects Division
Office of Special Projects

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 11, 1987

ATTACHMENT TO LICENSE AMENDMENT NO. 138

FACILITY OPERATING NO. DPR-33

DOCKET NO. 50-259

Revise the Appendix A Technical Specifications by removing the pages identified below and inserting the enclosed pages. The revised pages are identified by the captioned amendment number and contain marginal lines indicating the area of change. Overleaf pages* are provided to maintain document completeness.

Remove

iii
iv
v
vi
vii
viii
3.2/4.2-3
3.2/4.2-4
3.2/4.2-5
3.2/4.2-6
3.8/4.8-1
3.8/4.8-2
3.8/4.8-3
3.8/4.8-4
3.8/4.8-5
3.8/4.8-6
3.11/4.11-3
3.11/4.11-4
3.11/4.11-5
3.11/4.11-6
3.11/4.11-7
3.11/4.11-8
3.11/4.11-12
3.11/4.11-13
3.11/4.11-14
3.11/4.11-15

6.0-1 thru 6.0-23

Insert

iii*
iv
v
vi*
vii
viii
3.2/4.2-3
3.2/4.2-4*
3.2/4.2-5
3.2/4.2-6
3.8/4.8-1*
3.8/4.8-2
3.8/4.8-3
3.8/4.8-4
3.8/4.8-5
3.8/4.8-6
3.11/4.11-3
3.11/4.11-4*
3.11/4.11-5*
3.11/4.11-6
3.11/4.11-7
3.11/4.11-8
3.11/4.11-12
3.11/4.11-13*
3.11/4.11-14*
3.11/4.11-15

6.0-1 thru 6.0-34

Section

Page No.

C.	Coolant Leakage	3.6/4.6-9
D.	Relief Valves	3.6/4.6-10
E.	Jet Pumps	3.6/4.6-11
F.	Recirculation Pump Operation	3.6/4.6-12
G.	Structural Integrity	3.6/4.6-13
H.	Seismic Restraints, Supports and Snubbers	3.6/4.6-15
3.7/4.7	Containment Systems	3.7/4.7-1
A.	Primary Containment	3.7/4.7-1
B.	Standby Gas Treatment System	3.7/4.7-13
C.	Secondary Containment	3.7/4.7-17
D.	Primary Containment Isolation Valves	3.7/4.7-18
E.	Control Room Emergency Ventilation	3.7/4.7-19
F.	Primary Containment Purge System	3.7/4.7-21
G.	Containment Atmosphere Dilution System (CAD)	3.7/4.7-22
H.	Containment Atmosphere Monitoring (CAM) System H ₂ Analyzer	3.7/4.7-24
3.8/4.8	Radioactive Materials	3.8/4.8-1
A.	Liquid Effluents	3.8/4.8-1
B.	Airborne Effluents	3.8/4.8-3
C.	Radioactive Effluents - Dose	3.8/4.8-6
D.	Mechanical Vacuum Pump	3.8/4.8-6
E.	Miscellaneous Radioactive Materials Sources	3.8/4.8-7
F.	Solid Radwaste	3.8/4.8-9
3.9/4.9	Auxiliary Electrical System	3.9/4.9-1
A.	Auxiliary Electrical Equipment	3.9/4.9-1
B.	Operation with Inoperable Equipment	3.9/4.9-10
C.	Operation in Cold Shutdown	3.9/4.9-17
3.10/4.10	Core Alterations	3.10/4.10-1
A.	Refueling Interlocks	3.10/4.10-1

<u>Section</u>	<u>Page No.</u>
B. Core Monitoring	3.10/4.10-4
C. Spent Fuel Pool Water	3.10/4.10-7
D. Reactor Building Crane	3.10/4.10-8
E. Spent Fuel Cask	3.10/4.10-9
F. Spent Fuel Cask Handling-Refueling Floor	3.10/4.10-10
3.11/4.11 Fire Protection Systems	3.11/4.11-1
A. High Pressure Fire Protection System	3.11/4.11-1
B. CO ₂ Fire Protection System	3.11/4.11-4
C. Fire Detectors	3.11/4.11-6
D. Deleted	3.11/4.11-7
E. Fire Protection Systems Inspection	3.11/4.11-8
F. Deleted	3.11/4.11-8
G. Air Masks and Cylinders	3.11/4.11-8
H. Continuous Fire Watch	3.11/4.11-9
I. Open Flames, Welding and Burning in the Cable Spreading Room	3.11/4.11-9
5.0 Major Design Features	5.0-1
5.1 Site Features	5.0-1
5.2 Reactor	5.0-1
5.3 Reactor Vessel	5.0-1
5.4 Containment	5.0-1
5.5 Fuel Storage	5.0-1
5.6 Seismic Design	5.0-2

ADMINISTRATIVE CONTROLS

<u>SECTION</u>		<u>PAGE</u>
<u>6.1</u>	<u>RESPONSIBILITY</u>	6.0-1
<u>6.2</u>	<u>ORGANIZATION</u>	6.0-1
6.2.1	Corporate.....	6.0-1
6.2.2	Plant Staff.....	6.0-1
<u>6.3</u>	<u>PLANT STAFF QUALIFICATIONS</u>	6.0-4
<u>6.4</u>	<u>TRAINING</u>	6.0-4
<u>6.5</u>	<u>PLANT REVIEW AND AUDIT</u>	6.0-4
6.5.1	Plant Operation Review Committee (PORC).....	6.0-4
6.5.2	Nuclear Safety Review Board (NSRB).....	6.0-10
6.5.3	Technical Review and Approval of Procedures.....	6.0-16
<u>6.6</u>	<u>REPORTABLE EVENT ACTIONS</u>	6.0-17
<u>6.7</u>	<u>SAFETY LIMIT VIOLATION</u>	6.0-18
<u>6.8</u>	<u>PROCEDURES/INSTRUCTION AND PROGRAMS</u>	6.0-19
6.8.1	Procedures.....	6.0-19
6.8.2	Drills.....	6.0-20
6.8.3	Radiation Control Procedures.....	6.0-20
6.8.4	Quality Assurance Procedures - Effluent and.....	
	Environmental Monitoring.....	6.0-22
<u>6.9</u>	<u>REPORTING REQUIREMENTS</u>	6.0-23
6.9.1	Routine Reports.....	6.0-23
	Startup Reports.....	6.0-23
	Annual Operating Report.....	6.0-24
	Monthly Operating Report.....	6.0-25
	Reportable Events.....	6.0-25
	Radioactive Effluent Release Report.....	6.0-25
	Source Tests.....	6.0-25
6.9.2	Special Reports.....	6.0-26
<u>6.10</u>	<u>STATION OPERATING RECORDS AND RETENTION</u>	6.0-28
<u>6.11</u>	<u>PROCESS CONTROL PROGRAM</u>	6.0-31
<u>6.12</u>	<u>OFFSITE DOSE CALCULATION MANUAL</u>	6.0-31
<u>6.13</u>	<u>RADIOLOGICAL EFFLUENT MANUAL</u>	6.0-32

LIST OF TABLES

<u>Table</u>	<u>Title</u>	<u>Page No.</u>
1.1	Surveillance Frequency Notation	1.0-12
3.1.A	Reactor Protection System (SCRAM) Instrumentation Requirements.	3.1/4.1-3
4.1.A	Reactor Protection System (SCRAM) Instrumentation Functional Tests Minimum Functional Test Frequencies for Safety Instr. and Control Circuits.	3.1/4.1-8
4.1.B	Reactor Protection System (SCRAM) Instrumentation Calibration Minimum Calibration Frequencies for Reactor Protection Instrument Channels. . . .	3.1/4.1-11
3.2.A	Primary Containment and Reactor Building Isolation Instrumentation	3.2/4.2-7
3.2.B	Instrumentation that Initiates or Controls the Core and Containment Cooling Systems.	3.2/4.2-14
3.2.C	Instrumentation that Initiates Rod Blocks	3.2/4.2-25
3.2.D	Radioactive Liquid Effluent Monitoring Instrumentation	3.2/4.2-28
3.2.E	Instrumentation that Monitors Leakage Into Drywell.	3.2/4.2-30
3.2.F	Surveillance Instrumentation.	3.2/4.2-31
3.2.G	Control Room Isolation Instrumentation.	3.2/4.2-34
3.2.H	Flood Protection Instrumentation.	3.2/4.2-35
3.2.I	Meteorological Monitoring Instrumentation	3.2/4.2-36
3.2.J	Seismic Monitoring Instrumentation.	3.2/4.2-37
3.2.K	Radioactive Gaseous Effluent Monitoring Instrumentation	3.2/4.2-38
4.2.A	Surveillance Requirements for Primary Containment and Reactor Building Isolation Instrumentation. .	3.2/4.2-40
4.2.B	Surveillance Requirements for Instrumentation that Initiate or Control the CSCS.	3.2/4.2-44
4.2.C	Surveillance Requirements for Instrumentation that Initiate Rod Blocks	3.2/4.2-50
4.2.D	Radioactive Liquid Effluent Monitoring Instrumentation Surveillance Requirements	3.2/4.2-51

LIST OF TABLES (Cont'd)

<u>Table</u>	<u>Title</u>	<u>Page No.</u>
4.2.E	Minimum Test and Calibration Frequency for Drywell Leak Detection Instrumentation.	3.2/4.2-53
4.2.F	Minimum Test and Calibration Frequency for Surveillance Instrumentation	3.2/4.2-54
4.2.G	Surveillance Requirements for Control Room Isolation Instrumentation.	3.2/4.2-56
4.2.H	Minimum Test and Calibration Frequency for Flood Protection Instrumentation	3.2/4.2-57
4.2.J	Seismic Monitoring Instrument Surveillance Requirements	3.2/4.2-58
4.2.K	Radioactive Gaseous Effluent Instrumentation Surveillance	3.2/4.2-62
3.5-1	Minimum RHRSW and EECW Pump Assignment	3.5/4.5-11
3.5.I	MAPLHGR Versus Average Planar Exposure	3.5/4.5-21
3.7.A	Primary Containment Isolation Valves	3.7/4.7-25
3.7.B	Testable Penetrations with Double O-Ring Seals	3.7/4.7-32
3.7.C	Testable Penetrations with Testable Bellows.	3.7/4.7-33
3.7.D	Air Tested Isolation Valves.	3.7/4.7-34
3.7.E	Primary Containment Isolation Valves which Terminate below the Suppression Pool Water Level.	3.7/4.7-37
3.7.F	Primary Containment Isolation Vales Located in Water Sealed Seismic Class 1 Lines	3.7/4.7-38
3.7.H	Testable Electrical Penetrations	3.7/4.7-39
4.9.A.4.C	Voltage Relay Setpoints/Diesel Generator Start	3.9/4.9-16
3.11.A	Fire Protection System Hydraulic Requirements.	3.11/4.11-10
6.2.A	Minimum Shift Crew Requirements.	6.0-3

LIST OF ILLUSTRATIONS

<u>Figure</u>	<u>Title</u>	<u>Page No.</u>
2.1.1	APRM Flow Reference Scram and APRM Rod Block Settings	1.1/2.1-6
2.1-2	APRM Flow Bias Scram Vs. Reactor Core Flow	1.1/2.1-7
4.1-1	Graphic Aid in the Selection of an Adequate Interval Between Tests	3.1/4.1-13
4.2-1	System Unavailability.	3.2/4.2-64
3.4-1	Sodium Pentaborate Solution Volume Concentrated Requirements	3.4/4.4-4
3.4-2	Sodium Pentaborate Solution Temperature Requirements	3.4/4.4-5
3.5.K-1	MCPR Limits.	3.5/4.5-24
3.5.2	K _f Factor.	3.5/4.5-25
3.6-1	Minimum Temperature °F Above Change in Transient Temperature.	3.6/4.6-24
3.6-2	Change in Charpy V Transition Temperature Vs. Neutron Exposure	3.6/4.6-25
4.8.1.a	Gaseous Release Points and Elevations	3.8/4.8-10
4.8.1.b	Land Site Boundary	3.8/4.8-11
6.2-1	Offsite Organization for Facility Management and Technical Support	6.0-33
6.2-2	Facility Organization	6.0-34

3.2/4.2 PROTECTIVE INSTRUMENTATION

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.2.D Radioactive Liquid Effluent Monitoring Instrumentation

1. The radioactive liquid effluent monitoring instrumentation listed in Table 3.2.D shall be operable with the applicability as shown in Tables 3.2.D/4.2.D. Alarm/trip setpoints will be set in accordance with guidance given in the ODCM to ensure that the limits of specification 3.8.A.1 are not exceeded.
2. The action required when the number of operable channels is less than the minimum channels operable requirement is specified in the notes for Table 3.2.D. Exert best efforts to return the instrument(s) to OPERABLE status within 30 days and if unsuccessful, explain in the next Semiannual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.
3. With a radioactive liquid effluent monitoring channel alarm/trip setpoint less conservative than required by these specifications, suspend the release without delay, declare the channel inoperable, or adjust the alarm/trip setpoint to establish the conservatism required by these specifications.
4. The provisions of Specifications 1.0.C and 6.9.1.4 are not applicable.

4.2.D Radioactive Liquid Effluent Monitoring Instrumentation

1. Each of the radioactive liquid effluent monitoring instruments shall be demonstrated operable by performance of test in accordance with Table 4.2.D.

3.2/4.2-3

3.2/4.2 PROTECTIVE INSTRUMENTATION

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.2.E. Drywell Leak Detection

The limiting conditions of operation for the instrumentation that monitors drywell leak detection are given in Table 3.2.E.

F. Surveillance Instrumentation

The limiting conditions for the instrumentation that provides surveillance information readouts are given in Table 3.2.F.

G. Control Room Isolation

The limiting conditions for instrumentation that isolates the control room and initiates the control room emergency pressurization systems are given in Table 3.2.G.

H. Flood Protection

The unit shall be shutdown and placed in the cold condition when Wheeler Reservoir lake stage rises to a level such that water from the reservoir begins to run across the pumping station deck at elevation 565.

Requirements for instrumentation that monitors the reservoir level are given in Table 3.2.H.

I. Meteorological Monitoring Instrumentation

The meteorological monitoring instrumentation listed in Table 3.2.I shall be operable at all times.

4.2.E. Drywell Leak Detection

Instrumentation shall be calibrated and checked as indicated in Table 4.2.E.

F. Surveillance Instrumentation

Instrumentation shall be calibrated and checked as indicated in Table 4.2.F.

G. Control Room Isolation

Instrumentation shall be calibrated and checked as indicated in Table 4.2.G.

H. Flood Protection

Surveillance shall be performed on the instrumentation that monitors the reservoir level as indicated in Table 4.2.H.

I. Meteorological Monitoring Instrumentation

Each meteorological monitoring instrument channel shall be demonstrated operable by the performance of the CHANNEL CHECK at least once per

3.2/4.2 PROTECTIVE INSTRUMENTATION

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.2.I. Meteorological Monitoring Instrumentation (Cont'd)

1. With the number of operable meteorological monitoring channels less than required by Table 3.2.I, restore the inoperable channel(s) to operable status within 7 days.
2. With one or more of the meteorological monitoring channels inoperable for more than 7 days, prepare and submit a Special Report to the Commission, pursuant to Specification 6.9.2 within the next 10 days outlining the cause of the malfunction and the plans for restoring the system to operable status.

J. Seismic Monitoring Instrumentation

1. The seismic monitoring instruments listed in Table 3.2.J shall be operable at all times.
2. With the number of seismic monitoring instruments less than the number listed in Table 3.2.J, restore the inoperable instrument(s) to operable status within 30 days.
3. With one or more of the instruments listed in Table 3.2.J inoperable for more than 30 days, submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 10 days describing the cause of the malfunction and plans for restoring the instruments to operable status.

4.2.I Meteorological Monitoring Instrumentation (Cont'd)

24 hours and the CHANNEL CALIBRATION at least once each 6 months.

4.2.J. Seismic Monitoring Instrumentation

1. Each of the seismic monitoring instruments shall be demonstrated operable by performance of tests at the frequencies listed in Table 4.2.J.
2. Data shall be retrieved from all seismic instruments actuated during a seismic event and analyzed to determine the magnitude of the vibratory ground motion. A Special Report shall be submitted to the Commission pursuant to Specification 6.9.2 within 10 days describing the magnitude, frequency spectrum, and resultant effect upon plant features important to safety.

3.2/4.2-5

3.2/4.2 PROTECTIVE INSTRUMENTATION

LIMITING CONDITIONS FOR OPERATION

3.2.K Radioactive Gaseous Effluent Monitoring Instrumentation

1. The radioactive gaseous effluent monitoring instruments listed in Table 3.2.K shall be operable with the applicability as shown in Tables 3.2.K/4.2.K Alarm/trip setpoints will be set in accordance with guidance given in the ODCM to ensure that the limits of Specification 3.8.B.1 are not exceeded.
2. The action required when the number of operable channels is less than the Minimum Channels Operable requirement is specified in the notes for Table 3.2.K. Exert best efforts to return the instruments to operable status within 30 days and, if unsuccessful, explain in the next Semiannual Radioactive Release Report why the inoperability was not corrected in a timely manner.
3. With a radioactive gaseous effluent monitoring channel alarm/trip setpoint less conservative than required by these specifications, suspend the release without delay, declare the channel inoperable or adjust the alarm/trip setpoint to establish the conservatism required by these specifications.
4. Both off-gas treatment monitors may be taken out of service for less than one hour for purging of monitors during SI performance.
5. The provisions of Specifications 1.0.C and 6.9.1.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.2.K Radioactive Gaseous Effluent Monitoring Instrumentation

1. Each of the radioactive gaseous effluent monitoring instruments shall be demonstrated operable by performance of tests in accordance with Table 4.2.K.

3.8/4.8 RADIOACTIVE MATERIALS

LIMITING CONDITIONS FOR OPERATION

3.8 Radioactive Materials

Applicability

Applies to the release of radioactive liquids and gases from the facility.

Objective

To define the limits and conditions for the release of radioactive effluents to the environs to assure that any radioactive releases are as low as reasonably achievable and within the limits of 10 CFR Part 20. The specifications except for 3.8.A.1 and 3.8.B.1 are exempt from the requirements of definition 1.0.C (Limiting Condition for Operation).

Specification

A. Liquid Effluents

1. The concentration of radioactive material released at any time from the site to unrestricted areas (see Figure 4.8-1b) shall be limited to the concentrations specified in 10 CFR Part 20, Appendix B, Table II, Column 2 for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall be limited to $2E-4$ $\mu\text{Ci/ml}$ total activity.
2. If the limits of 3.8.A.1 are exceeded, appropriate action shall be initiated without delay to bring the release within

SURVEILLANCE REQUIREMENTS

4.8 Radioactive Materials

Applicability

Applies to the periodic test and record requirements and sampling and monitoring methods used for facility effluents.

Objective

To ensure that radioactive liquid and gaseous releases from the facility are maintained within the limits specified by Specifications 3.8.A and 3.8.B.

Specification

A. Liquid Effluents

1. Facility records shall be maintained of radioactive concentrations and volume before dilution of each batch of liquid effluent released, and of the average dilution flow and length of time over which each discharge occurred.
2. Radioactive liquid waste sampling and activity analysis of each liquid waste batch to be discharged shall be performed prior to release in accordance with the sampling and analysis program specified in the REM.
3. The operation of the automatic isolation valves and discharge tank selection valves shall be checked annually.

3.8/4.8 RADIOACTIVE MATERIALS

LIMITING CONDITIONS FOR OPERATION

3.8.A. Liquid Effluents

limits. Provide prompt notification to the NRC pursuant to Section 6.9.1.4.

3. The doses or dose commitment to a member of the public from radioactive materials in liquid effluents released from each unit to unrestricted areas (See Figure 4.8-1b) shall be limited:
 - a. During any calendar quarter to <1.5 mrem to the total body and <5 mrem to any organ and,
 - b. During any calendar year to <3 mrem to the total body and <10 mrem to any organ
4. If the limits specified in 3.8.A.3 a & b above are exceeded, prepare and submit Special Report pursuant to Section 6.9.1.4.
5. The maximum activity to be contained in one liquid radwaste tank or temporary storage tank that can be discharged directly to the environs shall not exceed 10 curies excluding tritium and dissolved/entrained noble gas.
6. With radioactive liquid waste exceeding 3.8.A.5 limits, without delay suspend all additions of radioactive material to the tank and within 48 hours, reduce the tank contents to within the limit. Events leading to this condition must be reported in the next Semiannual Radioactive Effluent Release Report (Section F.2 of the REM)

SURVEILLANCE REQUIREMENTS

4.8.A. Liquid Effluents

4. The results of the analysis of samples collected from release points shall be used with the calculational methodology in the ODCM to assure that the concentrations at the point of release are maintained within the limits of specification 3.8.A.1.
5. Cumulative quarterly and yearly dose contributions from liquid effluents shall be determined as specified in the ODCM at least once every 31 days.
6. The quantity of radioactive material contained in any outside liquid radwaste storage tanks shall be determined to be within the above limit by analyzing a representative sample of the tank's contents at least once per 7 days when radioactive materials are being added to the tank.

8/4.8 RADIOACTIVE MATERIALS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.8.B. Airborne Effluents

1. The dose rate at any time to areas at and beyond the site boundary (see Figure 4.8-1b) due to radioactivity released in gaseous effluents from the site shall be limited to the following values:
 - a. The dose rate limit for noble gases shall be <500 mrem/yr to the total body and <3000 mrem/yr to the skin, and
 - b. The dose rate limit for I-131, I-133, H-3, and particulates with greater than eight day half-lives shall be <1500 mrem/yr to any organ.
2. If the limits of 3.8.B.1 are exceeded, appropriate corrective action shall be immediately initiated to bring the release within limits. Provide prompt notification to the NRC pursuant to Section 6.9.1.4.

4.8.B. Airborne Effluents

1. The gross β/γ and particulate activity of gaseous wastes released to the environment shall be monitored and recorded.
 - a. For effluent streams having continuous monitoring capability, the activity shall be monitored and flow rate evaluated and recorded to enable release rates of gross radioactivity to be determined at least once per shift using instruments specified in Table 3.2.K.
 - b. For effluent streams without continuous monitoring capability, the activity shall be monitored and recorded and the release through these streams controlled to within the limits specified in 3.8.B.
2. Radioactive gaseous waste sampling and activity analysis shall be performed in accordance with the sampling and analysis program specified in the REM. Dose rates shall be determined to be within limits of 3.8.B using methods contained in the ODCM.

3.8/4.8-3

Amendment No. 132,138

3.8/4.8 RADIOACTIVE MATERIALS

LIMITING CONDITIONS FOR OPERATION

3.8.B Airborne Effluents
(Cont'd)

3. The air dose to areas at and beyond the site boundary (see Figure 4.8-1b) due to noble gases released in gaseous effluents per unit shall be limited to the following:
 - a. During any calendar quarter, to ≤ 5 mrad for gamma radiation and ≤ 10 mrad for beta radiation;
 - b. During any calendar year, to ≤ 10 mrad for gamma radiation and ≤ 20 mrad for beta radiation.
4. If the calculated air dose exceeds the limits specified in 3.8.B.3 above, prepare and submit a special report pursuant to section 6.9.1.4.
5. The dose to a member of the public from radioiodines, radioactive materials in particulate form, and radionuclides other than noble gases with half lives greater than 8 days in gaseous effluent released per unit to areas at and beyond the site boundary (see Figure 4.8-1b) shall be limited to the following:
 - a. To any organ during any calendar quarter to ≤ 7.5 mrem;
 - b. To any organ during any calendar year to ≤ 15 mrem;

SURVEILLANCE REQUIREMENTS

4.8.B Airborne Effluents
(Cont'd)

3. Cumulative quarterly and yearly dose contributions from gaseous releases shall be determined using methods contained in the ODCM at least once every 31 days.

3.8/4.8 RADIOACTIVE MATERIALS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.8.B Airborne Effluents
(Cont'd)

6. If the calculated doses exceed the limits of 3.8.B.5 above, prepare and submit a special report pursuant to Section 6.9.1.4.
7. During operation above 25% power the discharge of the SJAE must be routed through the charcoal adsorbers.
8. With gaseous waste being discharged for more than 7 days without treatment through the charcoal adsorbers, prepare and submit a special report pursuant to Section 6.9.1.4.
9. Whenever the SJAE is in service, the concentration of hydrogen in the offgas downstream of the recombiners shall be limited to $\leq 4\%$ by volume.
10. With the concentration of hydrogen exceeding the limit of 3.8.B.9 above, restore the concentration to within the limit within 48 hours.

4.8.B Airborne Effluents
(Cont'd)

4. During operation above 25% power, the position of the charcoal bed bypass valve will be verified daily.
5. The concentration of hydrogen downstream of the recombiners shall be determined to be within the limits of 3.8.B.9 by continuously monitoring the off-gas whenever the SJAE is in service using instruments described in Table 3.2.K. Instrument surveillance requirements are specified in Table 4.2.K.

3.8/4.8 RADIOACTIVE MATERIALS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.8.C Radioactive Effluents - Dose

1. The dose or dose commitment to a real individual from all uranium fuel cycle sources is limited to ≤ 25 mrem to the total body or any organ (except the thyroid, which is limited to ≤ 75 mrem) over a period of one calendar year.
2. With the calculated dose from the release of radioactive materials in liquid or gaseous effluents exceeding twice the limits of Specification 3.8.A.3, 3.8.B.3, or 3.8.B.5, prepare and submit a Special Report to the Commission pursuant to specification 6.9.1.4. and limit the subsequent releases such that the limits of 3.8.C.1 are not exceeded.

3.8.D Mechanical Vacuum Pump

1. Each mechanical vacuum pump shall be capable of being automatically isolated and secured on a signal or high radioactivity in the steam lines whenever the main steam isolation valves are open.
2. If the limits of 3.8.D.1 are not met, the vacuum pump shall be isolated.

4.8.C Radioactive Effluents - Dose

1. Cumulative dose contributions from liquid and gaseous effluents shall be determined in accordance with Specifications 3.8.A.3, 3.8.B.3, and 3.8.B.5 and the methods in the ODCM.

4.8.D Mechanical Vacuum Pump

At least once during each operating cycle verify automatic securing and isolation of the mechanical vacuum pump.

3.11/4.11 FIRE PROTECTION SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.11.A. High Pressure Fire Protection System

area where protection is lost is checked hourly.

3. If only one high pressure fire pump is OPERABLE, the reactors may remain in operation for a period not to exceed 7 days, provided the requirements of Specification 3.11.A.1.b above are met.
4. If Specification 3.11.A.3 cannot be met, the reactors shall be placed in the Cold Shutdown condition in 24 hours.
5. Removal of any component in the High Pressure Fire System from service for any reason other than testing or emergency operations shall require Plant Manager approval.
6. The Raw Service Water storage tank level shall be maintained above level 723'7" by the raw service water pumps.

4.11.A. High Pressure Fire Protection System

3. Raw Service Water System Testing

<u>Item</u>	<u>Frequency</u>
-------------	------------------

Simulated automatic and manual actuation of raw service water pumps and operation of tank level switches.	Once/year
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4. The high pressure fire protection system pressure shall be logged daily.
5. Principal header and component isolation valves shall be checked open at intervals no greater than 3 months.

3.11/4.11 FIRE PROTECTION SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.11.A. High Pressure Fire Protection System

- 7. If Specification 3.11.A.6 cannot be met a fire pump shall be started and run continuously until the raw service water pumps can maintain a raw service water storage tank level above 723'7".
- 8. The fire protection water distribution system shall have a minimum capacity of 2664 gpm at 250' head.
- 9. The fire protection system shall be capable of supplying the individual loads listed in Table 3.11.A.

B. CO₂ Fire Protection System

- 1. The CO₂ Fire Protection System shall be OPERABLE:
 - a. With a minimum of 8-1/2 tons (0.5 Tank) CO₂ in storage units 1 and 2.
 - b. With a minimum of 3 tons (0.5 Tank) CO₂ storage unit 3.

4.11.A. High Pressure Fire Protection System

B. CO₂ Fire Protection System

- 1. CO₂ Fire Protection Testing:

<u>Item</u>	<u>Frequency</u>
a. Simulated automatic and manual actuation	Once/year
b. Storage tank pressure and level	Checked daily

3.11/4.11 FIRE PROTECTION SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.11.B. CO₂ Fire Protection System

4.11.B. CO₂ Fire Protection System

3.11.B.1 (Cont'd)

4.11.B.1 (Cont'd)

- c. Automatic initiation logic OPERABLE.

- 2. If Specifications 3.11.B.1.a or 3.11.B.1.b or 3.11.B.1.c cannot be met, a patrolling fire watch with portable fire equipment shall be established to ensure that each area where protection is lost is checked hourly.

- 3. If Specifications 3.11.B.1.a, 3.11.B.1.b, or 3.11.B.1.c are not met within 7 days, the affected unit(s) shall be in Cold Shutdown within 24 hours.

