UNIT 1 IMPROVED TECHNICAL SPECIFICATIONS

1.1 Definitions

OPERABLE — OPERABILITY (continued)	instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication, and other auxiliary equipment that are required for the system, subsystem, division, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).
PHYSICS TESTS	PHYSICS TESTS shall be those tests performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation. These tests are: a. Described in Section 13.6, Startup and Power Test Program, of the FSAR; b. Authorized under the provisions of 10 CFR 50.59; or c. Otherwise approved by the Nuclear Regulatory Commission.
RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the reactor coolant of 2436 MWt.
REACTOR PROTECTION SYSTEM (RPS) RESPONSE TIME	The RPS RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its RPS trip setpoint at the channel sensor until de-energization of the scram pilot valve solenoids. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured.

(continued)

1.1 Definitions (continued)

SHUTDOWN MARGIN (SDM)	SDM shall be the amount of reactivity by which the reactor is subcritical or would be subcritical assuming that: a. The reactor is xenon free; b. The moderator temperature is 68°F; and c. All control rods are fully inserted except for the single control rod of highest reactivity worth, which is assumed to be fully withdrawn. With control rods not capable of being fully inserted, the reactivity worth of these control rods must be accounted for in the determination of SDM.
STAGGERED TEST BASIS	A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during *n* Surveillance Frequency intervals, where *n* is the total number of systems, subsystems, channels, or other designated components in the associated function.
THERMAL POWER	THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.
TURBINE BYPASS SYSTEM RESPONSE TIME	The TURBINE BYPASS SYSTEM RESPONSE TIME consists of two components: a. The time from initial movement of the main turbine stop valve or control valve until 80% of the turbine bypass capacity is established; and b. The time from initial movement of the main turbine stop valve or control valve until initial movement of the turbine bypass valve. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured.

SURVEILLANCE REQUIREMENTS

------------------------------------NOTE------------------------------------
When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided feedwater and main turbine high water level trip capability is maintained.

SURVEILLANCE		FREQUENCY
SR 3.3.2.2.1	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.2.2.2	Perform CHANNEL CALIBRATION. The Allowable Value shall be ≤ 56.5 inches.	18 months
SR 3.3.2.2.3	Perform LOGIC SYSTEM FUNCTIONAL TEST including valve actuation.	18 months

3.3 INSTRUMENTATION

3.3.3.1 Post Accident Monitoring (PAM) Instrumentation

LCO 3.3.3.1 The PAM instrumentation for each Function in Table 3.3.3.1-1 shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

-----NOTES-----

1. LCO 3.0.4 is not applicable.
2. Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one required channel inoperable.	A.1 Restore required channel to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action in accordance with Specification 5.6.6.	Immediately
C. One or more Functions with two or more required channels inoperable.	C.1 Restore all but one required channel to OPERABLE status.	7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. Required Action and associated Completion Time of Condition C not met.	D.1	Enter the Condition referenced in Table 3.3.3.1-1 for the channel.	Immediately
E. As required by Required Action D.1 and referenced in Table 3.3.3.1-1.	E.1	Be in MODE 3.	12 hours
F. As required by Required Action D.1 and referenced in Table 3.3.3.1-1.	F.1	Initiate action in accordance with Specification 5.6.6.	Immediately

SURVEILLANCE REQUIREMENTS

-------------------------------------NOTES-------------------------------------

1. These SRs apply to each Function in Table 3.3.3.1-1.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the other required channel(s) in the associated Function is OPERABLE.

SURVEILLANCE		FREQUENCY
SR 3.3.3.1.1	Perform CHANNEL CHECK.	31 days
SR 3.3.3.1.2	Perform CHANNEL CALIBRATION.	18 months

