UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-259

BROWNS FERRY NUCLEAR PLANT UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 199
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 March 25, 1992, and supplements dated January 29, 1993, and August 27, 1993, 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:

   (2) Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 199, 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

Frederick J. Hebdon

Frederick J. Hebdon, Director
Project Directorate II-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 22, 1993

ATTACHMENT TO LICENSE AMENDMENT NO. 199

FACILITY OPERATING LICENSE 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	INSERT
i	i
ii	ii*
iii	iii
iv	iv*
v	v
vi	vi
vii	vii
viii	viii
1.0-9	1.0-9
1.0-10	1.0-10
3.2/4.2-3	3.2/4.2-3
3.2/4.2-4	3.2/4.2-4*
3.2/4.2-5	3.2/4.2-5*
3.2/4.2-6	3.2/4.2-6
3.2/4.2-28	3.2/4.2-28
3.2/4.2-28a	--
3.2/4.2-29	3.2/4.2-29
3.2/4.2-38	3.2/4.2-38
--	3.2/4.2-38a
3.2/4.2-39	3.2/4.2-39
3.2/4.2-39a	3.2/4.2-39a*
3.2/4.2-51	3.2/4.2-51
3.2/4.2-52	3.2/4.2-52
3.2/4.2-62	3.2/4.2-62
--	3.2/4.2-62a
3.2/4.2-63	3.2/4.2-63
3.2/4.2-63a	3.2/4.2-63a*
3.2/4.2-67	3.2/4.2-67*
3.2/4.2-68	3.2/4.2-68
3.2/4.2-69	3.2/4.2-69*
3.2/4.2-70	3.2/4.2-70
3.2/4.2-73	3.2/4.2-73
3.2/4.2-73a	3.2/4.2-73a*
3.8/4.8-1	3.8/4.8-1
3.8/4.8-2	3.8/4.8-2
3.8/4.8-3	3.8/4.8-3

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REMOVE	INSERT
3.8/4.8-4	3.8/4.8-4
3.8/4.8-5	3.8/4.8-5
3.8/4.8-6	3.8/4.8-6
3.8/4.8-7	3.8/4.8-7
3.8/4.8-8	3.8/4.8-8
3.8/4.8-9	3.8/4.8-9
3.8/4.8-10	3.8/4.8-10
3.8/4.8-11	--
3.8/4.8-12	--
3.8/4.8-13	--
3.8/4.8-14	--
3.8/4.8-15	--
3.8/4.8-16	--
6.0-7	6.0-7*
6.0-8	6.0-8
6.0-15	6.0-15
6.0-16	6.0-16*
6.0-19	6.0-19*
6.0-20	6.0-20
6.0-23	6.0-23
--	6.0-23a
--	6.0-23b
--	6.0-23c
6.0-24	6.0-24*
6.0-25	6.0-25*
6.0-26	6.0-26
6.0-26a	6.0-26a*
6.0-26b	6.0-26b
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LIST OF ILLUSTRATIONS

1.0 DEFINITIONS (Cont'd)

10. Logic - A logic is an arrangement of relays, contacts, and other components that produces a decision output.

   (a) Initiating - A logic that receives signals from channels and produces decision outputs to the actuation logic.

   (b) Actuation - A logic that receives signals (either from initiation logic or channels) and produces decision outputs to accomplish a protective action.

11. Channel Calibration - Shall be the adjustment, as necessary, of the channel output such that it responds with necessary range and accuracy to known values of the parameters which the channel monitors. The channel calibration shall encompass the entire channel including alarm and/or trip functions and shall include the channel functional test. The channel calibration may be performed by any series of sequential, overlapping or total channel steps such that the entire channel is calibrated. Non-calibratable components shall be excluded from this requirement, but will be included in channel functional test and source check.

12. Channel Functional Test - Shall be:

   a. Analog/Digital Channels - the injection of a simulated signal into the channel as close to the sensor as practicable to verify OPERABILITY including alarm and/or trip functions.

   b. Bistable Channels - the injection of a simulated signal into the sensor to verify OPERABILITY including alarm and/or trip functions.

13. (Deleted)

1.0 DEFINITIONS (Cont'd)

W. Functional Tests - A functional test is the manual operation or initiation of a system, subsystem, or component to verify that it functions within design tolerances (e.g., the manual start of a core spray pump to verify that it runs and that it pumps the required volume of water).

X. Shutdown - The reactor is in a shutdown condition when the reactor mode switch is in the shutdown mode position and no core alterations are being performed.

Y. Engineered Safeguard - An engineered safeguard is a safety system the actions of which are essential to a safety action required in response to accidents.

Z. Reportable Event - A reportable event shall be any of those conditions specified in Section 50.73 to 10 CFR Part 50.

AA. (Deleted)

BB. Offsite Dose Calculation Manual (ODCM) - Shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring Alarm/Trip Setpoints, and in the conduct of the Environmental Radiological Monitoring Program. The ODCM shall also contain (1) the Radioactive Effluent Controls and Radiological Environmental Monitoring Programs required by Section 6.8.4 and (2) descriptions of the information that should be included in the Annual Radiological Environmental Operating and Annual Radioactive Effluent Release Reports required by Specifications 6.9.1.5 and 6.9.1.8.

CC. Purge or purging - The controlled process of discharging air or gas from the primary containment to maintain temperature, pressure, humidity, concentration, or other operating condition in such a manner that replacement air or gas is required to purify the containment.

DD. Process Control Program - Shall contain the current formulas, sampling, analyses, test, and determinations to be made to ensure that processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR Parts 20, 61 and 71, State regulations, burial ground requirements, and other requirements governing the disposal of solid radioactive waste.

EE. (Deleted)

FF. Venting - The controlled process of discharging air or gas from the primary containment to maintain temperature, pressure, humidity, concentration, or other operating condition in such a manner that replacement air or gas is not provided or required. Vent, used in system names, does not imply a venting process.

3.2/4.2 PROTECTIVE INSTRUMENTATION

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.2.D (Deleted)	4.2.D (Deleted)

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

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.

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.

LIMITING CONDITIONS FOR OPERATION

3.2.K. Explosive Gas Monitoring Instrumentation

1. The explosive gas 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 setpoints will be set to ensure that the limits of Specification 3.8.B.9 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, prepare and submit a special report to the commission pursuant to Specification 6.9.1.4 to explain why the inoperability was not corrected in a timely manner.

3. (Deleted)

4. (Deleted)

5. The provisions of Specification 1.0.C are not applicable.

SURVEILLANCE REQUIREMENTS

4.2.K. Explosive Gas Monitoring Instrumentation

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

TABLE 3.2.D

Deleted

NOTES FOR TABLE 3.2.D

(Deleted)

TABLE 3.2.K
Explosive Gas Monitoring Instrumentation

Instrument	Minimum Channels/ Devices Operable	Applicability	Action
1. (Deleted)			
2. (Deleted)			
3. (Deleted)			
4. (Deleted)			
5. OFF GAS HYDROGEN ANALYZER (H_2A, H_2B)	(1)	***	E
6. (Deleted)			

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NOTES FOR TABLE 3.2.K

*(Deleted)
**(Deleted)
***During main condenser offgas treatment system operation

ACTION A

(Deleted)

ACTION B

(Deleted)

ACTION C

(Deleted)

ACTION D

(Deleted)

ACTION E

With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, operation of main condenser offgas treatment system may continue provided that a temporary monitor is installed or grab samples are collected at least once per 4 hours and analyzed within the following 4 hours.

ACTION F

(Deleted)

Table 3.2.L
Anticipated Transient Without Scram (ATWS) -
Recirculation Pump Test (RPT) Surveillance Instrumentation

Minimum No. Channels Operable per Trip Sys (1)	Function	Trip Setting	Allowable Value	Action	Remarks
2	ATWS/RPT Logic Reactor Dome Pressure High	1118 psig	≤ 1146.5 psig	(2)	Two out of two of the high reactor dome pressure channels or the low reactor vessel level channels in either trip system trips both reactor recirculation pumps.
2	Reactor Vessel Level Low	483" above vessel zero	≥ 471.52" above vessel zero		

(1) One channel in only one trip system may be placed in an inoperable status for up to 6 hours for required surveillance provided the other channels in that trip system are OPERABLE.

(2) Two trip systems exist, either of which will trip both recirculation pumps. Perform Surveillance/maintenance/calibration on one channel in only one trip system at a time. If a channel is found to be inoperable or if the surveillance/maintenance/calibration period for one channel exceeds 6 consecutive hours, the trip system will be declared inoperable or the channel will be placed in a tripped condition. If in RUN mode and one trip system is inoperable for 72 hours or both trip systems are inoperable, the reactor shall be in at least the HOT STANDBY CONDITION within 6 hours.

TABLE 4.2.D

Deleted

NOTES FOR TABLE 4.2.D

(Deleted)

TABLE 4.2.K

Explosive Gas Instrumentation Surveillance

Instrument	Instrument Check	Source Check	Channel Calibration	Functional Test
1. (Deleted)				
2. (Deleted)				
3. (Deleted)				
4. (Deleted)				
5. OFF GAS HYDROGEN ANALYZER (H_2A, H_2B)	D	NA	R[3]	Q
6. (Deleted)				

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NOTES FOR TABLE 4.2.K

(1) (Deleted)

(2) (Deleted)

(3) The channel calibration shall include the use of standard gas samples containing a nominal:

a. Zero volume percent hydrogen (compressed air) and,

b. One volume percent hydrogen, balance nitrogen.

(4) (Deleted)

(5) (Deleted)

(6) (Deleted)

Table 4.2.L
Anticipated Transient Without Scram (ATWS) –
Recirculation Pump Trip (RPT) Instrumentation Surveillance

Function	Functional Test	Channel Calibration	Instrument Check
Reactor Vessel Water Level Low (LS-3-58A1-D1)	M(27)	R(28)	N/A
Reactor Vessel Dome Pressure High (PIS-3-204A-D)	M(27)	R(28)	N/A

steam line isolation valve closure, fission product release is limited so that 10 CFR 100 guidelines are not exceeded for this accident. Reference Section 14.6.2 FSAR. An alarm with a nominal setpoint of 1.5 x normal full-power background is provided also.

Pressure instrumentation is provided to close the main steam isolation valves in RUN Mode when the main steam line pressure drops below 825 psig.

The HPCI high flow and temperature instrumentation are provided to detect a break in the HPCI steam piping. Tripping of this instrumentation results in actuation of HPCI isolation valves. Tripping logic for the high flow is a 1-out-of-2 logic, and all sensors are required to be operable.

High temperature in the vicinity of the HPCI equipment is sensed by four sets of four bimetallic temperature switches. The 16 temperature switches are arranged in two trip systems with eight temperature switches in each trip system.

The HPCI trip settings of 90 psi for high flow and 200°F for high temperature are such that core uncovery is prevented and fission product release is within limits.

The RCIC high flow and temperature instrumentation are arranged the same as that for the HPCI. The trip setting of 450" H_2O for high flow and 200°F for temperature are based on the same criteria as the HPCI.

High temperature at the Reactor Cleanup System floor drain could indicate a break in the cleanup system. When high temperature occurs, the cleanup system is isolated.

The instrumentation which initiates CSCS action is arranged in a dual bus system. As for other vital instrumentation arranged in this fashion, the specification preserves the effectiveness of the system even during periods when maintenance or testing is being performed. An exception to this is when logic functional testing is being performed.

The control rod block functions are provided to prevent excessive control rod withdrawal so that MCPR does not decrease to 1.07. The trip logic for this function is 1-out-of-n: e.g., any trip on one of six APRMs, eight IRMs, or four SRMs will result in a rod block.

The minimum instrument channel requirements assure sufficient instrumentation to assure the single failure criteria is met. The minimum instrument channel requirements for the RBM may be reduced by one for maintenance, testing, or calibration. This does not significantly increase the risk of an inadvertent control rod withdrawal, as the other channel is available, and the RBM is a backup system to the written sequence for withdrawal of control rods.

The APRM rod block function is flow biased and prevents a significant reduction in MCPR, especially during operation at reduced flow. The APRM provides gross core protection; i.e., limits the gross core power increase from withdrawal of control rods in the normal withdrawal sequence. The trips are set so that MCPR is maintained greater than 1.07.

The RBM rod block function provides local protection of the core; i.e., the prevention of critical power in a local region of the core, for a single rod withdrawal error from a limiting control rod pattern.

If the IRM channels are in the worst condition of allowed bypass, the sealing arrangement is such that for unbypassed IRM channels, a rod block signal is generated before the detected neutrons flux has increased by more than a factor of 10.

A downscale indication is an indication the instrument has failed or the instrument is not sensitive enough. In either case the instrument will not respond to changes in control rod motion and thus, control rod motion is prevented.

The refueling interlocks also operate one logic channel, and are required for safety only when the mode switch is in the refueling position.

For effective emergency core cooling for small pipe breaks, the HPCI system must function since reactor pressure does not decrease rapid enough to allow either core spray or LPCI to operate in time. The automatic pressure relief function is provided as a backup to the HPCI in the event the HPCI does not operate. The arrangement of the tripping contacts is such as to provide this function when necessary and minimize spurious operation. The trip settings given in the specification are adequate to assure the above criteria are met. The specification preserves the effectiveness of the system during periods of maintenance, testing, or calibration, and also minimizes the risk of inadvertent operation; i.e., only one instrument channel out of service.

Two radiation monitors are provided for each unit which initiate Primary Containment Isolation (Group 6 isolation valves) Reactor Building Isolation and operation of the Standby Gas Treatment System. These instrument channels monitor the radiation in the reactor zone ventilation exhaust ducts and in the refueling zone.

Trip setting of 100 mr/hr for the monitors in the refueling zone are based upon initiating normal ventilation isolation and SGTS operation so that none of the activity released during the refueling accident leaves the Reactor Building via the normal ventilation path but rather all the activity is processed by the SGTS.

The allowed inoperable time of 4 hours for functional testing or 24 hours for calibration and maintenance (with the downscale trip of the inoperable channel in the tripped condition) of the Reactor Building Ventilation system is based upon a Probabilistic Risk Assessment (PRA). The assessment considered the failures, relay failures and the probability of an accident occurring for which the RBVRMs are required to operate.

Flow integrators and sump fill rate and pump out rate timers are used to determine leakage in the drywell. A system whereby the time interval to fill a known volume will be utilized to provide a backup. An air sampling system is also provided to detect leakage inside the primary containment (See Table 3.2.E).

For each parameter monitored, as listed in Table 3.2.F, there are two channels of instrumentation except as noted. By comparing readings between the two channels, a near continuous surveillance of instrument performance is available. Any deviation in readings will initiate an early recalibration, thereby maintaining the quality of the instrument readings.