- 4. If CO₂ fire protection is lost to a cable spreading room or to any diesel generator building area a continuous fire watch shall be established immediately and shall be continued until CO₂ fire protection is restored.

- c. CO₂ Spray header and nozzle inspection for blockage Once/3 years

- 2. When the cable spreading room CO₂ Fire Protection is INOPERABLE, one 125-pound (or larger) portable fire extinguisher shall be placed at each entrance.

3.11/4.11 FIRE PROTECTION SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.11.B. CO₂ Fire Protection System

5. Removal of any component in the CO₂ Fire Protection System from service for any reason other than testing or emergency operations shall require Plant Manager approval.

C. Fire Detectors

1. The fire detection system's heat and smoke detectors for all protected zones shall be OPERABLE except that one detector for a given protected zone may be INOPERABLE for a period no greater than 30 days.
2. If Specification 3.11.C.1 cannot be met, a patrolling fire watch will be established to ensure that each protected zone or area with INOPERABLE detectors is checked at intervals no greater than one each hour.

4.11.C. Fire Detectors

1. All heat and smoke detectors shall be tested in accordance with industrial standards or other approved methods semiannually.
2. The non-Class A supervised detector circuitry for those detectors which provide alarm only will be tested once each month by actuating the detector at the end of the line or end of the branch such that the largest number of circuit conductors will be checked.

3.11/4.11 FIRE PROTECTION SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

4.11.C. Fire Detectors

3. The class A supervised detector alarm circuits will be tested once each two months at the local panels.
4. The circuits between the local panels in 4.11.C.3 and the main control room will be tested monthly.
5. Smoke detector sensitivity will be checked in accordance with manufacturer's instruction annually.

.11.D. ROVING FIRE WATCH

Deleted

D. ROVING FIRE WATCH

Deleted

3.11/4.11-7

3.11/4.11 FIRE PROTECTION SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.11.E. Fire Protection Systems Inspection

All fire barrier penetrations, including cable penetration barriers, fire doors and fire dampers, in fire zone boundaries protecting safety-related areas shall be functional at all times. With one or more of the required fire barrier penetrations nonfunctional within one hour establish a continuous fire watch on at least one side of the affected penetration or verify the OPERABILITY of fire detectors on at least one side of the nonfunctional fire barrier and establish an hourly fire watch patrol until the work is completed and the barrier is restored to functional status.

F. Fire Protection Organization

Deleted

G. Air Masks and Cylinders

A minimum of 15 air masks and 30 500-cubic-inch air cylinders shall be available at all times except that a time period of 48 hours following emergency use is allowed to permit recharging or replacing.

4.11.E. Fire Protection Systems Inspections

Each required fire barrier penetration shall be verified to be functional at least once per 18 months by a visual inspection, and prior to restoring a fire barrier to functional status following repairs or maintenance by performance of a visual inspection of the affected fire barrier penetration.

F. Fire Protection Organization

Deleted

G. Air Masks and Cylinders

No additional surveillance required.

3.11 BASES

The High Pressure Fire and CO₂ Fire Protection specifications are provided in order to meet the preestablished levels of operability during a fire in either or all of the three units. Requiring a patrolling fire watch with portable fire equipment if the automatic initiation is lost will provide (as does the automatic system) for early reporting and immediate fire fighting capability in the event of a fire occurrence.

The High Pressure Fire Protection System is supplied by four pumps (three electric driven and one diesel driven) aligned to the high pressure fire header. The reactors may remain in operation for a period not to exceed seven days if three pumps are out-of-service. If at least two pumps are not made operable in seven days or if all pumps are lost during this seven-day period, the reactors will be placed in the cold shutdown condition within 24 hours.

For the areas of applicability, the fire protection water distribution system minimum capacity of 2,664 gpm at 250' head at the fire pump discharge consists of the following design loads:

1. Sprinkler System (0.30 gpm/ft ² /4440 ft ² area)	1332 gpm
2. 1 1/2" Hand Hose Lines	200 gpm
3. Raw Service Water Load	<u>1132 gpm</u>
TOTAL	2664 gpm

The CO₂ Fire Protection System is considered operable with a minimum of 8 1/2 tons (0.5 tank) CO₂ in storage for units 1 and 2; and a minimum of 3 tons (0.5 tank) CO₂ in storage for unit 3. An immediate and continuous fire watch in the cable spreading room or any diesel generator building area will be established if CO₂ fire protection is lost in this room and will continue until CO₂ fire protection is restored.

To assure close supervision of fire protection system activities, the removal from service of any component in either the High Pressure Fire System or the CO₂ Fire Protection System for any reason other than testing or emergency operations will require Plant Manager approval.

Early reporting and immediate fire fighting capability in the event of a fire occurrence will be provided (as with automatic system) by requiring a patrolling fire watch if more than one detector for a given protected zone is inoperable.

3.11 BASES (Cont'd)

The fire protection system is designed to supply the required flow and pressure to an individual load listed on Table 3.11.A while maintaining a design raw service water load of 1132 gpm.

4.11 BASES

Periodic testing of both the High Pressure Fire System and the CO₂ Fire Protection System will provide positive indication of their operability. If only one of the pumps supplying the High Pressure Fire System is operable, the pump that is operable will be checked immediately and daily thereafter to demonstrate operability. If the CO₂ Fire Protection System becomes inoperable in the cable spreading room, one 125-pound (or larger) fire extinguishers will be placed at each entrance to the cable spreading room.

Annual testing of automatic valves and control devices is in accordance with NFPA Code Vol. II, 1975, section 15, paragraph 6015. More frequent testing would require excessive automatic system inoperability, since there are a large number of automatic valves installed and various portions of the system must be isolated during an extended period of time during this test.

Wet fire header flushing, spray header inspection for blockage, and nozzle inspection for blockage will prevent, detect, and remove buildup of sludge or other material to ensure continued operability. System flushes in conjunction with the semiannual addition of biocide to the Raw Cooling Water System will help prevent the growth of crustaceans which could reduce nozzle discharge.

Semiannual tests of heat and smoke detectors are in accordance with NFPA Code.

With the exception of continuous strip heat detectors panels, all non-class A supervised detector circuits which provide alarm only are hardwired through conduits and/or cable trays from the detector to the main control room alarm panels with no active components between. Nonclass A circuits also actuate the HPCI water-fog system, the CO₂ system in the diesel generator buildings, and isolate ventilation in shutdown board rooms. The test frequency and methods specified are justified for the following reasons:

1. An analysis was made of worst-case fire detection circuits at Browns Ferry to determine the probability of no undetected failure of the circuits occurring between system test times as specified in the surveillance requirements. A circuit is defined as the wire connections and components that affect transmission of an alarm signal between the fire detectors and the control room annunciator. Three circuits were analyzed which were representative of an alarm-only circuit, a water-fog circuit, and a CO₂ circuit. The spreading room B smoke detector was selected as the worst-case alarm-only circuit because it had the largest number of wires and connections in a single circuit. The HPCI water-fog circuit was selected for analysis because it is the only water-fog circuit in

4.11 BASES (Cont'd)

the area of applicability for Technical Specifications. The Standby Diesel Generator Room A CO₂ circuit was selected because it contained 2 out of 3 detector logic, the most complicated CO₂ circuit logic. Calculations were based on failure rates for wires, connections, and circuit components as shown in Appendix III of WASH-1400. Failure rates were considered for the following circuit components:

1. Open circuit
2. Short to ground
3. Short to power
4. Timing motor failure to start
5. Relay failure to energize
6. Normally open contact failure to close
7. Normally open or normally closed contact short
8. Normally closed contact opening
9. Timing switch failure to transfer

The calculated probabilities (Pf) for no undetected failure of the circuits occurring were as follows, based on the specified test frequency.

AREA	TEST FREQUENCY	Pf
Spreading Room B	One Month	0.975287
HPCI Water Fog	Six Months	0.977175
Standby Diesel Gen Room A CO ₂	Six Months	0.957595

The worst case of the three areas considered is Spreading Room B. The probability of undetected failure is approximately 1/40, which means that one undetected failure will occur on the average every 40 months over an extended period of time and that the failure could exist up to one month. The frequency of testing is thus much greater than the frequency of failure and produces circuits with adequate reliability.

2. Circuits checks by initiation of end of the line or end of the branch detectors will more thoroughly test the parallel circuits than testing on a rotating detector basis. This test is not a detector test, but is a test to simulate the effect of electrical supervision as defined in the NFPA Code.*
3. Testing of circuits which actuate CO₂, water, or ventilation systems requires disabling the automatic feature of the fire protection system for the area. A surveillance program which disabled these circuits monthly would significantly reduce the ability of these circuits to provide fire suppression.

*Ref: NFPA Code 72D-9, paragraph 1111, Code 72D-15, paragraph 1312 for definition of Class A systems, and Code 72A-18, Article 240.

4.11 BASES (Cont'd)

4. Daily tests of annunciation lights and audible devices are performed as a routine operation function.
5. The CO₂ system manufacturer recommends semiannual testing of CO₂ system fire detection circuits.

In addition, operating personnel periodically inspect the plant during their normal operating activities for fire hazards and other abnormal conditions.

Smoke detectors will be tested "in-place" using inert freon gas applied by a pyrotronics type applicator which is accepted throughout the industrial fire protection industry for testing products of combustion detectors or by use of the MSA chemical smoke generators. At the present time, the manufacturers have only approved the use of "punk" for creating smoke. TVA will not use "punk" for testing smoke detectors.

3.11/4.11-15

BFN TECHNICAL SPECIFICATIONS
6.0 ADMINISTRATIVE CONTROLS

6.0 ADMINISTRATIVE CONTROLS

6.1 RESPONSIBILITY

The Plant Manager has onsite responsibilities for the safe operation of the facility and shall report to the Browns Ferry Site Director. In the absence of the Plant Manager, a Plant Superintendent will assume his responsibilities.

6.2 ORGANIZATION

CORPORATE

6.2.1 The portion of TVA management which relates to the operation of the plant is shown in Figure 6.2-1.

PLANT STAFF

6.2.2 The functional organization for the operation of the plant shall be shown in Figure 6.2-2.

- a. Shift manning requirements, shall as a minimum, be as described in Table 6.2.A and below.
- b. A licensed senior reactor operator shall be present at the site at all times when there is fuel in the reactor.

6.2.2 (Cont.)

- c. A licensed reactor operator shall be in the control room whenever there is fuel in the reactor.
- d. Two licensed reactor operators shall be in the control room during any cold startups, while shutting down the reactor, and during recovery from unit trip. In addition, a person holding a senior operator license shall be in the control room for that unit whenever it is in an operational mode other than cold shutdown or refueling.
- e. A Health Physics Technician* shall be present at the facility at all times when there is fuel in the reactor.
- f. A person holding a senior operator license or a senior operator license limited to fuel handling, shall be present during alteration of the core to directly supervise the activity and during this time shall not be assigned other duties.
- g. A site fire brigade of at least five members shall be maintained onsite at all times.* The fire brigade shall not include the Shift Engineer and the other members of the minimum shift crew necessary for safe shutdown of the unit, nor any personnel required for other essential functions during a fire emergency.

*The Health Physics Technician and fire brigade composition 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.

Table 6.2.A
Minimum Shift Crew Requirements^b

<u>Position</u>	<u>Units in Operation</u>				<u>Type of License</u>
	<u>0</u>	<u>1</u>	<u>2^d</u>	<u>3</u>	
Senior Operator ^a	1	1	1	1	SRO
Senior Operator	0	1	2	2	SRO
Licensed Operators	3	3	3	3	RO or SRO
Additional Licensed Operators ^c	0	1	2	2	RO or SRO
Assistant Unit Operators (AUO)	4	4	5	5	None
Shift Technical Advisor (STA)	0	1	1	1	None
Health Physics Technician	1	1	1	1	None

Note for Table 6.2.A

- a. A senior operator will be assigned responsibility for overall plant operation at all times there is fuel in any unit.
- b. Except for the senior operator discussed in note "a", the shift crew composition may be one less than the minimum requirements of Table 6.2.A for a period of time not to exceed two 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.A. 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.
- c. One of the Additional Licensed Operators must be assigned to each control room with an operating unit.
- d. The number of required licensed personnel, when the operating units are controlled from a common control room, are two senior operators and four operators.

6.3 PLANT STAFF QUALIFICATIONS

Qualifications of the Browns Ferry Nuclear Plant management and operating staff shall meet the minimum acceptable levels as described in ANSI - N18.1, Selection and Training of Nuclear Power Plant Personnel, dated March 8, 1971. The qualifications of the Health Physics Supervisor will meet or exceed the minimum acceptable levels as described in Regulatory Guide 1.8, Revision 1, dated September 1975. The Shift Technical Advisor shall have a bachelor's degree or equivalent in a scientific or engineering discipline with specific training in plant design and transient and accident response and analysis.

6.4 TRAINING

A retraining and replacement training program for station personnel shall be in accordance with ANSI - N18.1, Selection and Training of Nuclear Power Plant Personnel, dated March 8, 1971. The minimum frequency of the retraining program shall be every two years.

6.5 PLANT REVIEW AND AUDIT

6.5.1 PLANT OPERATIONS REVIEW COMMITTEE (PORC)

FUNCTION

- 6.5.1.1 a. The PORC shall function to advise the Plant Manager in all matters related to nuclear safety.
- b. This advisory function shall be performed by the PORC acting in a formal meeting or by members acting individually without a formal meeting.

COMPOSITION

6.5.1.2 The PORC shall be composed of the:

- a. Chairman: Plant Manager

- Alternate Chairman: Assistant to Plant Manager

- Alternate Chairman or Member: Technical Services
Superintendent

- Member: Unit Superintendents (3)

- Member: Maintenance Superintendent

- Member: Quality Assurance Staff
Supervisor

- Member: Health Physics
Supervisor

b. All alternate chairmen and alternate members shall be appointed in writing by the PORC chairman.

MEETING FREQUENCY

6.5.1.3 The PORC shall convene in a formal meeting at least once a month and as directed by the chairman. Other PORC meetings may be requested by the chairmen or members as required.

- 6.5.1.4 For expedited meetings, when it is not practical to convene as a group, the chairman or alternate chairman may conduct committee business by polling the members individually (by telephone or in person) or via a serialized review.

QUORUM

- 6.5.1.5 The quorum necessary for the PORC to act in a formal meeting shall consist of the chairman or alternate chairman and at least five members or their alternates. Members shall be considered present if they are in telephone communication with the committee.

RESPONSIBILITIES

- 6.5.1.6 The PORC shall be responsible for the activities listed below. The PORC may delegate the performance of reviews, but will maintain cognizance over and responsibility for them, e.g., subcommittees.
- a. Review of administrative procedures for the control of the technical and cross-disciplinary review of (1) all procedures required by Specification 6.8.1.1, and changes thereto, (2) any other procedures and changes thereto determined by the Plant Manager to affect nuclear safety.
 - b. Review of the administrative procedures required by Appendix A of Regulatory Guide 1.33, Revision 2, February 1978 and changes thereto.
 - c. Review of emergency operating procedures and changes thereto.
 - d. Review implementing procedures of the Radiological Emergency Plan and the Industrial Security Program.

- e. Review of all proposed changes to the Technical Specifications.
- f. Review of safety evaluation for proposed tests or experiments to be completed under the provisions of 10 CFR 50.59
- g. Review proposed changes to the Radiological Effluent Manual.
- h. Review adequacy of the Process Control Program and Offsite Dose Calculation Manual at least once every 24 months.
- i. Review changes to the radwaste treatment systems.
- j. Review of every unplanned onsite release of radioactive material to the environs including the preparation and forwarding of reports covering evaluation, recommendation, and disposition of the corrective action to prevent recurrence to the Director, Nuclear Power and to the Nuclear Safety Review Board.
- k. Review of all safety evaluations for modifications to structures, systems or components that affect nuclear safety to verify that such actions did not constitute an unreviewed safety question as defined in 10 CFR 50.59, or requires a change to these Technical Specifications.

1. Review of reportable events, unusual events, operating anomalies, and abnormal performance of plant equipment.
- m. Investigate reported or suspected incidents involving safety questions or violations of the Technical Specifications.
- n. Review of unit operations to detect potential hazards to nuclear safety. Items that may be included in this review are NRC inspection reports, QA audit, NSRB audit results, American Nuclear Insurer (ANI) inspection results, and significant corrective action reports (CARs).
- o. Performance of special reviews, investigations, or analysis, and report thereon as requested by the Plant Manager or the Nuclear Safety Review Board.

AUTHORITY

6.5.1.7 The PORC shall:

- a. Recommend to the Plant Manager in writing, approval, or disapproval of items considered under 6.5.1.6.a through i above.
 1. The recommendation shall be based on a majority vote of the PORC at a formal meeting.
 2. The recommendation shall be based on a unanimous vote of the PORC when the PORC members are acting individually.
 3. Each member or alternate member shall have one vote.
- b. Furnish for consideration a determination in writing with regard to whether or not each item considered under 6.5.1.6.f above constitutes an unreviewed safety question.
- c. Make recommendations to the Plant Manager in writing concerning whether action reviewed under 6.5.1.6.k above did not constitute an unreviewed safety question.
- d. Provide written notification within 24 hours to the Site Director and the Nuclear Safety Review Board of disagreements between the PORC and the Plant Manager. However, the Plant Manager shall have responsibility for resolution of such disagreements pursuant to Specification 6.1.

RECORDS

- 6.5.1.8 The PORC shall maintain written minutes of each PORC meeting including expedited meetings that, as a minimum, document the result of all PORC activities performed under the responsibility and authority provisions of these technical specifications. Copies shall be provided to the Site Director and the Nuclear Safety Review Board.

6.5.2 NUCLEAR SAFETY REVIEW BOARD (NSRB)

FUNCTION

- 6.5.2.1 The NSRB shall function to provide independent review and audit cognizance 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, and
 - h. Quality assurance practices

COMPOSITION

- 6.5.2.2 The NSRB shall be composed of at least five members, including the Chairman. Members of the NSRB may be from the Office of Nuclear Power or other TVA organizations, or external to TVA.

QUALIFICATIONS

6.5.2.3 The Chairman, members, alternate members of the NSRB shall be appointed in writing by the Manager of Nuclear Power and shall have an academic degree in engineering or a physical science field, or the equivalent; and in addition, shall have a minimum of 5 years technical experience in one or more areas given in 6.5.2.1. No more than two alternates shall participate as voting members in NSRB activities at any one time.

CONSULTANTS

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

MEETING FREQUENCY

6.5.2.5 The NSRB shall meet at least once per six months.

QUORUM

6.5.2.6 The minimum quorum of the NSRB necessary for the performance of the NSRB review and audit functions of these technical specifications shall consist of more than half of the NSRB membership or at least five members, whichever is greater. The quorum shall include the Chairman or his appointed alternate and the NSRB members including appointed alternate members meeting the requirements of 6.5.2.3. No more than a minority of the quorum shall have line responsibility for operation of the unit.

REVIEW

6.5.2.7 The NSRB shall review:

- a. The safety evaluations 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 to 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 plant 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; and
- i. Reports and meeting minutes of the PORC.

AUDITS

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

- a. The conformance of plant 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 plant staff at least once per 12 months.
- c. The results of actions taken to correct deficiencies occurring in site 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 Site Radiological Emergency Plan and implementing procedures at least once every 12 months.
- f. The Plant Physical Security Plan and implementing procedures at least once every 12 months.
- g. Any other area of site operation considered appropriate by the NSRB or the Manager of Nuclear Power.
- h. The fire protection programmatic controls including the implementing procedures at least once per 24 months.

- i. An independent fire protection and loss prevention program inspection and audit shall be performed annually utilizing either qualified offsite license personnel or an outside fire protection firm.
- j. An inspection and audit of the fire protection and loss prevention program shall be performed by an outside qualified fire consultant at intervals no greater than 3 years.
- k. The Radiological Environmental Monitoring program and the results thereof at least once per 12 months.
- l. The performance of activities required by the Quality Assurance Program to meet the criteria of Regulatory Guide 4.15, December 1977, or Regulatory Guide 1.21, Rev. 1, 1974, and Regulatory Guide 4.1, 1975, at least once every 12 months.
- m. The performance of activities required by the Safeguards Contingency Plan to meet the criteria of 10 CFR 73.40(d) at least once every 12 months.
- n. The Offsite Dose Calculation Manual and implementing procedures at least once per 24 months.
- o. The Process Control Program and implementing procedures for solidification of wet radioactive wastes at least once per 24 months.
- p. The Radiological Effluent Manual and implementing procedures at least once per 12 months.

6.0-14

AUTHORITY

6.5.2.9 The NSRB shall report to and advise the Manager of Nuclear Power on those areas of responsibility specified in Specifications 6.5.2.7 and 6.5.2.8.

RECORDS

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

- a. Minutes of each NSRB meeting shall be prepared, approved and forwarded to the Manager of Nuclear Power within 14 days following each meeting.
- b. Reports of reviews encompassed by Section 6.5.2.7 above, shall be prepared, approved and forwarded to the Manager of Nuclear Power within 14 days following completion of the review.
- c. Audit reports encompassed by Specification 6.5.2.8 above, shall be forwarded to the Manager of Nuclear Power and to the management positions responsible for the areas audited within 30 days after completion of the audit.

6.5.3 TECHNICAL REVIEW AND APPROVAL OF PROCEDURES

ACTIVITIES

- 6.5.3.1 Procedures required by Technical Specification 6.8.1.1 and other procedures which affect plant nuclear safety, and changes (other than editorial or typographical changes) thereto, shall be prepared, reviewed and approved. Each procedure or procedure change shall be reviewed by an individual other than the preparer. The reviewer may be from the same organization or from a different organization. Procedures other than Site Director Standard Practices will be approved by the responsible Section Supervisor, or applicable Plant Superintendent.
- 6.5.3.2 Proposed changes or modifications to plant structures, systems and components that affect nuclear safety shall be reviewed as designated by the Plant Manager. 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 plant structures, systems and components that affect nuclear safety shall be approved by the Plant Manager, prior to implementation.
- 6.5.3.3 Individuals responsible for reviews performed in accordance with 6.5.3.1 shall be members of the site supervisory staff previously designated by the Plant Manager. 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 review personnel of the appropriate discipline.
- 6.5.3.4 The Plant Manager shall approve all administrative procedures requiring PORC review prior to implementation.

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 PORC and the results of this review shall be submitted to the NSRB and the Site Director.**

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 Manager of Nuclear Power 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 PORC. 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 Manager of Nuclear Power within 14 days of the violation.
- d. Critical operation of the unit shall not be resumed until authorized by the Commission.

6.8 PROCEDURES/INSTRUCTIONS AND PROGRAMS

6.8.1 PROCEDURES

6.8.1.1 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. Limitations on the amount of overtime worked by individuals performing safety-related functions in accordance with NRC Policy statement on working hours (Generic Letter No. 82-12).
- c. Surveillance and test activities of safety-related equipment.
- d. Security plan implementation.
- e. Emergency plan implementation.
- f. Fire Protection Program implementation.
- g. Radiological Effluent Manual implementing procedures.
- h. Process Control Program (PCP).
- i. Offsite Dose Calculation Manual.
- j. Administrative procedures which control technical and cross-disciplinary review.

6.8.1.2 Each administrative procedure required by Section 6.8.1.1.a. shall be reviewed by PORC and all other procedures required by Section 6.8.1.1.a. shall be reviewed in accordance with Section 6.5.3.

6.8.1.3 Temporary changes to procedures of Specification 6.8.1.1 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;
- c. The change is documented, reviewed by the PORC and approved by the Plant Manager within 14 days of implementation, for changes in administrative procedures requiring PORC review.
- d. The change is documented, reviewed per Specification 6.5.3, and approved by the responsible group section supervisor within 14 days of implementation, for changes to procedures other than administrative procedures.

DRILLS

6.8.2 Drills on actions to be taken under emergency conditions involving release of radioactivity are specified in the Radiological Emergency Plan and shall be conducted annually. Annual drills shall also be conducted on the actions to be taken following failures of safety-related systems or components.

RADIATION CONTROL PROCEDURES

6.8.3 Radiation Control Procedures shall be maintained and made available to all station personnel. These procedures shall show permissible radiation exposure and shall be consistent

with the requirements of 10 CFR 20. This radiation protection program shall be organized to meet the requirements of 10 CFR 20 except in lieu of the "control device" or "alarm signal" required by paragraph 20.203 (c) of 10 CFR 20.

6.8.3.1 Each high radiation area in which the intensity of radiation is greater than 100 mrem/hr but less than 1000 mrem/hr shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiological Work Permit.* 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.
- b. A radiation monitoring device which continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate level in the area has been established and personnel have been made knowledgeable of them.
- c. An individual qualified in radiation protection procedures who is equipped with a radiation dose rate monitoring device. This individual shall be responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by the facility Health Physicist in the Radiological Work Permit.

6.8.3.2 Each high radiation area in which the intensity of radiation is greater than 1,000 mrem/hr shall be subject to the provisions of (1) above; and, in addition, access to the source and/or area

shall be secured by lock(s). The key(s) shall be under the administrative control of the shift engineer. In the case of a high radiation area established for a period of 30 days or less, direct surveillance to prevent unauthorized entry may be substituted for permanent access control.

- * Health Physics personnel, or personnel escorted by Health Physics personnel, in accordance with approved emergency procedures, shall be exempt from the RWP issuance requirement during the performance of their assigned radiation protection duties, provided they comply with approved radiation protection procedures for entry into high radiation areas.

QUALITY ASSURANCE PROCEDURES - EFFLUENT AND ENVIRONMENTAL MONITORING

- 6.8.4 Quality Assurance procedures shall be established, implemented, and maintained for effluent and environmental monitoring, using the guidance in Regulatory Guide 1.21, Rev. 1, June 1974 and Regulatory Guide 4.1, Rev. 1, April 1975 or Regulatory Guide 4.15, Dec. 1977.

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 identified reports shall be submitted to the Director of the Regional Office of NRC, unless otherwise noted.

6.9.1.1 STARTUP REPORT

- a. 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 plant. The report shall address each of the tests identified in the FSAR 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.

- b. 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 power operation), supplementary reports shall be submitted at least every three months until all three events have been completed.

6.9.1.2 ANNUAL OPERATING REPORT*

- a. 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, **e.g., reactor operations and surveillance, inservice inspection, routine maintenance, special maintenance (describe maintenance), waste processing, and refueling. The dose assignment to various duty functions may be estimates based on pocket dosimeter, TLD, or film badge measurements. Small exposures totaling 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 shall be assigned to specific major work functions.
- b. Any mainsteam relief valve that opens in response to reaching its setpoint or due to operator action to control reactor pressure shall be reported.

*A single submittal may be made for a multiple unit station.

**This tabulation supplements the requirements of 20.407 of 10 CFR Part 20.

6.9.1.3 MONTHLY OPERATING REPORT

Routine reports of operating statistics and shutdown experience shall be submitted on a monthly basis to the Office of Inspection and Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, with a copy to the Regional Office, to be submitted no later than the fifteenth of each month following the calendar month covered by the report. A narrative summary of operating experience shall be submitted in the above schedule.

6.9.1.4 REPORTABLE EVENTS

Reportable events, including corrective actions and measures to prevent re-occurrence, shall be reported to the NRC in accordance with Section 50.73 to 10 CFR 50.

6.9.1.5 RADIOACTIVE EFFLUENT RELEASE REPORT

Deleted (See REM section F-2)

6.9.1.6 SOURCE TESTS

Results of required leak tests performed on sources if the tests reveal the presence of 0.005 microcurie or more of removable contamination.

6.9.2 SPECIAL REPORTS

Reports on the following areas shall be submitted in writing to the Director of Regional Office of Inspection and Enforcement:

- | | | |
|---|----------|---|
| 1. Fatigue Usage | 6.10.1.g | Annual
Operating
Report |
| 2. Relief Valve Tailpipe | 3.2.F | Within 30 days
after inoper-
ability of
thermocouple
and acoustic
monitor on
one valve. |
| 3. Seismic Instrumentation
Inoperability | 3.2.J.3 | Within 10 days
after 30 days of
inoperability. |
| 4. Meteorological Monitoring
Instrumentation
Inoperability | 3.2.I.2 | Within 10 days
after 7 days of
inoperability. |
| 5. Primary Containment
Integrated Leak Rate
Testing | 4.7.A.2 | Within 90 days
of completion of
each test. |
| 6. Data shall be retrieved from all seismic instruments
actuated during a seismic event and analyzed to determine
the magnitude of the vibratory ground motion. A Special | | |

Report shall be submitted within 10 days after the event describing the magnitude, frequency spectrum, and resultant effect upon plant features important to safety.