Table 3.3.3.1-1 (page 1 of 1)
Post Accident Monitoring Instrumentation

FUNCTION	REQUIRED CHANNELS	CONDITIONS REFERENCED FROM REQUIRED ACTION D.1
1. Reactor Steam Dome Pressure	2	E
2. Reactor Vessel Water Level		
a. -317 inches to -17 inches	2	E
b. -150 inches to +60 inches	2	E
c. 0 inches to +60 inches	2	E
d. 0 inches to +400 inches	1	NA
3. Suppression Pool Water Level		
a. 0 inches to 300 inches	2	E
b. 133 inches to 163 inches	2	E
4. Drywell Pressure		
a. -10 psig to +90 psig	2	E
b. -5 psig to +5 psig	2	E
c. 0 psig to +250 psig	2	E
5. Drywell Area Radiation (High Range)	2	F
6. Primary Containment Isolation Valve Position	2 per penetration flow path (a)(b)	E
7. Drywell H_2 Concentration	2	E
8. Drywell O_2 Concentration	2	E
9. Suppression Pool Water Temperature	2(c)	E
10. Drywell Temperature in Vicinity of Reactor Level Instrument Reference Leg	6	E
11. Diesel Generator (DG) Parameters		
a. Output Voltage	1 per DG	NA
b. Output Current	1 per DG	NA
c. Output Power	1 per DG	NA
d. Battery Voltage	1 per DG	NA
12. RHR Service Water Flow	2	E

(a) Not required for isolation valves whose associated penetration flow path is isolated by at least one closed and deactivated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured.

(b) Only one position indication channel is required for penetration flow paths with only one installed control room indication channel.

(c) Monitoring each of four quadrants.

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
G. As required by Required Action A.1 and referenced in Table 3.3.5.1-1.	G.1	Declare ADS valves inoperable.	1 hour from discovery of loss of ADS initiation capability in both trip systems
	AND		
	G.2	Restore channel to OPERABLE status.	96 hours from discovery of inoperable channel concurrent with HPCI or RCIC inoperable AND 8 days
H. Required Action and associated Completion Time of Condition B, C, D, E, F, or G not met.	H.1	Declare associated supported feature(s) inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

NOTES

1. Refer to Table 3.3.5.1-1 to determine which SRs apply for each ECCS Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed as follows: (a) for up to 6 hours for Functions 3.c and 3.f; and (b) for up to 6 hours for Functions other than 3.c and 3.f provided the associated Function or the redundant Function maintains initiation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.5.1.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.5.1.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.5.1.3	Perform CHANNEL CALIBRATION.	92 days
SR 3.3.5.1.4	Perform CHANNEL CALIBRATION.	18 months
SR 3.3.5.1.5	Perform LOGIC SYSTEM FUNCTIONAL TEST.	18 months

3.3 INSTRUMENTATION

3.3.8.1 Loss of Power (LOP) Instrumentation

LCO 3.3.8.1 The LOP instrumentation for each Function in Table 3.3.8.1-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
When the associated diesel generator (DG) is required to be OPERABLE by LCO 3.8.2, "AC Sources — Shutdown."

ACTIONS

-------------------------------------NOTE-------------------------------------
Separate Condition entry is allowed for each channel.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channels inoperable for Functions 1 and 2.	A.1 Restore channel to OPERABLE status.	1 hour
B. One or more channels inoperable for Function 3.	B.1 Verify voltage on associated 4.16 kV bus is ≥ 3825 V.	Once per hour
C. Required Action and associated Completion Time not met.	C.1 Declare associated DG inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

-------------------------------------NOTE-------------------------------------

1. Refer to Table 3.3.8.1-1 to determine which SRs apply for each LOP Function.

2. When a 4.16 kV Emergency Bus Undervoltage channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains initiation capability (for Functions 1 and 2) and annunciation capability (for Function 3).

SURVEILLANCE		FREQUENCY
SR 3.3.8.1.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.8.1.2	Perform CHANNEL FUNCTIONAL TEST.	31 days
SR 3.3.8.1.3	Perform CHANNEL CALIBRATION.	18 months
SR 3.3.8.1.4	Perform LOGIC SYSTEM FUNCTIONAL TEST.	18 months

Table 3.3.8.1-1 (page 1 of 1)
Loss of Power Instrumentation

FUNCTION	REQUIRED CHANNELS PER BUS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage)			
a. Bus Undervoltage	2	SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4	≥ 2800 V
b. Time Delay	2	SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4	≤ 6.5 seconds
2. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage)			
a. Bus Undervoltage	2	SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4	≥ 3280 V
b. Time Delay	2	SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4	≤ 21.5 seconds
3. 4.16 kV Emergency Bus Undervoltage (Annunciation)			
a. Bus Undervoltage	2	SR 3.3.8.1.1 SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4	≥ 3825 V
b. Time Delay	2	SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4	≤ 60 seconds

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.9 RCS Pressure and Temperature (P/T) Limits

LCO 3.4.9 RCS pressure, RCS temperature, RCS heatup and cooldown rates, and the recirculation pump starting temperature requirements shall be maintained within limits.