Instrumentation is provided for isolating the control room and initiating a pressurizing system that processes outside air before supplying it to the control room. An accident signal that isolates primary containment will also automatically isolate the control room and initiate the emergency pressurization system. In addition, there are radiation monitors in the normal ventilation system that will isolate the control room and initiate the emergency pressurization system. Activity required to cause automatic actuation is about one mRem/hr.

Because of the constant surveillance and control exercised by TVA over the Tennessee Valley, flood levels of large magnitudes can be predicted in advance of their actual occurrence. In all cases, full advantage will be taken of advance warning to take appropriate action whenever reservoir levels above normal pool are predicted. Therefore, during flood conditions, the plant will be permitted to operate until water begins to run across the top of the pumping station at elevation 565. Seismically qualified, redundant level switches each powered from a separate division of power are provided at the pumping station to give main control room indication of this condition. At that time an orderly shutdown of the plant will be initiated, although surges even to a depth of several feet over the pumping station deck will not cause the loss of the main condenser circulating water pumps.

The OPERABILITY of the meteorological instrumentation ensures that sufficient meteorological data is available for estimating potential radiation dose to the public as a result of routine or accidental release of radioactive materials to the atmosphere. This capability is required to evaluate the need for initiating protective measures to protect the health and safety of the public.

The OPERABILITY of the seismic instrumentation ensures that sufficient capability is available to promptly determine the seismic response of those features important to safety. This capability is required to permit comparison of the measured response to that used in the design basis for Browns Ferry Nuclear Plant and to determine whether the plant can continue to be operated safely. The instrumentation provided is consistent with specific portions of the recommendations of Regulatory Guide 1.12 "Instrumentation for Earthquakes."

The instrumentation in Tables 3.2.K/4.2.K monitors the concentration of potentially explosive gas mixtures in the offgas holdup system. The OPERABILITY and use of this instrumentation is consistent with the requirements of General Design Criteria 63 of Appendix A to 10 CFR Part 50.

ATWS/RPT, Anticipated Transients without Scram/Recirculation Pump Trip system provides a means of limiting the consequences of the unlikely occurrence of a failure to scram during an ATWS event. The response of the plant to this postulated event (ATWS/RPT) follows the BWR Owners Group Report by General Electric NEDE-31096-P-A and the accompanying NRC Staff Safety Evaluation Report.

ATWS/RPT utilizes the engineered safety feature (ESF) master/slave analog trip units (ATU) which consists of four level and four pressure channels total. The initiating logic consists of two independent trip systems each consisting of two reactor dome high pressure channels and two reactor vessel low level channels. A coincident trip of either two low levels or two high pressures in the same trip system causes initiation of ATWS/RPT. This signal from either trip system opens one of two EOC

4.2 BASES (Cont'd)

The conclusions to be drawn are these:

1. A 1-out-of-n system may be treated the same as a single channel in terms of choosing a test interval; and

2. more than one channel should not be bypassed for testing at any one time.

The radiation monitors in the reactor and refueling zones which initiate building isolation and standby gas treatment operation are arranged such that two sensors high (above the high level setpoint) in a single channel or one sensor downscale (below low level setpoint) or inoperable in two channels in the same zone will initiate a trip function. The functional testing frequencies for both the channel functional test and the high voltage power supply functional test are based on a Probabilistic Risk Assessment and system drift characteristics of the Reactor Building Ventilation Radiation Monitors. The calibration frequency is based upon the drift characteristics of the radiation monitors.

The automatic pressure relief instrumentation can be considered to be a 1-out-of-2 logic system and the discussion above applies also.

The RCIC and HPCI system logic tests required by Table 4.2.B contain provisions to demonstrate that these systems will automatically restart on a RPV low water level signal received subsequent to a RPV high water level trip.

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LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS

3.8 Radioactive Materials

Applicability

Applies to the amount of radioactive material or explosive gases contained in specified systems.

Objective

To define the limits and conditions for the containment of radioactive material or explosive gases in specified systems. The specifications are exempt from the requirements of definition 1.0.C (Limiting Condition for Operation).

Specification

A. Liquid Effluents

1. (Deleted)
2. (Deleted)
3. (Deleted)

4.8 Radioactive Materials

Applicability

Applies to the periodic test and record requirements and sampling and monitoring methods used for systems containing radioactive material or explosive gases.

Objective

To ensure that the quantity of radioactive liquids and explosive gases are maintained within the limits specified by Specifications 3.8.A and 3.8.B.

Specification

A. Liquid Effluents

1. (Deleted)
2. (Deleted)
3. (Deleted)

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.8.A. Liquid Effluents	4.8.A. Liquid Effluents
4. (Deleted)	4. (Deleted)
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.	5. (Deleted)
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 Annual Radioactive Effluent Release Report (Section 5.2 of the ODCM).	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.

LIMITING CONDITIONS FOR OPERATION

3.8.B. Airborne Effluents

1. (Deleted)
2. (Deleted)
3. (Deleted)
4. (Deleted)
5. (Deleted)
6. (Deleted)
7. (Deleted)
8. (Deleted)
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

1. (Deleted)
2. (Deleted)
3. (Deleted)
4. (Deleted)
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.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.8.C (Deleted)	4.8.C (Deleted)
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.D Mechanical Vacuum Pump At least once during each operating cycle verify automatic securing and isolation of the mechanical vacuum pump.

LIMITING CONDITIONS FOR OPERATION

3.8.E. Miscellaneous Radioactive Materials Sources

1. Source Leakage Test

Each sealed source containing radioactive material either in excess of 100 microcuries of beta and/or gamma emitting material or 5 microcuries of alpha emitting material shall be free of $\geq$ 0.005 microcurie of removable contamination. Each sealed source with removable contamination in excess of the above limit shall be immediately withdrawn from use and (a) either decontaminated and repaired, or (b) disposed of in accordance with Commission regulations.

SURVEILLANCE REQUIREMENTS

4.8.E. Miscellaneous Radioactive Materials Sources

1. Surveillance Requirement

Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically authorized by the Commission or an agreement State, as follows:

a. Sources in Use

Each sealed source, excluding startup sources and flux detectors previously subjected to core flux, containing radioactive material, other than Hydrogen 3, with a half-life greater than thirty days and in any form other than gas shall be tested for leakage and/or contamination at least once per six months. The leakage test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS

4.8.E Miscellaneous Radioactive Materials Sources

4.8.E.1 (Cont'd)

b. Stored Sources Not In Use

Each sealed source and fission detector not previously subjected to core flux shall be tested prior to use or transfer to another licensee unless tested within the previous six months. Sealed sources and fission detectors transferred without a certificate indicating the last test date shall be tested prior to use.

c. Startup Sources and Fission Detectors

Each sealed startup source and fission detector shall be tested prior to being subjected to core flux and following repair or maintenance to the source.

2. Reports

A report shall be prepared and submitted to the Commission on an annual basis if sealed sources or fission detector leakage tests reveal the presence of greater than or equal to 0.005 microcuries of removable contamination.

3.8.F (Deleted)

4.8.F (Deleted)

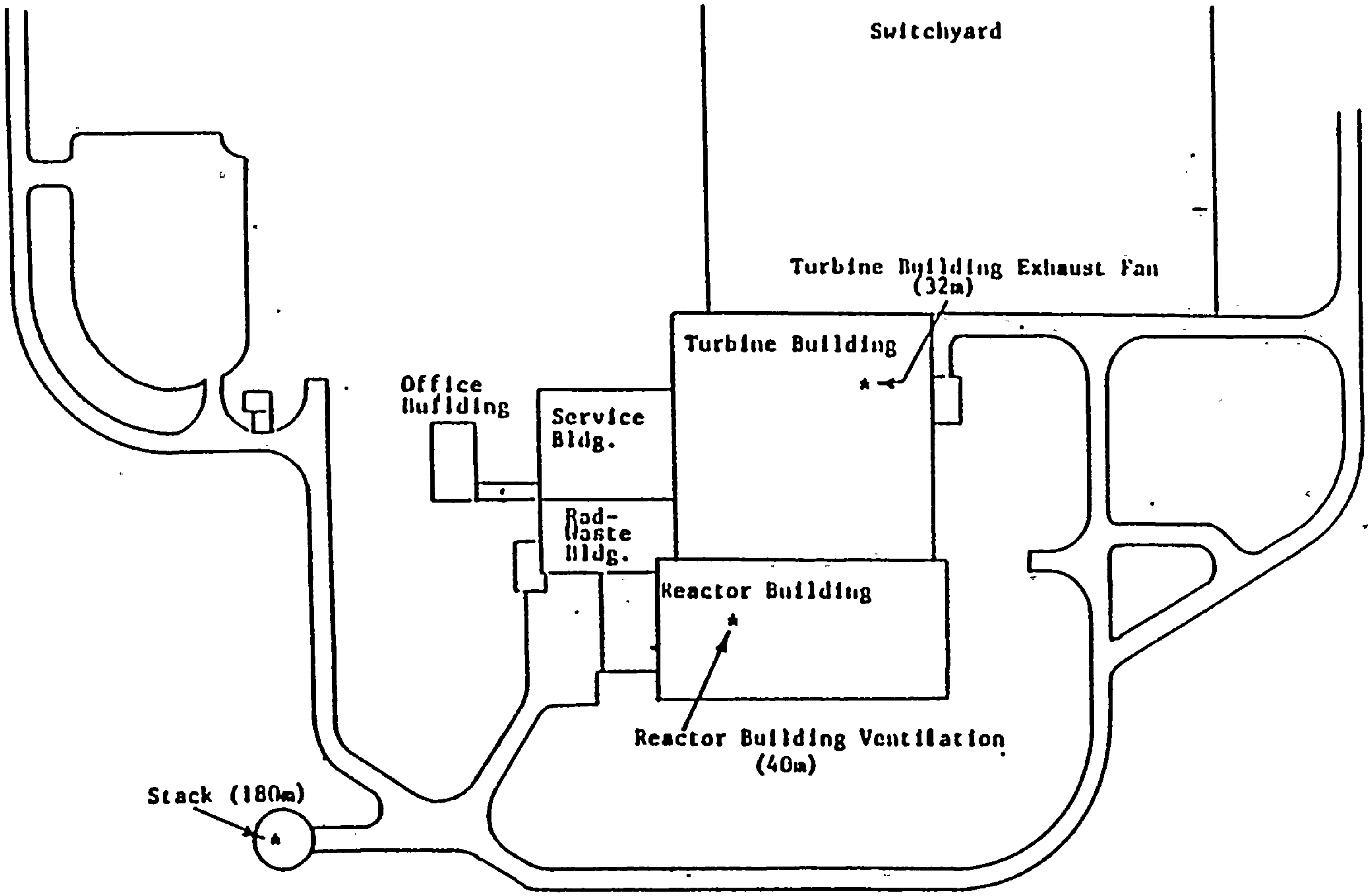
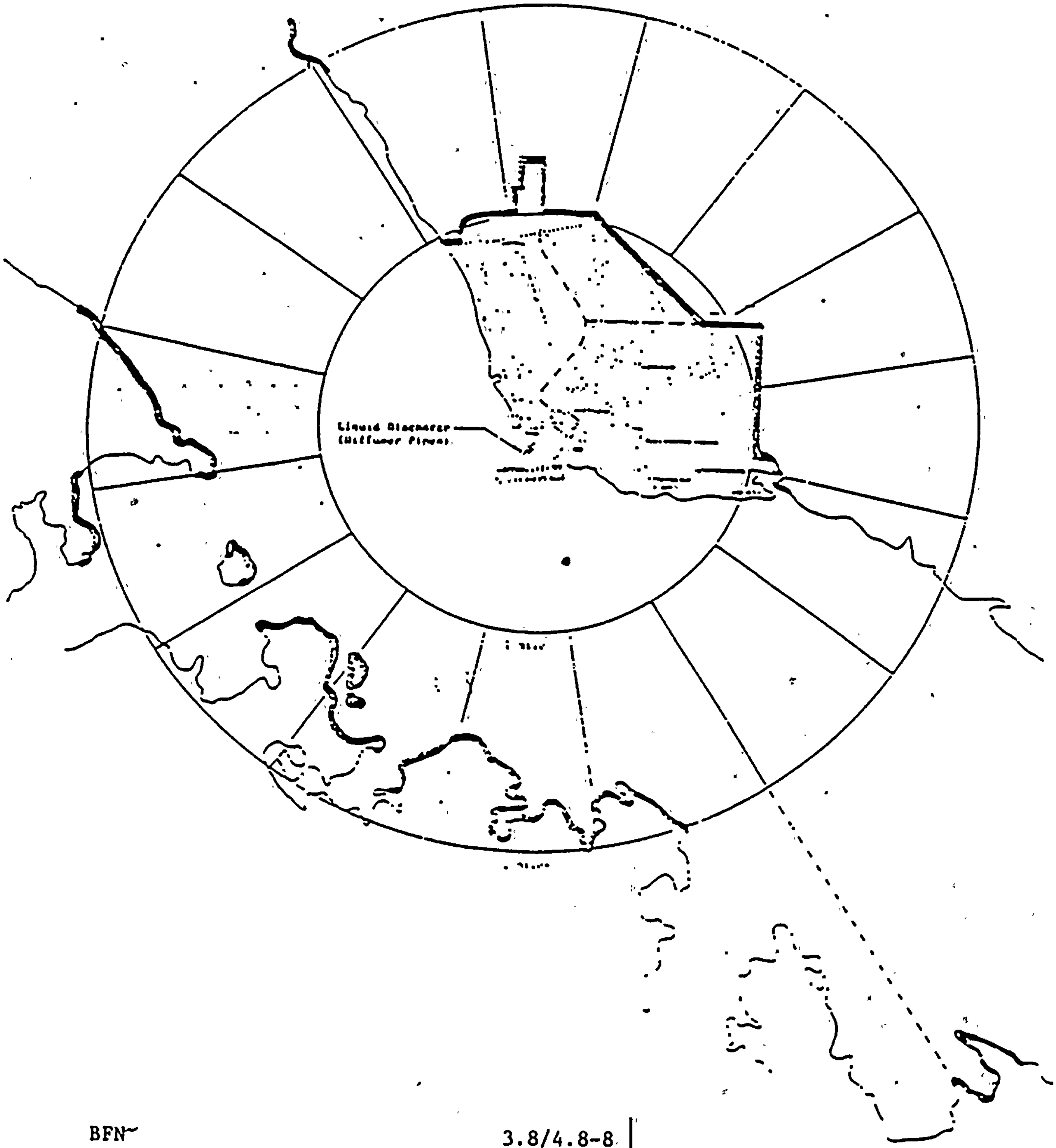


Figure 4.8-1a

GASEOUS RELEASE POINTS AND ELEVATIONS

Figure 4.8-1b

Land Site Boundary



3.8 BASES

(Deleted)

3.8.A LIQUID HOLDUP TANKS

Specification 3.8.A.5 includes any tanks containing radioactive material that are not surrounded by liners, dikes, or walls capable of holding the contents and that do not have overflows and surrounding area drains connected to the liquid radwaste treatment system. Restricting the quantity of radioactive material contained in the specified tanks provides assurance that in the event of an uncontrolled release of the tanks' contents, the resulting concentrations would be less than the limits of 10 CFR Part 20, Appendix B, Table II, Column 2, at the nearest potable water supply and the nearest surface water supply in an UNRESTRICTED AREA.