- | | | |
|--------------------------|--------|----------------|
| 7. Secondary Containment | 4.7.C. | Within 90 days |
| Leak Rate Testing* | | of completion |
| | | of each test. |

*Each integrated leak rate test of the secondary containment shall be the subject of a summary technical report. This report should include data on the wind speed, wind direction, outside and inside temperatures during the test, concurrent reactor building pressure, and emergency ventilation flow rate. The report shall also include analyses and interpretations of those data which demonstrate compliance with the specified leak rate limits.

6.10 STATION OPERATING RECORDS AND RETENTION

6.10.1 Records and/or logs shall be kept in a manner convenient for review as indicated below:

- a. All normal plant operation including such items as power level, fuel exposure, and shutdowns
- b. Principal maintenance activities
- c. Reportable Events
- d. Checks, inspections, tests, and calibrations of components and systems, including such diverse items as source leakage
- e. Reviews of changes made to the procedures or equipment or reviews of tests and experiments to comply with 10 CFR 50.59
- f. Radioactive shipments
- g. Test results in units of microcuries for leak tests performed pursuant to Specification 3.8.D

- h. Record of annual physical inventory verifying accountability of sources on record
- i. Gaseous and liquid radioactive waste released to the environs
- j. Offsite environmental monitoring surveys
- k. Fuel inventories and transfers
- l. Plant radiation and contamination surveys
- m. Radiation exposures for all plant personnel
- n. Updated, corrected, and as-built drawings of the plant
- o. Reactor coolant system inservice inspection
- p. Minutes of meetings of the NSRB
- q. Design fatigue usage evaluation

Monitoring and recording requirements below will be met for various portions of the reactor coolant pressure boundary (RCPB) for which detailed fatigue usage evaluation per the ASME Boiler and Pressure Vessel Code Section III was performed for the conditions defined in the design specification. In this plant, the applicable codes require fatigue usage evaluation for the reactor pressure vessel only. The locations to be monitored shall be:

1. The feedwater nozzles
2. The shell at or near the waterline
3. The flange studs

Transients that occur during plant operations will be reviewed and a cumulative fatigue usage factor determined.

For transients which are more severe than the transients evaluated in the stress report, code fatigue usage calculations will be made and tabulated separately.

In the annual operating report, the fatigue usage factor determined for the transients defined above shall be added and a cumulative fatigue usage factor to date shall be reported. When the cumulative usage factor reaches a value of 1.0, an inservice inspection shall be included for the specific location at the next scheduled inspection (3-1/3-year interval) period and 3-1/3-year intervals thereafter, and a subsequent evaluation performed in accordance with the rules of ASME Section XI Code if any flaw indications are detected. The results of the evaluation shall be submitted in a Special Report for review by the Commission.

6.10.2 Except where covered by applicable regulations, items a through h above shall be retained for a period of at least 5 years and item i through q shall be retained for the life of the plant. A complete inventory of radioactive materials in possession shall be maintained current at all times.

1. See paragraph N-415.2, ASME Section III, 1965 Edition.

6.11 PROCESS CONTROL PROGRAM (PCP)

1. The PCP shall be approved by the Commission prior to implementation.
2. Changes to the PCP shall be submitted to the Commission in the semi-annual Radioactive Effluent Release Report for the period in which the change(s) was made. This submittal shall contain:
 - a. Sufficiently detailed information to totally support the change.
 - b. A determination that the change did not change the overall conformance of the solidified product to existing criteria.
3. Changes to the PCP shall become effective upon review and acceptance by PORC.

6.12 OFFSITE DOSE CALCULATIONAL MANUAL (ODCM)

1. The ODCM shall be approved by the Commission prior to implementation.
2. Changes to the ODCM shall be submitted to the Commission in the semi-annual Radioactive Effluent Release Report for the period in which the change(s) was made. This submittal shall contain:
 - a. Sufficiently detailed information to totally support the change.
3. Changes to the ODCM shall become effective upon review and acceptance by PORC.

6.13 RADIOLOGICAL EFFLUENT MANUAL (REM)

1. The REM shall be approved by the Commission prior to implementation.
2. Changes to the REM shall be reviewed by PORC prior to implementation.
3. Changes to the REM shall be approved by the Commission prior to implementation.

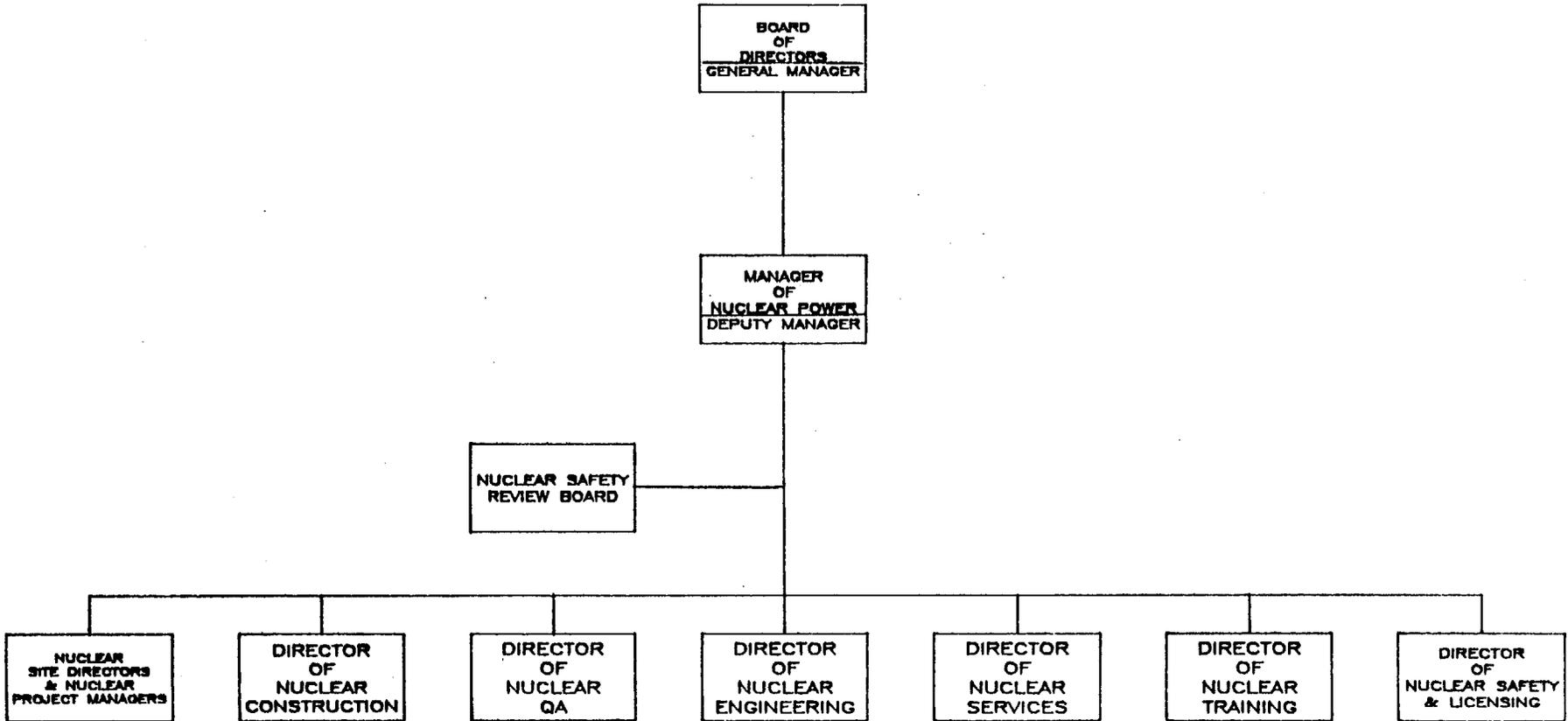
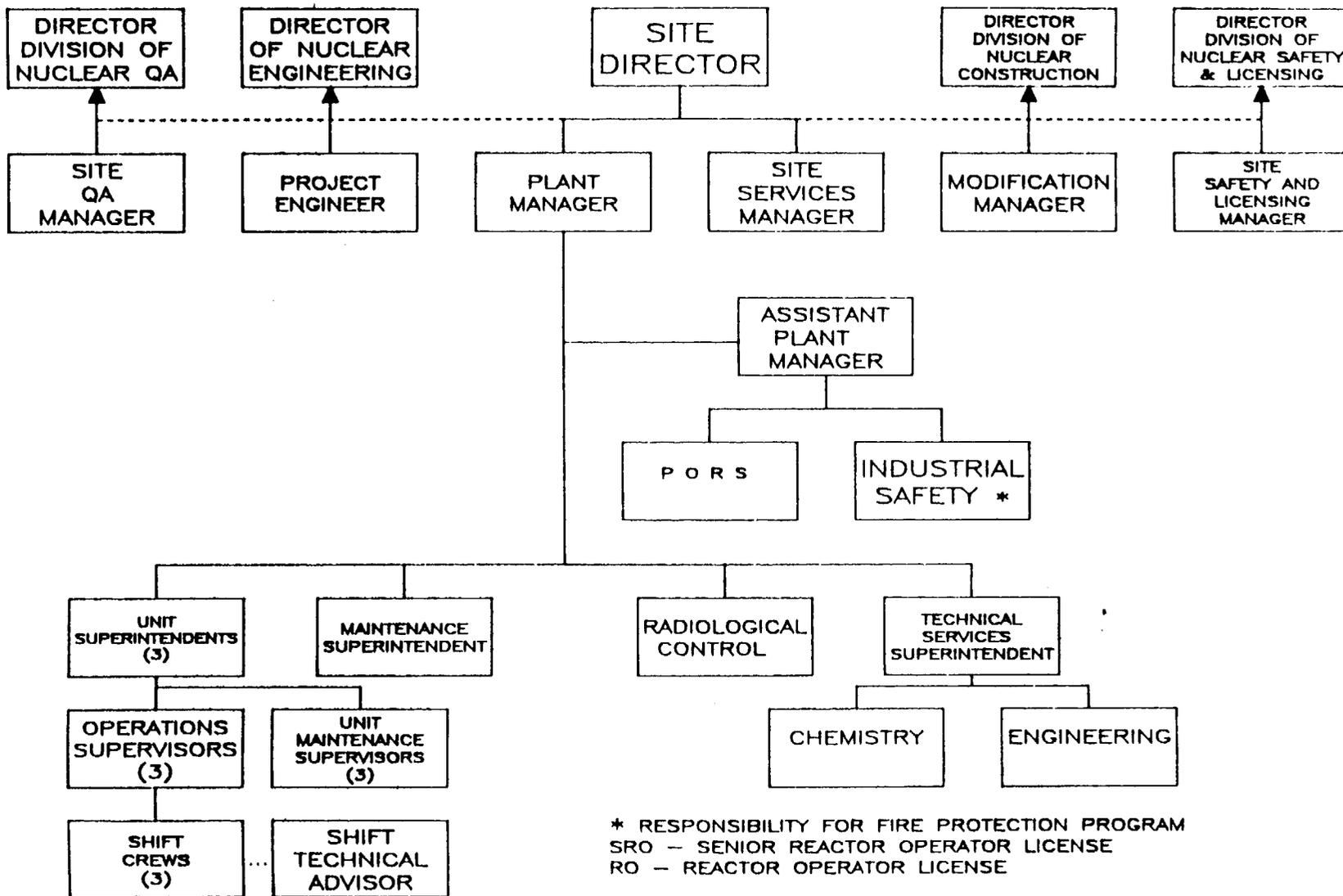


Figure 6.2-1 Offsite Organization for Facility Management & Technical Support



* RESPONSIBILITY FOR FIRE PROTECTION PROGRAM
 SRO - SENIOR REACTOR OPERATOR LICENSE
 RO - REACTOR OPERATOR LICENSE

- SHIFT ENGINEER (SRO)
- ASSISTANT SHIFT ENGINEER (SRO)
- UNIT OPERATOR (RO)
- ASSISTANT UNIT OPERATOR
- AUXILIARY UNIT OPERATOR

**FIGURE 6.2-2
 FACILITY ORGANIZATION**



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-260

BROWNS FERRY NUCLEAR PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 134
License No. DPR-52

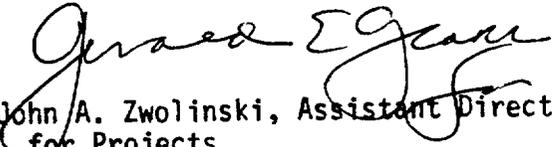
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Tennessee Valley Authority (the licensee) dated September 27, 1984 as supplemented January 17, June 2 and December 10, 1986, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-52 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 134, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 90 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION


John A. Zwolinski, Assistant Director
for Projects
TVA Projects Division
Office of Special Projects

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 11, 1987

ATTACHMENT TO LICENSE AMENDMENT NO. 134

FACILITY OPERATING NO. DPR-52

DOCKET NO. 50-260

Revise the Appendix A Technical Specifications by removing the pages identified below and inserting the enclosed pages. The revised pages are identified by the captioned amendment number and contain marginal lines indicating the area of change. Overleaf pages* are provided to maintain document completeness.

Remove

iii
iv
v
vi
vii
viii
3.2/4.2-3
3.2/4.2-4
3.2/4.2-5
3.2/4.2-6
3.8/4.8-1
3.8/4.8-2
3.8/4.8-3
3.8/4.8-4
3.8/4.8-5
3.8/4.8-6
3.11/4.11-3
3.11/4.11-4
3.11/4.11-5
3.11/4.11-6
3.11/4.11-7
3.11/4.11-8
3.11/4.11-12
3.11/4.11-13
3.11/4.11-14
3.11/4.11-15

6.0-1 thru 6.0-23

Insert

iii*
iv
v
vi*
vii
viii
3.2/4.2-3
3.2/4.2-4*
3.2/4.2-5
3.2/4.2-6
3.8/4.8-1*
3.8/4.8-2
3.8/4.8-3
3.8/4.8-4
3.8/4.8-5
3.8/4.8-6
3.11/4.11-3
3.11/4.11-4*
3.11/4.11-5*
3.11/4.11-6
3.11/4.11-7
3.11/4.11-8
3.11/4.11-12
3.11/4.11-13*
3.11/4.11-14*
3.11/4.11-15

6.0-1 thru 6.0-34

Section

Page No.

C.	Coolant Leakage.	3.6/4.6-9
D.	Relief Valves.	3.6/4.6-10
E.	Jet Pumps.	3.6/4.6-11
F.	Recirculation Pump Operation	3.6/4.6-12
G.	Structural Integrity	3.6/4.6-13
H.	Seismic Restraints, Supports and Snubbers. . .	3.6/4.6-15
3.7/4.7	Containment Systems.	3.7/4.7-1
A.	Primary Containment.	3.7/4.7-1
B.	Standby Gas Treatment System	3.7/4.7-13
C.	Secondary Containment.	3.7/4.7-16
D.	Primary Containment Isolation Valves	3.7/4.7-17
E.	Control Room Emergency Ventilation	3.7/4.7-19
F.	Primary Containment Purge System	3.7/4.7-21
G.	Containment Atmosphere Dilution System (CAD) .	3.7/4.7-22
H.	Containment Atmosphere Monitoring (CAM) System H ₂ Analyzer	3.7/4.7-24
3.8/4.8	Radioactive Materials.	3.8/4.8-1
A.	Liquid Effluents	3.8/4.8-1
B.	Airborne Effluents	3.8/4.8-2
C.	Radioactive Effluents - Dose	3.8/4.8-6
D.	Mechanical Vacuum Pump	3.8/4.8-6
E.	Miscellaneous Radioactive Materials Sources. .	3.8/4.8-7
F.	Solid Radwaste	3.8/4.8-9
3.9/4.9	Auxiliary Electrical System.	3.9/4.9-1
A.	Auxiliary Electrical Equipment	3.9/4.9-1
B.	Operation with Inoperable Equipment.	3.9/4.9-8
C.	Operation in Cold Shutdown	3.9/4.9-15
3.10/4.10	Core Alterations.	3.10/4.10-1
A.	Refueling Interlocks	3.10/4.10-1

<u>Section</u>	<u>Page No.</u>
B. Core Monitoring	3.10/4.10-4
C. Spent Fuel Pool Water	3.10/4.10-7
D. Reactor Building Crane	3.10/4.10-8
E. Spent Fuel Cask	3.10/4.10-9
F. Spent Fuel Cask Handling-Refueling Floor . . .	3.10/4.10-10
3.11/4.11 Fire Protection Systems	3.11/4.11-1
A. High Pressure Fire Protection System	3.11/4.11-1
B. CO ₂ Fire Protection System	3.11/4.11-4
C. Fire Detectors	3.11/4.11-6
D. Deleted	3.11/4.11-7
E. Fire Protection Systems Inspection	3.11/4.11-8
F. Deleted	3.11/4.11-8
G. Air Masks and Cylinders	3.11/4.11-8
H. Continuous Fire Watch	3.11/4.11-9
I. Open Flames, Welding and Burning in the Cable Spreading Room	3.11/4.11-9
5.0 Major Design Features	5.0-1
5.1 Site Features	5.0-1
5.2 Reactor	5.0-1
5.3 Reactor Vessel	5.0-1
5.4 Containment	5.0-1
5.5 Fuel Storage	5.0-1
5.6 Seismic Design	5.0-2

ADMINISTRATIVE CONTROLS

<u>SECTION</u>		<u>PAGE</u>
<u>6.1</u>	<u>RESPONSIBILITY</u>	6.0-1
<u>6.2</u>	<u>ORGANIZATION</u>	6.0-1
<u>6.2.1</u>	Corporate.....	6.0-1
<u>6.2.2</u>	Plant Staff.....	6.0-1
<u>6.3</u>	<u>PLANT STAFF QUALIFICATIONS</u>	6.0-4
<u>6.4</u>	<u>TRAINING</u>	6.0-4
<u>6.5</u>	<u>PLANT REVIEW AND AUDIT</u>	6.0-4
<u>6.5.1</u>	Plant Operation Review Committee (PORC).....	6.0-4
<u>6.5.2</u>	Nuclear Safety Review Board (NSRB).....	6.0-10
<u>6.5.3</u>	Technical Review and Approval of Procedures.....	6.0-16
<u>6.6</u>	<u>REPORTABLE EVENT ACTIONS</u>	6.0-17
<u>6.7</u>	<u>SAFETY LIMIT VIOLATION</u>	6.0-18
<u>6.8</u>	<u>PROCEDURES/INSTRUCTION AND PROGRAMS</u>	6.0-19
<u>6.8.1</u>	Procedures.....	6.0-19
<u>6.8.2</u>	Drills.....	6.0-20
<u>6.8.3</u>	Radiation Control Procedures.....	6.0-20
<u>6.8.4</u>	Quality Assurance Procedures - Effluent and.....	
	Environmental Monitoring.....	6.0-22
<u>6.9</u>	<u>REPORTING REQUIREMENTS</u>	6.0-23
<u>6.9.1</u>	Routine Reports.....	6.0-23
	Startup Reports.....	6.0-23
	Annual Operating Report.....	6.0-24
	Monthly Operating Report.....	6.0-25
	Reportable Events.....	6.0-25
	Radioactive Effluent Release Report.....	6.0-25
	Source Tests.....	6.0-25
<u>6.9.2</u>	Special Reports.....	6.0-26
<u>6.10</u>	<u>STATION OPERATING RECORDS AND RETENTION</u>	6.0-28
<u>6.11</u>	<u>PROCESS CONTROL PROGRAM</u>	6.0-31
<u>6.12</u>	<u>OFFSITE DOSE CALCULATION MANUAL</u>	6.0-31
<u>6.13</u>	<u>RADIOLOGICAL EFFLUENT MANUAL</u>	6.0-32

LIST OF TABLES

<u>Table</u>	<u>Title</u>	<u>Page No.</u>
1.1	Surveillance Frequency Notation	1.0-11
3.1.A	Reactor Protection System (SCRAM) Instrumentation Requirements.	3.1/4.1-3
4.1.A	Reactor Protection System (SCRAM) Instrumentation Functional Tests Minimum Functional Test Frequencies for Safety Instr. and Control Circuits.	3.1/4.1-8
4.1.B	Reactor Protection System (SCRAM) Instrumentation Calibration Minimum Calibration Frequencies for Reactor Protection Instrument Channels. . . .	3.1/4.1-11
3.2.A	Primary Containment and Reactor Building Isolation Instrumentation	3.2/4.2-7
3.2.B	Instrumentation that Initiates or Controls the Core and Containment Cooling Systems.	3.2/4.2-14
3.2.C	Instrumentation that Initiates Rod Blocks	3.2/4.2-25
3.2.D	Radioactive Liquid Effluent Monitoring.	3.2/4.2-28
3.2.E	Instrumentation that Monitors Leakage Into Drywell.	3.2/4.2-30
3.2.F	Surveillance Instrumentation.	3.2/4.2-31
3.2.G	Control Room Isolation Instrumentation.	3.2/4.2-34
3.2.H	Flood Protection Instrumentation.	3.2/4.2-35
3.2.I	Meteorological Monitoring Instrumentation	3.2/4.2-36
3.2.J	Seismic Monitoring Instrumentation.	3.2/4.2-37
3.2.K	Radioactive Gaseous Effluent Monitoring Instrumentation	3.2/4.2-38
4.2.A	Surveillance Requirements for Primary Containment and Reactor Building Isolation Instrumentation. . .	3.2/4.2-40
4.2.B	Surveillance Requirements for Instrumentation that Initiate or Control the CSCS.	3.2/4.2-44
4.2.C	Surveillance Requirements for Instrumentation that Initiate Rod Blocks	3.2/4.2-50
4.2.D	Radioactive Liquid Effluent Monitoring Instrumentation Surveillance Requirements	3.2/4.2-51

LIST OF TABLES (Cont'd)

<u>Table</u>	<u>Title</u>	<u>Page No.</u>
4.2.E	Minimum Test and Calibration Frequency for Drywell Leak Detection Instrumentation.	3.2/4.2-53
4.2.F	Minimum Test and Calibration Frequency for Surveillance Instrumentation	3.2/4.2-54
4.2.G	Surveillance Requirements for Control Room Isolation Instrumentation.	3.2/4.2-56
4.2.H	Minimum Test and Calibration Frequency for Flood Protection Instrumentation	3.2/4.2-57
4.2.J	Seismic Monitoring Instrument Surveillance Requirements	3.2/4.2-58
4.2.K	Radioactive Gaseous Effluent Instrumentation Surveillance	3.2/4.2-62
3.5-1	Minimum RHRSW and EECW Pump Assignment	3.5/4.5-11
3.5.I	MAPLHGR Versus Average Planar Exposure	3.5/4.5-21
3.7.A	Primary Containment Isolation Valves	3.7/4.7-25
3.7.B	Testable Penetrations with Double O-Ring Seals	3.7/4.7-32
3.7.C	Testable Penetrations with Testable Bellows.	3.7/4.7-33
3.7.D	Air Tested Isolation Valves.	3.7/4.7-34
3.7.E	Primary Containment Isolation Valves which Terminate below the Suppression Pool Water Level.	3.7/4.7-37
3.7.F	Primary Containment Isolation Vales Located in Water Sealed Seismic Class 1 Lines	3.7/4.7-38
3.7.H	Testable Electrical Penetrations	3.7/4.7-39
4.9.A.4.C	Voltage Relay Setpoints/Diesel Generator Start	3.9/4.9-16
3.11.A	Fire Protection System Hydraulic Requirements.	3.11/4.11-10
6.2.A	Minimum Shift Crew Requirements.	6.0-3

LIST OF ILLUSTRATIONS

<u>Figure</u>	<u>Title</u>	<u>Page No.</u>
2.1.1	APRM Flow Reference Scram and APRM Rod Block Settings	1.1/2.1-6
2.1-2	APRM Flow Bias Scram Vs. Reactor Core Flow	1.1/2.1-7
4.1-1	Graphic Aid in the Selection of an Adequate Interval Between Tests	3.1/4.1-13
4.2-1	System Unavailability.	3.2/4.2-64
3.4-1	Sodium Pentaborate Solution Volume Concentrated Requirements	3.4/4.4-4
3.4-2	Sodium Pentaborate Solution Temperature Requirements	3.4/4.4-5
3.5.K-1	MCPR Limits.	3.5/4.5-22
3.5.2	K _f Factor.	3.5/4.5-23
3.6-1	Minimum Temperature °F Above Change in Transient Temperature.	3.6/4.6-24
3.6-2	Change in Charpy V Transition Temperature Vs. Neutron Exposure	3.6/4.6-25
4.8.1.a	Gaseous Release Points and Elevations	3.8/4.8-10
4.8.1.b	Land Site Boundary	3.8/4.8-11
6.2-1	Offsite Organization for Facility Management and Technical Support	6.0-33
6.2-2	Facility Organization	6.0-34

3.2/4.2 PROTECTIVE INSTRUMENTATION

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.2.D Radioactive Liquid Effluent Monitoring Instrumentation

4.2.D Radioactive Liquid Effluent Monitoring Instrumentation

1. The radioactive liquid effluent monitoring instrumentation listed in Table 3.2.D shall be OPERABLE with the applicability as shown in Tables 3.2.D/4.2.D. Alarm/trip setpoints will be set in accordance with guidance given in the ODCM to ensure that the limits of specification 3.8.A.1 are not exceeded.
2. The action required when the number of operable channels is less than the minimum channels operable requirement is specified in the notes for Table 3.2.D. Exert best efforts to return the instrument(s) to OPERABLE status within 30 days and if unsuccessful, explain in the next Semiannual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.
3. With a radioactive liquid effluent monitoring channel alarm/trip setpoint less conservative than required by these specifications, suspend the release without delay, declare the channel inoperable, or adjust the alarm/trip setpoint to establish the conservatism required by these specifications.
4. The provisions of specification 1.0.C and 6.9.1.4 are not applicable.

1. Each of the radioactive liquid effluent monitoring instruments shall be demonstrated OPERABLE by performance of test in accordance with Table 4.2.D.

3.2/4.2-3

3.2/4.2 PROTECTIVE INSTRUMENTATION

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.2.E. Drywell Leak Detection

The limiting conditions of operation for the instrumentation that monitors drywell leak detection are given in Table 3.2.E.

F. Surveillance Instrumentation

The limiting conditions for the instrumentation that provides surveillance information readouts are given in Table 3.2.F.

G. Control Room Isolation

The limiting conditions for instrumentation that isolates the control room and initiates the control room emergency pressurization systems are given in Table 3.2.G.

H. Flood Protection

The unit shall be shutdown and placed in the cold condition when Wheeler Reservoir lake stage rises to a level such that water from the reservoir begins to run across the pumping station deck at elevation 565.

Requirements for instrumentation that monitors the reservoir level are given in Table 3.2.H.

I. Meteorological Monitoring Instrumentation

The meteorological monitoring instrumentation listed in Table 3.2.I shall be OPERABLE at all times.

4.2.E. Drywell Leak Detection

Instrumentation shall be calibrated and checked as indicated in Table 4.2.E.

F. Surveillance Instrumentation

Instrumentation shall be calibrated and checked as indicated in Table 4.2.F.

G. Control Room Isolation

Instrumentation shall be calibrated and checked as indicated in Table 4.2.G.

H. Flood Protection

Surveillance shall be performed on the instrumentation that monitors the reservoir level as indicated in Table 4.2.H.

I. Meteorological Monitoring Instrumentation

Each meteorological monitoring instrument channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK at least once per

3.2/4.2 PROTECTIVE INSTRUMENTATION

MITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.2.I. Meteorological Monitoring Instrumentation (Cont'd)

1. With the number of operable meteorological monitoring channels less than required by Table 3.2.I, restore the inoperable channel(s) to operable status within 7 days.
2. With one or more of the meteorological monitoring channels inoperable for more than 7 days, prepare and submit a Special Report to the Commission, pursuant to Specification 6.9.2 within the next 10 days outlining the cause of the malfunction and the plans for restoring the system to operable status.

J. Seismic Monitoring Instrumentation

1. The seismic monitoring instruments listed in Table 3.2.J shall be operable at all times.
2. With the number of seismic monitoring instruments less than the number listed in Table 3.2.J, restore the inoperable instrument(s) to operable status within 30 days.
3. With one or more of the instruments listed in Table 3.2.J inoperable for more than 30 days, submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 10 days describing the cause of the malfunction and the plans for restoring the instruments to operable status.

4.2.I Meteorological Monitoring Instrumentation (Cont'd)

24 hours and the CHANNEL CALIBRATION at least once each 6 months.

4.2.J. Seismic Monitoring Instrumentation

1. Each of the seismic monitoring instruments shall be demonstrated operable by performance of tests at the frequencies listed in Table 4.2.J.
2. Data shall be retrieved from all seismic instruments actuated during a seismic event and analyzed to determine the magnitude of the vibratory ground motion. A Special Report shall be submitted to the Commission pursuant to Specification 6.9.2 within 10 days describing the magnitude, frequency spectrum, and resultant effect upon plant features important to safety.