APPLICABILITY: At all times.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ---------NOTE--------- Required Action A.2 shall be completed if this Condition is entered. ---------------------- Requirements of the LCO not met in MODES 1, 2, and 3.	A.1 Restore parameter(s) to within limits. AND A.2 Determine RCS is acceptable for continued operation.	30 minutes 72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	12 hours 36 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. ---------NOTE--------- Required Action C.2 shall be completed if this Condition is entered. --------------------- Requirements of the LCO not met in other than MODES 1, 2, and 3.	C.1 Initiate action to restore parameter(s) to within limits. <u>AND</u> C.2 Determine RCS is acceptable for operation.	Immediately Prior to entering MODE 2 or 3

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.9.1	-------------------NOTE------------------- Only required to be performed during RCS heatup and cooldown operations and RCS inservice leak and hydrostatic testing. -- Verify: a. RCS pressure and RCS temperature are within the limits specified in Figure 3.4.9-1 and Figure 3.4.9-2; and b. RCS heatup and cooldown rates are $\leq$ 100°F in any 1 hour period.	30 minutes

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.9.2	Verify RCS pressure and RCS temperature are within the criticality limits specified in Figure 3.4.9-3.	Once within 15 minutes prior to control rod withdrawal for the purpose of achieving criticality

(continued)

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.4.9.3	-------------------NOTE------------------ Only required to be met in MODES 1, 2, 3, and 4 during startup of a recirculation pump. --- Verify the difference between the bottom head coolant temperature and the reactor pressure vessel (RPV) coolant temperature is ≤ 145°F.	 15 minutes
SR 3.4.9.4	-------------------NOTE------------------ Only required to be met in MODES 1, 2, 3, and 4 during startup of a recirculation pump. --- Verify the difference between the reactor coolant temperature in the recirculation loop to be started and the RPV coolant temperature is ≤ 50°F.	 15 minutes
SR 3.4.9.5	-------------------NOTE------------------ Only required to be performed when tensioning the reactor vessel head bolting studs. --- Verify reactor vessel flange and head flange temperatures are ≥ 76°F.	 30 minutes

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.9.6	---NOTE--- Not required to be performed until 30 minutes after RCS temperature ≤ 86°F in MODE 4. --- Verify reactor vessel flange and head flange temperatures are ≥ 76°F.	30 minutes
SR 3.4.9.7	---NOTE--- Not required to be performed until 12 hours after RCS temperature ≤ 106°F in MODE 4. --- Verify reactor vessel flange and head flange temperatures are ≥ 76°F.	12 hours