3.8.B EXPLOSIVE GAS MIXTURE

Specification 3.8.B.9 and 10 is provided to ensure that the concentration of potentially explosive gas mixtures contained in the offgas system is maintained below the flammability limits of hydrogen. Maintaining the concentration of hydrogen below its flammability limit provides assurance that the releases of radioactive materials will be controlled in conformance with the requirements of General Design Criterion 60 of Appendix A to 10 CFR Part 50.

4.8.A and 4.8.B BASES

(Deleted)

3.8.C and 4.8.C BASES

(Deleted)

3.8.D and 4.8.D MECHANICAL VACUUM PUMP

The purpose of isolating the mechanical vacuum pump line is to limit the release of activity from the main condenser. During an accident, fission products would be transported from the reactor through the main steam lines to the condenser. The fission product radioactivity would be sensed by the main steam line radioactivity monitors which initiate isolation.

3.8.E and 4.8.E BASES

The limitations on removable contamination for sources requiring leak testing, including alpha emitters, based on 10 CFR 70.39(c) limits for plutonium. This limitation will ensure that leakage from byproduct, source, and special nuclear material sources will not exceed allowable intake values. Sealed sources are classified into three groups according to their use, with surveillance requirements commensurate with the probability of damage to a source in that group. Those sources which are frequently handled are required to be tested more often than those which are not. Sealed sources which are continuously enclosed within a shielded mechanism (i.e., sealed sources within radiation monitoring or boron measuring devices) are considered to be stored and need not be tested unless they are removed from the shielded mechanism.

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 Offsite Dose Calculation Manual and Process Control Program.

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 Senior Vice President, 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.

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 12 months.

o. The Process Control Program and implementing procedures for solidification of wet radioactive wastes at least once per 24 months.

p. (Deleted)

AUTHORITY

6.5.2.9 The NSRB shall report to and advise the Senior Vice President, 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 Senior Vice President, 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 Senior Vice President, 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 Senior Vice President, Nuclear Power and to the management positions responsible for the areas audited within 30 days after completion of the audit.

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 Senior Vice President, 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 Senior Vice President, 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. (Deleted)

h. Process Control Program (PCP).

i. Offsite Dose Calculation Manual.

j. Administrative procedures which control technical and cross-disciplinary review.

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.

6.8.4 RADIOACTIVE EFFLUENT CONTROLS/RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAMS

The following programs shall be established, implemented, and maintained.

6.8.4.1 RADIOACTIVE EFFLUENT CONTROLS PROGRAM

A program shall be provided conforming with 10 CFR 50.36a for the control of radioactive effluents and for maintaining the doses to MEMBERS OF THE PUBLIC from radioactive effluents as low as reasonably achievable. The program (1) shall be contained in the ODCM, (2) shall be implemented by operating procedures, and (3) shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

a. Limitations on the OPERABILITY of radioactive liquid and gaseous monitoring instrumentation including surveillance tests and setpoint determination in accordance with the methodology in the ODCM.

b. Limitations on the concentrations of radioactive material released in liquid effluents to UNRESTRICTED AREAS conforming to 10 CFR Part 20, Appendix B, Table II, Column 2.

c. Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with 10 CFR 20.106 and with the methodology and parameters in the ODCM.

d. Limitations on the annual and quarterly doses or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released from each unit to UNRESTRICTED AREAS conforming to Appendix I to 10 CFR Part 50.

e. Determination of cumulative and projected dose contributions from radioactive effluents for the current

calendar quarter and current year in accordance with the methodology and parameters in the ODCM at least every 31 days.

f. Limitations on the OPERABILITY and use of the liquid and gaseous effluent treatment systems to ensure that the appropriate portions of these systems are used to reduce releases of radioactivity when the projected doses in a 31-day period would exceed 2 percent of the guidelines for the annual dose or dose commitment conforming to Appendix I to 10 CFR Part 50.

g. Limitations on the dose rate resulting from radioactive material released in gaseous effluents to areas beyond the SITE BOUNDARY conforming to the doses associated with 10 CFR Part 20, Appendix B, Table II, Column 1.

h. Limitations of the annual and quarterly air doses resulting from noble gases released in gaseous effluents from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50.

i Limitations on the annual and quarterly doses to a MEMBER OF THE PUBLIC from Iodine-131, Iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50.

j. Limitations on the annual dose or dose commitment to any MEMBER OF THE PUBLIC due to releases of radioactivity and to radiation from uranium fuel cycle sources conforming to 40 CFR Part 190.

6.8.4.2 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

A program shall be provided to monitor the radiation and radionuclides in the environs of the plant. The program shall provide (1) representative measurements of radioactivity in the highest potential exposure pathways, and (2) verification of the accuracy of the effluent monitoring program and modeling of environmental exposure pathways. The program shall (1) be contained in the ODCM, (2) conform to the guidance of Appendix I to 10 CFR Part 50, and (3) include the following:

a. Monitoring, sampling, analysis, and reporting of radiation and radionuclides in the environment in accordance with the methodology and parameters in the ODCM,

b. A Land Use Census to ensure that changes in the use of area at and beyond the SITE BOUNDARY are identified and that modifications to the monitoring program are made if required by the results of this census, and

c. Participation in an Interlaboratory Comparison Program to ensure that independent checks on the precision and accuracy of the measurements of radioactive materials in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring.

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 ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted before May 1 of each year. A single submittal may be made for a multi-unit station. The report shall include summaries, interpretations, and analysis of trends of the results of the Radiological Environmental Monitoring Program for the reporting period. The material provided shall be consistent with the objectives outlined in (1) the ODCM and (2) Sections IV.B.2, IV.B.3, and IV.C of Appendix I to 10 CFR Part 50.

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.

6.9.1.7 CORE OPERATING LIMITS REPORT

a. Core operating limits shall be established and shall be documented in the CORE OPERATING LIMITS REPORT prior to each operating cycle, or prior to any remaining portion of an operating cycle, for the following:

(1) The APLHGR for Specification 3.5.I

(2) The LHGR for Specification 3.5.J

(3) The MCPR Operating Limit for Specification 3.5.K/4.5.K

b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC, specifically those described in General Electric Licensing Topical Report NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel" (latest approved version).

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

d. The CORE OPERATING LIMITS REPORT, including any midcycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

6.9.1.8 THE ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

The Annual Radioactive Effluent Release Report covering the operation of the unit during the previous calendar year of operation shall be submitted by April 1, of each year. The report shall include summaries of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. A single submittal may be made for a multi-unit station. The submittal should combine those sections that are common to all units at the station; however, for units with separate radwaste systems, the submittal shall specify the releases of radioactive material from each unit. The material provided shall be (1) consistent with the objectives outlined in the ODCM and PCP and (2) in conformance with 10 CFR 50.36a and Section IV.B.1 of Appendix I to 10 CFR Part 50.

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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.

r. Reviews performed for changes made to the Offsite Dose Calculation Manual and the Process Control Program

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 r 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)

Changes to the PCP:

1. Shall be documented and records of reviews performed shall be retained as required by Specification 6.10.1.r. This documentation shall contain:

    a. Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s) and

    b. A determination that the change will maintain the overall conformance of the solidified waste product to existing requirements of Federal, State, or other applicable regulations.

2. Shall become effective after review and acceptance by the PORC and the approval of the Plant Manager.

6.12 OFFSITE DOSE CALCULATION MANUAL (ODCM)

Changes to the ODCM:

1. Shall be documented and records of reviews performed shall be retained as required by Specification 6.10.1.r. This documentation shall contain:

    a. Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change.

b. A determination that the change will maintain the level of radioactive effluent control required by 10 CFR 20.106, 40 CFR Part 190, 10 CFR 50.36a, and Appendix I to 10 CFR Part 50 and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations.

2. Shall become effective after review and acceptance by the PORC and the approval of the Plant Manager.

3. Shall be submitted to the Commission in the form of a complete, legible copy of the entire ODCM as a part of or concurrent with the Annual Radioactive Effluent Release Report for the period of the report in which any change to the ODCM was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date (e.g., month/year) the change was implemented.

6.13 (Deleted)

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TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-260

BROWNS FERRY NUCLEAR PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 216
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 March 25, 1992, and supplements dated January 29, 1993, and August 27, 1993, 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. 216, 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

Frederick J. Hebdon

Frederick J. Hebdon, Director
Project Directorate II-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
  Specifications

Date of Issuance: September 22, 1993

ATTACHMENT TO LICENSE AMENDMENT NO. 216

FACILITY OPERATING LICENSE 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	INSERT
i	i
ii*	ii*
iii	iii
iv	iv*
v	v
vi	vi
vii	vii
viii	viii
1.0-9	1.0-9
1.0-10	1.0-10
3.2/4.2-3	3.2/4.2-3
3.2/4.2-4	3.2/4.2-4*
3.2/4.2-5	3.2/4-2-5*
3.2/4.2-6	3.2/4.2-6
3.2/4.2-28	3.2/4.2-28
3.2/4.2-28a	--
3.2/4.2-29	3.2/4.2-29
3.2/4.2-38	3.2/4.2-38
--	3.2/4.2-38a
3.2/4.2-39	3.2/4.2-39
3.2/4.2-39a	3.2/4.2-39a*
3.2/4.2-51	3.2/4.2-51
3.2/4.2-52	3.2/4.2-52
3.2/4.2-62	3.2/4.2-62
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3.2/4.2-63	3.2/4.2-63
3.2/4.2-63a	3.2/4.2-63a*
3.2/4.2-69	3.2/4.2-69
3.2/4.2-70	3.2/4.2-70
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3.2/4.2-72	3.2/4.2-72*
3.2/4.2-73	3.2/4.2-73*
3.2/4.2-73a	3.2/4.2-73a
3.8/4.8-1	3.8/4.8-1
3.8/4.8-2	3.8/4.8-2
3.8/4.8-3	3.8/4.8-3
3.8/4.8-4	3.8/4.8-4
3.8/4.8-5	3.8/4.8-5
3.8/4.8-6	3.8/4.8-6
3.8/4.8-7	3.8/4.8-7

Docket No. 50-260 (Continued)

REMOVE	INSERT
3.8/4.8-8	3.8/4.8-8
3.8/4.8-9	3.8/4.8-9
3.8/4.8-10	3.8/4.8-10
3.8/4.8-11	--
3.8/4.8-12	--
3.8/4.8-13	--
3.8/4.8-14	--
3.8/4.8-15	--
3.8/4.8-16	--
6.0-7	6.0-7*
6.0-8	6.0-8
6.0-15	6.0-15
6.0-16	6.0-16*
6.0-19	6.0-19*
6.0-20	6.0-20
6.0-23	6.0-23
--	6.0-23a
--	6.0-23b
--	6.0-23c
6.0-24	6.0-24*
6.0-25	6.0-25*
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	B.	Coolant Chemistry.	3.6/4.6-5
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	D.	Relief Valves.	3.6/4.6-10

LIST OF TABLES

LIST OF TABLES (Cont'd)

LIST OF ILLUSTRATIONS

10. Logic - A logic is an arrangement of relays, contacts, and other components that produces a decision output.

    (a) Initiating - A logic that receives signals from channels and produces decision outputs to the actuation logic.

    (b) Actuation - A logic that receives signals (either from initiation logic or channels) and produces decision outputs to accomplish a protective action.

11. Channel Calibration - Shall be the adjustment, as necessary, of the channel output such that it responds with necessary range and accuracy to known values of the parameters which the channel monitors. The channel calibration shall encompass the entire channel including alarm and/or trip functions and shall include the channel functional test. The channel calibration may be performed by any series of sequential, overlapping or total channel steps such that the entire channel is calibrated. Non-calibratable components shall be excluded from this requirement, but will be included in channel functional test and source check.

12. Channel Functional Test - Shall be:

    a. Analog/Digital Channels - the injection of a simulated signal into the channel as close to the sensor as practicable to verify OPERABILITY including alarm and/or trip functions.

    b. Bistable Channels - the injection of a simulated signal into the sensor to verify OPERABILITY including alarm and/or trip functions.

13. (Deleted)

W. Functional Tests - A functional test is the manual operation or initiation of a system, subsystem, or component to verify that it functions within design tolerances (e.g., the manual start of a core spray pump to verify that it runs and that it pumps the required volume of water).

X. Shutdown - The reactor is in a shutdown condition when the reactor mode switch is in the shutdown mode position and no core alterations are being performed.

Y. Engineered Safeguard - An engineered safeguard is a safety system the actions of which are essential to a safety action required in response to accidents.

Z. Reportable Event - A reportable event shall be any of those conditions specified in Section 50.73 to 10 CFR Part 50.

AA. (Deleted)

BB. Offsite Dose Calculation Manual (ODCM) - Shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring Alarm/Trip Setpoints, and in the conduct of the Environmental Radiological Monitoring Program. The ODCM shall also contain (1) the Radioactive Effluent Controls and Radiological Environmental Monitoring Programs required by Section 6.8.4 and (2) descriptions of the information that should be included in the Annual Radiological Environmental Operating and Annual Radioactive Effluent Release Reports required by Specifications 6.9.1.5 and 6.9.1.8.

CC. Purge or purging - The controlled process of discharging air or gas from the primary containment to maintain temperature, pressure, humidity, concentration, or other operating condition in such a manner that replacement air or gas is required to purify the containment.

DD. Process Control Program - Shall contain the current formulas, sampling, analyses, test, and determinations to be made to ensure that processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR Parts 20, 61 and 71, State regulations, burial ground requirements, and other requirements governing the disposal of solid radioactive waste.

EE. (Deleted)

FF. Venting - The controlled process of discharging air or gas from the primary containment to maintain temperature, pressure, humidity, concentration, or other operating condition in such a manner that replacement air or gas is not provided or required. Vent, used in system names, does not imply a venting process.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.2.D (Deleted)	4.2.D (Deleted)

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

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 the 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.

LIMITING CONDITIONS FOR OPERATION

3.2.K Explosive Gas Monitoring Instrumentation

1. The explosive gas 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 setpoints will be set to ensure that the limits of Specification 3.8.B.9 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, prepare and submit a special report to the commission pursuant to Specification 6.9.1.4 to explain why the inoperability was not corrected in a timely manner.