3.2/4.2 PROTECTIVE INSTRUMENTATION

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.2.K Radioactive Gaseous Effluent Monitoring Instrumentation

1. The radioactive gaseous effluent monitoring instruments listed in Table 3.2.K shall be OPERABLE with the applicability as shown in Tables 3.2.K/4.2.K Alarm/trip setpoints will be set in accordance with guidance given in the ODCM to ensure that the limits of Specification 3.8.B.1 are not exceeded.
2. The action required when the number of operable channels is less than the Minimum Channels Operable requirement is specified in the notes for Table 3.2.K. Exert best efforts to return the instruments to operable status within 30 days and, if unsuccessful, explain in the next Semiannual Radioactive Release Report why the inoperability was not corrected in a timely manner.
3. With a radioactive gaseous effluent monitoring channel alarm/trip setpoint less conservative than required by these specifications, suspend the release without delay, declare the channel inoperable or adjust the alarm/trip setpoint to establish the conservatism required by these specifications.
4. Both off-gas treatment monitors may be taken out of service for less than one hour for purging of monitors during SI performance.
5. The provisions of Specifications 1.0.C and 6.9.1.4 are not applicable.

4.2.K Radioactive Gaseous Effluent Monitoring Instrumentation

1. Each of the radioactive gaseous effluent monitoring instruments shall be demonstrated OPERABLE by performance of tests in accordance with Table 4.2.K.

3.8/4.8 RADIOACTIVE MATERIALS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.8 RADIOACTIVE MATERIALS

Applicability

Applies to the release of radioactive liquids and gases from the facility.

Objective

To define the limits and conditions for the release of radioactive effluents to the environs to assure that any radioactive releases are as low as reasonably achievable and within the limits of 10 CFR Part 20. The specifications except for 3.8.A.1 and 3.8.B.1 are exempt from the requirements of definition 1.0.C (Limiting Condition for Operation).

Specification

A. Liquid Effluents

1. The concentration of radioactive material released at any time from the site to unrestricted areas (see Figure 4.8-1b) shall be limited to the concentrations specified in 10 CFR Part 20, Appendix B, Table II, Column 2 for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall be limited to $2E-4$ mCi/ml total activity.
2. If the limits of 3.8.A.1 are exceeded, appropriate action shall be initiated without delay to bring the release within

4.8 RADIOACTIVE MATERIALS

Applicability

Applies to the periodic testing and record requirements and sampling and monitoring methods used for facility effluents.

Objective

To ensure that radioactive liquid and gaseous releases from the facility are maintained within the limits specified by Specifications 3.8.A and 3.8.B.

Specification

A. Liquid Effluents

1. Facility records shall be maintained of radioactive concentrations and volume before dilution of each batch of liquid effluent released, and of the average dilution flow and length of time over which each discharge occurred.
2. Radioactive liquid waste sampling and activity analysis of each liquid waste batch to be discharged shall be performed prior to release in accordance with the sampling and analysis program specified in the REM.
3. The operation of the automatic isolation valves and discharge tank selection valves shall be checked annually.

3.8/4.8 RADIOACTIVE MATERIALS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.8.A. Liquid Effluents

- limits. Provide prompt notification to the NRC pursuant to section 6.9.1.4.
3. The doses or dose commitment to a member of the public from radioactive materials in liquid effluents released from each unit to unrestricted areas (See Figure 4.8-1b) shall be limited:
 - a. During any calendar quarter to <1.5 mrem to the total body and <5 mrem to any organ and,
 - b. During any calendar year to <3 mrem to the total body and <10 mrem to any organ
 4. If the limits specified in 3.8.A.3 a & b above are exceeded, prepare and submit Special Report pursuant to Section 6.9.1.4.
 5. The maximum activity to be contained in one liquid radwaste tank or temporary storage tank that can be discharged directly to the environs shall not exceed 10 curies excluding tritium and dissolved/entrained noble gas.
 6. With radioactive liquid waste exceeding 3.8.A.5 limits, without delay suspend all additions of radioactive material to the tank and within 48 hours, reduce the tank contents to within the limit. Events leading to this condition must be reported in the next Semiannual Radioactive Effluent Release Report (section F.2 of the REM)

4.8.A. Liquid Effluents

4. The results of the analysis of samples collected from release points shall be used with the calculational methodology in the ODCM to assure that the concentrations at the point of release are maintained within the limits of specification 3.8.A.1.
5. Cumulative quarterly and yearly dose contributions from liquid effluents shall be determined as specified in the ODCM at least once every 31 days.
6. The quantity of radioactive material contained in any outside liquid radwaste storage tanks shall be determined to be within the above limit by analyzing a representative sample of the tank's contents at least once per 7 days when radioactive materials are being added to the tank.

8/4.8 RADIOACTIVE MATERIALS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.8.B. Airborne Effluents

1. The dose rate at any time to areas at and beyond the site boundary (see Figure 4.8-1b) due to radioactivity released in gaseous effluents from the site shall be limited to the following values:
 - a. The dose rate limit for noble gases shall be <500 mrem/yr to the total body and <3000 mrem/yr to the skin, and
 - b. The dose rate limit for I-131, I-133, H-3, and particulates with greater than eight day half-lives shall be <1500 mrem/yr to any organ.
2. If the limits of 3.8.B.1 are exceeded, appropriate corrective action shall be immediately initiated to bring the release within limits. Provide prompt notification to the NRC pursuant to Section 6.9.1.4.

4.8.B. Airborne Effluents

1. The gross β/γ and particulate activity of gaseous wastes released to the environment shall be monitored and recorded.
 - a. For effluent streams having continuous monitoring capability, the activity shall be monitored and flow rate evaluated and recorded to enable release rates of gross radioactivity to be determined at least once per shift using instruments specified in Table 3.2.K.
 - b. For effluent streams without continuous monitoring capability, the activity shall be monitored and recorded and the release through these streams controlled to within the limits specified in 3.8.B.
2. Radioactive gaseous waste sampling and activity analysis shall be performed in accordance with the sampling and analysis program specified in the REM. Dose rates shall be determined to be within limits of 3.8.B using methods contained in the ODCM.

3.8/4.8-3

3.8/4.8 RADIOACTIVE MATERIALS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.8.B Airborne Effluents
(Cont'd)

3. The air dose to areas at and beyond the site boundary (see Figure 4.8-1b) due to noble gases released in gaseous effluents per unit shall be limited to the following:
 - a. During any calendar quarter, to ≤ 5 mrad for gamma radiation and ≤ 10 mrad for beta radiation;
 - b. During any calendar year, to ≤ 10 mrad for gamma radiation and ≤ 20 mrad for beta radiation.
4. If the calculated air dose exceeds the limits specified in 3.8.B.3 above, prepare and submit a special report pursuant to section 6.9.1.4.
5. The dose to a member of the public from radioiodines, radioactive materials in particulate form, and radionuclides other than noble gases with half lives greater than 8 days in gaseous effluent released per unit to areas at and beyond the site boundary (see Figure 4.8-1b) shall be limited to the following:
 - a. To any organ during any calendar quarter to ≤ 7.5 mrem;
 - b. To any organ during any calendar year to ≤ 15 mrem;

4.8.B Airborne Effluents
(Cont'd)

3. Cumulative quarterly and yearly dose contributions from gaseous releases shall be determined using methods contained in the ODCM at least once every 31 days.

8/4.8 RADIOACTIVE MATERIALS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.8.B Airborne Effluents
(Cont'd)

6. If the calculated doses exceed the limits of 3.8.B.5 above, prepare and submit a special report pursuant to Section 6.9.1.4.
7. During operation above 25% power the discharge of the SJAE must be routed through the charcoal adsorbers.
8. With gaseous waste being discharged for more than 7 days without treatment through the charcoal adsorbers, prepare and submit a special report pursuant to Section 6.9.1.4.
9. Whenever the SJAE is in service, the concentration of hydrogen in the offgas downstream of the recombiners shall be limited to $\leq 4\%$ by volume.
10. With the concentration of hydrogen exceeding the limit of 3.8.B.9 above, restore the concentration to within the limit within 48 hours.

4.8.B Airborne Effluents
(Cont'd)

4. During operation above 25% power, the position of the charcoal bed bypass valve will be verified daily.
5. The concentration of hydrogen downstream of the recombiners shall be determined to be within the limits of 3.8.B.9 by continuously monitoring the off-gas whenever the SJAE is in service using instruments described in Table 3.2.K. Instrument surveillance requirements are specified in Table 4.2.K.

3.8/4.8 RADIOACTIVE MATERIALS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.8.C Radioactive Effluents - Dose

1. The dose or dose commitment to a real individual from all uranium fuel cycle sources is limited to ≤ 25 mrem to the total body or any organ (except the thyroid, which is limited to ≤ 75 mrem) over a period of one calendar year.
2. With the calculated dose from the release of radioactive materials in liquid or gaseous effluents exceeding twice the limits of Specification 3.8.A.3, 3.8.B.3, or 3.8.B.5, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.1.4. and limit the subsequent releases such that the limits of 3.8.C.1 are not exceeded.

3.8.D Mechanical Vacuum Pump

1. Each mechanical vacuum pump shall be capable of being automatically isolated and secured on a signal or high radioactivity in the steam lines whenever the main steam isolation valves are open.
2. If the limits of 3.8.D.1 are not met, the vacuum pump shall be isolated.

4.8.C Radioactive Effluents - Dose

1. Cumulative dose contributions from liquid and gaseous effluents shall be determined in accordance with Specifications 3.8.A.3, 3.8.B.3, and 3.8.B.5 and the methods in the ODCM.

4.8.D Mechanical Vacuum Pump

At least once during each operating cycle verify automatic securing and isolation of the mechanical vacuum pump.

3.11/4.11 FIRE PROTECTION SYSTEMS

LIMITING CONDITIONS FOR OPERATION

3.11.A. High Pressure Fire Protection System

area where protection is lost is checked hourly.

3. If only one high pressure fire pump is OPERABLE, the reactors may remain in operation for a period not to exceed 7 days, provided the requirements of Specification 3.11.A.1.b above are met.
4. If Specification 3.11.A.3 cannot be met, the reactors shall be placed in the Cold Shutdown condition in 24 hours.
5. Removal of any component in the High Pressure Fire System from service for any reason other than testing or emergency operations shall require Plant Manager approval.
6. The Raw Service Water storage tank level shall be maintained above level 723'7" by the raw service water pumps.

SURVEILLANCE REQUIREMENTS

4.11.A. High Pressure Fire Protection System

3. Raw Service Water System Testing

<u>Item</u>	<u>Frequency</u>
-------------	------------------

Simulated automatic and manual actuation of raw service water pumps and operation of tank level switches.	Once/year
---	-----------

4. The high pressure fire protection system pressure shall be logged daily.
5. Principal header and component isolation valves shall be checked open at intervals no greater than 3 months.

3.11/4.11-3

Amendment No. 134

3.11/4.11 FIRE PROTECTION SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.11.A. High Pressure Fire Protection System

7. If Specification 3.11.A.6 cannot be met a fire pump shall be started and run continuously until the raw service water pumps can maintain a raw service water storage tank level above 723'7".
8. The fire protection water distribution system shall have a minimum capacity of 2664 gpm at 250' head.
9. The fire protection system shall be capable of supplying the individual loads listed in Table 3.11.A.

B. CO₂ Fire Protection System

1. The CO₂ Fire Protection System shall be OPERABLE:
 - a. With a minimum of 8-1/2 tons (0.5 Tank) CO₂ in storage units 1 and 2.
 - b. With a minimum of 3 tons (0.5 Tank) CO₂ storage unit 3.

4.11.A. High Pressure Fire Protection System

B. CO₂ Fire Protection System

1. CO₂ Fire Protection Testing:

<u>Item</u>	<u>Frequency</u>
-------------	------------------

- | | |
|---|---------------|
| a. Simulated automatic and manual actuation | Once/year |
| b. Storage tank pressure and level | Checked daily |

3.11/4.11 FIRE PROTECTION SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.11.B. CO₂ Fire Protection System

4.11.B. CO₂ Fire Protection System

3.11.B.1 (Cont'd)

4.11.B.1 (Cont'd)

- c. Automatic initiation logic OPERABLE.

- 2. If Specifications 3.11.B.1.a or 3.11.B.1.b or 3.11.B.1.c cannot be met, a patrolling fire watch with portable fire equipment shall be established to ensure that each area where protection is lost is checked hourly.

- 3. If Specifications 3.11.B.1.a, 3.11.B.1.b, or 3.11.B.1.c are not met within 7 days, the affected unit(s) shall be in Cold Shutdown within 24 hours.

- 4. If CO₂ fire protection is lost to a cable spreading room or to any diesel generator building area a continuous fire watch shall be established immediately and shall be continued until CO₂ fire protection is restored.

- c. CO₂ Spray header and nozzle inspection for blockage Once/3 years

- 2. When the cable spreading room CO₂ Fire Protection is INOPERABLE, one 125-pound (or larger) portable fire extinguisher shall be placed at each entrance.

3.11/4.11 FIRE PROTECTION SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.11.B. CO₂ Fire Protection System

5. Removal of any component in the CO₂ Fire Protection System from service for any reason other than testing or emergency operations shall require Plant Manager approval.

C. Fire Detectors

1. The fire detection system's heat and smoke detectors for all protected zones shall be OPERABLE except that one detector for a given protected zone may be INOPERABLE for a period no greater than 30 days.
2. If Specification 3.11.C.1 cannot be met, a patrolling fire watch will be established to ensure that each protected zone or area with INOPERABLE detectors is checked at intervals no greater than one each hour.

4.11.C. Fire Detectors

1. All heat and smoke detectors shall be tested in accordance with industrial standards or other approved methods semiannually.
2. The non-Class A supervised detector circuitry for those detectors which provide alarm only will be tested once each month by actuating the detector at the end of the line or end of the branch such that the largest number of circuit conductors will be checked.

3.11/4.11-6

3.11/4.11 FIRE PROTECTION SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

11.D. ROVING FIRE WATCH

Deleted

4.11.C. Fire Detectors

3. The class A supervised detector alarm circuits will be tested once each two months at the local panels.
4. The circuits between the local panels in 4.11.C.3 and the main control room will be tested monthly.
5. Smoke detector sensitivity will be checked in accordance with manufacturer's instruction annually.

D. ROVING FIRE WATCH

Deleted

3.11/4.11-7

3.11/4.11 FIRE PROTECTION SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.11.E. Fire Protection Systems Inspection

All fire barrier penetrations, including cable penetration barriers, fire doors and fire dampers, in fire zone boundaries protecting safety-related areas shall be functional at all times. With one or more of the required fire barrier penetrations nonfunctional within one hour establish a continuous fire watch on at least one side of the affected penetration or verify the OPERABILITY of fire detectors on at least one side of the nonfunctional fire barrier and establish an hourly fire watch patrol until the work is completed and the barrier is restored to functional status.

F. Fire Protection Organization

Deleted

G. Air Masks and Cylinders

A minimum of 15 air masks and 30 500-cubic-inch air cylinders shall be available at all times except that a time period of 48 hours following emergency use is allowed to permit recharging or replacing.

4.11.E. Fire Protection Systems Inspections

Each required fire barrier penetration shall be verified to be functional at least once per 18 months by a visual inspection, and prior to restoring a fire barrier to functional status following repairs or maintenance by performance of a visual inspection of the affected fire barrier penetration.

F. Fire Protection Organization

Deleted

G. Air Masks and Cylinders

No additional surveillance required.

3.11 BASES

The High Pressure Fire and CO₂ Fire Protection specifications are provided in order to meet the preestablished levels of operability during a fire in either or all of the three units. Requiring a patrolling fire watch with portable fire equipment if the automatic initiation is lost will provide (as does the automatic system) for early reporting and immediate fire fighting capability in the event of a fire occurrence.

The High Pressure Fire Protection System is supplied by four pumps (three electric driven and one diesel driven) aligned to the high pressure fire header. The reactors may remain in operation for a period not to exceed seven days if three pumps are out-of-service. If at least two pumps are not made operable in seven days or if all pumps are lost during this seven-day period, the reactors will be placed in the cold shutdown condition within 24 hours.

For the areas of applicability, the fire protection water distribution system minimum capacity of 2,664 gpm at 250' head at the fire pump discharge consists of the following design loads:

1. Sprinkler System (0.30 gpm/ft ² /4440 ft ² area)	1332 gpm
2. 1 1/2" Hand Hose Lines	200 gpm
3. Raw Service Water Load	<u>1132 gpm</u>
TOTAL	2664 gpm

The CO₂ Fire Protection System is considered operable with a minimum of 8 1/2 tons (0.5 tank) CO₂ in storage for units 1 and 2; and a minimum of 3 tons (0.5 tank) CO₂ in storage for unit 3. An immediate and continuous fire watch in the cable spreading room or any diesel generator building area will be established if CO₂ fire protection is lost in this room and will continue until CO₂ fire protection is restored.

To assure close supervision of fire protection system activities, the removal from service of any component in either the High Pressure Fire System or the CO₂ Fire Protection System for any reason other than testing or emergency operations will require Plant Manager approval.

Early reporting and immediate fire fighting capability in the event of a fire occurrence will be provided (as with automatic system) by requiring a patrolling fire watch if more than one detector for a given protected zone is inoperable.

3.11/4.11-12

3.11 BASES (Cont'd)

The fire protection system is designed to supply the required flow and pressure to an individual load listed on Table 3.11.A while maintaining a design raw service water load of 1132 gpm.

4.11 BASES

Periodic testing of both the High Pressure Fire System and the CO₂ Fire Protection System will provide positive indication of their operability. If only one of the pumps supplying the High Pressure Fire System is operable, the pump that is operable will be checked immediately and daily thereafter to demonstrate operability. If the CO₂ Fire Protection System becomes inoperable in the cable spreading room, one 125-pound (or larger) fire extinguishers will be placed at each entrance to the cable spreading room.

Annual testing of automatic valves and control devices is in accordance with NFPA Code Vol. II, 1975, section 15, paragraph 6015. More frequent testing would require excessive automatic system inoperability, since there are a large number of automatic valves installed and various portions of the system must be isolated during an extended period of time during this test.

Wet fire header flushing, spray header inspection for blockage, and nozzle inspection for blockage will prevent, detect, and remove buildup of sludge or other material to ensure continued operability. System flushes in conjunction with the semiannual addition of biocide to the Raw Cooling Water System will help prevent the growth of crustaceans which could reduce nozzle discharge.

Semiannual tests of heat and smoke detectors are in accordance with the NFPA Code.

With the exception of continuous strip heat detectors panels, all non-class A supervised detector circuits which provide alarm only are hardwired through conduits and/or cable trays from the detector to the main control room alarm panels with no active components between. Nonclass A circuits also actuate the HPCI water-fog system, the CO₂ system in the diesel generator buildings, and isolate ventilation in shutdown board rooms. The test frequency and methods specified are justified for the following reasons:

1. An analysis was made of worst-case fire detection circuits at Browns Ferry to determine the probability of no undetected failure of the circuits occurring between system test times as specified in the surveillance requirements. A circuit is defined as the wire connections and components that affect transmission of an alarm signal between the fire detectors and the control room annunciator. Three circuits were analyzed which were representative of an alarm-only circuit, a water-fog circuit, and a CO₂ circuit. The spreading room B smoke detector was selected as the worst-case alarm-only circuit because it had the largest number of wires and connections in a single circuit. The HPCI water-fog circuit was selected for analysis because it is the only water-fog circuit in the area of applicability for Technical Specifications.

4.11 BASES (Cont'd)

The Standby Diesel Generator Room A CO₂ circuit was selected because it contained 2 out of 3 detector logic, the most complicated CO₂ circuit logic. Calculations were based on failure rates for wires, connections, and circuit components as shown in Appendix III of WASH-1400. Failure rates were considered for the following circuit components:

1. Open circuit
2. Short to ground
3. Short to power
4. Timing motor failure to start
5. Relay failure to energize
6. Normally open contact failure to close
7. Normally open or normally closed contact short
8. Normally closed contact opening
9. Timing switch failure to transfer

The calculated probabilities (Pf) for no undetected failure of the circuits occurring were as follows, based on the specified test frequency.

AREA	TEST FREQUENCY	Pf
Spreading Room B	One Month	0.975287
HPCI Water Fog	Six Months	0.977175
Standby Diesel Gen Room A CO ₂	Six Months	0.957595

The worst case of the three areas considered is Spreading Room B. The probability of undetected failure is approximately 1/40, which means that one undetected failure will occur on the average every 40 months over an extended period of time and that the failure could exist up to one month. The frequency of testing is thus much greater than the frequency of failure and produces circuits with adequate reliability.

2. Circuits checks by initiation of end of the line or end of the branch detectors will more thoroughly test the parallel circuits than testing on a rotating detector basis. This test is not a detector test, but is a test to simulate the effect of electrical supervision as defined in the NFPA Code.*
3. Testing of circuits which actuate CO₂, water, or ventilation systems requires disabling the automatic feature of the fire protection system for the area. A surveillance program which disabled these circuits monthly would significantly reduce the ability of these circuits to provide fire suppression.

*Ref: NFPA Code 72D-9, paragraph 1111, Code 72D-15, paragraph 1312 for definition of Class A systems, and Code 72A-18, Article 240.

4.11 BASES (Cont'd)

4. Daily tests of annunciation lights and audible devices are performed as a routine operation function.
5. The CO₂ system manufacturer recommends semiannual testing of CO₂ system fire detection circuits.

In addition, operating personnel periodically inspect the plant during their normal operating activities for fire hazards and other abnormal conditions.

Smoke detectors will be tested "in-place" using inert freon gas applied by a pyrotronics type applicator which is accepted throughout the industrial fire protection industry for testing products of combustion detectors or by use of the MSA chemical smoke generators. At the present time, the manufacturers have only approved the use of "punk" for creating smoke. TVA will not use "punk" for testing smoke detectors.

3.11/4.11-15

BFN TECHNICAL SPECIFICATIONS
6.0 ADMINISTRATIVE CONTROLS

6.0 ADMINISTRATIVE CONTROLS

6.1 RESPONSIBILITY

The Plant Manager has onsite responsibilities for the safe operation of the facility and shall report to the Browns Ferry Site Director. In the absence of the Plant Manager, a Plant Superintendent will assume his responsibilities.

6.2 ORGANIZATION

CORPORATE

6.2.1 The portion of TVA management which relates to the operation of the plant is shown in Figure 6.2-1.

PLANT STAFF

6.2.2 The functional organization for the operation of the plant shall be shown in Figure 6.2-2.

- a. Shift manning requirements, shall as a minimum, be as described in Table 6.2.A and below.
- b. A licensed senior reactor operator shall be present at the site at all times when there is fuel in the reactor.

6.2.2 (Cont.)

- c. A licensed reactor operator shall be in the control room whenever there is fuel in the reactor.
- d. Two licensed reactor operators shall be in the control room during any cold startups, while shutting down the reactor, and during recovery from unit trip. In addition, a person holding a senior operator license shall be in the control room for that unit whenever it is in an operational mode other than cold shutdown or refueling.
- e. A Health Physics Technician* shall be present at the facility at all times when there is fuel in the reactor.
- f. A person holding a senior operator license or a senior operator license limited to fuel handling, shall be present during alteration of the core to directly supervise the activity and during this time shall not be assigned other duties.
- g. A site fire brigade of at least five members shall be maintained onsite at all times.* The fire brigade shall not include the Shift Engineer and the other members of the minimum shift crew necessary for safe shutdown of the unit, nor any personnel required for other essential functions during a fire emergency.

*The Health Physics Technician and fire brigade composition 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.

Table 6.2.A
Minimum Shift Crew Requirements^b

<u>Position</u>	<u>Units in Operation</u>				<u>Type of License</u>
	<u>0</u>	<u>1</u>	<u>2^d</u>	<u>3</u>	
Senior Operator ^a	1	1	1	1	SRO
Senior Operator	0	1	2	2	SRO
Licensed Operators	3	3	3	3	RO or SRO
Additional Licensed Operators ^c	0	1	2	2	RO or SRO
Assistant Unit Operators (AUO)	4	4	5	5	None
Shift Technical Advisor (STA)	0	1	1	1	None
Health Physics Technician	1	1	1	1	None

Note for Table 6.2.A

- a. A senior operator will be assigned responsibility for overall plant operation at all times there is fuel in any unit.
- b. Except for the senior operator discussed in note "a", the shift crew composition may be one less than the minimum requirements of Table 6.2.A for a period of time not to exceed two 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.A. 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.
- c. One of the Additional Licensed Operators must be assigned to each control room with an operating unit.
- d. The number of required licensed personnel, when the operating units are controlled from a common control room, are two senior operators and four operators.

6.3 PLANT STAFF QUALIFICATIONS

Qualifications of the Browns Ferry Nuclear Plant management and operating staff shall meet the minimum acceptable levels as described in ANSI - N18.1, Selection and Training of Nuclear Power Plant Personnel, dated March 8, 1971. The qualifications of the Health Physics Supervisor will meet or exceed the minimum acceptable levels as described in Regulatory Guide 1.8, Revision 1, dated September 1975. The Shift Technical Advisor shall have a bachelor's degree or equivalent in a scientific or engineering discipline with specific training in plant design and transient and accident response and analysis.

6.4 TRAINING

A retraining and replacement training program for station personnel shall be in accordance with ANSI - N18.1, Selection and Training of Nuclear Power Plant Personnel, dated March 8, 1971. The minimum frequency of the retraining program shall be every two years.

6.5 PLANT REVIEW AND AUDIT

6.5.1 PLANT OPERATIONS REVIEW COMMITTEE (PORC)

FUNCTION

- 6.5.1.1 a. The PORC shall function to advise the Plant Manager in all matters related to nuclear safety.
- b. This advisory function shall be performed by the PORC acting in a formal meeting or by members acting individually without a formal meeting.

COMPOSITION

6.5.1.2 The PORC shall be composed of the:

- a. Chairman: Plant Manager
- Alternate Chairman: Assistant to Plant Manager
- Alternate Chairman or Member: Technical Services
Superintendent
- Member: Unit Superintendents (3)
- Member: Maintenance Superintendent
- Member: Quality Assurance Staff
Supervisor
- Member: Health Physics
Supervisor

b. All alternate chairmen and alternate members shall be appointed in writing by the PORC chairman.

MEETING FREQUENCY

6.5.1.3 The PORC shall convene in a formal meeting at least once a month and as directed by the chairman. Other PORC meetings may be requested by the chairmen or members as required.

- 6.5.1.4 For expedited meetings, when it is not practical to convene as a group, the chairman or alternate chairman may conduct committee business by polling the members individually (by telephone or in person) or via a serialized review.

QUORUM

- 6.5.1.5 The quorum necessary for the PORC to act in a formal meeting shall consist of the chairman or alternate chairman and at least five members or their alternates. Members shall be considered present if they are in telephone communication with the committee.

RESPONSIBILITIES

- 6.5.1.6 The PORC shall be responsible for the activities listed below. The PORC may delegate the performance of reviews, but will maintain cognizance over and responsibility for them, e.g., subcommittees.
- a. Review of administrative procedures for the control of the technical and cross-disciplinary review of (1) all procedures required by Specification 6.8.1.1, and changes thereto, (2) any other procedures and changes thereto determined by the Plant Manager to affect nuclear safety.
 - b. Review of the administrative procedures required by Appendix A of Regulatory Guide 1.33, Revision 2, February 1978 and changes thereto.
 - c. Review of emergency operating procedures and changes thereto.
 - d. Review implementing procedures of the Radiological Emergency Plan and the Industrial Security Program.

- e. Review of all proposed changes to the Technical Specifications.
- f. Review of safety evaluation for proposed tests or experiments to be completed under the provisions of 10 CFR 50.59
- g. Review proposed changes to the Radiological Effluent Manual.
- h. Review adequacy of the Process Control Program and Offsite Dose Calculation Manual at least once every 24 months.
- i. Review changes to the radwaste treatment systems.
- j. Review of every unplanned onsite release of radioactive material to the environs including the preparation and forwarding of reports covering evaluation, recommendation, and disposition of the corrective action to prevent recurrence to the Director, Nuclear Power and to the Nuclear Safety Review Board.
- k. Review of all safety evaluations for modifications to structures, systems or components that affect nuclear safety to verify that such actions did not constitute an unreviewed safety question as defined in 10 CFR 50.59, or requires a change to these Technical Specifications.

- l. Review of reportable events, unusual events, operating anomalies, and abnormal performance of plant equipment.
- m. Investigate reported or suspected incidents involving safety questions or violations of the Technical Specifications.
- n. Review of unit operations to detect potential hazards to nuclear safety. Items that may be included in this review are NRC inspection reports, QA audit, NSRB audit results, American Nuclear Insurer (ANI) inspection results, and significant corrective action reports (CARs).
- o. Performance of special reviews, investigations, or analysis, and report thereon as requested by the Plant Manager or the Nuclear Safety Review Board.