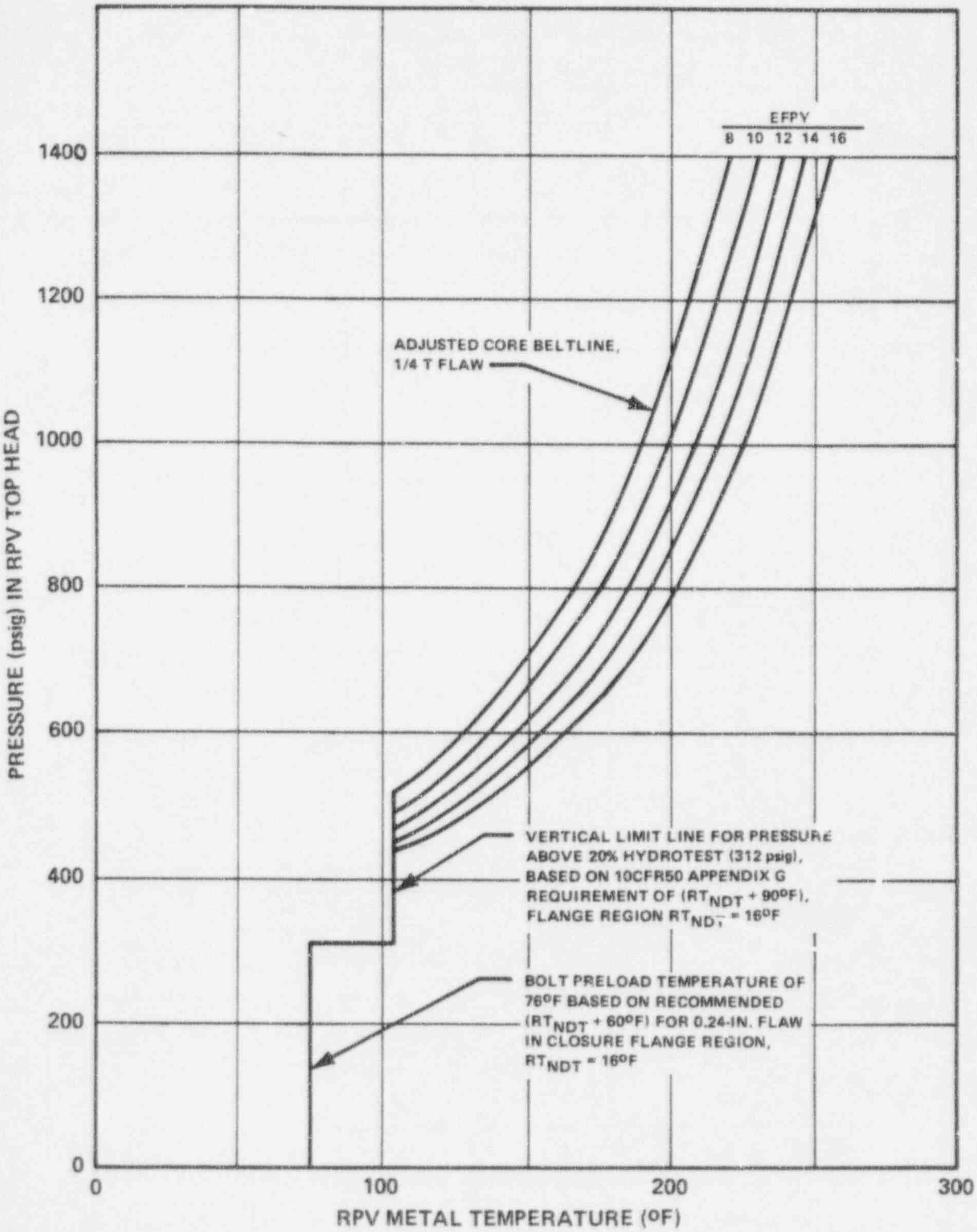


Figure 3.4.9-1 (page 1 of 1)
Temperature/Pressure Limits for
Inservice Hydrostatic and Inservice Leakage Tests