3. (Deleted)

4. (Deleted)

5. The provisions of Specification 1.0.C are not applicable.

SURVEILLANCE REQUIREMENTS

4.2.K Explosive Gas Monitoring Instrumentation

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

TABLE 3.2.D

Deleted

NOTES FOR TABLE 3.2.D

(Deleted)

TABLE 3.2.K
Explosive Gas Monitoring Instrumentation

Instrument	Minimum Channels/ Devices Operable	Applicability	Action
1. (Deleted)			
2. (Deleted)			
3. (Deleted)			
4. (Deleted)			
5. OFF GAS HYDROGEN ANALYZER (H_2A, H_2B)	(1)	***	E
6. (Deleted)			

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NOTES FOR TABLE 3.2.K

*(Deleted)
**(Deleted)
***During main condenser offgas treatment system operation

ACTION A

(Deleted)

ACTION B

(Deleted)

ACTION C

(Deleted)

ACTION D

(Deleted)

ACTION E

With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, operation of main condenser offgas treatment system may continue provided that a temporary monitor is installed or grab samples are collected at least once per 4 hours and analyzed within the following 4 hours.

ACTION F

(Deleted)

Table 3.2.L
Anticipated Transient Without Scram (ATWS) -
Recirculation Pump Test (RPT) Surveillance Instrumenation

Minimum No. Channels Operable per Trip Sys (1)	Function	Trip Setting	Allowable Value	Action	Remarks
2	ATWS/RPT Logic Reactor Dome Pressure High	1118 psig	$\leq$ 1146.5 psig	(2)	Two out of two of the high reactor dome pressure channels or the low reactor vessel level channels in either trip system trips both reactor recirculation pumps.
2	Reactor Vessel Level Low	483" above vessel zero	$\geq$ 471.52" above vessel zero		

(1) One channel in only one trip system may be placed in an inoperable status for up to 6 hours for required surveillance provided the other channels in that trip system are OPERABLE.

(2) Two trip systems exist, either of which will trip both recirculation pumps. Perform Surveillance/maintenance/calibration on one channel in only one trip system at a time. If a channel is found to be inoperable or if the surveillance/maintenance/calibration period for one channel exceeds 6 consecutive hours, the trip system will be declared inoperable or the channel will be placed in a tripped condition. If in RUN mode and one trip system is inoperable for 72 hours or both trip systems are inoperable, the reactor shall be in at least the HOT STANDBY CONDITION within 6 hours.

TABLE 4.2.D

Deleted

NOTES FOR TABLE 4.2.D

(Deleted)

TABLE 4.2.K
Explosive Gas Instrumentation Surveillance

Instrument	Instrument Check	Source Check	Channel Calibration	Functional Test
1. (Deleted)				
2. (Deleted)				
3. (Deleted)				
4. (Deleted)				
5. OFF GAS HYDROGEN ANALYZER (H_2A, H_2B)	D	NA	R(3)	Q
6. (Deleted)				

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NOTES FOR TABLE 4.2.K

(1) (Deleted)

(2) (Deleted)

(3) The channel calibration shall include the use of standard gas samples containing a nominal:

   a. Zero volume percent hydrogen (compressed air) and,

   b. One volume percent hydrogen, balance nitrogen.

(4) (Deleted)

(5) (Deleted)

(6) (Deleted)

Table 4.2.L
Anticipated Transient Without Scram (ATWS) -
Recirculation Pump Trip (RPT) Instrumentation Surveillance

Function	Functional Test	Channel Calibration	Instrument Check
Reactor Vessel Water Level Low (LS-3-58A1-D1)	M(27)	R(28)	N/A
Reactor Vessel Dome Pressure High (PIS-3-204A-D)	M(27)	R(28)	N/A

adequate to assure the above criteria are met. The specification preserves the effectiveness of the system during periods of maintenance, testing, or calibration, and also minimizes the risk of inadvertent operation; i.e., only one instrument channel out of service.

Two radiation monitors are provided for each unit which initiate Primary Containment Isolation (Group 6 isolation valves) Reactor Building Isolation and operation of the Standby Gas Treatment System. These instrument channels monitor the radiation in the reactor zone ventilation exhaust ducts and in the refueling zone.

Trip setting of 100 mr/hr for the monitors in the refueling zone are based upon initiating normal ventilation isolation and SGTS operation so that none of the activity released during the refueling accident leaves the Reactor Building via the normal ventilation path but rather all the activity is processed by the SGTS.

The allowed inoperable time of 4 hours for functional testing or 24 hours for calibration and maintenance (with the downscale trip of the inoperable channel in the tripped condition) of the Reactor Building Ventilation system is based upon a Probabilistic Risk Assessment (PRA). The assessment considered the failures, relay failures and the probability of an accident occurring for which the RBVRMs are required to operate.

Flow integrators and sump fill rate and pump out rate timers are used to determine leakage in the drywell. A system whereby the time interval to fill a known volume will be utilized to provide a backup. An air sampling system is also provided to detect leakage inside the primary containment (See Table 3.2.E).

For each parameter monitored, as listed in Table 3.2.F, there are two channels of instrumentation except as noted. By comparing readings between the two channels, a near continuous surveillance of instrument performance is available. Any deviation in readings will initiate an early recalibration, thereby maintaining the quality of the instrument readings.

Instrumentation is provided for isolating the control room and initiating a pressurizing system that processes outside air before supplying it to the control room. An accident signal that isolates primary containment will also automatically isolate the control room and initiate the emergency pressurization system. In addition, there are radiation monitors in the normal ventilation system that will isolate the control room and initiate the emergency pressurization system. Activity required to cause automatic actuation is about one mRem/hr.

Because of the constant surveillance and control exercised by TVA over the Tennessee Valley, flood levels of large magnitudes can be predicted in advance of their actual occurrence. In all cases, full advantage will be taken of advance warning to take appropriate action whenever reservoir levels above normal pool are predicted. Therefore, during flood conditions, the plant will be permitted to operate until water begins to run across the top of the pumping station at elevation 565. Seismically qualified, redundant level switches each powered from a separate division of power are provided at the pumping station to give main control room indication of this condition. At that time an orderly shutdown of the plant will be initiated, although surges even to a depth of several feet over the pumping station deck will not cause the loss of the main condenser circulating water pumps.

The OPERABILITY of the meteorological instrumentation ensures that sufficient meteorological data is available for estimating potential radiation dose to the public as a result of routine or accidental release of radioactive materials to the atmosphere. This capability is required to evaluate the need for initiating protective measures to protect the health and safety of the public.

The OPERABILITY of the seismic instrumentation ensures that sufficient capability is available to promptly determine the seismic response of those features important to safety. This capability is required to permit comparison of the measured response to that used in the design basis for Browns Ferry Nuclear Plant and to determine whether the plant can continue to be operated safely. The instrumentation provided is consistent with specific portions of the recommendations of Regulatory Guide 1.12 "Instrumentation for Earthquakes."

The instrumentation in Tables 3.2.K/4.2.K monitors the concentration of potentially explosive gas mixtures in the off-gas holdup system. The OPERABILITY and use of this instrumentation is consistent with the requirements of General Design Criteria 63 of Appendix A to 10 CFR Part 50.

3.2 BASES (Cont'd)

ATWS/RPT, Anticipated Transients without Scram/Recirculation Pump Trip system provides a means of limiting the consequences of the unlikely occurrence of a failure to scram during an ATWS event. The response of the plant to this postulated event (ATWS/RPT) follows the BWR Owners Group Report by General Electric NEDE-31096-P-A and the accompanying NRC Staff Safety Evaluation Report.

ATWS/RPT utilizes the engineered safety feature (ESF) master/slave analog trip units (ATU) which consists of four level and four pressure channels total. The initiating logic consists of two independent trip systems each consisting of two reactor dome high pressure channels and two reactor vessel low level channels. A coincident trip of either two low levels or two high pressures in the same trip system causes initiation of ATWS/RPT. This signal from either trip system opens one of two EOC (end-of-cycle) breakers in series (the other system opens the other breaker) between the pump motor and the Motor Generator set driving each recirculation pump. Both systems are completely redundant such that only one trip system is necessary to perform the ATWS/RPT function. Power comes from the 250 VDC shutdown boards.

Setpoints for reactor dome high pressure and reactor vessel low level are such that a normal Reactor Protection System scram and accompanying recirculation pump trip would occur before or coincident with the trip by ATWS/RPT.

4.2 BASES

The instrumentation listed in Tables 4.2.A through 4.2.F will be functionally tested and calibrated at regularly scheduled intervals. The same design reliability goal as the Reactor Protection System of 0.99999 generally applies for all applications of (1-out-of-2) X (2) logic. Therefore, on-off sensors are tested once/3 months, and bistable trips associated with analog sensors and amplifiers are tested once/week.

Those instruments which, when tripped, result in a rod block have their contacts arranged in a 1-out-of-n logic, and all are capable of being bypassed. For such a tripping arrangement with bypass capability provided, there is an optimum test interval that should be maintained in order to maximize the reliability of a given channel (7). This takes account of the fact that testing degrades reliability and the optimum interval between tests is approximately given by:

$$i = \sqrt{\frac{2t}{r}}$$

Where: i = the optimum interval between tests.

t = the time the trip contacts are disabled from performing their function while the test is in progress.

r = the expected failure rate of the relays.

To test the trip relays requires that the channel be bypassed, the test made, and the system returned to its initial state. It is assumed this task requires an estimated 30 minutes to complete in a thorough and workmanlike manner and that the relays have a failure rate of 10^{-6} failures per hour. Using this data and the above operation, the optimum test interval is:

$$i = \sqrt{\frac{2(0.5)}{10^{-6}}} = 1 \times 10^{3}$$

$$= 40 \text{ days}$$

For additional margin a test interval of once per month will be used initially.

The sensors and electronic apparatus have not been included here as these are analog devices with readouts in the control room and the sensors and electronic apparatus can be checked by comparison with other like instruments. The checks which are made on a daily basis are adequate to assure OPERABILITY of the sensors and electronic apparatus, and the test interval given above provides for optimum testing of the relay circuits.

The above calculated test interval optimizes each individual channel, considering it to be independent of all others. As an example, assume that there are two channels with an individual technician assigned to each. Each technician tests his channel at the optimum frequency, but the two technicians are not allowed to communicate so that one can advise the other that his channel is under test. Under these conditions, it is possible for both channels to be under test simultaneously. Now, assume that the technicians are required to communicate and that two channels are never tested at the same time.

(7) UCRL-50451, Improving Availability and Readiness of Field Equipment Through Periodic Inspection, Benjamin Epstein, Albert Shiff, July 16, 1968, page 10, Equation (24), Lawrence Radiation Laboratory.

Forbidding simultaneous testing improves the availability of the system over that which would be achieved by testing each channel independently. These one-out-of-n trip systems will be tested one at a time in order to take advantage of this inherent improvement in availability.

Optimizing each channel independently may not truly optimize the system considering the overall rules of system operation. However, true system optimization is a complex problem. The optimums are broad, not sharp, and optimizing the individual channels is generally adequate for the system.

The formula given above minimizes the unavailability of a single channel which must be bypassed during testing. The minimization of the unavailability is illustrated by Curve No. 1 of Figure 4.2-1 which assumes that a channel has a failure rate of 0.1×10^{-6}/hour and 0.5 hours is required to test it. The unavailability is a minimum at a test interval i, of 3.16×10^{3} hours.

If two similar channels are used in a 1-out-of-2 configuration, the test interval for minimum unavailability changes as a function of the rules for testing. The simplest case is to test each one independent of the other. In this case, there is assumed to be a finite probability that both may be bypassed at one time. This case is shown by Curve No. 2. Note that the unavailability is lower as expected for a redundant system and the minimum occurs at the same test interval. Thus, if the two channels are tested independently, the equation above yields the test interval for minimum unavailability.

A more usual case is that the testing is not done independently. If both channels are bypassed and tested at the same time, the result is shown in Curve No. 3. Note that the minimum occurs at about 40,000 hours, much longer than for cases 1 and 2. Also, the minimum is not nearly as low as Case 2 which indicates that this method of testing does not take full advantage of the redundant channel. Bypassing both channels for simultaneous testing should be avoided.

The most likely case would be to stipulate that one channel be bypassed, tested, and restored, and then immediately following, the second channel be bypassed, tested, and restored. This is shown by Curve No. 4. Note that there is no true minimum. The curve does have a definite knee and very little reduction in system unavailability is achieved by testing at a shorter interval than computed by the equation for a single channel.

4.2 BASES (Cont'd)

The best test procedure of all those examined is to perfectly stagger the tests. That is, if the test interval is four months, test one or the other channel every two months. This is shown in Curve No. 5. The difference between Cases 4 and 5 is negligible. There may be other arguments, however, that more strongly support the perfectly staggered tests, including reductions in human error.

The conclusions to be drawn are these:

1. A 1-out-of-n system may be treated the same as a single channel in terms of choosing a test interval; and

2. more than one channel should not be bypassed for testing at any one time.

The radiation monitors in the reactor and refueling zones which initiate building isolation and standby gas treatment operation are arranged such that two sensors high (above the high level setpoint) in a single channel or one sensor downscale (below low level setpoint) or inoperable in two channels in the same zone will initiate a trip function. The functional testing frequencies for both the channel functional test and the high voltage power supply functional test are based on a Probabilistic Risk Assessment and system drift characteristics of the Reactor Building Ventilation Radiation Monitors. The calibration frequency is based upon the drift characteristics of the radiation monitors.

The automatic pressure relief instrumentation can be considered to be a 1-out-of-2 logic system and the discussion above applies also.

The RCIC and HPCI system logic tests required by Table 4.2.B contain provisions to demonstrate that these systems will automatically restart on a RPV low water level signal received subsequent to a RPV high water level trip.

LIMITING CONDITIONS FOR OPERATION

3.8 RADIOACTIVE MATERIALS

Applicability

Applies to the amount of radioactive material or explosive gases contained in specified systems.

Objective

To define the limits and conditions for the containment of radioactive material or explosive gases in specified systems. The specifications are exempt from the requirements of definition 1.0.C (Limiting Condition for Operation).

Specification

A. Liquid Effluents

1. (Deleted)

2. (Deleted)

3. (Deleted)

SURVEILLANCE REQUIREMENTS

4.8 RADIOACTIVE MATERIALS

Applicability

Applies to the periodic testing and record requirements and sampling and monitoring methods used for systems containing radioactive material or explosive gases.

Objective

To ensure that the quantity of radioactive liquids and explosive gases are maintained within the limits specified by Specifications 3.8.A and 3.8.B.