AUTHORITY

6.5.1.7 The PORC shall:

- a. Recommend to the Plant Manager in writing, approval, or disapproval of items considered under 6.5.1.6.a through i above.
 1. The recommendation shall be based on a majority vote of the PORC at a formal meeting.
 2. The recommendation shall be based on a unanimous vote of the PORC when the PORC members are acting individually.
 3. Each member or alternate member shall have one vote.
- b. Furnish for consideration a determination in writing with regard to whether or not each item considered under 6.5.1.6.f above constitutes an unreviewed safety question.
- c. Make recommendations to the Plant Manager in writing concerning whether action reviewed under 6.5.1.6.k above did not constitute an unreviewed safety question.
- d. Provide written notification within 24 hours to the Site Director and the Nuclear Safety Review Board of disagreements between the PORC and the Plant Manager. However, the Plant Manager shall have responsibility for resolution of such disagreements pursuant to Specification 6.1.

RECORDS

6.5.1.8 The PORC shall maintain written minutes of each PORC meeting including expedited meetings that, as a minimum, document the result of all PORC activities performed under the responsibility and authority provisions of these technical specifications. Copies shall be provided to the Site Director and the Nuclear Safety Review Board.

6.5.2 NUCLEAR SAFETY REVIEW BOARD

FUNCTION

6.5.2.1 The NSRB shall function to provide independent review and audit cognizance 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, and
- h. Quality assurance practices

COMPOSITION

6.5.2.2 The NSRB shall be composed of at least five members, including the Chairman. Members of the NSRB may be from the Office of Nuclear Power or other TVA organizations, or external to TVA.

QUALIFICATIONS

- 6.5.2.3 The Chairman, members, alternate members of the NSRB shall be appointed in writing by the Manager of Nuclear Power and shall have an academic degree in engineering or a physical science field, or the equivalent; and in addition, shall have a minimum of 5 years technical experience in one or more areas given in 6.5.2.1. No more than two alternates shall participate as voting members in NSRB activities at any one time.

CONSULTANTS

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

MEETING FREQUENCY

- 6.5.2.5 The NSRB shall meet at least once per six months.

QUORUM

- 6.5.2.6 The minimum quorum of the NSRB necessary for the performance of the NSRB review and audit functions of these technical specifications shall consist of more than half of the NSRB membership or at least five members, whichever is greater. The quorum shall include the Chairman or his appointed alternate and the NSRB members including appointed alternate members meeting the requirements of 6.5.2.3. No more than a minority of the quorum shall have line responsibility for operation of the unit.

REVIEW

6.5.2.7 The NSRB shall review:

- a. The safety evaluations 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 to 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 plant 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; and
- i. Reports and meeting minutes of the PORC.

AUDITS

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

- a. The conformance of plant 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 plant staff at least once per 12 months.
- c. The results of actions taken to correct deficiencies occurring in site 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 Site Radiological Emergency Plan and implementing procedures at least once every 12 months.
- f. The Plant Physical Security Plan and implementing procedures at least once every 12 months.
- g. Any other area of site operation considered appropriate by the NSRB or the Manager of Nuclear Power.
- h. The fire protection programmatic controls including the implementing procedures at least once per 24 months.

- i. An independent fire protection and loss prevention program inspection and audit shall be performed annually utilizing either qualified offsite license personnel or an outside fire protection firm.
- j. An inspection and audit of the fire protection and loss prevention program shall be performed by an outside qualified fire consultant at intervals no greater than 3 years.
- k. The Radiological Environmental Monitoring program and the results thereof at least once per 12 months.
- l. The performance of activities required by the Quality Assurance Program to meet the criteria of Regulatory Guide 4.15, December 1977, or Regulatory Guide 1.21, Rev. 1, 1974, and Regulatory Guide 4.1, 1975, at least once every 12 months.
- m. The performance of activities required by the Safeguards Contingency Plan to meet the criteria of 10 CFR 73.40(d) at least once every 12 months.
- n. The Offsite Dose Calculation Manual and implementing procedures at least once per 24 months.
- o. The Process Control Program and implementing procedures for solidification of wet radioactive wastes at least once per 24 months.
- p. The Radiological Effluent Manual and implementing procedures at least once per 12 months.

AUTHORITY

6.5.2.9 The NSRB shall report to and advise the Manager of Nuclear Power on those areas of responsibility specified in Specifications 6.5.2.7 and 6.5.2.8.

RECORDS

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

- a. Minutes of each NSRB meeting shall be prepared, approved and forwarded to the Manager of Nuclear Power within 14 days following each meeting.
- b. Reports of reviews encompassed by Section 6.5.2.7 above, shall be prepared, approved and forwarded to the Manager of Nuclear Power within 14 days following completion of the review.
- c. Audit reports encompassed by Specification 6.5.2.8 above, shall be forwarded to the Manager of Nuclear Power and to the management positions responsible for the areas audited within 30 days after completion of the audit.

6.5.3 TECHNICAL REVIEW AND APPROVAL OF PROCEDURES

ACTIVITIES

- 6.5.3.1 Procedures required by Technical Specification 6.8.1.1 and other procedures which affect plant nuclear safety, and changes (other than editorial or typographical changes) thereto, shall be prepared, reviewed and approved. Each procedure or procedure change shall be reviewed by an individual other than the preparer. The reviewer may be from the same organization or from a different organization. Procedures other than Site Director Standard Practices will be approved by the responsible Section Supervisor, or applicable Plant Superintendent.
- 6.5.3.2 Proposed changes or modifications to plant structures, systems and components that affect nuclear safety shall be reviewed as designated by the Plant Manager. 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 plant structures, systems and components that affect nuclear safety shall be approved by the Plant Manager, prior to implementation.
- 6.5.3.3 Individuals responsible for reviews performed in accordance with 6.5.3.1 shall be members of the site supervisory staff previously designated by the Plant Manager. 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 review personnel of the appropriate discipline.
- 6.5.3.4 The Plant Manager shall approve all administrative procedures requiring PORC review prior to implementation.

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 PORC and the results of this review shall be submitted to the NSRB and the Site Director.

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 Manager of Nuclear Power 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 PORC. 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 Manager of Nuclear Power within 14 days of the violation.
- d. Critical operation of the unit shall not be resumed until authorized by the Commission.

6.8 PROCEDURES/INSTRUCTIONS AND PROGRAMS

6.8.1 PROCEDURES

6.8.1.1 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. Limitations on the amount of overtime worked by individuals performing safety-related functions in accordance with NRC Policy statement on working hours (Generic Letter No. 82-12).
- c. Surveillance and test activities of safety-related equipment.
- d. Security plan implementation.
- e. Emergency plan implementation.
- f. Fire Protection Program implementation.
- g. Radiological Effluent Manual implementing procedures.
- h. Process Control Program (PCP).
- i. Offsite Dose Calculation Manual.
- j. Administrative procedures which control technical and cross-disciplinary review.

6.8.1.2 Each administrative procedure required by Section 6.8.1.1.a. shall be reviewed by PORC and all other procedures required by Section 6.8.1.1.a. shall be reviewed in accordance with Section 6.5.3.

6.8.1.3 Temporary changes to procedures of Specification 6.8.1.1 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;
- c. The change is documented, reviewed by the PORC and approved by the Plant Manager within 14 days of implementation, for changes in administrative procedures requiring PORC review.
- d. The change is documented, reviewed per Specification 6.5.3, and approved by the responsible group section supervisor within 14 days of implementation, for changes to procedures other than administrative procedures.

DRILLS

6.8.2 Drills on actions to be taken under emergency conditions involving release of radioactivity are specified in the Radiological Emergency Plan and shall be conducted annually. Annual drills shall also be conducted on the actions to be taken following failures of safety-related systems or components.

RADIATION CONTROL PROCEDURES

6.8.3 Radiation Control Procedures shall be maintained and made available to all station personnel. These procedures shall show permissible radiation exposure and shall be consistent

with the requirements of 10 CFR 20. This radiation protection program shall be organized to meet the requirements of 10 CFR 20 except in lieu of the "control device" or "alarm signal" required by paragraph 20.203 (c) of 10 CFR 20.

6.8.3.1 Each high radiation area in which the intensity of radiation is greater than 100 mrem/hr but less than 1000 mrem/hr shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiological Work Permit.* 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.
- b. A radiation monitoring device which continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate level in the area has been established and personnel have been made knowledgeable of them.
- c. An individual qualified in radiation protection procedures who is equipped with a radiation dose rate monitoring device. This individual shall be responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by the facility Health Physicist in the Radiological Work Permit.

6.8.3.2 Each high radiation area in which the intensity of radiation is greater than 1,000 mrem/hr shall be subject to the provisions of (1) above; and, in addition, access to the source and/or area

shall be secured by lock(s). The key(s) shall be under the administrative control of the shift engineer. In the case of a high radiation area established for a period of 30 days or less, direct surveillance to prevent unauthorized entry may be substituted for permanent access control.

- * Health Physics personnel, or personnel escorted by Health Physics personnel, in accordance with approved emergency procedures, shall be exempt from the RWP issuance requirement during the performance of their assigned radiation protection duties, provided they comply with approved radiation protection procedures for entry into high radiation areas.

QUALITY ASSURANCE PROCEDURES - EFFLUENT AND ENVIRONMENTAL MONITORING

- 6.8.4 Quality Assurance procedures shall be established, implemented, and maintained for effluent and environmental monitoring, using the guidance in Regulatory Guide 1.21, Rev. 1, June 1974 and Regulatory Guide 4.1, Rev. 1, April 1975 or Regulatory Guide 4.15, Dec. 1977.

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 identified reports shall be submitted to the Director of the Regional Office of NRC, unless otherwise noted.

6.9.1.1 STARTUP REPORT

- a. 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 plant. The report shall address each of the tests identified in the FSAR 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.

- b. 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 power operation), supplementary reports shall be submitted at least every three months until all three events have been completed.

6.9.1.2 ANNUAL OPERATING REPORT*

- a. 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, **e.g., reactor operations and surveillance, inservice inspection, routine maintenance, special maintenance (describe maintenance), waste processing, and refueling. The dose assignment to various duty functions may be estimates based on pocket dosimeter, TLD, or film badge measurements. Small exposures totaling 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 shall be assigned to specific major work functions.
- b. Any mainsteam relief valve that opens in response to reaching its setpoint or due to operator action to control reactor pressure shall be reported.

*A single submittal may be made for a multiple unit station.

**This tabulation supplements the requirements of 20.407 of 10 CFR Part 20.

6.9.1.3 MONTHLY OPERATING REPORT

Routine reports of operating statistics and shutdown experience shall be submitted on a monthly basis to the Office of Inspection and Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, with a copy to the Regional Office, to be submitted no later than the fifteenth of each month following the calendar month covered by the report. A narrative summary of operating experience shall be submitted in the above schedule.

6.9.1.4 REPORTABLE EVENTS

Reportable events, including corrective actions and measures to prevent re-occurrence, shall be reported to the NRC in accordance with Section 50.73 to 10 CFR 50.

6.9.1.5 RADIOACTIVE EFFLUENT RELEASE REPORT

Deleted (See REM section F-2)

6.9.1.6 SOURCE TESTS

Results of required leak tests performed on sources if the tests reveal the presence of 0.005 microcurie or more of removable contamination.

6.9.2 SPECIAL REPORTS

Reports on the following areas shall be submitted in writing to the Director of Regional Office of Inspection and Enforcement:

- | | | |
|---|----------|---|
| 1. Fatigue Usage | 6.10.1.g | Annual Operating Report |
| 2. Relief Valve Tailpipe | 3.2.F | Within 30 days after inoperability of thermocouple and acoustic monitor on one valve. |
| 3. Seismic Instrumentation Inoperability | 3.2.J.3 | Within 10 days after 30 days of inoperability. |
| 4. Meteorological Monitoring Instrumentation Inoperability | 3.2.I.2 | Within 10 days after 7 days of inoperability. |
| 5. Primary Containment Integrated Leak Rate Testing | 4.7.A.2 | Within 90 days of completion of each test. |
| 6. Data shall be retrieved from all seismic instruments actuated during a seismic event and analyzed to determine the magnitude of the vibratory ground motion. A Special | | |

Report shall be submitted within 10 days after the event describing the magnitude, frequency spectrum, and resultant effect upon plant features important to safety.

- | | | |
|--|--------|--|
| 7. Secondary Containment
Leak Rate Testing* | 4.7.C. | Within 90 days
of completion
of each test. |
| 8. High-Range Primary
Containment Radiation
Monitors | 3.2.F | Within 7 days
after 7 days of
inoperability. |
| 9. High-Range Gaseous
Effluent Radiation
Monitors | 3.2.F | Within 7 days
after 7 days of
inoperability. |

*Each integrated leak rate test of the secondary containment shall be the subject of a summary technical report. This report should include data on the wind speed, wind direction, outside and inside temperatures during the test, concurrent reactor building pressure, and emergency ventilation flow rate. The report shall also include analyses and interpretations of those data which demonstrate compliance with the specified leak rate limits.

6.10 STATION OPERATING RECORDS AND RETENTION

6.10.1 Records and/or logs shall be kept in a manner convenient for review as indicated below:

- a. All normal plant operation including such items as power level, fuel exposure, and shutdowns
- b. Principal maintenance activities
- c. Reportable Events
- d. Checks, inspections, tests, and calibrations of components and systems, including such diverse items as source leakage
- e. Reviews of changes made to the procedures or equipment or reviews of tests and experiments to comply with 10 CFR 50.59
- f. Radioactive shipments
- g. Test results in units of microcuries for leak tests performed pursuant to Specification 3.8.D

- h. Record of annual physical inventory verifying accountability of sources on record
- i. Gaseous and liquid radioactive waste released to the environs
- j. Offsite environmental monitoring surveys
- k. Fuel inventories and transfers
- l. Plant radiation and contamination surveys
- m. Radiation exposures for all plant personnel
- n. Updated, corrected, and as-built drawings of the plant
- o. Reactor coolant system inservice inspection
- p. Minutes of meetings of the NSRB
- q. Design fatigue usage evaluation

Monitoring and recording requirements below will be met for various portions of the reactor coolant pressure boundary (RCPB) for which detailed fatigue usage evaluation per the ASME Boiler and Pressure Vessel Code Section III was performed for the conditions defined in the design specification. In this plant, the applicable codes require fatigue usage evaluation for the reactor pressure vessel only. The locations to be monitored shall be:

- 1. The feedwater nozzles
- 2. The shell at or near the waterline
- 3. The flange studs

Transients that occur during plant operations will be reviewed and a cumulative fatigue usage factor determined.

For transients which are more severe than the transients evaluated in the stress report, code fatigue usage calculations will be made and tabulated separately.

In the annual operating report, the fatigue usage factor determined for the transients defined above shall be added and a cumulative fatigue usage factor to date shall be reported. When the cumulative usage factor reaches a value of 1.0, an inservice inspection shall be included for the specific location at the next scheduled inspection (3-1/3-year interval) period and 3-1/3-year intervals thereafter, and a subsequent evaluation performed in accordance with the rules of ASME Section XI Code if any flaw indications are detected. The results of the evaluation shall be submitted in a Special Report for review by the Commission.

6.10.2 Except where covered by applicable regulations, items a through h above shall be retained for a period of at least 5 years and item i through q shall be retained for the life of the plant. A complete inventory of radioactive materials in possession shall be maintained current at all times.

1. See paragraph N-415.2, ASME Section III, 1965 Edition.

6.11 PROCESS CONTROL PROGRAM (PCP)

1. The PCP shall be approved by the Commission prior to implementation.
2. Changes to the PCP shall be submitted to the Commission in the semi-annual Radioactive Effluent Release Report for the period in which the change(s) was made. This submittal shall contain:
 - a. Sufficiently detailed information to totally support the change.
 - b. A determination that the change did not change the overall conformance of the solidified product to existing criteria.
3. Changes to the PCP shall become effective upon review and acceptance by PORC.

6.12 OFFSITE DOSE CALCULATIONAL MANUAL (ODCM)

1. The ODCM shall be approved by the Commission prior to implementation.
2. Changes to the ODCM shall be submitted to the Commission in the semi-annual Radioactive Effluent Release Report for the period in which the change(s) was made. This submittal shall contain:
 - a. Sufficiently detailed information to totally support the change.
3. Changes to the ODCM shall become effective upon review and acceptance by PORC.

6.13 RADIOLOGICAL EFFLUENT MANUAL (REM)

1. The REM shall be approved by the Commission prior to implementation.
2. Changes to the REM shall be reviewed by PORC prior to implementation.
3. Changes to the REM shall be approved by the Commission prior to implementation.

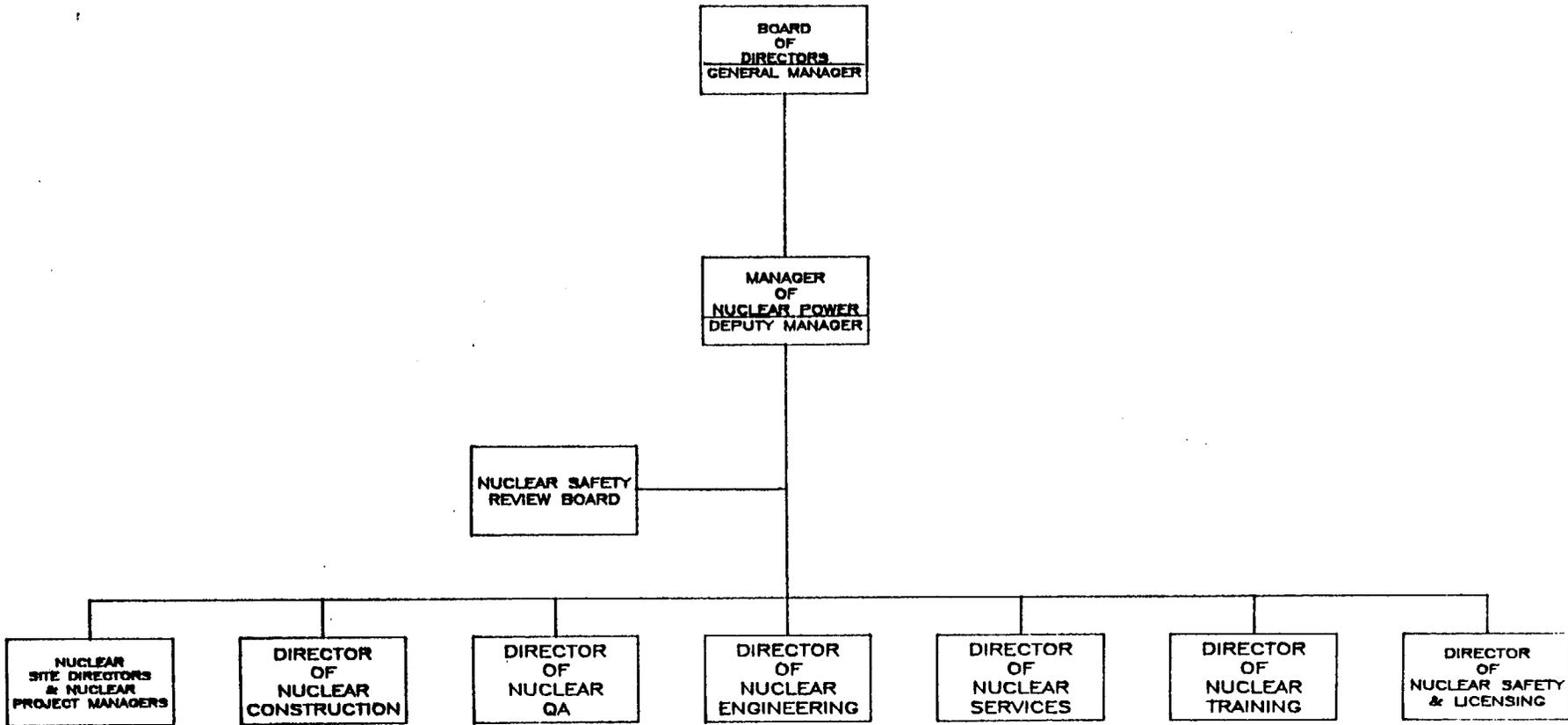
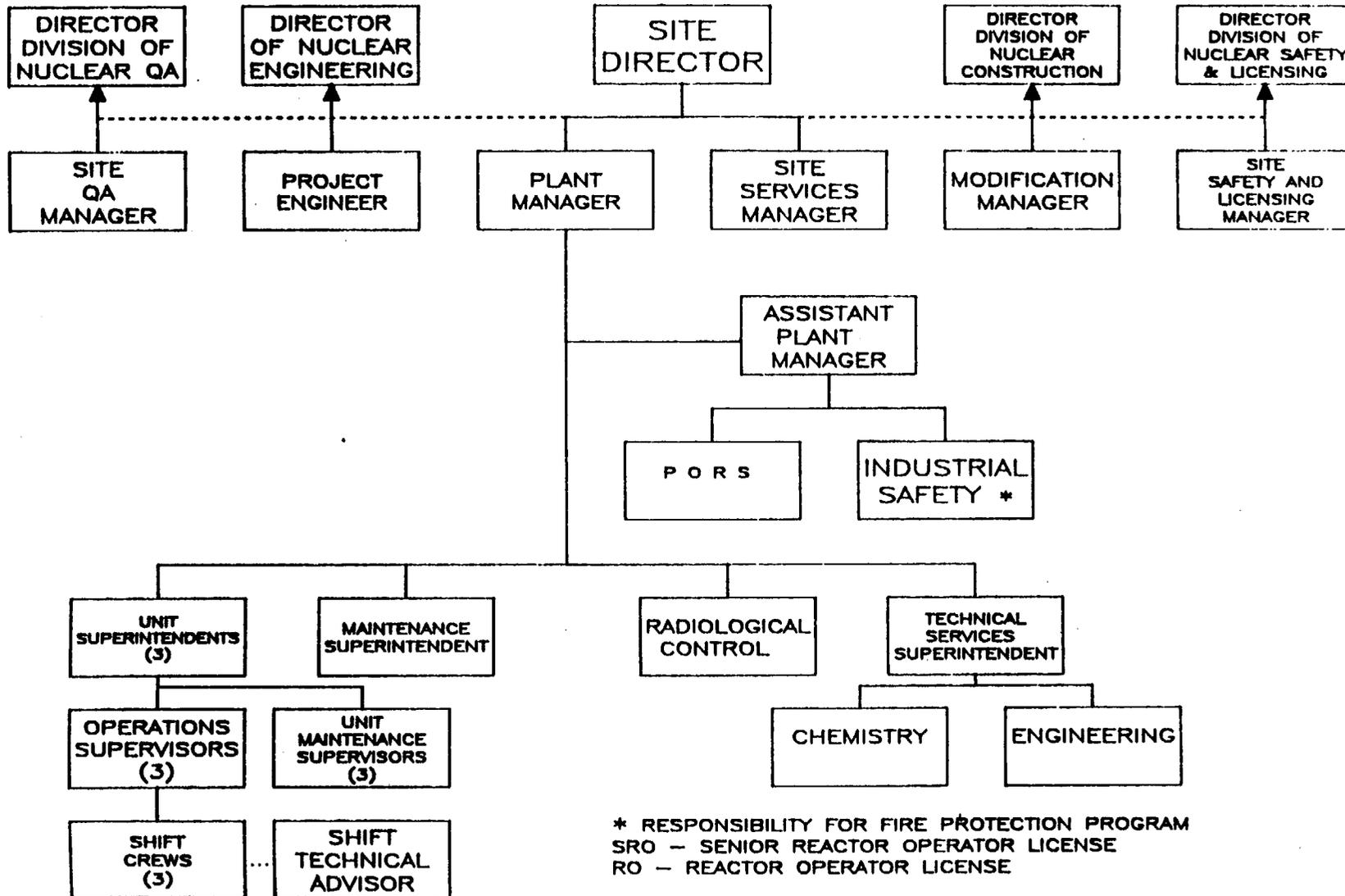


Figure 6.2-1 Offsite Organization for Facility Management & Technical Support



* RESPONSIBILITY FOR FIRE PROTECTION PROGRAM
 SRO - SENIOR REACTOR OPERATOR LICENSE
 RO - REACTOR OPERATOR LICENSE

- SHIFT ENGINEER (SRO)
- ASSISTANT SHIFT ENGINEER (SRO)
- UNIT OPERATOR (RO)
- ASSISTANT UNIT OPERATOR
- AUXILIARY UNIT OPERATOR

FIGURE 6.2-2
 FACILITY ORGANIZATION



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-296

BROWNS FERRY NUCLEAR PLANT, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 109
License No. DPR-68

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Tennessee Valley Authority (the licensee) dated September 27, 1984 as supplemented January 17, June 2 and December 10, 1986, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-68 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 109, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 90 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION


John A. Zwolinski, Assistant Director
for Projects
TVA Projects Division
Office of Special Projects

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 11, 1987

ATTACHMENT TO LICENSE AMENDMENT NO. 109

FACILITY OPERATING NO. DPR-68

DOCKET NO. 50-296

Revise the Appendix A Technical Specifications by removing the pages identified below and inserting the enclosed pages. The revised pages are identified by the captioned amendment number and contain marginal lines indicating the area of change. Overleaf pages* are provided to maintain document completeness.

Remove

iii
iv
v
vi
vii
viii
3.2/4.2-3
3.2/4.2-4
3.2/4.2-5
3.2/4.2-6
3.8/4.8-1
3.8/4.8-2
3.8/4.8-3
3.8/4.8-4
3.8/4.8-5
3.8/4.8-6
3.11/4.11-3
3.11/4.11-4
3.11/4.11-5
3.11/4.11-6
3.11/4.11-7
3.11/4.11-8
3.11/4.11-12
3.11/4.11-13
3.11/4.11-14
3.11/4.11-15

6.0-1 thru 6.0-23

Insert

iii*
iv
v
vi*
vii
viii
3.2/4.2-3
3.2/4.2-4*
3.2/4.2-5
3.2/4.2-6
3.8/4.8-1*
3.8/4.8-2
3.8/4.8-3
3.8/4.8-4
3.8/4.8-5
3.8/4.8-6
3.11/4.11-3
3.11/4.11-4*
3.11/4.11-5*
3.11/4.11-6
3.11/4.11-7
3.11/4.11-8
3.11/4.11-12
3.11/4.11-13*
3.11/4.11-14*
3.11/4.11-15

6.0-1 thru 6.0-34

Section

Page No.