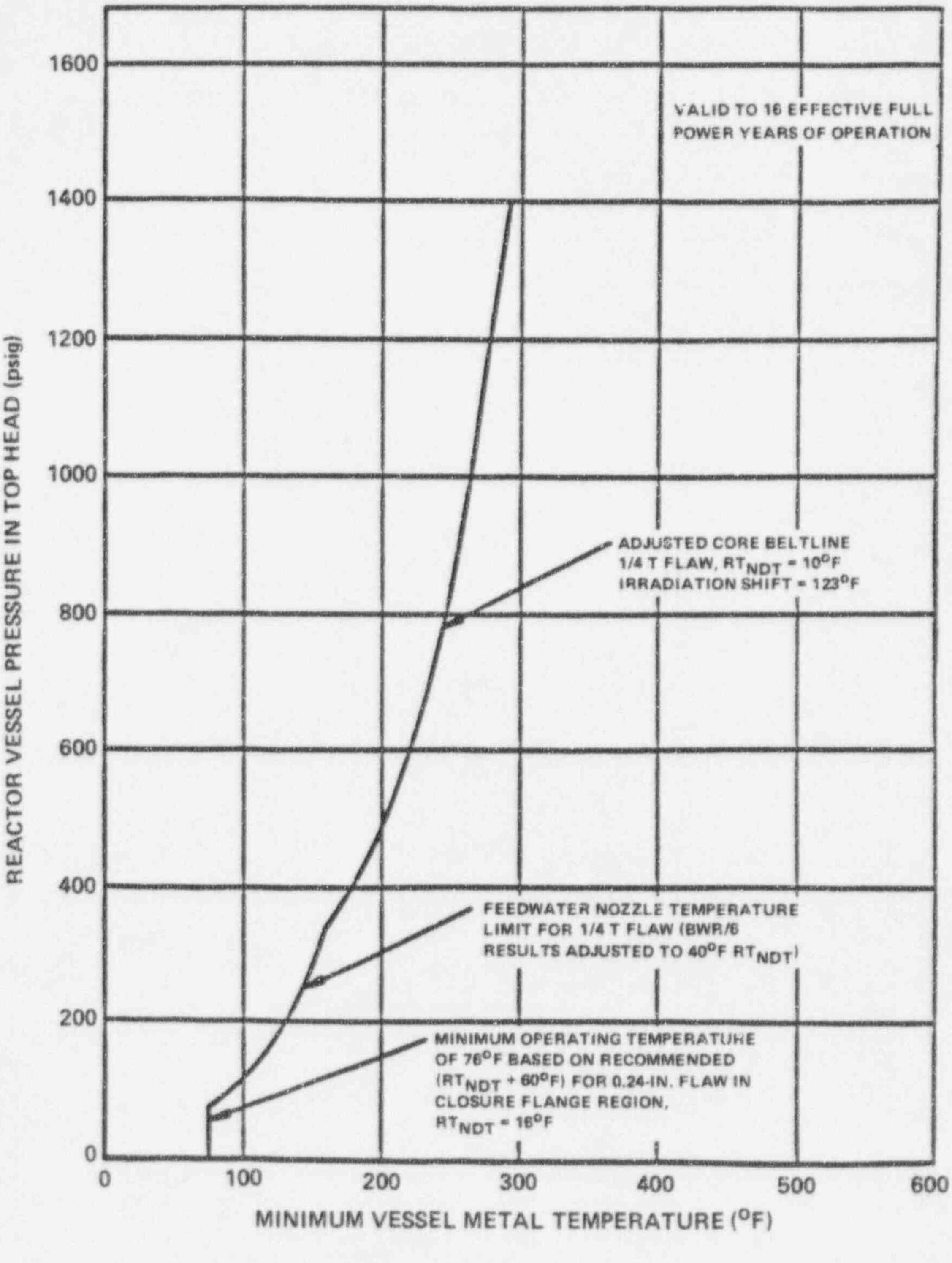


Figure 3.4.9-2 (page 1 of 1)
Temperature/Pressure Limits for Non-Nuclear Heatup,
Low Power Physics Tests, and Cooldown Following a Shutdown