Specification

A. Liquid Effluents

1. (Deleted)

2. (Deleted)

3. (Deleted)

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.8.A. Liquid Effluents	4.8.A. Liquid Effluents
4. (Deleted)	4. (Deleted)
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.	5. (Deleted)
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 Annual Radioactive Effluent Release Report (Section 5.2 of the ODCM).	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.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.8.B. Airborne Effluents	4.8.B. Airborne Effluents
1. (Deleted)	1. (Deleted)
2. (Deleted)	2. (Deleted)
3. (Deleted)	3. (Deleted)
4. (Deleted)	4. (Deleted)
5. (Deleted)	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.
6. (Deleted)	
7. (Deleted)	
8. (Deleted)	
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.	

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.8.C (Deleted)	4.8.C (Deleted)
3.8.D Mechanical Vacuum Pump	4.8.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.	At least once during each operating cycle verify automatic securing and isolation of the mechanical vacuum pump.
2. If the limits of 3.8.D.1 are not met, the vacuum pump shall be isolated.	

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.8.E Miscellaneous Radioactive Materials Sources	4.8.E Miscellaneous Radioactive Materials Sources
1. Source Leakage Test Each sealed source containing radioactive material either in excess of 100 microcuries of beta and/or gamma emitting material or 5 microcuries of alpha emitting material shall be free of $\geq$ 0.005 microcurie of removable contamination. Each sealed source with removable contamination in excess of the above limit shall be immediately withdrawn from use and (a) either decontaminated and repaired, or (b) disposed of in accordance with Commission regulations.	1. Surveillance Requirement Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically authorized by the Commission or an agreement State, as follows: a. Sources in Use Each sealed source, excluding startup sources and flux detectors previously subjected to core flux, containing radioactive material, other than Hydrogen 3, with a half-life greater than thirty days and in any form other than gas shall be tested for leakage and/or contamination at least once per six months. The leakage test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample.

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENTS

4.8.E Miscellaneous Radioactive Materials Sources

4.8.E.1 (Cont'd)

b. Stored Sources Not In Use

Each sealed source and fission detector not previously subjected to core flux shall be tested prior to use or transfer to another licensee unless tested within the previous six months. Sealed sources and fission detectors transferred without a certificate indicating the last test date shall be tested prior to use.

c. Startup Sources and Fission Detectors

Each sealed startup source and fission detector shall be tested prior to being subjected to core flux and following repair or maintenance to the source.

2. Reports

A report shall be prepared and submitted to the Commission on an annual basis if sealed sources or fission detector leakage tests reveal the presence of greater than or equal to 0.005 microcuries of removable contamination.

3.8.F (Deleted)

4.8.F (Deleted)

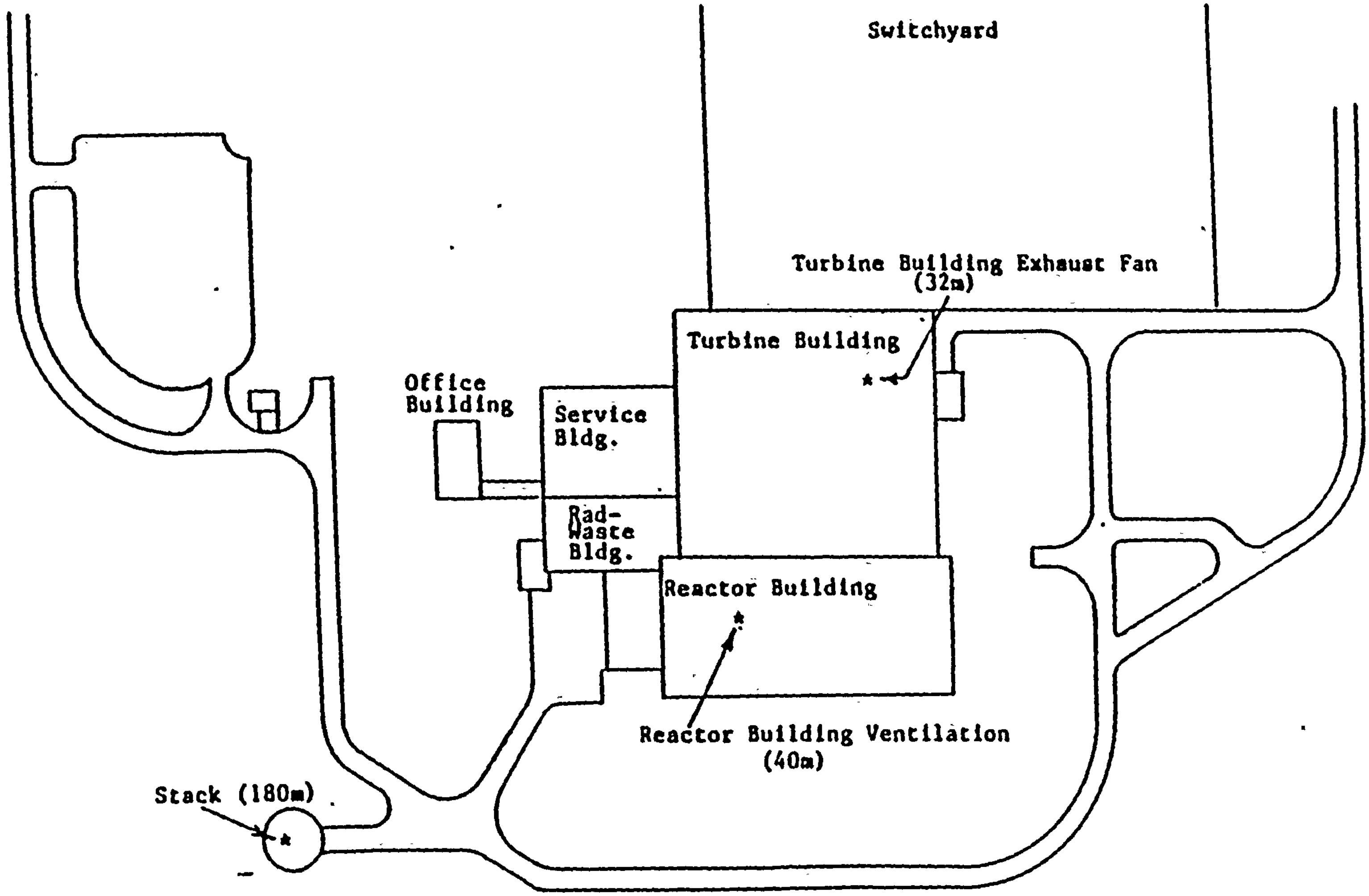
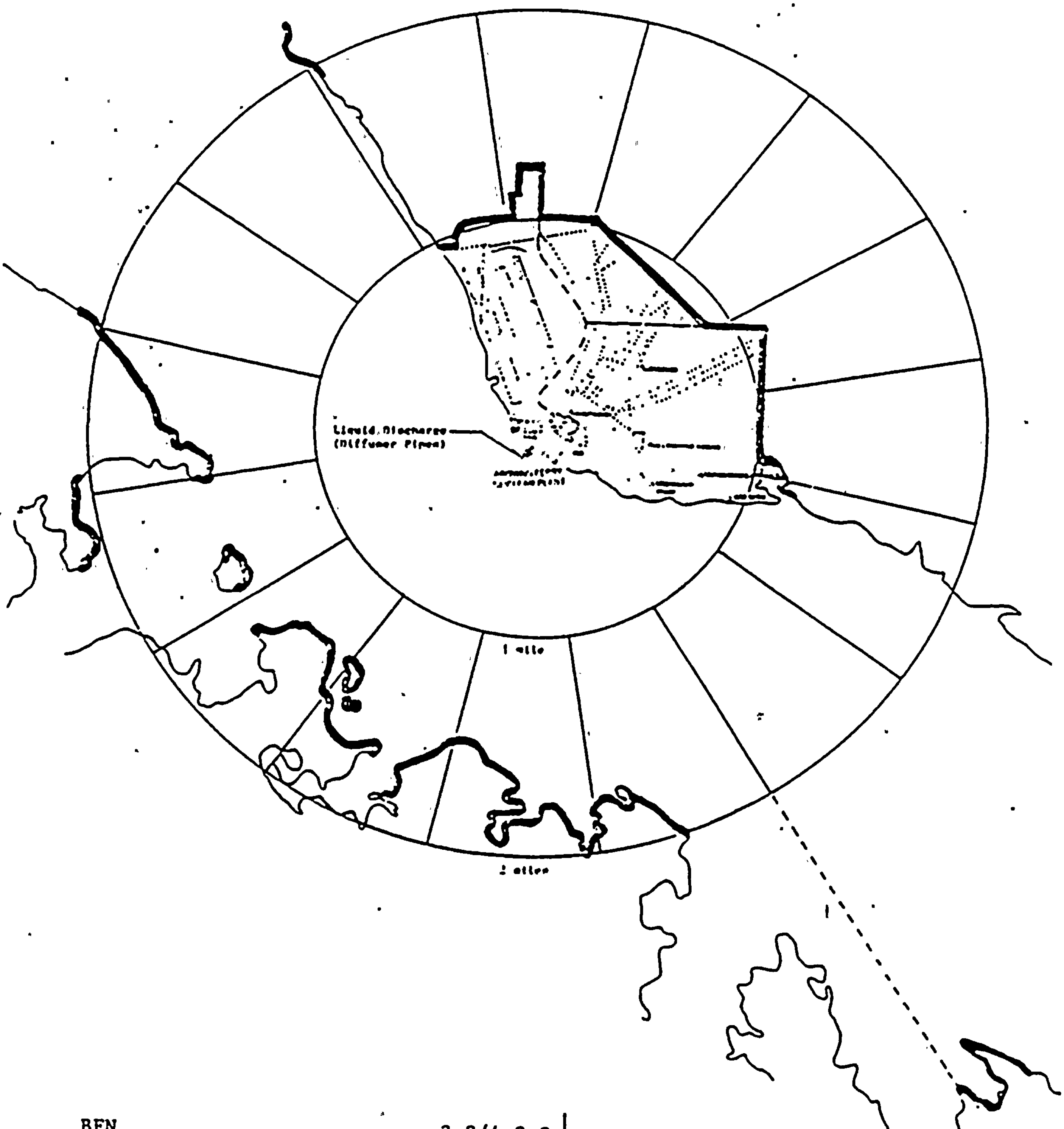


Figure 4.8-1a

GASEOUS RELEASE POINTS AND ELEVATIONS

Figure 4.8-1b

LAND SITE BOUNDARY



3.8 BASES

(Deleted)

3.8.A LIQUID HOLDUP TANKS

Specification 3.8.A.5 includes any tanks containing radioactive material that are not surrounded by liners, dikes, or walls capable of holding the contents and that do not have overflows and surrounding area drains connected to the liquid radwaste treatment system. Restricting the quantity of radioactive material contained in the specified tanks provides assurance that in the event of an uncontrolled release of the tanks' contents, the resulting concentrations would be less than the limits of 10 CFR Part 20, Appendix B, Table II, Column 2, at the nearest potable water supply and the nearest surface water supply in an UNRESTRICTED AREA.

3.8.B EXPLOSIVE GAS MIXTURE

Specification 3.8.B.9 and 10 is provided to ensure that the concentration of potentially explosive gas mixtures contained in the offgas system is maintained below the flammability limits of hydrogen. Maintaining the concentration of hydrogen below its flammability limit provides assurance that the releases of radioactive materials will be controlled in conformance with the requirements of General Design Criterion 60 of Appendix A to 10 CFR Part 50.

4.8.A and 4.8.B BASES

(Deleted)

3.8.C and 4.8.C BASES

(Deleted)

3.8.D and 4.8.D MECHANICAL VACUUM PUMP

The purpose of isolating the mechanical vacuum pump line is to limit the release of activity from the main condenser. During an accident, fission products would be transported from the reactor through the main steam lines to the condenser. The fission product radioactivity would be sensed by the main steam line radioactivity monitors which initiate isolation.

3.8.E and 4.8.E BASES

The limitations on removable contamination for sources requiring leak testing, including alpha emitters, based on 10 CFR 70.39(c) limits for plutonium. This limitation will ensure that leakage from byproduct, source, and special nuclear material sources will not exceed allowable intake values. Sealed sources are classified into three groups according to their use, with surveillance requirements commensurate with the probability of damage to a source in that group. Those sources which are frequently handled are required to be tested more often than those which are not. Sealed sources which are continuously enclosed within a shielded mechanism (i.e., sealed sources within radiation monitoring or boron measuring devices) are considered to be stored and need not be tested unless they are removed from the shielded mechanism.

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.

6.5.1.6 (Cont.)

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 Offsite Dose Calculation Manual and Process Control Program.

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 Senior Vice President, 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.

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 12 months.

o. The Process Control Program and implementing procedures for solidification of wet radioactive wastes at least once per 24 months.

p. (Deleted)

AUTHORITY

6.5.2.9 The NSRB shall report to and advise the Senior Vice President, 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 Senior Vice President, 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 Senior Vice President, 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 Senior Vice President, Nuclear Power and to the management positions responsible for the areas audited within 30 days after completion of the audit.

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 Senior Vice President, 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 Senior Vice President, 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. (Deleted)

h. Process Control Program (PCP).

i. Offsite Dose Calculation Manual.

j. Administrative procedures which control technical and cross-disciplinary review.

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.

6.8.4 RADIOACTIVE EFFLUENT CONTROLS/RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAMS

The following programs shall be established, implemented, and maintained.

6.8.4.1 RADIOACTIVE EFFLUENT CONTROLS PROGRAM

A program shall be provided conforming with 10 CFR 50.36a for the control of radioactive effluents and for maintaining the doses to MEMBERS OF THE PUBLIC from radioactive effluents as low as reasonably achievable. The program (1) shall be contained in the ODCM, (2) shall be implemented by operating procedures, and (3) shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

a. Limitations on the OPERABILITY of radioactive liquid and gaseous monitoring instrumentation including surveillance tests and setpoint determination in accordance with the methodology in the ODCM.

b. Limitations on the concentrations of radioactive material released in liquid effluents to UNRESTRICTED AREAS conforming to 10 CFR Part 20, Appendix B, Table II, Column 2.

c. Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with 10 CFR 20.106 and with the methodology and parameters in the ODCM.

d. Limitations on the annual and quarterly doses or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released from each unit to UNRESTRICTED AREAS conforming to Appendix I to 10 CFR Part 50.

e. Determination of cumulative and projected dose contributions from radioactive effluents for the current calendar quarter and current year in accordance with the methodology and parameters in the ODCM at least every 31 days.

f. Limitations on the OPERABILITY and use of the liquid and gaseous effluent treatment systems to ensure that the appropriate portions of these systems are used to reduce releases of radioactivity when the projected doses in a 31-day period would exceed 2 percent of the guidelines for the annual dose or dose commitment conforming to Appendix I to 10 CFR Part 50.

g. Limitations on the dose rate resulting from radioactive material released in gaseous effluents to areas beyond the SITE BOUNDARY conforming to the doses associated with 10 CFR Part 20, Appendix B, Table II, Column 1.

h. Limitations of the annual and quarterly air doses resulting from noble gases released in gaseous effluents from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50.

i. Limitations on the annual and quarterly doses to a MEMBER OF THE PUBLIC from Iodine-131, Iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50.

j. Limitations on the annual dose or dose commitment to any MEMBER OF THE PUBLIC due to releases of radioactivity and to radiation from uranium fuel cycle sources conforming to 40 CFR Part 190.