C.	Coolant Leakage	3.6/4.6-9
D.	Relief Valves	3.6/4.6-10
E.	Jet Pumps	3.6/4.6-11
F.	Recirculation Pump Operation	3.6/4.6-12
G.	Structural Integrity	3.6/4.6-13
H.	Seismic Restraints, Supports and Snubbers. . .	3.6/4.6-15
3.7/4.7	Containment Systems.	3.7/4.7-1
A.	Primary Containment.	3.7/4.7-1
B.	Standby Gas Treatment System	3.7/4.7-13
C.	Secondary Containment.	3.7/4.7-16
D.	Primary Containment Isolation Valves	3.7/4.7-17
E.	Control Room Emergency Ventilation	3.7/4.7-19
F.	Primary Containment Purge System	3.7/4.7-21
G.	Containment Atmosphere Dilution System (CAD) .	3.7/4.7-22
H.	Containment Atmosphere Monitoring (CAM) System H ₂ Analyzer	3.7/4.7-23
3.8/4.8	Radioactive Materials.	3.8/4.8-1
A.	Liquid Effluents	3.8/4.8-1
B.	Airborne Effluents	3.8/4.8-2
C.	Radioactive Effluents - Dose	3.8/4.8-6
D.	Mechanical Vacuum Pump	3.8/4.8-6
E.	Miscellaneous Radioactive Materials Sources .	3.8/4.8-7
F.	Solid Radwaste	3.8/4.8-9
3.9/4.9	Auxiliary Electrical System.	3.9/4.9-1
A.	Auxiliary Electrical Equipment	3.9/4.9-1
B.	Operation with Inoperable Equipment.	3.9/4.9-8
C.	Operation in Cold Shutdown	3.9/4.9-14
3.10/4.10	Core Alterations	3.10/4.10-1
A.	Refueling Interlocks	3.10/4.10-1

<u>Section</u>	<u>Page No.</u>
B. Core Monitoring	3.10/4.10-4
C. Spent Fuel Pool Water	3.10/4.10-7
D. Reactor Building Crane	3.10/4.10-8
E. Spent Fuel Cask	3.10/4.10-9
F. Spent Fuel Cask Handling-Refueling Floor . . .	3.10/4.10-9
3.11/4.11 Fire Protection Systems	3.11/4.11-1
A. High Pressure Fire Protection System	3.11/4.11-1
B. CO ₂ Fire Protection System	3.11/4.11-4
C. Fire Detectors	3.11/4.11-6
D. Deleted.	3.11/4.11-7
E. Fire Protection Systems Inspection	3.11/4.11-8
F. Deleted.	3.11/4.11-8
G. Air Masks and Cylinders.	3.11/4.11-8
H. Continuous Fire Watch.	3.11/4.11-9
I. Open Flames, Welding and Burning in the Cable Spreading Room	3.11/4.11-9
5.0 Major Design Features	5.0-1
5.1 Site Features.	5.0-1
5.2 Reactor.	5.0-1
5.3 Reactor Vessel	5.0-1
5.4 Containment.	5.0-1
5.5 Fuel Storage	5.0-1
5.6 Seismic Design	5.0-2

ADMINISTRATIVE CONTROLS

<u>SECTION</u>		<u>PAGE</u>
<u>6.1</u>	<u>RESPONSIBILITY</u>	6.0-1
<u>6.2</u>	<u>ORGANIZATION</u>	6.0-1
<u>6.2.1</u>	Corporate.....	6.0-1
<u>6.2.2</u>	Plant Staff.....	6.0-1
<u>6.3</u>	<u>PLANT STAFF QUALIFICATIONS</u>	6.0-4
<u>6.4</u>	<u>TRAINING</u>	6.0-4
<u>6.5</u>	<u>PLANT REVIEW AND AUDIT</u>	6.0-4
<u>6.5.1</u>	Plant Operation Review Committee (PORC).....	6.0-4
<u>6.5.2</u>	Nuclear Safety Review Board (NSRB).....	6.0-10
<u>6.5.3</u>	Technical Review and Approval of Procedures.....	6.0-16
<u>6.6</u>	<u>REPORTABLE EVENT ACTIONS</u>	6.0-17
<u>6.7</u>	<u>SAFETY LIMIT VIOLATION</u>	6.0-18
<u>6.8</u>	<u>PROCEDURES/INSTRUCTION AND PROGRAMS</u>	6.0-19
<u>6.8.1</u>	Procedures.....	6.0-19
<u>6.8.2</u>	Drills.....	6.0-20
<u>6.8.3</u>	Radiation Control Procedures.....	6.0-20
<u>6.8.4</u>	Quality Assurance Procedures - Effluent and.....	
	Environmental Monitoring.....	6.0-22
<u>6.9</u>	<u>REPORTING REQUIREMENTS</u>	6.0-23
<u>6.9.1</u>	Routine Reports.....	6.0-23
	Startup Reports.....	6.0-23
	Annual Operating Report.....	6.0-24
	Monthly Operating Report.....	6.0-25
	Reportable Events.....	6.0-25
	Radioactive Effluent Release Report.....	6.0-25
	Source Tests.....	6.0-25
<u>6.9.2</u>	Special Reports.....	6.0-26
<u>6.10</u>	<u>STATION OPERATING RECORDS AND RETENTION</u>	6.0-28
<u>6.11</u>	<u>PROCESS CONTROL PROGRAM</u>	6.0-31
<u>6.12</u>	<u>OFFSITE DOSE CALCULATION MANUAL</u>	6.0-31
<u>6.13</u>	<u>RADIOLOGICAL EFFLUENT MANUAL</u>	6.0-32

LIST OF TABLES

<u>Table</u>	<u>Title</u>	<u>Page No.</u>
1.1	Surveillance Frequency Notation	1.0-12
3.1.A	Reactor Protection System (SCRAM) Instrumentation Requirements.	3.1/4.1-2
4.1.A	Reactor Protection System (SCRAM) Instrumentation Functional Tests Minimum Functional Test Frequencies for Safety Instr. and Control Circuits.	3.1/4.1-7
4.1.B	Reactor Protection System (SCRAM) Instrumentation Calibration Minimum Calibration Frequencies for Reactor Protection Instrument Channels. . . .	3.1/4.1-10
3.2.A	Primary Containment and Reactor Building Isolation Instrumentation	3.2/4.2-7
3.2.B	Instrumentation that Initiates or Controls the Core and Containment Cooling Systems.	3.2/4.2-14
3.2.C	Instrumentation that Initiates Rod Blocks	3.2/4.2-24
3.2.D	Radioactive Liquid Effluent Monitoring Instrumentation	3.2/4.2-27
3.2.E	Instrumentation that Monitors Leakage Into Drywell.	3.2/4.2-29
3.2.F	Surveillance Instrumentation.	3.2/4.2-30
3.2.G	Control Room Isolation Instrumentation.	3.2/4.2-33
3.2.H	Flood Protection Instrumentation.	3.2/4.2-34
3.2.I	Meteorological Monitoring Instrumentation	3.2/4.2-35
3.2.J	Seismic Monitoring Instrumentation.	3.2/4.2-36
3.2.K	Radioactive Gaseous Effluent Monitoring Instrumentation	3.2/4.2-37
4.2.A	Surveillance Requirements for Primary Containment and Reactor Building Isolation Instrumentation. .	3.2/4.2-39
4.2.B	Surveillance Requirements for Instrumentation that Initiate or Control the CSCS.	3.2/4.2-43
4.2.C	Surveillance Requirements for Instrumentation that Initiate Rod Blocks	3.2/4.2-49
4.2.D	Radioactive Liquid Effluent Monitoring Instrumentation Surveillance Requirements	3.2/4.2-50

LIST OF TABLES (Cont'd)

<u>Table</u>	<u>Title</u>	<u>Page No.</u>
4.2.E	Minimum Test and Calibration Frequency for Drywell Leak Detection Instrumentation.	3.2/4.2-52
4.2.F	Minimum Test and Calibration Frequency for Surveillance Instrumentation	3.2/4.2-53
4.2.G	Surveillance Requirements for Control Room Isolation Instrumentation.	3.2/4.2-55
4.2.H	Minimum Test and Calibration Frequency for Flood Protection Instrumentation	3.2/4.2-56
4.2.J	Seismic Monitoring Instrument Surveillance Requirements	3.2/4.2-57
4.2.K	Radioactive Gaseous Effluent Instrumentation Surveillance	3.2/4.2-61
3.5-1	Minimum RHRSW and EECW Pump Assignment	3.5/4.5-11
3.5.I	MAPLHGR Versus Average Planar Exposure	3.5/4.5-21
3.7.A	Primary Containment Isolation Valves	3.7/4.7-25
3.7.B	Testable Penetrations with Double O-Ring Seals	3.7/4.7-31
3.7.C	Testable Penetrations with Testable Bellows.	3.7/4.7-32
3.7.D	Air Tested Isolation Valves.	3.7/4.7-33
3.7.E	Primary Containment Isolation Valves which Terminate below the Suppression Pool Water Level.	3.7/4.7-36
3.7.F	Primary Containment Isolation Vales Located in Water Sealed Seismic Class 1 Lines	3.7/4.7-37
3.7.H	Testable Electrical Penetrations	3.7/4.7-38
4.9.A.4.C	Voltage Relay Setpoints/Diesel Generator Start	3.9/4.9-15
3.11.A	Fire Protection System Hydraulic Requirements.	3.11/4.11-10
6.2.A	Minimum Shift Crew Requirements.	6.0-3

LIST OF ILLUSTRATIONS

<u>Figure</u>	<u>Title</u>	<u>Page No.</u>
2.1.1	APRM Flow Reference Scram and APRM Rod Block Settings	1.1/2.1-6
2.1-2	APRM Flow Bias Scram Vs. Reactor Core Flow	1.1/2.1-7
4.1-1	Graphic Aid in the Selection of an Adequate Interval Between Tests	3.1/4.1-12
4.2-1	System Unavailability.	3.2/4.2-63
3.4-1	Sodium Pentaborate Solution Volume Concentrated Requirements	3.4/4.4-4
3.4-2	Sodium Pentaborate Solution Temperature Requirements	3.4/4.4-5
3.5.K-1	MCPR Limits.	3.5/4.5-25
3.5.2	K_f Factor.	3.5/4.5-26
3.6-1	Minimum Temperature ⁰ F Above Change in Transient Temperature.	3.6/4.6-24
3.6-2	Change in Charpy V Transition Temperature Vs. Neutron Exposure	3.6/4.6-25
4.8.1.a	Gaseous Release Points and Elevation	3.8/4.8-10
4.8.1.b	Land Site Boundary	3.8/4.8-11
6.2-1	Offsite Organization for Facility Management and Technical Support	6.0-33
6.2-2	Facility Organization	6.0-34

3.2/4.2 PROTECTIVE INSTRUMENTATION

LIMITING CONDITIONS FOR OPERATION

3.2.D Radioactive Liquid Effluent Monitoring Instrumentation

1. The radioactive liquid effluent monitoring instrumentation listed in Table 3.2.D shall be OPERABLE with the applicability as shown in Tables 3.2.D/4.2.D. Alarm/trip setpoints will be set in accordance with guidance given in the ODCM to ensure that the limits of specification 3.8.A.1 are not exceeded.
2. The action required when the number of operable channels is less than the minimum channels operable requirement is specified in the notes for Table 3.2.D. Exert best efforts to return the instrument(s) to OPERABLE status within 30 days and if unsuccessful, explain in the next Semiannual Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.
3. With a radioactive liquid effluent monitoring channel alarm/trip setpoint less conservative than required by these specifications, suspend the release without delay, declare the channel inoperable, or adjust the alarm/trip setpoint to establish the conservatism required by these specifications.
4. The provisions of Specification 1.0.C and 6.9.1.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.2.D Radioactive Liquid Effluent Monitoring Instrumentation

1. Each of the radioactive liquid effluent monitoring instruments shall be demonstrated OPERABLE by performance of test in accordance with Table 4.2.D.

3.2/4.2 PROTECTIVE INSTRUMENTATION

LIMITING CONDITIONS FOR OPERATION

3.2.E. Drywell Leak Detection

The limiting conditions of operation for the instrumentation that monitors drywell leak detection are given in Table 3.2.E.

F. Surveillance Instrumentation

The limiting conditions for the instrumentation that provides surveillance information readouts are given in Table 3.2.F.

G. Control Room Isolation

The limiting conditions for instrumentation that isolates the control room and initiates the control room emergency pressurization systems are given in Table 3.2.G.

H. Flood Protection

The unit shall be shutdown and placed in the cold condition when Wheeler Reservoir lake stage rises to a level such that water from the reservoir begins to run across the pumping station deck at elevation 565.

Requirements for instrumentation that monitors the reservoir level are given in Table 3.2.H.

I. Meteorological Monitoring Instrumentation

The meteorological monitoring instrumentation listed in Table 3.2.I shall be operable at all times.

SURVEILLANCE REQUIREMENTS

4.2.E. Drywell Leak Detection

Instrumentation shall be calibrated and checked as indicated in Table 4.2.E.

F. Surveillance Instrumentation

Instrumentation shall be calibrated and checked as indicated in Table 4.2.F.

G. Control Room Isolation

Instrumentation shall be calibrated and checked as indicated in Table 4.2.G.

H. Flood Protection

Surveillance shall be performed on the instrumentation that monitors the reservoir level as indicated in Table 4.2.H.

I. Meteorological Monitoring Instrumentation

Each meteorological monitoring instrument channel shall be demonstrated operable by the performance of the CHANNEL CHECK at least once per

3.2/4.2 PROTECTIVE INSTRUMENTATION

LIMITING CONDITIONS FOR OPERATION

3.2.I. Meteorological Monitoring Instrumentation (Cont'd)

1. With the number of operable meteorological monitoring channels less than required by Table 3.2.I, restore the inoperable channel(s) to operable status within 7 days.
2. With one or more of the meteorological monitoring channels inoperable for more than 7 days, prepare and submit a Special Report to the Commission, pursuant to Specification 6.9.2 within the next 10 days outlining the cause of the malfunction and the plans for restoring the system to operable status.

J. Seismic Monitoring Instrumentation

1. The seismic monitoring instruments listed in Table 3.2.J shall be operable at all times.
2. With the number of seismic monitoring instruments less than the number listed in Table 3.2.J, restore the inoperable instrument(s) to operable status within 30 days.
3. With one or more of the instruments listed in Table 3.2.J inoperable for more than 30 days, submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 10 days describing the cause of the malfunction and plans for restoring the instruments to operable status.

SURVEILLANCE REQUIREMENTS

4.2.I. Meteorological Monitoring Instrumentation (Cont'd)

24 hours and the CHANNEL CALIBRATION at least once each 6 months.

4.2.J. Seismic Monitoring Instrumentation

1. Each of the seismic monitoring instruments shall be demonstrated operable by performance of tests at the frequencies listed in Table 4.2.J.
2. Data shall be retrieved from all seismic instruments actuated during a seismic event and analyzed to determine the magnitude of the vibratory ground motion. A Special Report shall be submitted to the Commission pursuant to Specification 6.9.2 within 10 days describing the magnitude, frequency spectrum, and resultant effect upon plant features important to safety.

3.2/4.2 PROTECTIVE INSTRUMENTATION

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.2.K. Radioactive Gaseous Effluent Monitoring Instrumentation

1. The radioactive gaseous effluent monitoring instruments listed in Table 3.2.K shall be operable with the applicability as shown in Tables 3.2.K/4.2.K Alarm/trip setpoints will be set in accordance with guidance given in the ODCM to ensure that the limits of specification 3.8.B.1 are not exceeded.
2. The action required when the number of operable channels is less than the Minimum Channels Operable requirement is specified in the notes for Table 3.2.K. Exert best efforts to return the instruments to operable status within 30 days and, if unsuccessful, explain in the next Semiannual Radioactive Release Report why the inoperability was not corrected in a timely manner.
3. With a radioactive gaseous effluent monitoring channel alarm/trip setpoint less conservative than required by these specifications, suspend the release without delay, declare the channel inoperable or adjust the alarm/trip setpoint to establish the conservatism required by these specifications.
4. Both off-gas treatment monitors may be taken out of service for less than one hour for purging of monitors during SI performance.
5. The provisions of Specifications 1.0.C and 6.9.1.4 are not applicable.

4.2.K. Radioactive Gaseous Effluent Monitoring Instrumentation

1. Each of the radioactive gaseous effluent monitoring instruments shall be demonstrated operable by performance of tests in accordance with Table 4.2.K.

3.8/4.8 RADIOACTIVE MATERIALS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.8 Radioactive Materials

Applicability

Applies to the release of radioactive liquids and gases from the facility.

Objective

To define the limits and conditions for the release of radioactive effluents to the environs to assure that any radioactive releases are as low as reasonably achievable and within the limits of 10 CFR Part 20. The specifications except for 3.8.A.1 and 3.8.B.1 are exempt from the requirements of definition 1.0.C (Limiting Condition for Operation).

Specification

A. Liquid Effluents

1. The concentration of radioactive material released at any time from the site to unrestricted areas (see Figure 4.8-1b) shall be limited to the concentrations specified in 10 CFR Part 20, Appendix B, Table II, Column 2 for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall be limited to $2E-4$ mCi/ml total activity.
2. If the limits of 3.8.A.1 are exceeded, appropriate action shall be initiated without delay to bring the release within

4.8 Radioactive Materials

Applicability

Applies to the periodic test and record requirements and sampling and monitoring methods used for facility effluents.

Objective

To ensure that radioactive liquid and gaseous releases from the facility are maintained within the limits specified by Specifications 3.8.A and 3.8.B

Specification

A. Liquid Effluents

1. Facility records shall be maintained of radioactive concentrations and volume before dilution of each batch of liquid effluent released, and of the average dilution flow and length of time over which each discharge occurred.
2. Radioactive liquid waste sampling and activity analysis of each liquid waste batch to be discharged shall be performed prior to release in accordance with the sampling and analysis program specified in the REM.
3. The operation of the automatic isolation valves and discharge tank selection valves shall be checked annually.

3.8/4.8 RADIOACTIVE MATERIALS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.8.A. Liquid Effluents

limits. Provide prompt notification to the NRC pursuant to Section 6.9.1.4.

3. The doses or dose commitment to a member of the public from radioactive materials in liquid effluents released from each unit to unrestricted areas (See Figure 4.8-1b) shall be limited:
 - a. During any calendar quarter to <1.5 mrem to the total body and <5 mrem to any organ and,
 - b. During any calendar year to <3 mrem to the total body and <10 mrem to any organ
4. If the limits specified in 3.8.A.3 a & b above are exceeded, prepare and submit Special Report pursuant to Section 6.9.1.4.
5. The maximum activity to be contained in one liquid radwaste tank or temporary storage tank that can be discharged directly to the environs shall not exceed 10 curies excluding tritium and dissolved/entrained noble gas.
6. With radioactive liquid waste exceeding 3.8.A.5 limits, without delay suspend all additions of radioactive material to the tank and within 48 hours, reduce the tank contents to within the limit. Events leading to this condition must be reported in the next Semiannual Radioactive Effluent Release Report (Section F.2 of the REM)

4.8.A. Liquid Effluents

4. The results of the analysis of samples collected from release points shall be used with the calculational methodology in the ODCM to assure that the concentrations at the point of release are maintained within the limits of Specification 3.8.A.1.
5. Cumulative quarterly and yearly dose contributions from liquid effluents shall be determined as specified in the ODCM at least once every 31 days.
6. The quantity of radioactive material contained in any outside liquid radwaste storage tanks shall be determined to be within the above limit by analyzing a representative sample of the tank's contents at least once per 7 days when radioactive materials are being added to the tank.

3.8/4.8 RADIOACTIVE MATERIALS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.8.B. Airborne Effluents

1. The dose rate at any time to areas at and beyond the site boundary (see Figure 4.8-1b) due to radioactivity released in gaseous effluents from the site shall be limited to the following values:
 - a. The dose rate limit for noble gases shall be <500 mrem/yr to the total body and <3000 mrem/yr to the skin, and
 - b. The dose rate limit for I-131, I-133, H-3, and particulates with greater than eight day half-lives shall be <1500 mrem/yr to any organ.
2. If the limits of 3.8.B.1 are exceeded, appropriate corrective action shall be immediately initiated to bring the release within limits. Provide prompt notification to the NRC pursuant to Section 6.9.1.4.

4.8.B. Airborne Effluents

1. The gross β/γ and particulate activity of gaseous wastes released to the environment shall be monitored and recorded.
 - a. For effluent streams having continuous monitoring capability, the activity shall be monitored and flow rate evaluated and recorded to enable release rates of gross radioactivity to be determined at least once per shift using instruments specified in Table 3.2.K.
 - b. For effluent streams without continuous monitoring capability, the activity shall be monitored and recorded and the release through these streams controlled to within the limits specified in 3.8.B.
2. Radioactive gaseous waste sampling and activity analysis shall be performed in accordance with the sampling and analysis program specified in the REM. Dose rates shall be determined to be within limits of 3.8.B using methods contained in the ODCM.

3.8/4.8-3

Amendment No. 103,109

3.8/4.8 RADIOACTIVE MATERIALS

LIMITING CONDITIONS FOR OPERATION

3.8.B. Airborne Effluents
(Cont'd)

3. The air dose to areas at and beyond the site boundary (see Figure 4.8-1b) due to noble gases released in gaseous effluents per unit shall be limited to the following:
 - a. During any calendar quarter, to ≤ 5 mrad for gamma radiation and ≤ 10 mrad for beta radiation;
 - b. During any calendar year, to ≤ 10 mrad for gamma radiation and ≤ 20 mrad for beta radiation.
4. If the calculated air dose exceeds the limits specified in 3.8.B.3 above, prepare and submit a special report pursuant to Section 6.9.1.4.
5. The dose to a member of the public from radioiodines, radioactive materials in particulate form, and radionuclides other than noble gases with half lives greater than 8 days in gaseous effluent released per unit to areas at and beyond the site boundary (see Figure 4.8-1b) shall be limited to the following:
 - a. To any organ during any calendar quarter to ≤ 7.5 mrem;
 - b. To any organ during any calendar year to ≤ 15 mrem;

SURVEILLANCE REQUIREMENTS

4.8.B. Airborne Effluents
(Cont'd)

3. Cumulative quarterly and yearly dose contributions from gaseous releases shall be determined using methods contained in the ODCM at least once every 31 days.

3.8/4.8 RADIOACTIVE MATERIALS

LIMITING CONDITIONS FOR OPERATION

3.8.B. Airborne Effluents
(Cont'd)

6. If the calculated doses exceed the limits of 3.8.B.5 above, prepare and submit a special report pursuant to Section 6.9.1.4.
7. During operation above 25% power the discharge of the SJAE must be routed through the charcoal adsorbers.
8. With gaseous waste being discharged for more than 7 days without treatment through the charcoal adsorbers, prepare and submit a special report pursuant to Section 6.9.1.4.
9. Whenever the SJAE is in service, the concentration of hydrogen in the offgas downstream of the recombiners shall be limited to $\leq 4\%$ by volume.
10. With the concentration of hydrogen exceeding the limit of 3.8.B.9 above, restore the concentration to within the limit within 48 hours.

SURVEILLANCE REQUIREMENTS

4.8.B. Airborne Effluents
(Cont'd)

4. During operation above 25% power, the position of the charcoal bed bypass valve will be verified daily.
5. The concentration of hydrogen downstream of the recombiners shall be determined to be within the limits of 3.8.B.9 by continuously monitoring the off-gas whenever the SJAE is in service using instruments described in Table 3.2.K. Instrument surveillance requirements are specified in Table 4.2.K.

3.8/4.8-5

Amendment No. 103, 109

3.8/4.8 RADIOACTIVE MATERIALS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.8.C. Radioactive Effluents - Dose

1. The dose or dose commitment to a real individual from all uranium fuel cycle sources is limited to ≤ 25 mrem to the total body or any organ (except the thyroid, which is limited to ≤ 75 mrem) over a period of one calendar year.
2. With the calculated dose from the release of radioactive materials in liquid or gaseous effluents exceeding twice the limits of Specification 3.8.A.3, 3.8.B.3, or 3.8.B.5, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.1.4. and limit the subsequent releases such that the limits of 3.8.C.1 are not exceeded.

3.8.D. Mechanical Vacuum Pump

1. Each mechanical vacuum pump shall be capable of being automatically isolated and secured on a signal or high radioactivity in the steam lines whenever the main steam isolation valves are open.
2. If the limits of 3.8.D.1 are not met, the vacuum pump shall be isolated.

4.8.C. Radioactive Effluents - Dose

1. Cumulative dose contributions from liquid and gaseous effluents shall be determined in accordance with Specifications 3.8.A.3, 3.8.B.3, and 3.8.B.5 and the methods in the ODCM.

4.8.D. Mechanical Vacuum Pump

At least once during each operating cycle verify automatic securing and isolation of the mechanical vacuum pump.

3.11/4.11 FIRE PROTECTION SYSTEMS

LIMITING CONDITIONS FOR OPERATION

3.11.A. High Pressure Fire Protection System

area where protection is lost is checked hourly.

3. If only one high pressure fire pump is OPERABLE, the reactors may remain in operation for a period not to exceed 7 days, provided the requirements of Specification 3.11.A.1.b above are met.
4. If Specification 3.11.A.3 cannot be met, the reactors shall be placed in the Cold Shutdown condition in 24 hours.
5. Removal of any component in the High Pressure Fire System from service for any reason other than testing or emergency operations shall require Plant Manager approval.
6. The Raw Service Water storage tank level shall be maintained above level 723'7" by the raw service water pumps.

SURVEILLANCE REQUIREMENTS

4.11.A. High Pressure Fire Protection System

3. Raw Service Water System Testing

<u>Item</u>	<u>Frequency</u>
-------------	------------------

Simulated automatic and manual actuation of raw service water pumps and operation of tank level switches.	Once/year
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4. The high pressure fire protection system pressure shall be logged daily.
5. Principal header and component isolation valves shall be checked open at intervals no greater than 3 months.

3.11/4.11 FIRE PROTECTION SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.11.A. High Pressure Fire Protection System

- 7. If Specification 3.11.A.6 cannot be met, a fire pump shall be started and run continuously until the raw service water pumps can maintain a raw service water storage tank level above 723'7".
- 8. The fire protection water distribution system shall have a minimum capacity of 2,664 gpm at 250' head.
- 9. The fire protection system shall be capable of supplying the individual loads listed in Table 3.11.A.

B. CO₂ Fire Protection System

- 1. The CO₂ Fire Protection System shall be OPERABLE:
 - a. With a minimum of 8-1/2 tons (0.5 Tank) CO₂ in storage units 1 and 2.
 - b. With a minimum of 3 tons (0.5 Tank) CO₂ storage unit 3.

4.11.A. High Pressure Fire Protection System

B. CO₂ Fire Protection System

- 1. CO₂ Fire Protection Testing:

<u>Item</u>	<u>Frequency</u>
-------------	------------------

- | | |
|---|---------------|
| a. Simulated automatic and manual actuation | Once/year |
| b. Storage tank pressure and level | Checked daily |

3.11/4.11 FIRE PROTECTION SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.11.B. CO₂ Fire Protection System

4.11.B. CO₂ Fire Protection System

3.11.B.1 (Cont'd)

4.11.B.1 (Cont'd)

- c. Automatic initiation logic OPERABLE.
- 2. If Specifications 3.11.B.1.a or 3.11.B.1.b or 3.11.B.1.c cannot be met, a patrolling fire watch with portable fire equipment shall be established to ensure that each area where protection is lost is checked hourly.
- 3. If Specifications 3.11.B.1.a, 3.11.B.1.b, or 3.11.B.1.c are not met within 7 days, the affected unit(s) shall be in Cold Shutdown within 24 hours.
- 4. If CO₂ fire protection is lost to a cable spreading room or to any diesel generator building area a continuous fire watch shall be established immediately and shall be continued until CO₂ fire protection is restored.

- c. CO₂ Spray header and nozzle inspection for blockage Once/3 years
- 2. When the cable spreading room CO₂ fire protection is INOPERABLE, one 125-pound (or larger) portable fire extinguisher shall be placed at each entrance.

3.11/4.11 FIRE PROTECTION SYSTEMS

LIMITING CONDITIONS FOR OPERATION

3.11.B. CO₂ Fire Protection System

5. Removal of any component in the CO₂ Fire Protection System from service for any reason other than testing or emergency operations shall require Plant Manager approval.

C. Fire Detectors

1. The fire detection system's heat and smoke detectors for all protected zones shall be OPERABLE except that one detector for a given protected zone may be INOPERABLE for a period no greater than 30 days.
2. If Specification 3.11.C.1 cannot be met, a patrolling fire watch will be established to ensure that each protected zone or area with INOPERABLE detectors is checked at intervals no greater than one each hour.

SURVEILLANCE REQUIREMENTS

4.11.C. Fire Detectors

1. All heat and smoke detectors shall be tested in accordance with industrial standards or other approved methods semiannually.
2. The non-Class A supervised detector circuitry for those detectors which provide alarm only will be tested once each month by actuating the detector at the end of the line or end of the branch such that the largest number of circuit conductors will be checked.

3.11/4.11-6

3.11/4.11 FIRE PROTECTION SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

4.11.C. Fire Detectors

3. The class A supervised detector alarm circuits will be tested once each two months at the local panels.
4. The circuits between the local panels in 4.11.C.3 and the main control room will be tested monthly.
5. Smoke detector sensitivity will be checked in accordance with manufacturer's instruction annually.

.11.D. ROVING FIRE WATCH

Deleted

D. ROVING FIRE WATCH

Deleted

3.11/4.11-7

3.11/4.11 FIRE PROTECTION SYSTEMS

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

3.11.E. Fire Protection Systems Inspection

All fire barrier penetrations, including cable penetration barriers, fire doors and fire dampers, in fire zone boundaries protecting safety-related areas shall be functional at all times. With one or more of the required fire barrier penetrations nonfunctional within one hour establish a continuous fire watch on at least one side of the affected penetration or verify the OPERABILITY of fire detectors on at least one side of the nonfunctional fire barrier and establish an hourly fire watch patrol until the work is completed and the barrier is restored to functional status.

F. Fire Protection Organization

Deleted

G. Air Masks and Cylinders

A minimum of 15 air masks and 30 500-cubic-inch air cylinders shall be available at all times except that a time period of 48 hours following emergency use is allowed to permit recharging or replacing.

4.11.E. Fire Protection Systems Inspections

Each required fire barrier penetration shall be verified to be functional at least once per 18 months by a visual inspection, and prior to restoring a fire barrier to functional status following repairs or maintenance by performance of a visual inspection of the affected fire barrier penetration.

F. Fire Protection Organization

Deleted

G. Air Masks and Cylinders

No additional surveillance required.

3.11 BASES

The High Pressure Fire and CO₂ Fire Protection specifications are provided in order to meet the preestablished levels of operability during a fire in either or all of the three units. Requiring a patrolling fire watch with portable fire equipment if the automatic initiation is lost will provide (as does the automatic system) for early reporting and immediate fire fighting capability in the event of a fire occurrence.