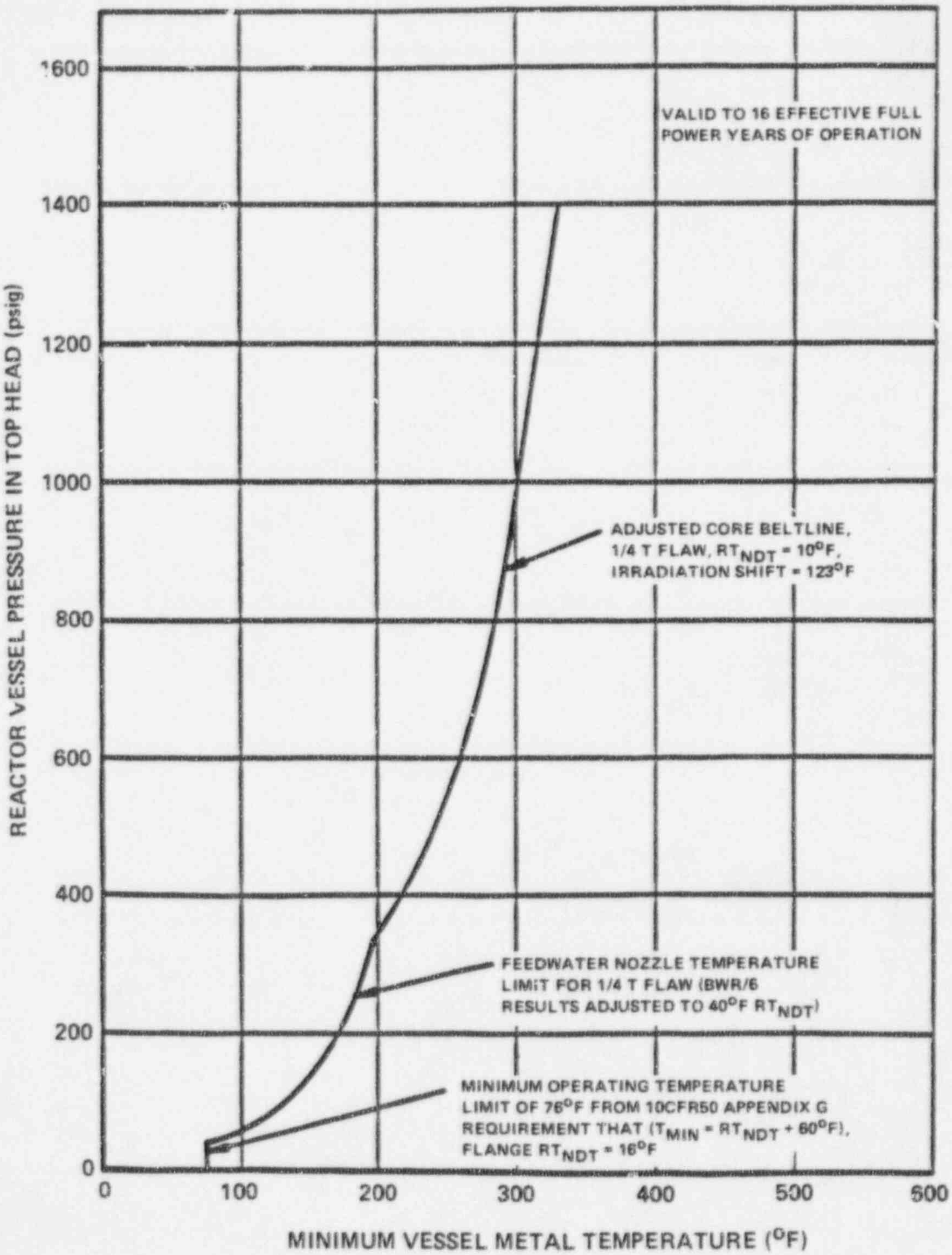


Figure 3.4.9-3 (page 1 of 1)
Temperature/Pressure Limits for Criticality

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.10 Reactor Steam Dome Pressure

LCO 3.4.10 The reactor steam dome pressure shall be ≤ 1020 psig.

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Reactor steam dome pressure not within limit.	A.1 Restore reactor steam dome pressure to within limit.	15 minutes
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.10.1 Verify reactor steam dome pressure is ≤ 1020 psig.	12 hours

SURVEILLANCE		FREQUENCY
SR 3.6.4.3.1	Operate each required Unit 1 and Unit 2 SGT subsystem for ≥ 10 continuous hours with heaters operating.	31 days
SR 3.6.4.3.2	Perform required SGT filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.6.4.3.3	Verify each required SGT subsystem actuates on an actual or simulated initiation signal.	18 months

5.5 Programs and Manuals (continued)

5.5.7 Ventilation Filter Testing Program (VFTP)

The VFTP will establish the required testing of Engineered Safety Feature (ESF) filter ventilation systems at the frequencies specified in Regulatory Guide 1.52, Revision 2, Section 5a and at least once per 18 months or 1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, 2) following painting, fire or chemical release in any ventilation zone communicating with the system, or 3) after every 720 hours of charcoal adsorber operation.

--------------------------------NOTES--------------------------------

1. Tests and evaluations have determined the impact on the Standby Gas Treatment (SGT) System filters of certain types of painting, buffing and grinding, and welding. The use of water based paints and the performance of metal grinding, buffing, or welding are not detrimental to the charcoal filters of the SGT System, either prior to or during operation. These activities will not require surveillance of the system upon their conclusion. This applies to all types of welding conducted at Plant Hatch, and tracking of the quantity of weld material used is not necessary.

2. For testing purposes, the use of refrigerants equivalent to those specified in ASME N510-1989 is acceptable.

----

a. Demonstrate for each of the ESF systems that an inplace test of the HEPA filters shows a penetration and system bypass < 0.05% when tested in accordance with Regulatory Guide 1.52, Revision 2, Section 5c and ASME N510-1989, Section 10, at the system flowrate specified below.