6.8.4.2 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

A program shall be provided to monitor the radiation and radionuclides in the environs of the plant. The program shall provide (1) representative measurements of radioactivity in the highest potential exposure pathways, and (2) verification of the accuracy of the effluent monitoring program and modeling of environmental exposure pathways. The program shall (1) be contained in the ODCM, (2) conform to the guidance of Appendix I to 10 CFR Part 50, and (3) include the following:

a. Monitoring, sampling, analysis, and reporting of radiation and radionuclides in the environment in accordance with the methodology and parameters in the ODCM,

b. A Land Use Census to ensure that changes in the use of area at and beyond the SITE BOUNDARY are identified and that modifications to the monitoring program are made if required by the results of this census, and

c. Participation in an Interlaboratory Comparison Program to ensure that independent checks on the precision and accuracy of the measurements of radioactive materials in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring.

6.8.5 PROGRAMS

Postaccident Sampling

Postaccident sampling activities will ensure the capability to obtain and analyze reactor coolant, radioactive iodines and

particulates in plant gaseous effluents, and containment atmosphere samples under accident conditions. These activities shall include the following:

(i) Training of personnel,

(ii) Procedures for sampling and analysis,

(iii) Provisions for maintenance of sampling and analysis

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

6.9.1.1 STARTUP REPORT (Continued)

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

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

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

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.

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 ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted before May 1 of each year. A single submittal may be made for a multi-unit station. The report shall include summaries, interpretations, and analysis of trends of the results of the Radiological Environmental Monitoring Program for the reporting period. The material provided shall be consistent with the objectives outlined in (1) the ODCM and (2) Sections IV.B.2, IV.B.3, and IV.C of Appendix I to 10 CFR Part 50.

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.

6.9.1.7 CORE OPERATING LIMITS REPORT

a. Core operating limits shall be established and shall be documented in the CORE OPERATING LIMITS REPORT prior to each operating cycle, or prior to any remaining portion of an operating cycle, for the following:

   (1) The APLHGR for Specification 3.5.I

   (2) The LHGR for Specification 3.5.J

   (3) The MCPR Operating Limit for Specification 3.5.K/4.5.K

b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC, specifically those described in General Electric Licensing Topical Report NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel" (latest approved version).

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

d. The CORE OPERATING LIMITS REPORT, including any midcycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

6.9.1.8 THE ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

The Annual Radioactive Effluent Release Report covering the operation of the unit during the previous calendar year of operation shall be submitted by April 1, of each year. The report shall include summaries of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. A single submittal may be made for a multi-unit station. The submittal should combine those sections that are common to all units at the station; however, for units with separate radwaste systems, the submittal shall specify the releases of radioactive material from each unit. The material provided shall be (1) consistent with the objectives outlined in the ODCM and PCP and (2) in conformance with 10 CFR 50.36a and Section IV.B.1 of Appendix I to 10 CFR Part 50.

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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.

r. Reviews performed for changes made to the Offsite Dose Calculation Manual and the Process Control Program.

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 r shall be retained for the life of the plant. A complete inventory of radioactive materials in possession shall be maintained current at all times.

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

6.11 PROCESS CONTROL PROGRAM (PCP)

Changes to the PCP:

1. Shall be documented and records of reviews performed shall be retained as required by Specification 6.10.1.r. This documentation shall contain:

   a. Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s) and

   b. A determination that the change will maintain the overall conformance of the solidified waste product to existing requirements of Federal, State, or other applicable regulations.

2. Shall become effective after review and acceptance by the PORC and the approval of the Plant Manager.

6.12 OFFSITE DOSE CALCULATION MANUAL (ODCM)

Changes to the ODCM:

1. Shall be documented and records of reviews performed shall be retained as required by Specification 6.10.1.r. This documentation shall contain:

   a. Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change.

b. A determination that the change will maintain the level of radioactive effluent control required by 10 CFR 20.106, 40 CFR Part 190, 10 CFR 50.36a, and Appendix I to 10 CFR Part 50 and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations.

2. Shall become effective after review and acceptance by the PORC and the approval of the Plant Manager.

3. Shall be submitted to the Commission in the form of a complete, legible copy of the entire ODCM as a part of or concurrent with the Annual Radioactive Effluent Release Report for the period of the report in which any change to the ODCM was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date (e.g., month/year) the change was implemented.

6.13 (Deleted)

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-296

BROWNS FERRY NUCLEAR PLANT, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 172
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 March 25, 1992, and supplements dated January 29, 1993, and August 27, 1993 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. 172, 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

Frederick J. Hebdon

Frederick J. Hebdon, Director
Project Directorate II-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 22, 1993

ATTACHMENT TO LICENSE AMENDMENT NO. 172

FACILITY OPERATING LICENSE 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	INSERT
i	i
ii	ii*
iii	iii
iv	iv
v	v
vi	vi
vii	vii
viii	viii
1.0-9	1.0-9
1.0-10	1.0-10
3.2/4.2-3	3.2/4.2-3
3.2/4.2-4	3.2/4.2-4*
3.2/4.2-5	3.2/4.2-5*
3.2/4.2-6	3.2/4.2-6
3.2/4.2-27	3.2/4.2-27
3.2/4.2-28	3.2/4.2-28
3.2/4.2-37	3.2/4.2-37
--	3.2/4.2-37a
3.2/4-2-38	3.2/4.2-38
3.2/4.2-38a	3.2/4.2-38a*
3.2/4.2-50	3.2/4.2-50
3.2/4.2-51	3.2/4.2-51
3.2/4.2-61	3.2/4.2-61
--	3.2/4.2-61a
3.2/4.2-62	3.2/4.2-62
3.2/4.2-62a	3.2/4.2-62a*
3.2/4.2-66	3.2/4.2-66*
3.2/4.2-67	3.2/4.2-67
3.2/4.2-68	3.2/4.2-68*
3.2/4.2-69	3.2/4.2-69
3.2/4.2-72	3.2/4.2-72
3.2/4.2-72a	3.2/4.2-72a*
3.8/4.8-1	3.8/4.8-1
3.8/4.8-2	3.8/4.8-2
3.8/4.8-3	3.8/4.8-3
3.8/4.8-4	3.8/4.8-4

Docket No. 50-296 (Continued)

REMOVE	INSERT
3.8/4.8-5	3.8/4.8-5
3.8/4.8-6	3.8/4.8-6
3.8/4.8-7	3.8/4.8-7
3.8/4.8-8	3.8/4.8-8
3.8/4.8-9	3.8/4.8-9
3.8/4.8-10	3.8/4.8-10
3.8/4.8-11	--
3.8/4.8-12	--
3.8/4.8-13	--
3.8/4.8-14	--
3.8/4.8-15	--
3.8/4.8-16	--
6.0-7	6.0-7*
6.0-8	6.0-8
6.0-15	6.0-15
6.0-16	6.0-16*
6.0-19	6.0-19*
6.0-20	6.0-20
6.0-23	6.0-23
--	6.0-23a
--	6.0-23b
--	6.0-23c
6.0-24	6.0-24*
6.0-25	6.0-25*
6.0-26	6.0-26
6.0-26a	6.0-26a*
6.0-26b	6.0-26b
--	6.0-26c
6.0-31	6.0-31
6.0-32	6.0-32
6.0-33	6.0-33
--	6.0-33a

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LIST OF TABLES (Cont'd)

LIST OF ILLUSTRATIONS

1.0 DEFINITIONS (Cont'd)

10. Logic - A logic is an arrangement of relays, contacts, and other components that produces a decision output.

    (a) Initiating - A logic that receives signals from channels and produces decision outputs to the actuation logic.

    (b) Actuation - A logic that receives signals (either from initiation logic or channels) and produces decision outputs to accomplish a protective action.

11. Channel Calibration - Shall be the adjustment, as necessary, of the channel output such that it responds with necessary range and accuracy to known values of the parameters which the channel monitors. The channel calibration shall encompass the entire channel including alarm and/or trip functions and shall include the channel functional test. The channel calibration may be performed by any series of sequential, overlapping or total channel steps such that the entire channel is calibrated. Non-calibratable components shall be excluded from this requirement, but will be included in channel functional test and source check.

12. Channel Functional Test - Shall be:

    a. Analog/Digital Channels - the injection of a simulated signal into the channel as close to the sensor as practicable to verify OPERABILITY including alarm and/or trip functions.

    b. Bistable Channels - the injection of a simulated signal into the sensor to verify OPERABILITY including alarm and/or trip functions.

13. (Deleted)

W. Functional Tests - A functional test is the manual operation or initiation of a system, subsystem, or components to verify that it functions within design tolerances (e.g., the manual start of a core spray pump to verify that it runs and that it pumps the required volume of water).

X. Shutdown - The reactor is in a shutdown condition when the reactor mode switch is in the shutdown mode position and no core alterations are being performed.

Y. Engineered Safeguard - An engineered safeguard is a safety system the actions of which are essential to a safety action required in response to accidents.

Z. Reportable Event - A reportable event shall be any of those conditions specified in section 50.73 to 10 CFR Part 50.

AA. (Deleted)

BB. Offsite Dose Calculation Manual (ODCM) - Shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring Alarm/Trip Setpoints, and in the conduct of the Environmental Radiological Monitoring Program. The ODCM shall also contain (1) the Radioactive Effluent Controls and Radiological Environmental Monitoring Programs required by Section 6.8.4 and (2) descriptions of the information that should be included in the Annual Radiological Environmental Operating and Annual Radioactive Effluent Release Reports required by Specifications 6.9.1.5 and 6.9.1.8.

CC. Purge or purging - The controlled process of discharging air or gas from the primary containment to maintain temperature, pressure, humidity, concentration, or other operating condition in such a manner that replacement air or gas is required to purify the containment.

DD. Process Control Program - Shall contain the current formulas, sampling, analyses, test, and determinations to be made to ensure that processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR Parts 20, 61 and 71, State regulations, burial ground requirements, and other requirements governing the disposal of solid radioactive waste.

EE. (Deleted)

FF. Venting - The controlled process of discharging air or gas from the primary containment to maintain temperature, pressure, humidity, concentration, or other operating condition in such a manner that replacement air or gas is not provided or required. Vent, used in system names, does not imply a venting process.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.2.D (Deleted)	4.2.D (Deleted)

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.2.E. Drywell Leak Detection	4.2.E. Drywell Leak Detection
The limiting conditions of operation for the instrumentation that monitors drywell leak detection are given in Table 3.2.E.	Instrumentation shall be calibrated and checked as indicated in Table 4.2.E.
F. Surveillance Instrumentation	F. Surveillance Instrumentation
The limiting conditions for the instrumentation that provides surveillance information readouts are given in Table 3.2.F.	Instrumentation shall be calibrated and checked as indicated in Table 4.2.F.
G. Control Room Isolation	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.	Instrumentation shall be calibrated and checked as indicated in Table 4.2.G.
H. Flood Protection	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.	Surveillance shall be performed on the instrumentation that monitors the reservoir level as indicated in Table 4.2.H.
Requirements for instrumentation that monitors the reservoir level are given in Table 3.2.H.	
I. Meteorological Monitoring Instrumentation	I. Meteorological Monitoring Instrumentation
The meteorological monitoring instrumentation listed in Table 3.2.I shall be operable at all times.	Each meteorological monitoring instrument channel shall be demonstrated operable by the performance of the CHANNEL CHECK at least once per

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.

LIMITING CONDITIONS FOR OPERATION

3.2.K Explosive Gas Monitoring Instrumentation

1. The explosive gas 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 setpoints will be set to ensure that the limits of Specification 3.8.B.9 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, prepare and submit a special report to the commission pursuant to Specification 6.9.1.4 to explain why the inoperability was not corrected in a timely manner.

3. (Deleted)

4. (Deleted)

5. The provisions of Specification 1.0.C are not applicable.

SURVEILLANCE REQUIREMENTS

4.2.K Explosive Gas Monitoring Instrumentation

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

TABLE 3.2.D

Deleted

NOTES FOR TABLE 3.2.D

(Deleted)

TABLE 3.2.K
Explosive Gas Monitoring Instrumentation

Instrument	Minimum Channels/ Devices Operable	Applicability	Action
1. (Deleted)			
2. (Deleted)			
3. (Deleted)			
4. (Deleted)			
5. OFF GAS HYDROGEN ANALYZER (H_2A, H_2B)	(1)	***	E
6. (Deleted)			

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NOTES FOR TABLE 3.2.K

*(Deleted)
**(Deleted)
***During main condenser offgas treatment system operation

ACTION A

(Deleted)

ACTION B

(Deleted)

ACTION C

(Deleted)

ACTION D

(Deleted)

ACTION E

With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, operation of main condenser offgas treatment system may continue provided that a temporary monitor is installed or grab samples are collected at least once per 4 hours and analyzed within the following 4 hours.

ACTION F

(Deleted)

Table 3.2.L
Anticipated Transient Without Scram (ATWS) -
Recirculation Pump Test (RPT) Surveillance Instrumenation

Minimum No. Channels operable per Trip Sys (1)	Function	Trip Setting	Allowable Value	Action	Remarks
2	ATWS/RPT Logic Reactor Dome Pressure High	1118 psig	$\leq$ 1146.5 psig	(2)	Two out of two of the high reactor dome pressure channels or the low reactor vessel level channels in either trip system tripsboth reactor recirculation pumps.
2	Reactor Vessel Level Low	483" above vessel zero	$\geq$ 471.52" above vessel zero		

(1) One channel in only one trip system may be placed in an inoperable status for up to 6 hours for required surveillance provided the other channels in that trip system are OPERABLE.

(2) Two trip systems exist, either of which will trip both recirculation pumps. Perform Surveillance/maintenance/calibration on one channel in only one trip system at a time. If a channel is found to be inoperable or if the surveillance/maintenance/calibration period for one channel exceeds 6 consecutive hours, the trip system will be declared inoperable or the channel will be placed in a tripped condition. If in RUN mode and one trip system is inoperable for 72 hours or both trip systems are inoperable, the reactor shall be in at least the HOT STANDBY CONDITION within 6 hours.