The High Pressure Fire Protection System is supplied by four pumps (three electric driven and one diesel driven) aligned to the high pressure fire header. The reactors may remain in operation for a period not to exceed seven days if three pumps are out-of-service. If at least two pumps are not made operable in seven days or if all pumps are lost during this seven-day period, the reactors will be placed in the cold shutdown condition within 24 hours.

For the areas of applicability, the fire protection water distribution system minimum capacity of 2,664 gpm at 250' head at the fire pump discharge consists of the following design loads:

1. Sprinkler System (0.30 gpm/ft ² /4440 ft ² area)	1332 gpm
2. 1 1/2" Hand Hose Lines	200 gpm
3. Raw Service Water Load	<u>1132 gpm</u>
TOTAL	2664 gpm

The CO₂ Fire Protection System is considered operable with a minimum of 8 1/2 tons (0.5 tank) CO₂ in storage for units 1 and 2; and a minimum of 3 tons (0.5 tank) CO₂ in storage for unit 3. An immediate and continuous fire watch in the cable spreading room or any diesel generator building area will be established if CO₂ fire protection is lost in this room and will continue until CO₂ fire protection is restored.

To assure close supervision of fire protection system activities, the removal from service of any component in either the High Pressure Fire System or the CO₂ Fire Protection System for any reason other than testing or emergency operations will require Plant Manager approval.

Early reporting and immediate fire fighting capability in the event of a fire occurrence will be provided (as with automatic system) by requiring a patrolling fire watch if more than one detector for a given protected zone is inoperable.

3.11/4.11-12

3.11 BASES (Cont'd)

The fire protection system is designed to supply the required flow and pressure to an individual load listed on Table 3.11.A while maintaining a design raw service water load of 1132 gpm.

4.11 BASES

Periodic testing of both the High Pressure Fire System and the CO₂ Fire Protection System will provide positive indication of their operability. If only one of the pumps supplying the High Pressure Fire System is OPERABLE, the pump that is OPERABLE will be checked immediately and daily thereafter to demonstrate operability. If the CO₂ Fire Protection System becomes INOPERABLE in the cable spreading room, one 125-pound (or larger) fire extinguisher will be placed at each entrance to the cable spreading room.

Annual testing of automatic valves and control devices is in accordance with NFPA Code Vol. II, 1975, section 15, paragraph 6015. More frequent testing would require excessive automatic system inoperability, since there are a large number of automatic valves installed and various portions of the system must be isolated during an extended period of time during this test.

Wet fire header flushing, spray header inspection for blockage, and nozzle inspection for blockage will prevent, detect, and remove buildup of sludge or other material to ensure continued operability. System flushes in conjunction with the semiannual addition of biocide to the Raw Cooling Water System will help prevent the growth of crustaceans which could reduce nozzle discharge.

Semiannual tests of heat and smoke detectors are in accordance with NFPA Code.

With the exception of continuous strip heat detector panels, all non-class A supervised detector circuits which provide alarm only are hardwired through conduits and/or cable trays from the detector to the main control room alarm panels with no active components between. Nonclass A circuits also actuate the HPCI water-fog system, the CO₂ system in the diesel generator buildings, and isolate ventilation in shutdown board rooms. The test frequency and methods specified are justified for the following reasons:

1. An analysis was made of worst-case fire detection circuits at Browns Ferry to determine the probability of no undetected failure of the circuits occurring between system test times as specified in the surveillance requirements. A circuit is defined as the wire connections and components that affect transmission of an alarm signal between the fire detectors and the control room annunciator. Three circuits were analyzed which were representative of an alarm-only circuit, a water-fog circuit, and a CO₂ circuit. The spreading room B smoke detector was selected as the worst-case alarm-only circuit because it had the largest number of wires and connections in a single circuit. The HPCI water-fog circuit was selected for analysis because it is the only water-fog

4.11 BASES (Cont'd)

circuit in the area of applicability for Technical Specifications. The Standby Diesel Generator Room A CO₂ circuit was selected because it contained 2 out of 3 detector logic, the most complicated CO₂ circuit logic. Calculations were based on failure rates for wires, connections, and circuit components as shown in Appendix III of WASH-1400. Failure rates were considered for the following circuit components:

1. Open circuit
2. Short to ground
3. Short to power
4. Timing motor failure to start
5. Relay failure to energize
6. Normally open contact failure to close
7. Normally open or normally closed contact short
8. Normally closed contact opening
9. Timing switch failure to transfer

The calculated probabilities (Pf) for no undetected failure of the circuits occurring were as follows, based on the specified test frequency.

AREA	TEST FREQUENCY	Pf
Spreading Room B	One Month	0.975287
HPCI Water Fog	Six Months	0.977175
Standby Diesel Gen Room A CO ₂	Six Months	0.957595

The worst case of the three areas considered is Spreading Room B. The probability of undetected failure is approximately 1/40, which means that one undetected failure will occur on the average every 40 months over an extended period of time and that the failure could exist up to one month. The frequency of testing is thus much greater than the frequency of failure and produces circuits with adequate reliability.

2. Circuits checks by initiation of end of the line or end of the branch detectors will more thoroughly test the parallel circuits than testing on a rotating detector basis. This test is not a detector test, but is a test to simulate the effect of electrical supervision as defined in the NFPA Code.*
3. Testing of circuits which actuate CO₂, water, or ventilation systems requires disabling the automatic feature of the fire protection system for the area. A surveillance program which disabled these circuits monthly would significantly reduce the ability of these circuits to provide fire suppression.

*Ref: NFPA Code 72D-9, paragraph 1111, Code 72D-15, paragraph 1312 for definition of Class A systems, and Code 72A-18, Article 240.

4.11 BASES (Cont'd)

4. Daily tests of annunciation lights and audible devices are performed as a routine operation function.
5. The CO₂ system manufacturer recommends semiannual testing of CO₂ system fire detection circuits.

In addition, operating personnel periodically inspect the plant during their normal operating activities for fire hazards and other abnormal conditions.

Smoke detectors will be tested "in-place" using inert freon gas applied by a pyrotronics type applicator which is accepted throughout the industrial fire protection industry for testing products of combustion detectors or by use of the MSA chemical smoke generators. At the present time, the manufacturers have only approved the use of "punk" for creating smoke. TVA will not use "punk" for testing smoke detectors.

3.11/4.11-15

BFN TECHNICAL SPECIFICATIONS
6.0 ADMINISTRATIVE CONTROLS

6.0 ADMINISTRATIVE CONTROLS

6.1 RESPONSIBILITY

The Plant Manager has onsite responsibilities for the safe operation of the facility and shall report to the Browns Ferry Site Director. In the absence of the Plant Manager, a Plant Superintendent will assume his responsibilities.

6.2 ORGANIZATION

CORPORATE

6.2.1 The portion of TVA management which relates to the operation of the plant is shown in Figure 6.2-1.

PLANT STAFF

6.2.2 The functional organization for the operation of the plant shall be shown in Figure 6.2-2.

- a. Shift manning requirements, shall as a minimum, be as described in Table 6.2.A and below.
- b. A licensed senior reactor operator shall be present at the site at all times when there is fuel in the reactor.

6.2.2 (Cont.)

- c. A licensed reactor operator shall be in the control room whenever there is fuel in the reactor.
- d. Two licensed reactor operators shall be in the control room during any cold startups, while shutting down the reactor, and during recovery from unit trip. In addition, a person holding a senior operator license shall be in the control room for that unit whenever it is in an operational mode other than cold shutdown or refueling.
- e. A Health Physics Technician* shall be present at the facility at all times when there is fuel in the reactor.
- f. A person holding a senior operator license or a senior operator license limited to fuel handling, shall be present during alteration of the core to directly supervise the activity and during this time shall not be assigned other duties.
- g. A site fire brigade of at least five members shall be maintained onsite at all times.* The fire brigade shall not include the Shift Engineer and the other members of the minimum shift crew necessary for safe shutdown of the unit, nor any personnel required for other essential functions during a fire emergency.

*The Health Physics Technician and fire brigade composition 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.

Table 6.2.A
Minimum Shift Crew Requirements^b

<u>Position</u>	<u>Units in Operation</u>				<u>Type of License</u>
	<u>0</u>	<u>1</u>	<u>2^d</u>	<u>3</u>	
Senior Operator ^a	1	1	1	1	SRO
Senior Operator	0	1	2	2	SRO
Licensed Operators	3	3	3	3	RO or SRO
Additional Licensed Operators ^c	0	1	2	2	RO or SRO
Assistant Unit Operators (AUO)	4	4	5	5	None
Shift Technical Advisor (STA)	0	1	1	1	None
Health Physics Technician	1	1	1	1	None

Note for Table 6.2.A

- a. A senior operator will be assigned responsibility for overall plant operation at all times there is fuel in any unit.
- b. Except for the senior operator discussed in note "a", the shift crew composition may be one less than the minimum requirements of Table 6.2.A for a period of time not to exceed two 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.A. 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.
- c. One of the Additional Licensed Operators must be assigned to each control room with an operating unit.
- d. The number of required licensed personnel, when the operating units are controlled from a common control room, are two senior operators and four operators.

6.3 PLANT STAFF QUALIFICATIONS

Qualifications of the Browns Ferry Nuclear Plant management and operating staff shall meet the minimum acceptable levels as described in ANSI - N18.1, Selection and Training of Nuclear Power Plant Personnel, dated March 8, 1971. The qualifications of the Health Physics Supervisor will meet or exceed the minimum acceptable levels as described in Regulatory Guide 1.8, Revision 1, dated September 1975. The Shift Technical Advisor shall have a bachelor's degree or equivalent in a scientific or engineering discipline with specific training in plant design and transient and accident response and analysis.

6.4 TRAINING

A retraining and replacement training program for station personnel shall be in accordance with ANSI - N18.1, Selection and Training of Nuclear Power Plant Personnel, dated March 8, 1971. The minimum frequency of the retraining program shall be every two years.

6.5 PLANT REVIEW AND AUDIT

6.5.1 PLANT OPERATIONS REVIEW COMMITTEE (PORC)

FUNCTION

- 6.5.1.1 a. The PORC shall function to advise the Plant Manager in all matters related to nuclear safety.
- b. This advisory function shall be performed by the PORC acting in a formal meeting or by members acting individually without a formal meeting.

COMPOSITION

6.5.1.2 The PORC shall be composed of the:

- a. Chairman: Plant Manager

- Alternate Chairman: Assistant to Plant Manager

- Alternate Chairman or Member: Technical Services
Superintendent

- Member: Unit Superintendents (3)

- Member: Maintenance Superintendent

- Member: Quality Assurance Staff
Supervisor

- Member: Health Physics
Supervisor

b. All alternate chairmen and alternate members shall be appointed in writing by the PORC chairman.

MEETING FREQUENCY

6.5.1.3 The PORC shall convene in a formal meeting at least once a month and as directed by the chairman. Other PORC meetings may be requested by the chairmen or members as required.

- 6.5.1.4 For expedited meetings, when it is not practical to convene as a group, the chairman or alternate chairman may conduct committee business by polling the members individually (by telephone or in person) or via a serialized review.

QUORUM

- 6.5.1.5 The quorum necessary for the PORC to act in a formal meeting shall consist of the chairman or alternate chairman and at least five members or their alternates. Members shall be considered present if they are in telephone communication with the committee.

RESPONSIBILITIES

- 6.5.1.6 The PORC shall be responsible for the activities listed below. The PORC may delegate the performance of reviews, but will maintain cognizance over and responsibility for them, e.g., subcommittees.
- a. Review of administrative procedures for the control of the technical and cross-disciplinary review of (1) all procedures required by Specification 6.8.1.1, and changes thereto, (2) any other procedures and changes thereto determined by the Plant Manager to affect nuclear safety.
 - b. Review of the administrative procedures required by Appendix A of Regulatory Guide 1.33, Revision 2, February 1978 and changes thereto.
 - c. Review of emergency operating procedures and changes thereto.
 - d. Review implementing procedures of the Radiological Emergency Plan and the Industrial Security Program.

- e. Review of all proposed changes to the Technical Specifications.
- f. Review of safety evaluation for proposed tests or experiments to be completed under the provisions of 10 CFR 50.59
- g. Review proposed changes to the Radiological Effluent Manual.
- h. Review adequacy of the Process Control Program and Offsite Dose Calculation Manual at least once every 24 months.
- i. Review changes to the radwaste treatment systems.
- j. Review of every unplanned onsite release of radioactive material to the environs including the preparation and forwarding of reports covering evaluation, recommendation, and disposition of the corrective action to prevent recurrence to the Director, Nuclear Power and to the Nuclear Safety Review Board.
- k. Review of all safety evaluations for modifications to structures, systems or components that affect nuclear safety to verify that such actions did not constitute an unreviewed safety question as defined in 10 CFR 50.59, or requires a change to these Technical Specifications.

- l. Review of reportable events, unusual events, operating anomalies, and abnormal performance of plant equipment.
- m. Investigate reported or suspected incidents involving safety questions or violations of the Technical Specifications.
- n. Review of unit operations to detect potential hazards to nuclear safety. Items that may be included in this review are NRC inspection reports, QA audit, NSRB audit results, American Nuclear Insurer (ANI) inspection results, and significant corrective action reports (CARs).
- o. Performance of special reviews, investigations, or analysis, and report thereon as requested by the Plant Manager or the Nuclear Safety Review Board.

AUTHORITY

6.5.1.7 The PORC shall:

- a. Recommend to the Plant Manager in writing, approval, or disapproval of items considered under 6.5.1.6.a through i above.
 1. The recommendation shall be based on a majority vote of the PORC at a formal meeting.
 2. The recommendation shall be based on a unanimous vote of the PORC when the PORC members are acting individually.
 3. Each member or alternate member shall have one vote.
- b. Furnish for consideration a determination in writing with regard to whether or not each item considered under 6.5.1.6.f above constitutes an unreviewed safety question.
- c. Make recommendations to the Plant Manager in writing concerning whether action reviewed under 6.5.1.6.k above did not constitute an unreviewed safety question.
- d. Provide written notification within 24 hours to the Site Director and the Nuclear Safety Review Board of disagreements between the PORC and the Plant Manager. However, the Plant Manager shall have responsibility for resolution of such disagreements pursuant to Specification 6.1.

RECORDS

6.5.1.8 The PORC shall maintain written minutes of each PORC meeting including expedited meetings that, as a minimum, document the result of all PORC activities performed under the responsibility and authority provisions of these technical specifications. Copies shall be provided to the Site Director and the Nuclear Safety Review Board.

6.5.2 NUCLEAR SAFETY REVIEW BOARD

FUNCTION

6.5.2.1 The NSRB shall function to provide independent review and audit cognizance 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, and
- h. Quality assurance practices

COMPOSITION

6.5.2.2 The NSRB shall be composed of at least five members, including the Chairman. Members of the NSRB may be from the Office of Nuclear Power or other TVA organizations, or external to TVA.

QUALIFICATIONS

- 6.5.2.3 The Chairman, members, alternate members of the NSRB shall be appointed in writing by the Manager of Nuclear Power and shall have an academic degree in engineering or a physical science field, or the equivalent; and in addition, shall have a minimum of 5 years technical experience in one or more areas given in 6.5.2.1. No more than two alternates shall participate as voting members in NSRB activities at any one time.

CONSULTANTS

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

MEETING FREQUENCY

- 6.5.2.5 The NSRB shall meet at least once per six months.

QUORUM

- 6.5.2.6 The minimum quorum of the NSRB necessary for the performance of the NSRB review and audit functions of these technical specifications shall consist of more than half of the NSRB membership or at least five members, whichever is greater. The quorum shall include the Chairman or his appointed alternate and the NSRB members including appointed alternate members meeting the requirements of 6.5.2.3. No more than a minority of the quorum shall have line responsibility for operation of the unit.

REVIEW

6.5.2.7 The NSRB shall review:

- a. The safety evaluations 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 to 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 plant 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; and
- i. Reports and meeting minutes of the PORC.

AUDITS

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

- a. The conformance of plant 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 plant staff at least once per 12 months.
- c. The results of actions taken to correct deficiencies occurring in site 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 Site Radiological Emergency Plan and implementing procedures at least once every 12 months.
- f. The Plant Physical Security Plan and implementing procedures at least once every 12 months.
- g. Any other area of site operation considered appropriate by the NSRB or the Manager of Nuclear Power.
- h. The fire protection programmatic controls including the implementing procedures at least once per 24 months.

- i. An independent fire protection and loss prevention program inspection and audit shall be performed annually utilizing either qualified offsite license personnel or an outside fire protection firm.
- j. An inspection and audit of the fire protection and loss prevention program shall be performed by an outside qualified fire consultant at intervals no greater than 3 years.
- k. The Radiological Environmental Monitoring program and the results thereof at least once per 12 months.
- l. The performance of activities required by the Quality Assurance Program to meet the criteria of Regulatory Guide 4.15, December 1977, or Regulatory Guide 1.21, Rev. 1, 1974, and Regulatory Guide 4.1, 1975, at least once every 12 months.
- m. The performance of activities required by the Safeguards Contingency Plan to meet the criteria of 10 CFR 73.40(d) at least once every 12 months.
- n. The Offsite Dose Calculation Manual and implementing procedures at least once per 24 months.
- o. The Process Control Program and implementing procedures for solidification of wet radioactive wastes at least once per 24 months.
- p. The Radiological Effluent Manual and implementing procedures at least once per 12 months.

AUTHORITY

6.5.2.9 The NSRB shall report to and advise the Manager of Nuclear Power on those areas of responsibility specified in Specifications 6.5.2.7 and 6.5.2.8.

RECORDS

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

- a. Minutes of each NSRB meeting shall be prepared, approved and forwarded to the Manager of Nuclear Power within 14 days following each meeting.
- b. Reports of reviews encompassed by Section 6.5.2.7 above, shall be prepared, approved and forwarded to the Manager of Nuclear Power within 14 days following completion of the review.
- c. Audit reports encompassed by Specification 6.5.2.8 above, shall be forwarded to the Manager of Nuclear Power and to the management positions responsible for the areas audited within 30 days after completion of the audit.

6.5.3 TECHNICAL REVIEW AND APPROVAL OF PROCEDURES

ACTIVITIES

- 6.5.3.1 Procedures required by Technical Specification 6.8.1.1 and other procedures which affect plant nuclear safety, and changes (other than editorial or typographical changes) thereto, shall be prepared, reviewed and approved. Each procedure or procedure change shall be reviewed by an individual other than the preparer. The reviewer may be from the same organization or from a different organization. Procedures other than Site Director Standard Practices will be approved by the responsible Section Supervisor, or applicable Plant Superintendent.
- 6.5.3.2 Proposed changes or modifications to plant structures, systems and components that affect nuclear safety shall be reviewed as designated by the Plant Manager. 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 plant structures, systems and components that affect nuclear safety shall be approved by the Plant Manager, prior to implementation.
- 6.5.3.3 Individuals responsible for reviews performed in accordance with 6.5.3.1 shall be members of the site supervisory staff previously designated by the Plant Manager. 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 review personnel of the appropriate discipline.
- 6.5.3.4 The Plant Manager shall approve all administrative procedures requiring PORC review prior to implementation.

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 PORC and the results of this review shall be submitted to the NSRB and the Site Director.

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 Manager of Nuclear Power 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 PORC. 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 Manager of Nuclear Power within 14 days of the violation.
- d. Critical operation of the unit shall not be resumed until authorized by the Commission.

6.8 PROCEDURES/INSTRUCTIONS AND PROGRAMS

6.8.1 PROCEDURES

6.8.1.1 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. Limitations on the amount of overtime worked by individuals performing safety-related functions in accordance with NRC Policy statement on working hours (Generic Letter No. 82-12).
- c. Surveillance and test activities of safety-related equipment.
- d. Security plan implementation.
- e. Emergency plan implementation.
- f. Fire Protection Program implementation.
- g. Radiological Effluent Manual implementing procedures.
- h. Process Control Program (PCP).
- i. Offsite Dose Calculation Manual.
- j. Administrative procedures which control technical and cross-disciplinary review.

6.8.1.2 Each administrative procedure required by Section 6.8.1.1.a. shall be reviewed by PORC and all other procedures required by Section 6.8.1.1.a. shall be reviewed in accordance with Section 6.5.3.

6.8.1.3 Temporary changes to procedures of Specification 6.8.1.1 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;
- c. The change is documented, reviewed by the PORC and approved by the Plant Manager within 14 days of implementation, for changes in administrative procedures requiring PORC review.
- d. The change is documented, reviewed per Specification 6.5.3, and approved by the responsible group section supervisor within 14 days of implementation, for changes to procedures other than administrative procedures.

DRILLS

6.8.2 Drills on actions to be taken under emergency conditions involving release of radioactivity are specified in the Radiological Emergency Plan and shall be conducted annually. Annual drills shall also be conducted on the actions to be taken following failures of safety-related systems or components.

RADIATION CONTROL PROCEDURES

6.8.3 Radiation Control Procedures shall be maintained and made available to all station personnel. These procedures shall show permissible radiation exposure and shall be consistent

with the requirements of 10 CFR 20. This radiation protection program shall be organized to meet the requirements of 10 CFR 20 except in lieu of the "control device" or "alarm signal" required by paragraph 20.203 (c) of 10 CFR 20.

6.8.3.1 Each high radiation area in which the intensity of radiation is greater than 100 mrem/hr but less than 1000 mrem/hr shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiological Work Permit.* 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.
- b. A radiation monitoring device which continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate level in the area has been established and personnel have been made knowledgeable of them.
- c. An individual qualified in radiation protection procedures who is equipped with a radiation dose rate monitoring device. This individual shall be responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by the facility Health Physicist in the Radiological Work Permit.

6.8.3.2 Each high radiation area in which the intensity of radiation is greater than 1,000 mrem/hr shall be subject to the provisions of (1) above; and, in addition, access to the source and/or area

shall be secured by lock(s). The key(s) shall be under the administrative control of the shift engineer. In the case of a high radiation area established for a period of 30 days or less, direct surveillance to prevent unauthorized entry may be substituted for permanent access control.

- * Health Physics personnel, or personnel escorted by Health Physics personnel, in accordance with approved emergency procedures, shall be exempt from the RWP issuance requirement during the performance of their assigned radiation protection duties, provided they comply with approved radiation protection procedures for entry into high radiation areas.

QUALITY ASSURANCE PROCEDURES - EFFLUENT AND ENVIRONMENTAL MONITORING

- 6.8.4 Quality Assurance procedures shall be established, implemented, and maintained for effluent and environmental monitoring, using the guidance in Regulatory Guide 1.21, Rev. 1, June 1974 and Regulatory Guide 4.1, Rev. 1, April 1975 or Regulatory Guide 4.15, Dec. 1977.

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 identified reports shall be submitted to the Director of the Regional Office of NRC, unless otherwise noted.

6.9.1.1 STARTUP REPORT

- a. 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 plant. The report shall address each of the tests identified in the FSAR 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.

- b. 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 power operation), supplementary reports shall be submitted at least every three months until all three events have been completed.

6.9.1.2 ANNUAL OPERATING REPORT*

- a. 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, **e.g., reactor operations and surveillance, inservice inspection, routine maintenance, special maintenance (describe maintenance), waste processing, and refueling. The dose assignment to various duty functions may be estimates based on pocket dosimeter, TLD, or film badge measurements. Small exposures totaling 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 shall be assigned to specific major work functions.
- b. Any mainsteam relief valve that opens in response to reaching its setpoint or due to operator action to control reactor pressure shall be reported.

*A single submittal may be made for a multiple unit station.

**This tabulation supplements the requirements of 20.407 of 10 CFR Part 20.

6.9.1.3 MONTHLY OPERATING REPORT

Routine reports of operating statistics and shutdown experience shall be submitted on a monthly basis to the Office of Inspection and Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, with a copy to the Regional Office, to be submitted no later than the fifteenth of each month following the calendar month covered by the report. A narrative summary of operating experience shall be submitted in the above schedule.

6.9.1.4 REPORTABLE EVENTS

Reportable events, including corrective actions and measures to prevent re-occurrence, shall be reported to the NRC in accordance with Section 50.73 to 10 CFR 50.

6.9.1.5 RADIOACTIVE EFFLUENT RELEASE REPORT

Deleted (See REM section F-2)

6.9.1.6 SOURCE TESTS

Results of required leak tests performed on sources if the tests reveal the presence of 0.005 microcurie or more of removable contamination.

6.9.2 SPECIAL REPORTS

Reports on the following areas shall be submitted in writing to the Director of Regional Office of Inspection and Enforcement:

- | | | |
|---|----------|---|
| 1. Fatigue Usage | 6.10.1.g | Annual
Operating
Report |
| 2. Relief Valve Tailpipe | 3.2.F | Within 30 days
after inoper-
ability of
thermocouple
and acoustic
monitor on
one valve. |
| 3. Seismic Instrumentation
Inoperability | 3.2.J.3 | Within 10 days
after 30 days of
inoperability. |
| 4. Meteorological Monitoring
Instrumentation
Inoperability | 3.2.I.2 | Within 10 days
after 7 days of
inoperability. |
| 5. Primary Containment
Integrated Leak Rate
Testing | 4.7.A.2 | Within 90 days
of completion of
each test. |
| 6. Data shall be retrieved from all seismic instruments
actuated during a seismic event and analyzed to determine
the magnitude of the vibratory ground motion. A Special | | |

Report shall be submitted within 10 days after the event describing the magnitude, frequency spectrum, and resultant effect upon plant features important to safety.

- | | | |
|--|--------|--|
| 7. Secondary Containment
Leak Rate Testing* | 4.7.C. | Within 90 days
of completion
of each test. |
|--|--------|--|

*Each integrated leak rate test of the secondary containment shall be the subject of a summary technical report. This report should include data on the wind speed, wind direction, outside and inside temperatures during the test, concurrent reactor building pressure, and emergency ventilation flow rate. The report shall also include analyses and interpretations of those data which demonstrate compliance with the specified leak rate limits.

6.10 STATION OPERATING RECORDS AND RETENTION

6.10.1 Records and/or logs shall be kept in a manner convenient for review as indicated below:

- a. All normal plant operation including such items as power level, fuel exposure, and shutdowns
- b. Principal maintenance activities
- c. Reportable Events
- d. Checks, inspections, tests, and calibrations of components and systems, including such diverse items as source leakage
- e. Reviews of changes made to the procedures or equipment or reviews of tests and experiments to comply with 10 CFR 50.59
- f. Radioactive shipments
- g. Test results in units of microcuries for leak tests performed pursuant to Specification 3.8.D

- h. Record of annual physical inventory verifying accountability of sources on record
- i. Gaseous and liquid radioactive waste released to the environs
- j. Offsite environmental monitoring surveys
- k. Fuel inventories and transfers
- l. Plant radiation and contamination surveys
- m. Radiation exposures for all plant personnel
- n. Updated, corrected, and as-built drawings of the plant
- o. Reactor coolant system inservice inspection
- p. Minutes of meetings of the NSRB
- q. Design fatigue usage evaluation

Monitoring and recording requirements below will be met for various portions of the reactor coolant pressure boundary (RCPB) for which detailed fatigue usage evaluation per the ASME Boiler and Pressure Vessel Code Section III was performed for the conditions defined in the design specification. In this plant, the applicable codes require fatigue usage evaluation for the reactor pressure vessel only. The locations to be monitored shall be:

- 1. The feedwater nozzles
- 2. The shell at or near the waterline
- 3. The flange studs

Transients that occur during plant operations will be reviewed and a cumulative fatigue usage factor determined.

For transients which are more severe than the transients evaluated in the stress report, code fatigue usage calculations will be made and tabulated separately.

In the annual operating report, the fatigue usage factor determined for the transients defined above shall be added and a cumulative fatigue usage factor to date shall be reported. When the cumulative usage factor reaches a value of 1.0, an inservice inspection shall be included for the specific location at the next scheduled inspection (3-1/3-year interval) period and 3-1/3-year intervals thereafter, and a subsequent evaluation performed in accordance with the rules of ASME Section XI Code if any flaw indications are detected. The results of the evaluation shall be submitted in a Special Report for review by the Commission.

6.10.2 Except where covered by applicable regulations, items a through h above shall be retained for a period of at least 5 years and item i through q shall be retained for the life of the plant. A complete inventory of radioactive materials in possession shall be maintained current at all times.

1. See paragraph N-415.2, ASME Section III, 1965 Edition.

6.11 PROCESS CONTROL PROGRAM (PCP)

1. The PCP shall be approved by the Commission prior to implementation.
2. Changes to the PCP shall be submitted to the Commission in the semi-annual Radioactive Effluent Release Report for the period in which the change(s) was made. This submittal shall contain:
 - a. Sufficiently detailed information to totally support the change.
 - b. A determination that the change did not change the overall conformance of the solidified product to existing criteria.
3. Changes to the PCP shall become effective upon review and acceptance by PORC.