ESF Ventilation System	Flowrate (cfm)
SGT System	3000 to 4000
Main Control Room Environmental Control (MCREC) System	2250 to 2750

(continued)

5.5 Programs and Manuals

5.5.7 Ventilation Filter Testing Program (VFTP) (continued)

b. Demonstrate for each of the ESF systems that an inplace test of the charcoal adsorber shows a penetration and system bypass < 0.05% when tested in accordance with Regulatory Guide 1.52, Revision 2, Section 5d and ASME N510-1989, Section 11, at the system flowrate specified below.

ESF Ventilation System	Flowrate (cfm)
SGT System	3000 to 4000
MCREC System	2250 to 2750

c. Demonstrate for each of the ESF systems that a laboratory test of a sample of the charcoal adsorber, when obtained as described in Regulatory Guide 1.52, Revision 2, Section 6b and ASME N510-1989, Section 15 and Appendix B, shows the methyl iodide penetration less than the value specified below when tested in accordance with ASTM D3803-1989 at a temperature of ≤ 30°C and greater than or equal to the relative humidity specified below.

ESF Ventilation System	Penetration(%)	RH(%)
SGT System	0.2	70
MCREC System	2.0	95

d. Demonstrate for each of the ESF systems that the pressure drop across the combined HEPA filters, the prefilters, and the charcoal adsorbers is less than the value specified below when tested in accordance with ASME N510-1989, Section 8.5.1, at the system flowrate specified below.

ESF Ventilation System	ΔP (inches wg)	Flowrate (cfm)
SGT System	< 6	3000 to 4000
MCREC System	< 6	2250 to 2750

e. Demonstrate that the heaters for the ESF system dissipate the value specified below when tested in accordance with ASME N510-1989, Section 14.5.1.

ESF Ventilation System	Wattage (kW)
SGT System	15 to 20

(continued)

5.5 Programs and Manuals

5.5.7 Ventilation Filter Testing Program (VFTP) (continued)

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the VFTP test frequencies.

(continued)

5.6 Reporting Requirements (continued)

5.6.5 CORE OPERATING LIMITS REPORT (COLR)

a. Core operating limits shall be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and shall be documented in the COLR for the following:

   1) Control Rod Block Instrumentation - Rod Block Monitor for Specification 3.3.2.1.

   2) The Average Planar Linear Heat Generation Rate for Specification 3.2.1.

   3) The Minimum Critical Power Ratio for Specifications 3.2.2 and 3.3.2.1.

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 the following documents:

   1) NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel," (applicable amendment specified in the COLR).

   2) "Safety Evaluation by the Office of Nuclear Reactor Regulation Supporting Amendment No. 157 to Facility Operating License DPR-57," dated September 12, 1988.

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

d. The COLR, including any mid-cycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

(continued)

5.6 Reporting Requirements (continued)

5.6.6 Post Accident Monitoring (PAM) Instrumentation Report

When a report is required by LCO 3.3.3.1, "Post Accident Monitoring (PAM) Instrumentation," a report shall be submitted within the following 14 days. The report shall outline the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the Function to OPERABLE status.

UNIT 1 IMPROVED BASES

BASES

LCO

12. RHR Service Water Flow (continued)

primary indication used by the operator during an accident. Therefore, the PAM specification deals specifically with this portion of the instrument channel.

APPLICABILITY

The PAM instrumentation LCO is applicable in MODES 1 and 2. These variables are related to the diagnosis and preplanned actions required to mitigate DBAs. The applicable DBAs are assumed to occur in MODES 1 and 2. In MODES 3, 4, and 5, plant conditions are such that the likelihood of an event that would require PAM instrumentation is extremely low; therefore, PAM instrumentation is not required to be OPERABLE in these MODES.

ACTIONS

Note 1 has been added to the ACTIONS to exclude the MODE change restriction of LCO 3.0.4. This exception allows entry into the applicable MODE while relying on the ACTIONS even though the ACTIONS may eventually require plant shutdown. This exception is acceptable due to the passive function of the instruments, the operator's ability to diagnose an accident using alternative instruments and methods, and the low probability of an event requiring these instruments.