TABLE 4.2.D

Deleted

NOTES FOR TABLE 4.2.D

(Deleted)

TABLE 4.2.K
Explosive Gas Instrumentation Surveillance

Instrument	Instrument Check	Source Check	Calibration	Test
1. (Deleted)				
2. (Deleted)				
3. (Deleted)				
4. (Deleted)				
5. OFF GAS HYDROGEN ANALYZER (H_2A, H_2B)	D	NA	$R^{(3)}$	Q
6. (Deleted)				

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NOTES FOR TABLE 4.2.K

(1) (Deleted)

(2) (Deleted)

(3) The channel calibration shall include the use of standard gas samples containing a nominal:

    a. Zero volume percent hydrogen (compressed air) and,

    b. One volume percent hydrogen, balance nitrogen.

(4) (Deleted)

(5) (Deleted)

(6) (Deleted)

Table 4.2.L
Anticipated Transient Without Scram (ATWS) -
Recirculation Pump Trip (RPT) Instrumentation Surveillance

Function	Functional Test	Channel Calibration	Instrument Check
Reactor Vessel Water Level Low (LS-3-58A1-D1)	M(28)	R(29)	N/A
Reactor Vessel Dome Pressure High (PIS-3-204A-D)	M(28)	R(29)	N/A

steam line isolation valve closure, fission product release is limited so that 10 CFR 100 guidelines are not exceeded for this accident. Reference Section 14.6.2 FSAR. An alarm with a nominal setpoint of 1.5 x normal full-power background is provided also.

Pressure instrumentation is provided to close the main steam isolation valves in RUN Mode when the main steam line pressure drops below 825 psig.

The HPCI high flow and temperature instrumentation are provided to detect a break in the HPCI steam piping. Tripping of this instrumentation results in actuation of HPCI isolation valves. Tripping logic for the high flow is a 1-out-of-2 logic, and all sensors are required to be operable.

High temperature in the vicinity of the HPCI equipment is sensed by four sets of four bimetallic temperature switches. The 16 temperature switches are arranged in two trip systems with eight temperature switches in each trip system.

The HPCI trip settings of 90 psi for high flow and 200°F for high temperature are such that core uncovery is prevented and fission product release is within limits.

The RCIC high flow and temperature instrumentation are arranged the same as that for the HPCI. The trip setting of 450" water for high flow and 200°F for temperature are based on the same criteria as the HPCI.

High temperature at the Reactor Cleanup System floor drain could indicate a break in the cleanup system. When high temperature occurs, the cleanup system is isolated.

The instrumentation which initiates CSCS action is arranged in a dual bus system. As for other vital instrumentation arranged in this fashion, the specification preserves the effectiveness of the system even during periods when maintenance or testing is being performed. An exception to this is when logic functional testing is being performed.

The control rod block functions are provided to prevent excessive control rod withdrawal so that MCPR does not decrease to 1.07. The trip logic for this function is 1-out-of-n: e.g., any trip on one of six APRMs, eight IRMs, or four SRMs will result in a rod block.

The minimum instrument channel requirements assure sufficient instrumentation to assure the single failure criteria is met. The minimum instrument channel requirements for the RBM may be reduced by one for maintenance, testing, or calibration. This does not significantly increase the risk of an inadvertent control rod withdrawal, as the other channel is available, and the RBM is a backup system to the written sequence for withdrawal of control rods.

The APRM rod block function is flow biased and prevents a significant reduction in MCPR, especially during operation at reduced flow. The APRM provides gross core protection; i.e., limits the gross core power increase from withdrawal of control rods in the normal withdrawal sequence. The trips are set so that MCPR is maintained greater than 1.07.

The RBM rod block function provides local protection of the core; i.e., the prevention of critical power in a local region of the core, for a single rod withdrawal error from a limiting control rod pattern.

If the IRM channels are in the worst condition of allowed bypass, the sealing arrangement is such that for unbypassed IRM channels, a rod block signal is generated before the detected neutrons flux has increased by more than a factor of 10.

A downscale indication is an indication the instrument has failed or the instrument is not sensitive enough. In either case the instrument will not respond to changes in control rod motion and thus, control rod motion is prevented.

The refueling interlocks also operate one logic channel, and are required for safety only when the mode switch is in the refueling position.

For effective emergency core cooling for small pipe breaks, the HPCI system must function since reactor pressure does not decrease rapid enough to allow either core spray or LPCI to operate in time. The automatic pressure relief function is provided as a backup to the HPCI in the event the HPCI does not operate. The arrangement of the tripping contacts is such as to provide this function when necessary and minimize spurious operation. The trip settings given in the specification are adequate to assure the above criteria are met. The specification preserves the effectiveness of the system during periods of maintenance, testing, or calibration, and also minimizes the risk of inadvertent operation; i.e., only one instrument channel out of service.

Two radiation monitors are provided for each unit which initiate Primary Containment Isolation (Group 6 isolation valves) Reactor Building Isolation and operation of the Standby Gas Treatment System. These instrument channels monitor the radiation in the reactor zone ventilation exhaust ducts and in the refueling zone.

Trip setting of 100 mr/hr for the monitors in the refueling zone are based upon initiating normal ventilation isolation and SGTS operation so that none of the activity released during the refueling accident leaves the Reactor Building via the normal ventilation path but rather all the activity is processed by the SGTS.

The allowed inoperable time of 4 hours for functional testing or 24 hours for calibration and maintenance (with the downscale trip of the inoperable channel in the tripped condition) of the Reactor Building Ventilation system is based upon a Probabilistic Risk Assessment (PRA). The assessment considered the failures, relay failures and the probability of an accident occurring for which the RBVRMs are required to operate.

Flow integrators and sump fill rate and pump out rate timers are used to determine leakage in the drywell. A system whereby the time interval to fill a known volume will be utilized to provide a backup. An air sampling system is also provided to detect leakage inside the primary containment (See Table 3.2.E).

For each parameter monitored, as listed in Table 3.2.F, there are two channels of instrumentation except as noted. By comparing readings between the two channels, a near continuous surveillance of instrument performance is available. Any deviation in readings will initiate an early recalibration, thereby maintaining the quality of the instrument readings.

Instrumentation is provided for isolating the control room and initiating a pressurizing system that processes outside air before supplying it to the control room. An accident signal that isolates primary containment will also automatically isolate the control room and initiate the emergency pressurization system. In addition, there are radiation monitors in the normal ventilation system that will isolate the control room and initiate the emergency pressurization system. Activity required to cause automatic actuation is about one mRem/hr.

Because of the constant surveillance and control exercised by TVA over the Tennessee Valley, flood levels of large magnitudes can be predicted in advance of their actual occurrence. In all cases, full advantage will be taken of advance warning to take appropriate action whenever reservoir levels above normal pool are predicted. Therefore, during flood conditions, the plant will be permitted to operate until water begins to run across the top of the pumping station at elevation 565. Seismically qualified, redundant level switches each powered from a separate division of power are provided at the pumping station to give main control room indication of this condition. At that time an orderly shutdown of the plant will be initiated, although surges even to a depth of several feet over the pumping station deck will not cause the loss of the main condenser circulating water pumps.

3.2 BASES (Cont'd)

The OPERABILITY of the meteorological instrumentation ensures that sufficient meteorological data is available for estimating potential radiation dose to the public as a result of routine or accidental release of radioactive materials to the atmosphere. This capability is required to evaluate the need for initiating protective measures to protect the health and safety of the public.

The OPERABILITY of the seismic instrumentation ensures that sufficient capability is available to promptly determine the seismic response of those features important to safety. This capability is required to permit comparison of the measured response to that used in the design basis for Browns Ferry Nuclear Plant and to determine whether the plant can continue to be operated safely. The instrumentation provided is consistent with specific portions of the recommendations of Regulatory Guide 1.12 "Instrumentation for Earthquakes."

The instrumentation in Tables 3.2.K/4.2.K monitors the concentration of potentially explosive gas mixtures in the offgas holdup system. The OPERABILITY and use of this instrumentation is consistent with the requirements of General Design Criteria 63 of Appendix A to 10 CFR Part 50.

ATWS/RPT, Anticipated Transients without Scram/Recirculation Pump Trip system provides a means of limiting the consequences of the unlikely occurrence of a failure to scram during an ATWS event. The response of the plant to this postulated event (ATWS/RPT) follows the BWR Owners Group Report by General Electric NEDE-31096-P-A and the accompanying NRC Staff Safety Evaluation Report.

ATWS/RPT utilizes the engineered safety feature (ESF) master/slave analog trip units (ATU) which consists of four level and four pressure channels total. The initiating logic consists of two independent trip systems each consisting of two reactor dome high pressure channels and two reactor vessel low level channels. A coincident trip of either two low levels or two high pressures in the same trip system causes initiation of ATWS/RPT. This signal from either trip system opens one of two EOC

The conclusions to be drawn are these:

1. A 1-out-of-n system may be treated the same as a single channel in terms of choosing a test interval; and

2. more than one channel should not be bypassed for testing at any one time.

The radiation monitors in the reactor and refueling zones which initiate building isolation and standby gas treatment operation are arranged such that two sensors high (above the high level setpoint) in a single channel or one sensor downscale (below low level setpoint) or inoperable in two channels in the same zone will initiate a trip function. The functional testing frequencies for both the channel functional test and the high voltage power supply functional test are based on a Probabilistic Risk Assessment and system drift characteristics of the Reactor Building Ventilation Radiation Monitors. The calibration frequency is based upon the drift characteristics of the radiation monitors.

The automatic pressure relief instrumentation can be considered to be a 1-out-of-2 logic system and the discussion above applies also.

The RCIC and HPCI system logic tests required by Table 4.2.B contain provisions to demonstrate that these systems will automatically restart on a RPV low water level signal received subsequent to a RPV high water level trip.

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LIMITING CONDITIONS FOR OPERATION

3.8 Radioactive Materials

Applicability

Applies to the amount of radioactive material or explosive gases contained in specified systems.

Objective

To define the limits and conditions for the containment of radioactive material or explosive gases in specified systems. The specifications are exempt from the requirements of definition 1.0.C (Limiting Condition for Operation).

Specification

A. Liquid Effluents

1. (Deleted)

2. (Deleted)

3. (Deleted)

SURVEILLANCE REQUIREMENTS

4.8 Radioactive Materials

Applicability

Applies to the periodic test and record requirements and sampling and monitoring methods used for systems containing radioactive material or explosive gases.

Objective

To ensure that the quantity of radioactive liquids and explosive gases are maintained within the limits specified by Specifications 3.8.A and 3.8.B.

Specification

A. Liquid Effluents

1. (Deleted)

2. (Deleted)

3. (Deleted)

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.8.A. Liquid Effluents	4.8.A. Liquid Effluents
4. (Deleted)	4. (Deleted)
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.	5. (Deleted)
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 Annual Radioactive Effluent Release Report (Section 5.2 of the ODCM).	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.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.8.B. Airborne Effluents	4.8.B. Airborne Effluents
1. (Deleted)	1. (Deleted)
2. (Deleted)	2. (Deleted)
3. (Deleted)	3. (Deleted)
4. (Deleted)	4. (Deleted)
5. (Deleted)	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.
6. (Deleted)	
7. (Deleted)	
8. (Deleted)	
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.	

LIMITING CONDITIONS FOR OPERATION

3.8.C (Deleted)

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.

SURVEILLANCE REQUIREMENTS

4.8.C (Deleted)

4.8.D Mechanical Vacuum Pump

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

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS

3.8.E. Miscellaneous Radioactive Materials Sources

1. Source Leakage Test

Each sealed source containing radioactive material either in excess of 100 microcuries of beta and/or gamma emitting material or 5 microcuries of alpha emitting material shall be free of $\geq$ 0.005 microcurie of removable contamination. Each sealed source with removable contamination in excess of the above limit shall be immediately withdrawn from use and (a) either decontaminated and repaired, or (b) disposed of in accordance with Commission regulations.

4.8.E. Miscellaneous Radioactive Materials Sources

1. Surveillance Requirement

Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically authorized by the Commission or an agreement State, as follows:

a. Sources in Use

Each sealed source, excluding startup sources and flux detectors previously subjected to core flux, containing radioactive material, other than Hydrogen 3, with a half-life greater than thirty days and in any form other than gas shall be tested for leakage and/or contamination at least once per six months. The leakage test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample.

LIMITING CONDITIONS FOR OPERATION | SURVEILLANCE REQUIREMENTS

4.8.E Miscellaneous Radioactive Materials Sources

4.8.E.1 (Cont'd)

b. Stored Sources Not In Use

Each sealed source and fission detector not previously subjected to core flux shall be tested prior to use or transfer to another licensee unless tested within the previous six months. Sealed sources and fission detectors transferred without a certificate indicating the last test date shall be tested prior to use.

c. Startup Sources and Fission Detectors

Each sealed startup source and fission detector shall be tested prior to being subjected to core flux and following repair or maintenance to the source.

2. Reports

A report shall be prepared and submitted to the Commission on an annual basis if sealed sources or fission detector leakage tests reveal the presence of greater than or equal to 0.005 microcuries of removable contamination.