6.12 OFFSITE DOSE CALCULATIONAL MANUAL (ODCM)

1. The ODCM shall be approved by the Commission prior to implementation.
2. Changes to the ODCM shall be submitted to the Commission in the semi-annual Radioactive Effluent Release Report for the period in which the change(s) was made. This submittal shall contain:
 - a. Sufficiently detailed information to totally support the change.
3. Changes to the ODCM shall become effective upon review and acceptance by PORC.

6.13 RADIOLOGICAL EFFLUENT MANUAL (REM)

1. The REM shall be approved by the Commission prior to implementation.
2. Changes to the REM shall be reviewed by PORC prior to implementation.
3. Changes to the REM shall be approved by the Commission prior to implementation.

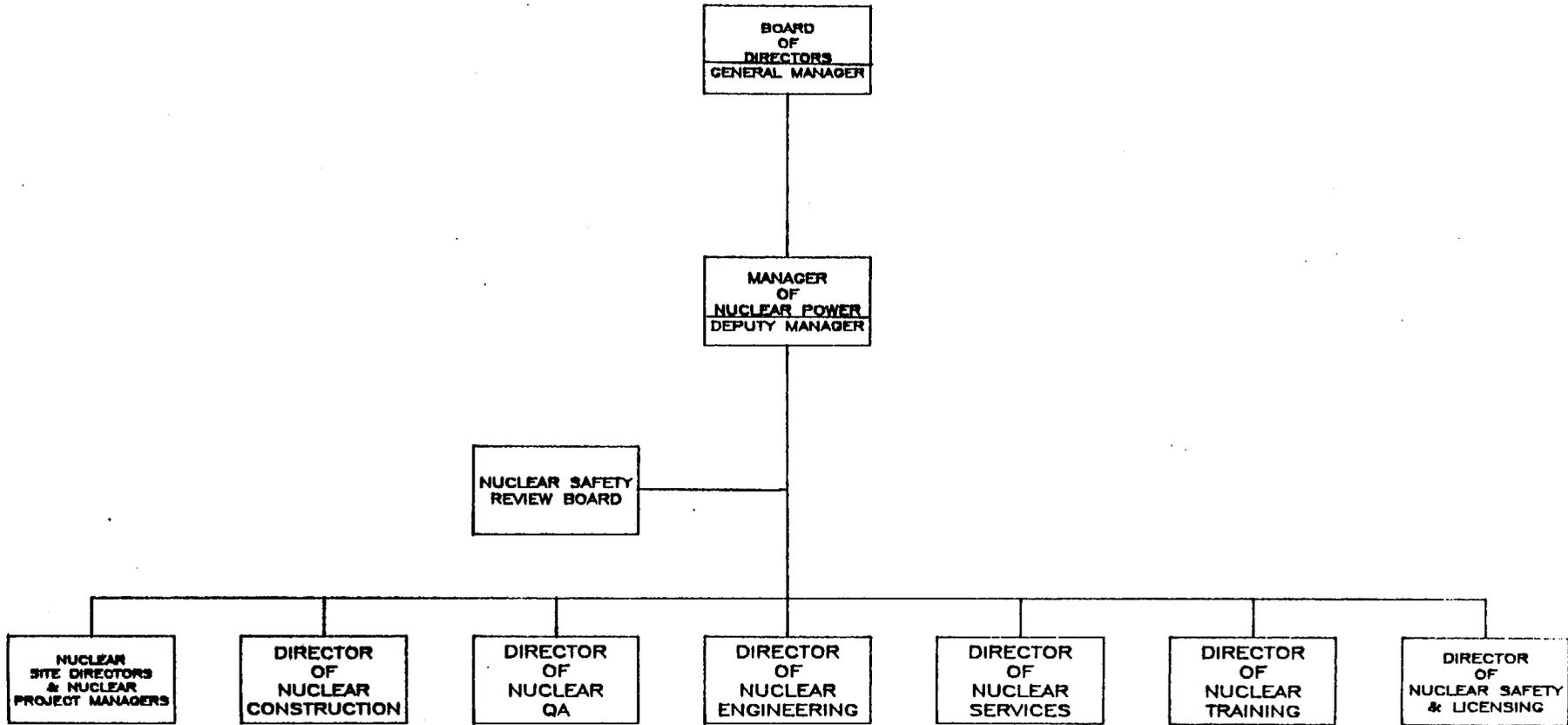
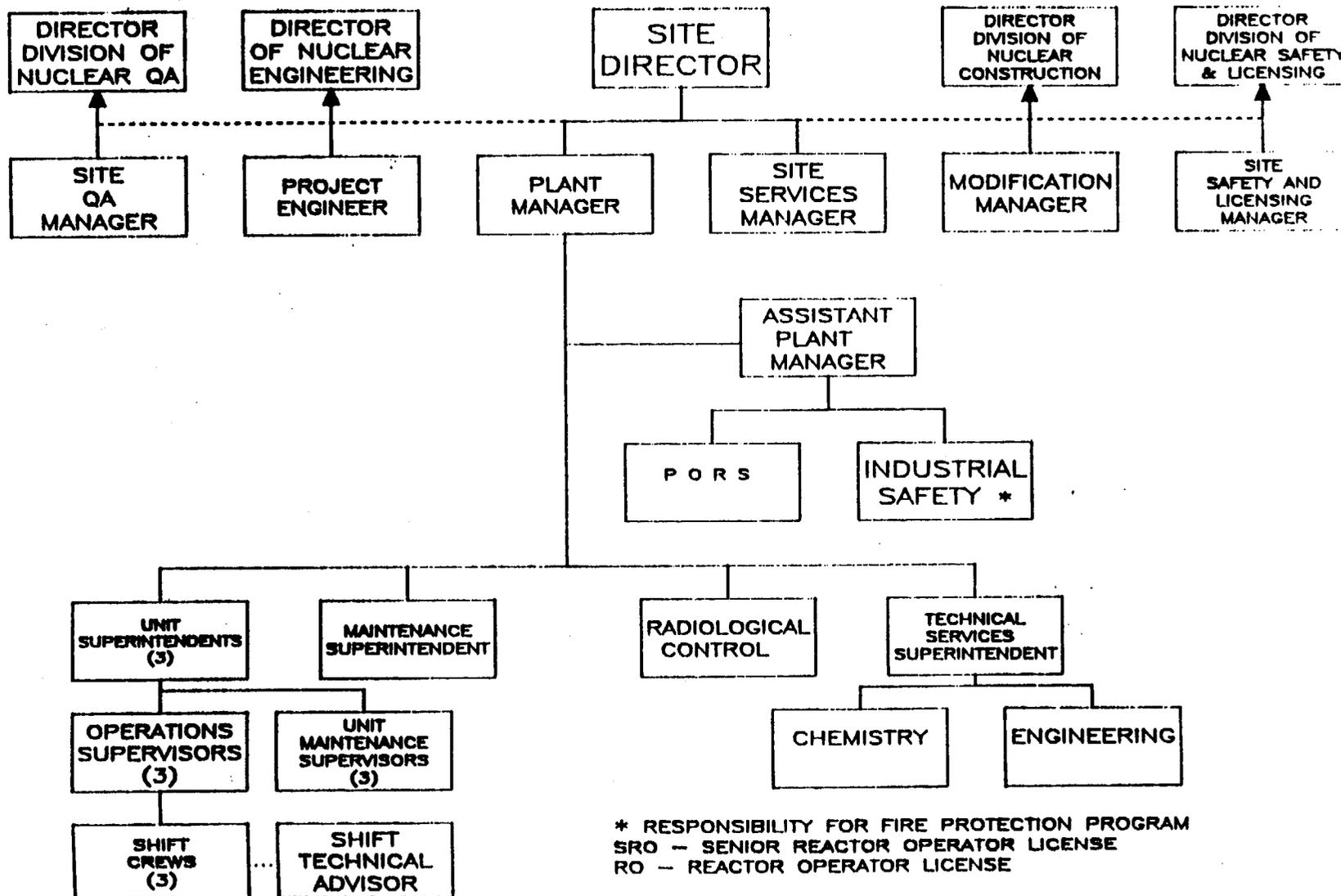


Figure 6.2-1 Offsite Organization for Facility Management & Technical Support



* RESPONSIBILITY FOR FIRE PROTECTION PROGRAM
 SRO - SENIOR REACTOR OPERATOR LICENSE
 RO - REACTOR OPERATOR LICENSE

- SHIFT ENGINEER (SRO)
- ASSISTANT SHIFT ENGINEER (SRO)
- UNIT OPERATOR (RO)
- ASSISTANT UNIT OPERATOR
- AUXILIARY UNIT OPERATOR

**FIGURE 6.2-2
 FACILITY ORGANIZATION**



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF SPECIAL PROJECTS

SUPPORTING AMENDMENT NO. 138 TO FACILITY OPERATING LICENSE NO. DPR-33

AMENDMENT NO. 134 TO FACILITY OPERATING LICENSE NO. DPR-52

AMENDMENT NO. 109 TO FACILITY OPERATING LICENSE NO. DPR-68

TENNESSEE VALLEY AUTHORITY

BROWNS FERRY NUCLEAR PLANT, UNITS 1, 2 AND 3

DOCKET NOS. 50-259, 50-260, AND 50-296

1.0 INTRODUCTION

By letter dated September 27, 1984 as supplemented January 17, June 2, and December 10, 1986, (TS-201) the Tennessee Valley Authority (TVA or the licensee) requested amendments to Facility Operating Licenses Nos. DPR-33, DPR-52, and DPR-68 for the Browns Ferry Nuclear Plant, Units 1, 2, and 3 (BFN). The amendments would change the Technical Specifications (TS) to show recent organization changes, provide improvements and clarifications, and reformat the administration control section to conform more closely with the Standard Technical Specifications (STS). Minor changes were made to proposed Specifications 6.5.1.6.b and k, 6.5.3.1 and 6.8.1.1 to clarify the Specifications. These changes were discussed between the NRC staff and the licensee on September 8, 1987, and accepted by the licensee.

The licensee's letters dated June 2, 1986, and December 10, 1986, consisted of minor administrative changes and enhancements per staff discussions. These supplements did not significantly change the application from that initially noticed on February 26, 1986 (51 FR 6830) and do not alter the staff's proposed no significant hazards determination.

2.0 EVALUATION

2.1 Format of the Entire Administrative Controls, Section 6

The proposed amendment adopts the same format and method for numbering subsections that are used by STS. This includes a revised index and table of contents. The request to adopt the STS page numbering system for the Administrative Controls Section by this amendment has been obviated by TVA's letter dated March 19, 1987 since that letter provided a complete set of retyped TS, which contained the new page numbering system, for use as the NRC record copy. The table of contents will be revised and expanded to reflect the changes of the amendment.

Changing the TS format should make the Administrative Controls Section clearer to follow due to the more logical order, the better indexing, and the improved section headings. Therefore, the staff finds this reformatting, including renumbering of the subsections, to be acceptable.

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PDR

2.2 Responsibility, Section 6.1

Section 6.1 has been revised to change the Plant Superintendent to Plant Manager since that is the new title of the position. In addition, Section 6.1 has been revised to change the Assistant Director of Nuclear Power (Operations) to the Browns Ferry (BF) Site Director since that is the new title of the position to which the Plant Manager now reports.

These changes are acceptable since they represent title changes only.

2.3 Revisions to the Offsite Organization Chart, Figure 6.2-1

Figure 6.2-1 has been revised to reflect the TVA corporate offsite nuclear organization for facility management and technical support. The corporate level changes represent a restructuring of the corporate offsite organization to provide for centralized direction and control of nuclear activities. Each of the offsite corporate departments shown in Figure 6.2-1 will be responsible for direct support of the sites in their areas of responsibilities. The TVA corporate organization was developed so that support to each of the sites follows clear lines. The functional alignment of departments within corporate is paralleled at the plant sites (including Browns Ferry).

The staff considers this functional alignment of departments and standardizations of TVA an improvement over the organization presented in the existing Browns Ferry TS. The corporate organization is acceptable, since it provides for management attention to and support of the Browns Ferry nuclear program, meets the acceptance criteria of Section 13.1.1 and 13.1.2 of the Standard Review Plan (SRP) and is consistent with the TVA organization presented in the revised TVA Corporate Nuclear Performance Plan which was approved in NUREG-1232, Volume 1.

2.4 Revision to the Facility Organization Chart, Figure 6.2-2

Figure 6.2-2 has been revised to reflect the new site organization at the Browns Ferry Nuclear (BFN) Plant as detailed in the latest revision of the Browns Ferry Nuclear Performance Plan (BFNPP), submitted to NRC on July 1, 1987. The BFN site support organizations have been reorganized into functional departments that generally parallel the functional departments in the headquarters of the Office of Nuclear Power. The BFNPP describes the plan for providing management control and performing specific actions to correct past problems at BFN. Specifically, the BFNPP outlines the management approach to overcoming past problems and improving regulatory performance at the BFN. This TS change revises the organization chart in the TS to be consistent with the organization necessary to carry out the improvements specified in the BFNPP.

The Plant Manager is responsible for conducting day-to-day plant operation in compliance with licensing and regulatory requirements. A plant management organization has been implemented with a unit superintendent assigned to each of the units. As a result of the reorganization, the Plant Manager is free to concentrate his attention on the actual conduct of plant operations.

Due to the reorganization, many position titles have changed. Of these, the most significant are the following:

<u>Previous Title</u>	<u>New Title</u>
Manager of Power (and previously Manager of Power and Engineering)	Manager of Nuclear Power
Assistant Director of Nuclear Power (Operations)	Browns Ferry Site Director
Plant Superintendent	Plant Manager
Health Physics	Radiological Control Supervisor
Quality Assurance Supervisor	Site QA Manager

In conclusion, Figure 6.2-2 represents the BFN organization which (1) reflects an increase in staffing, (2) provides a higher level of management control at the site, (3) shows improved management involvement in plant operations, (4) has distinct functional areas that are separately supervised, (5) meets the acceptance criteria of Section 13.1.2 of the SRP, and (6) is consistent with the BFN organizational structure presented in the BFNPP. Therefore, Figure 6.2-2 is acceptable.

2.5 Plant Staff, Section 6.2.2

Section 6.2.2 has been revised as follows:

- a. Existing Note No. 7 which required the Shift Technical Advisor (STA) to be present at all times has been deleted and replaced by the requirement for an STA when any unit is in operation. This change is consistent with past practice and meets the guidance provided in NUREG-0737, Item I.A.1.1 and is, therefore, acceptable.
- b. Existing Note No. 6 which required the Operations Supervisor to have an SRO license has been deleted. The Operations Supervisor shall meet the minimum qualifications specified in Regulatory Guide 1.8 which endorses ANSI-N18.1, which includes the requirement for an SRO license (see new Section 6.3) and therefore, this change is acceptable.

- c. The following has been added to Section 6.2.2 "d," "In addition, a person holding a senior operator license shall be in the control room for that unit when ever it is in an operational mode other than cold shutdown or refueling." This addition is acceptable since it is in conformance with 10 CFR 50.54.
- d. The requirement for a senior licensed operator with respect to fuel handling has been clarified and is in conformance with 10 CFR 50.54 and is, therefore, acceptable.
- e. The requirement to maintain a site fire brigade has been added. This change also includes the addition of a note regarding the minimum requirements for the site fire brigade and health physics technician. This addition is acceptable since it adds requirements delineated in STS and is conformance with 10 CFR 50.54.

2.6 Minimum Shift Crew Requirements, Table 6.2.A

Table 6.2.A has been revised as follows:

- a. The minimum shift requirements have been increased to reflect the requirements in 10 CFR 50.54(m), and
- b. Note "e," which described the STA qualifications, has been deleted since these qualifications are described in the new Section 6.3.

Table 6.2A which adds the new minimum shift crew requirements and deletes an unnecessary note is acceptable since the table meets the requirements of 10 CFR 50.54, adopts STS terminology, meets the objectives of Section 13.1.2 of the SRP and will result in increased clarity and usefulness.

2.7 Plant Staff Qualifications, Section 6.3

The description of the STA qualifications have been added to Section 6.3. The STA qualifications are now in the TS text and no longer only a footnote to the shift crew table (6.2.A). This is an administrative change that improves the way the information is presented and does not alter the requirements and therefore is, acceptable.

2.8 Plant Operations Review Committee (PORC) Composition and Quorum Sections 6.5.1.1, 6.5.1.2, 6.5.1.3, 6.5.1.4, and 6.5.1.5

The proposed changes to the Plant Operations Review Committee (PORC) Composition and Quorum including the following:

- The addition of a new Section 6.5.1.1 to the TS which describes the function of the PORC. This section allows PORC to function as a body or as individuals and through the use of subcommittees.
- The membership of the PORC would be revised to be consistent with the reorganization discussed in Section 2.4. The revised membership includes the Plant Manager or the Assistant to Plant Manager as Chairman, the Technical Services Superintendent as Chairman or a member, three unit Superintendents, the Maintenance Superintendent, the Quality Assurance Staff Supervisor and the Health Physics Supervisor.
- The minimum number of persons necessary for a quorum for the PORC would be revised to be the Chairman or the alternate chairman and five members.

The revised PORC membership provides a broad cross-section of expertise from the plant staff, therefore, preserving interdisciplinary reviews of the subject matter. In addition, the PORC membership will maintain a diversity of backgrounds among its members (i.e., operations, engineering, maintenance, quality assurance and health physics). The new minimum quorum requirements of Chairman plus five members is a majority of the revised total PORC membership of eight.

We find that these proposed changes to the PORC do not degrade the capabilities of the PORC and meet the acceptance criteria of Section 13.4 of the SRP and the relevant requirements of Regulatory Guide 1.33 (R.G. 1.33). Therefore, these proposed changes are acceptable.

2.9 Plant Operations Review Committee (PORC) Responsibilities, Section 6.5.1.6 and new Section 6.5.3 Technical Review and Approval of Procedures

The licensee proposed to revise Section 6.5.1.6 and to add a new Section 6.5.3. As discussed in detail below, several review responsibilities of PORC would be transferred to designated technical reviewers. The new proposed process of Section 6.5.3 will establish an "independent qualified review" and a cross-disciplinary review and approval to support certain changes currently under PORC review responsibility. The PORC review responsibility for Appendix "A" TS, Emergency Operating Procedures, the Security Plan and the Radiological Emergency Plan remains unchanged.

The following PORC responsibilities are proposed to be deleted from Specification 6.5.1.6 as discussed below:

- Review and approval of corporate site-level procedures issued by the site director thereto will be controlled under the new Section 6.5.3 "Technical Review and Approval of Procedures."

The following PORC responsibilities would be revised in Specification 6.5.1.6 as discussed below:

- PORC will review the administrative procedures listed in Appendix A of R.G. 1.33, Revision 2, February 1978, and the administrative procedures for the control of the technical and cross-disciplinary review of written procedures.
- PORC responsibilities have been changed so that PORC will be responsible for the review of all "safety evaluations for modifications to structures, systems or components that affect nuclear safety instead of "proposed changes to equipment or systems having safety significance." Revised Section 6.5.3.2 of the TS establishes the new technical methods for individual review and approval for these plant changes or modifications. The new, more commonly used wording "modifications to safety-related structures, systems or components" is preferable since the previous words were unclear and difficult to interpret.
- PORC will be responsible for reviewing the safety evaluations for proposed tests or experiments instead of the plans.
- A rewording of the responsibilities of the PORC to more closely match responsibilities listed in TS of more recently licensed BWR plants.

On September 8, 1987 the staff discussed minor clarification changes to proposed Specification 6.5.1.6.b and 6.5.3.2 to provide more precise determination of the PORC responsibilities for review of administrative procedures and review of safety evaluations for modification of systems or components that affect safety. These changes were acceptable to the licensee.

These changes are minor and provide better clarification of Specification 6.5.1.6.b and k, and therefore, these changes do not need to be submitted and noticed in accordance with 10 CFR 50.90 and 10 CFR 50.91.

Section 6.5.3, Technical Review and Approval of Procedures, is added to describe the new technical review and control process. The new process establishes an independent qualified review and a cross-disciplinary review and approval that supports changes to procedures and plant changes or modifications to plant nuclear safety-related structures, systems and components.

Each procedure required by Section 6.5.3 of the TS will be reviewed by an individual other than the preparer. The reviewer may be from the same organization or from a different organization. Individuals who conduct these reviews, at a minimum, will be members of the BFNPP supervisory staff and shall be previously designated by the Plant Manager. Each review will include a determination of whether or not a cross-disciplinary review is necessary. If so a cross-disciplinary review will be conducted.

Each proposed change or modification to plant nuclear safety-related structures, systems and components will be reviewed by a reviewer designated by the Plant Manager. Each modification will be reviewed by an individual or group other than the person(s) which designed the modification. The Plant Manager will approve the modifications prior to implementation.

A new Site Director's Standard Practice, SDSP-7.4 (Plant Operations Review Committee and Technical Review and Approval of Procedures), will establish requirements for qualified review of procedures. It will also establish qualifications and training requirements necessary for qualified reviewers. Each individual performing the qualified review will possess technical expertise in the area or discipline in which he is performing the review. Every qualified reviewer will receive training in how to determine if an interdisciplinary review is necessary. Specific guidelines are given for performing the independent qualified review, including the cross-disciplinary review, and the appropriate level of management to approve changes is specified. SDSP will contain a clause which allows the qualified reviewer or the responsible manager approving the procedures or procedure change the right to request PORC review.

NQAM (Nuclear Quality Assurance Manual) will require review and approval in accordance with SDSP-74. Appropriate managers responsible for approval of different groups of procedures will be designated within their field of responsibility. Quality Assurance (QA) will be given the option to review all changes.

After revising PORC, the members will have a reduced administrative burden and, therefore, will have more time available for the review of significant issues. These amendments would permit PORC members to focus their attention on the issues essential to the operation of the plant thereby improving PORC's effectiveness. This aspect is increasingly important because of the growing number of procedures, procedural changes, and modifications that must be reviewed.

The proposed changes would allow for the use of individual technical reviewers who can spend more time on the review. The detailed technical reviews of procedures can be accomplished by qualified technical reviewers not encumbered with other managerial duties, but possessing the technical expertise to conduct a thorough review. The proposed changes allow for an independent technical and cross-disciplinary review and approval.

The current TS requirement for review of changes is actually satisfied by individuals of a similar responsibility level, however, considerable management time is consumed in the assigning of these personnel to review each item, collecting results from those reviews, and finally attending a formal meeting to recommend a disposition. The method requested by these amendments eliminates much of the unnecessary effort and at the same time provides for a more consistent and timely review

and approval process. It would focus responsibility and accountability to the technical reviewers and provide a better review. Cross-disciplinary review would also be improved from current methods since reviewers will be able to concentrate on their particular areas of expertise.

On September 8, 1987 the staff discussed minor clarifications changes to Specification 6.5.3.1 to define specifically the person or persons who may approve procedures other than Site Director Standard Practices. These changes were acceptable to the licensee. These changes are minor and provide only the specific person or persons who may approve procedures, and therefore, these changes do not need to be submitted and noticed in accordance with 10 CFR 50.90 and 10 CFR 50.91.

The proposed changes have been designed so as to improve PORC operations. The above changes are acceptable since they (1) are consistent with the acceptance criteria of SRP Section 13.4, (2) meet the objectives of Regulatory Guide 1.33 which requires that decisions affecting safety are made at the proper level of responsibility and with the necessary technical advice and review, (3) provide for interdisciplinary review of the subject matter, (4) allow for independent technical review and approval, and (5) provide qualified designated reviewers.

2.10 Plant Operations Review Committee (PORC) Authority and Records, Sections 6.5.17 and 6.5.18

These sections have been rewritten to generally correspond with STS and to be consistent with the previously discussed changes and are, therefore, acceptable.

2.11 Nuclear Safety Review Board (NSRB), Audits, Authority and Records Qualifications, Sections 6.5.2.3, 6.5.2.8, 6.5.2.9, 6.5.2.10

Change "Manager of Power" to "Manager of Nuclear Power." This change is acceptable since it is a title change only.

2.12 Technical Review and Approval of Procedures, Section 6.5.3

Since changes outlined in Item 2.9 above reduce the responsibilities of PORC, this section has been added to describe the new technical review and approval process for procedures required by TS 6.8.1.1. Procedures required by 6.8.1.1 include those recommended by Appendix A of R.G. 1.33 (except the administrative procedures which will be reviewed by PORC); overtime, surveillance and test activities, and Security Plan, Emergency Plan and Fire Protection Program implementation.

Each procedure required by the TS will be reviewed by an individual other than the preparer. The reviewer may be from the same organization or from a different organization. Individuals who conduct these reviews will be members of the BFN site supervisory staff and shall be previously designated by the Plant Manager. Procedures other than Site Director Standard Practices will be approved by the responsible section supervisor or the applicable plant superintendent. Each review will include a determination of whether or not a cross-disciplinary review is necessary. If so a cross-disciplinary review will be conducted.

Each proposed change or modification to plant nuclear safety-related structures, systems and components will be reviewed by a reviewer designated by the Plant Manager. Each modification described above will be reviewed by an individual or group other than the person(s) which designed the modification. The Plant Manager will approve the modifications prior to implementation.

The above changes are acceptable since they (1) are consistent with the acceptance criteria of SRP Section 13.4, (2) meet the objectives of R.G. 1.33, (3) provide the opportunity for interdisciplinary review of the subject matter, (4) allow for independent technical review and approval, and (5) provide qualified designated reviewers.

2.13 Reportable Event Action and Safety Limit Violation, Sections 6.6 and 6.7

Since these sections have been rewritten for clarity to closely correspond to STS they are acceptable.

2.14 Procedures, Section 6.8.1

The procedures section, which lists those procedures that are required to be established, implemented and maintained by BFNP, has been upgraded to include the procedures listed in Appendix A of R.G. 1.33, Revision 2, February 1978. Rather than individually list general categories of procedures to be prepared, Section 6.8.1 has been revised to incorporate those listed in R.G. 1.33. R.G. 1.33 more precisely lists the types of procedures to be established, implemented and maintained. Since the proposed Section 6.8.1 conforms with R.G. 1.33 and uses STS terminology, it is acceptable.

2.15 Radiation Control Procedures, Section 6.8.3.1

This section contains a minor change to show that Browns Ferry Nuclear Plant has changed the title of the Special Work Permit to the Radiological Work Permit. This change is acceptable.

2.16 Reporting Requirements, Section 6.9

The section on Reporting Requirements has been revised as follows:

- a. Footnote 2 and 3 of the current TS section 6.7, which defined the terms, "forced reduction in power" and "forced outage" are deleted by this amendment since they are not referenced anywhere in TS.
- b. The notes 1 and 2 are moved and properly referenced by the Annual Operating Report requirement and the Radioactive Effluent Release Report requirement as in STS.
- c. The reference to safety relief valves in the current TS on the Annual Operating Report has been changed to properly reference only relief valves, since "safety valves" were deleted from Units 1, 2, and 3 TS by Amendments 92, 85, and 51, respectively.

- d. The requirement for the Monthly Operating Report has been changed to allow 15 days for submission to NRC instead of the current requirement of 10 days. This extension of 5 days is consistent with STS.

The above proposed changes to the Reporting Requirements reflect an upgrading and clarification of the TS. We find that the Reporting Requirements, as revised, are acceptable for the following reasons:

- a. Deleting notes that are not referenced in the current TS and are not in STS will clarify the actual requirements by removing notes which are not applicable to the TS.
- b. Moving notes to the area where they are to be referenced and properly noting the reference will clarify these requirements.
- c. Removing this reference to safety valves is correcting an error and does not actually change the requirement.
- d. Allowing 15 days to submit the monthly report will provide needed additional time for its preparation and conforms to STS.

2.17 Station Operating Records and Retention, Section 6.10

This section has been revised to slightly modify the words of the current TS Section 6.6.A.17 to reflect the revised format. The current TS Section 6.6.A.18 has been deleted since it was solely in reference to a Section 6.10 which was previously deleted by Amendments 79, 75, and 48 for Units 1, 2, and 3, respectively. These changes are acceptable since they improve the clarity of Section 6.10.

3.0 SUMMARY

The proposed amendments to Section 6, "Administrative Controls" revise the TS for Units 1, 2 and 3 to reflect the new TVA and Browns Ferry plant organization, changes to the PORC, and changes to convert Section 6 of the TS to more closely match the content of the STS. The staff concludes for the reasons stated in the above evaluation that all proposed changes are acceptable.

4.0 ENVIRONMENTAL CONSIDERATIONS

These amendments relate to changes in recordkeeping, reporting, or administrative procedures and requirements. Accordingly, these amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(10). Pursuant to 10 CFR 51.22(b) no environmental impact statement nor environmental assessment need be prepared in connection with the issuance of these amendments.

5.0 CONCLUSIONS

We have concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of these amendments will not be inimical to the common defense and security nor to the health and safety of the public.

Principal Contributor: C. Goodman

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