3.8.F (Deleted)

4.8.F (Deleted)

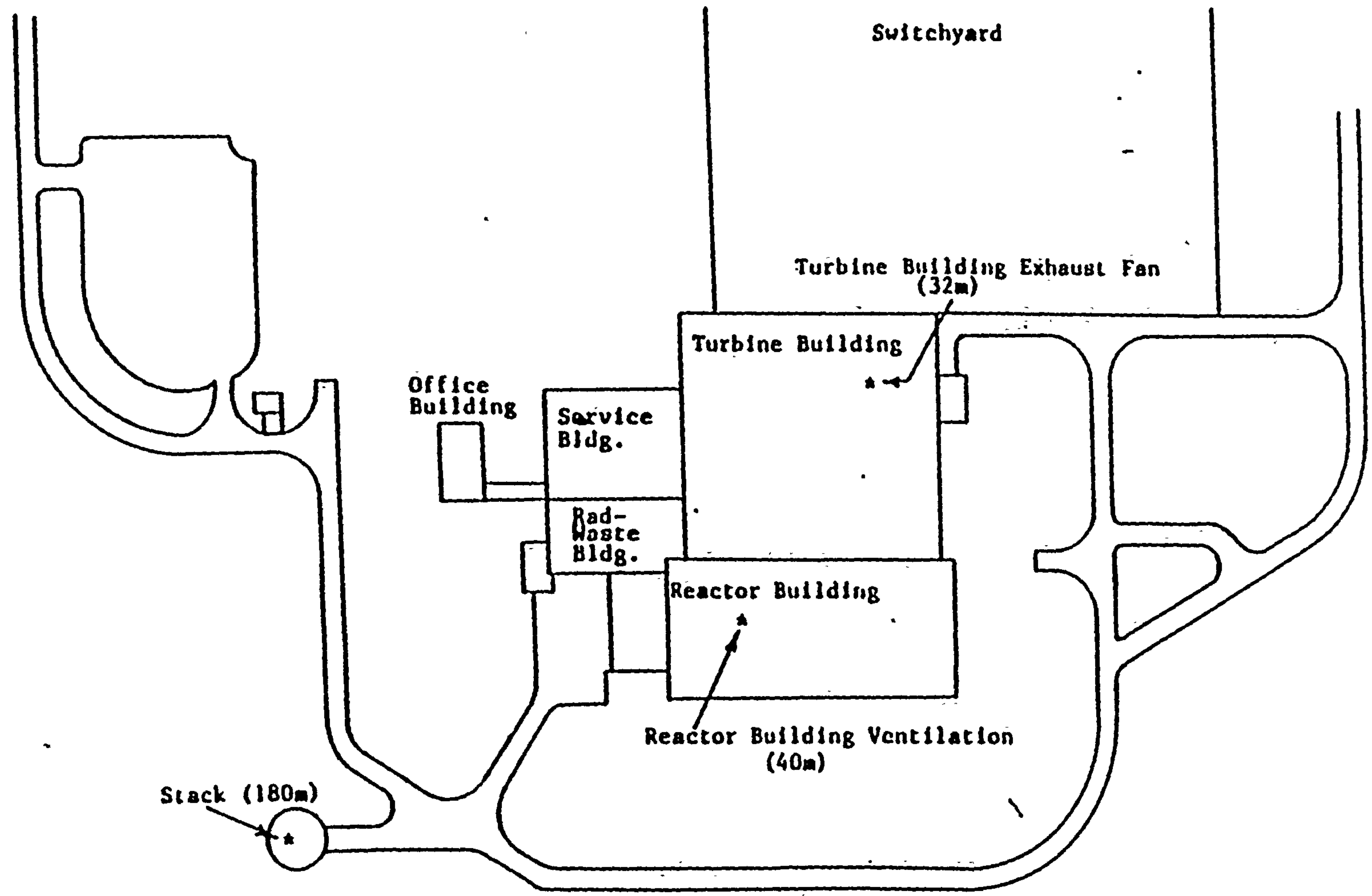
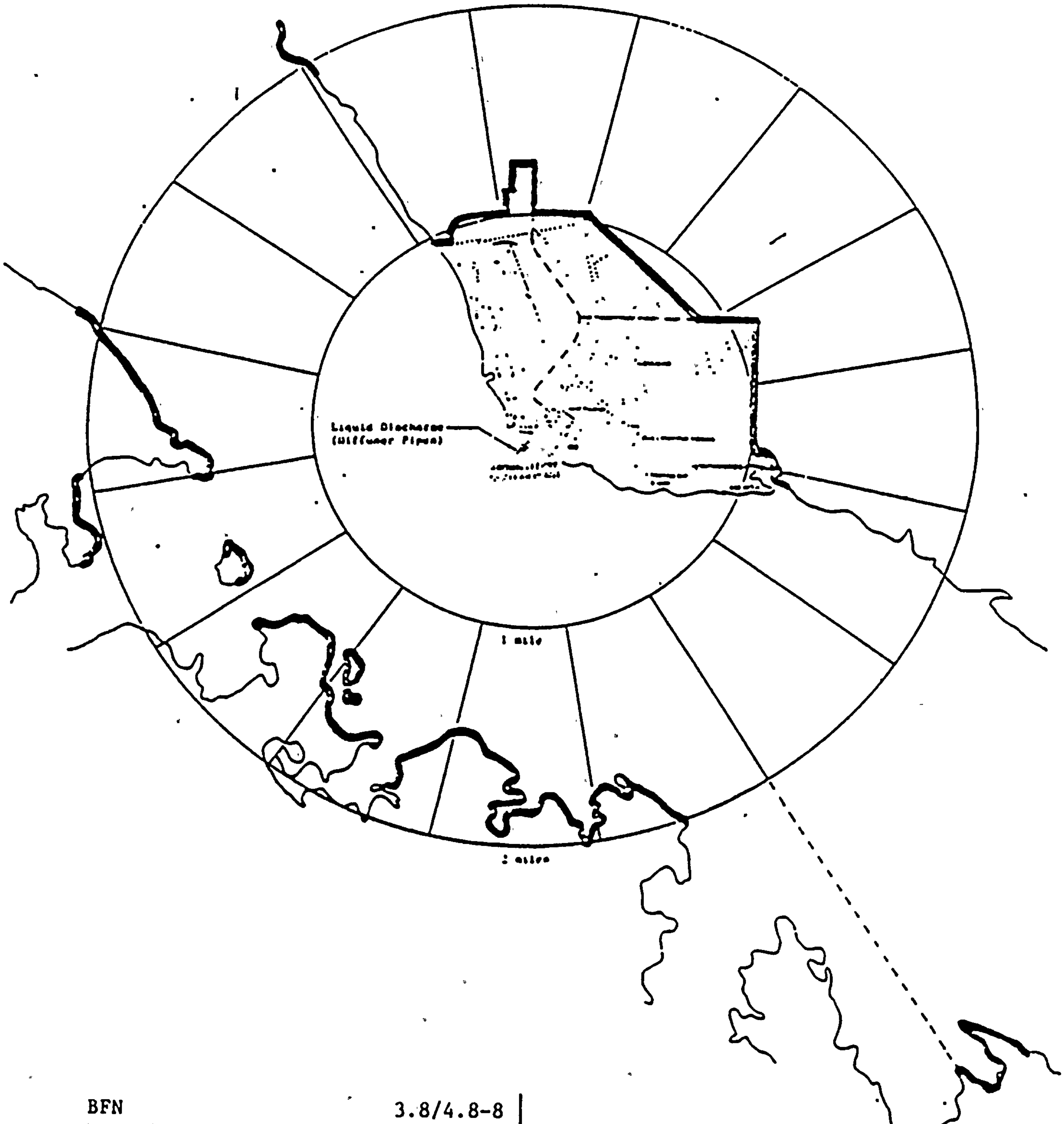


Figure 4.8-1a

GASEOUS RELEASE POINTS AND ELEVATIONS

Figure 4.8-1h

LAND SITE BOUNDARY



3.8 BASES

(Deleted)

3.8.A LIQUID HOLDUP TANKS

Specification 3.8.A.5 includes any tanks containing radioactive material that are not surrounded by liners, dikes, or walls capable of holding the contents and that do not have overflows and surrounding area drains connected to the liquid radwaste treatment system. Restricting the quantity of radioactive material contained in the specified tanks provides assurance that in the event of an uncontrolled release of the tanks' contents, the resulting concentrations would be less than the limits of 10 CFR Part 20, Appendix B, Table II, Column 2, at the nearest potable water supply and the nearest surface water supply in an UNRESTRICTED AREA.

3.8.B EXPLOSIVE GAS MIXTURE

Specification 3.8.B.9 and 10 is provided to ensure that the concentration of potentially explosive gas mixtures contained in the offgas system is maintained below the flammability limits of hydrogen. Maintaining the concentration of hydrogen below its flammability limit provides assurance that the releases of radioactive materials will be controlled in conformance with the requirements of General Design Criterion 60 of Appendix A to 10 CFR Part 50.

4.8.A and 4.8.B BASES

(Deleted)

3.8.C and 4.8.C BASES

(Deleted)

3.8.D and 4.8.D MECHANICAL VACUUM PUMP

The purpose of isolating the mechanical vacuum pump line is to limit the release of activity from the main condenser. During an accident, fission products would be transported from the reactor through the main steam lines to the condenser. The fission product radioactivity would be sensed by the main steam line radioactivity monitors which initiate isolation.

3.8.E and 4.8.E BASES

The limitations on removable contamination for sources requiring leak testing, including alpha emitters, based on 10 CFR 70.39(c) limits for plutonium. This limitation will ensure that leakage from byproduct, source, and special nuclear material sources will not exceed allowable intake values. Sealed sources are classified into three groups according to their use, with surveillance requirements commensurate with the probability of damage to a source in that group. Those sources which are frequently handled are required to be tested more often than those which are not. Sealed sources which are continuously enclosed within a shielded mechanism (i.e., sealed sources within radiation monitoring or boron measuring devices) are considered to be stored and need not be tested unless they are removed from the shielded mechanism.

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 Offsite Dose Calculation Manual and Process Control Program.

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 Senior Vice President, 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.

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 12 months.

o. The Process Control Program and implementing procedures for solidification of wet radioactive wastes at least once per 24 months.

p. (Deleted)

AUTHORITY

6.5.2.9 The NSRB shall report to and advise the Senior Vice President, 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 Senior Vice President, 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 Senior Vice President, 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 Senior Vice President, Nuclear Power and to the management positions responsible for the areas audited within 30 days after completion of the audit.

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 Senior Vice President, 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 Senior Vice President, 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. (Deleted)

h. Process Control Program (PCP).

i. Offsite Dose Calculation Manual.

j. Administrative procedures which control technical and cross-disciplinary review.

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.

6.8.4 RADIOACTIVE EFFLUENT CONTROLS/RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAMS

The following programs shall be established, implemented, and maintained.

6.8.4.1 RADIOACTIVE EFFLUENT CONTROLS PROGRAM

A program shall be provided conforming with 10 CFR 50.36a for the control of radioactive effluents and for maintaining the doses to MEMBERS OF THE PUBLIC from radioactive effluents as low as reasonably achievable. The program (1) shall be contained in the ODCM, (2) shall be implemented by operating procedures, and (3) shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

a. Limitations on the OPERABILITY of radioactive liquid and gaseous monitoring instrumentation including surveillance tests and setpoint determination in accordance with the methodology in the ODCM.

b. Limitations on the concentrations of radioactive material released in liquid effluents to UNRESTRICTED AREAS conforming to 10 CFR Part 20, Appendix B, Table II, Column 2.

c. Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with 10 CFR 20.106 and with the methodology and parameters in the ODCM.

d. Limitations on the annual and quarterly doses or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released from each unit to UNRESTRICTED AREAS conforming to Appendix I to 10 CFR Part 50.

e. Determination of cumulative and projected dose contributions from radioactive effluents for the current calendar quarter and current year in accordance with the methodology and parameters in the ODCM at least every 31 days.

f. Limitations on the OPERABILITY and use of the liquid and gaseous effluent treatment systems to ensure that the appropriate portions of these systems are used to reduce releases of radioactivity when the projected doses in a 31-day period would exceed 2 percent of the guidelines for the annual dose or dose commitment conforming to Appendix I to 10 CFR Part 50.

g. Limitations on the dose rate resulting from radioactive material released in gaseous effluents to areas beyond the SITE BOUNDARY conforming to the doses associated with 10 CFR Part 20, Appendix B, Table II, Column 1.

h. Limitations of the annual and quarterly air doses resulting from noble gases released in gaseous effluents from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50.

i. Limitations on the annual and quarterly doses to a MEMBER OF THE PUBLIC from Iodine-131, Iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50.

j. Limitations on the annual dose or dose commitment to any MEMBER OF THE PUBLIC due to releases of radioactivity and to radiation from uranium fuel cycle sources conforming to 40 CFR Part 190.

6.8.4.2 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

A program shall be provided to monitor the radiation and radionuclides in the environs of the plant. The program shall provide (1) representative measurements of radioactivity in the highest potential exposure pathways, and (2) verification of the accuracy of the effluent monitoring program and modeling of environmental exposure pathways. The program shall (1) be contained in the ODCM, (2) conform to the guidance of Appendix I to 10 CFR Part 50, and (3) include the following:

a. Monitoring, sampling, analysis, and reporting of radiation and radionuclides in the environment in accordance with the methodology and parameters in the ODCM,

b. A Land Use Census to ensure that changes in the use of area at and beyond the SITE BOUNDARY are identified and that modifications to the monitoring program are made if required by the results of this census, and

c. Participation in an Interlaboratory Comparison Program to ensure that independent checks on the precision and accuracy of the measurements of radioactive materials in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring.

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 ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted before May 1 of each year. A single submittal may be made for a multi-unit station. The report shall include summaries, interpretations, and analysis of trends of the results of the Radiological Environmental Monitoring Program for the reporting period. The material provided shall be consistent with the objectives outlines in (1) the ODCM and (2) Sections IV.B.2, IV.B.3, and IV.C of Appendix I to 10 CFR Part 50.

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.

6.9.1.7 CORE OPERATING LIMITS REPORT

a. Core operating limits shall be established and shall be documented in the CORE OPERATING LIMITS REPORT prior to each operating cycle, or prior to any remaining portion of an operating cycle, for the following:

(1) The APLHGR for Specification 3.5.I

(2) The LHGR for Specification 3.5.J

(3) The MCPR Operating Limit for Specification 3.5.K/4.5.K

b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC, specifically those described in General Electric Licensing Topical Report NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel" (latest approved version).

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

d. The CORE OPERATING LIMITS REPORT, including any midcycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

6.9.1.8 THE ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

The Annual Radioactive Effluent Release Report covering the operation of the unit during the previous calendar year of operation shall be submitted by April 1, of each year. The report shall include summaries of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. A single submittal may be made for a multi-unit station. The submittal should combine those sections that are common to all units at the station; however, for units with separate radwaste systems, the submittal shall specify the releases of radioactive material from each unit. The material provided shall be (1) consistent with the objectives outlined in the ODCM and PCP and (2) in conformance with 10 CFR 50.36a and Section IV.B.1 of Appendix I to 10 CFR Part 50.

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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.

r. Reviews performed for changes made to the Offsite Dose Calculation Manual and the Process Control Program.

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 r shall be retained for the life of the plant. A complete inventory of radioactive materials in possession shall be maintained current at all times.

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

6.11 PROCESS CONTROL PROGRAM (PCP)

Changes to the PCP:

1. Shall be documented and records of reviews performed shall be retained as required by Specification 6.10.1.r. This documentation shall contain:

   a. Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s) and

   b. A determination that the change will maintain the overall conformance of the solidified waste product to existing requirements of Federal, State, or other applicable regulations.

2. Shall become effective after review and acceptance by the PORC and the approval of the Plant Manager.

6.12 OFFSITE DOSE CALCULATION MANUAL (ODCM)

Changes to the ODCM:

1. Shall be documented and records of reviews performed shall be retained as required by Specification 6.10.1.r. This documentation shall contain:

   a. Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change.

b. A determination that the change will maintain the level of radioactive effluent control required by 10 CFR 20.106, 40 CFR Part 190, 10 CFR 50.36a, and Appendix I to 10 CFR Part 50 and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations.

2. Shall become effective after review and acceptance by the PORC and the approval of the Plant Manager.

3. Shall be submitted to the Commission in the form of a complete, legible copy of the entire ODCM as part of or concurrent with the Annual Radioactive Effluent Release Report for the period of the report in which any change to the ODCM was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date (e.g., month/year) the change was implemented.

6.13 (Deleted)

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