Note 2 has been provided to modify the ACTIONS related to PAM instrumentation channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable PAM instrumentation channels provide appropriate compensatory measures for separate Functions. As such, a Note has been provided that allows separate Condition entry for each inoperable PAM Function.

(continued)

BASES

ACTIONS (continued)

A.1

When one or more Functions have one required channel that is inoperable, the required inoperable channel must be restored to OPERABLE status within 30 days. The 30 day Completion Time is based on operating experience and takes into account the remaining OPERABLE channels (or, in the case of a Function that has only one required channel, other non-Regulatory Guide 1.97 instrument channels to monitor the Function), the passive nature of the instrument (no critical automatic action is assumed to occur from these instruments), and the low probability of an event requiring PAM instrumentation during this interval.

B.1

If a channel has not been restored to OPERABLE status in 30 days, this Required Action specifies initiation of action in accordance with Specification 5.6.6, which requires a written report to be submitted to the NRC. This report discusses the results of the root cause evaluation of the inoperability and identifies proposed restorative actions. This action is appropriate in lieu of a shutdown requirement, since alternative actions are identified before loss of functional capability, and given the likelihood of plant conditions that would require information provided by this instrumentation.

C.1

When one or more Functions have two or more required channels that are inoperable (i.e., two channels inoperable in the same Function), all but one channel in the Function should be restored to OPERABLE status within 7 days. The Completion Time of 7 days is based on the relatively low probability of an event requiring PAM instrument operation and the availability of alternate means to obtain the required information. Continuous operation with two required channels inoperable in a Function is not acceptable because the alternate indications may not fully meet all performance qualification requirements applied to the PAM instrumentation. Therefore, requiring restoration of one inoperable channel of the Function limits the risk that the

(continued)

BASES

ACTIONS

C.1 (continued)

PAM Function will be in a degraded condition should an accident occur.

D.1

This Required Action directs entry into the appropriate Condition referenced in Table 3.3.3.1-1. The applicable Condition referenced in the Table is Function dependent. Each time an inoperable channel has not met the Required Action of Condition C, and the associated Completion Time has expired, Condition D is entered for that channel and provides for transfer to the appropriate subsequent Condition.

E.1

For the majority of Functions in Table 3.3.3.1-1, if any Required Action and associated Completion Time of Condition C is not met, the plant must be brought to a MODE in which the LCO not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

F.1

Since alternate means of monitoring drywell area radiation have been developed and tested, the Required Action is not to shut down the plant, but rather to follow the directions of Specification 5.6.6. These alternate means may be temporarily installed if the normal PAM channel cannot be restored to OPERABLE status within the allotted time. The report provided to the NRC should discuss the alternate means used, describe the degree to which the alternate means are equivalent to the installed PAM channels, justify the areas in which they are not equivalent, and provide a schedule for restoring the normal PAM channels.

(continued)

BASES (continued)

SURVEILLANCE REQUIREMENTS

As noted at the beginning of the SRs, the following SRs apply to each PAM instrumentation Function in Table 3.3.3.1-1.

The Surveillances are modified by a second Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours, provided the other required channel(s) in the associated Function are OPERABLE. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken. The Note is based upon a NRC Safety Evaluation Report (Reference 1) which concluded that the 6 hour testing allowance does not significantly reduce the probability of properly monitoring post accident parameters, when necessary.

SR 3.3.3.1.1

Performance of the CHANNEL CHECK once every 31 days ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel against a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between instrument channels could be an indication of excessive instrument drift in one of the channels or something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the plant staff, based on a combination of the channel instrument uncertainties, including isolation, indication, and readability. If a channel is outside the criteria, it may be an indication that the sensor or the signal processing equipment has drifted outside its limit.

(continued)

BASES

ACTIONS

F.1 and F.2 (continued)

it is not desired to place the channel in trip (e.g., as in the case where placing the inoperable channel in trip would result in an initiation), Condition H must be entered and its Required Action taken.

G.1 and G.2

Required Action G.1 is intended to ensure that appropriate actions are taken if multiple, inoperable channels within similar ADS trip system Functions result in automatic initiation capability being lost for the ADS. In this situation (loss of automatic initiation capability), the 96 hour or 8 day allowance, as applicable, of Required Action G.2 is not appropriate, and all ADS valves must be declared inoperable within 1 hour after discovery of loss of ADS initiation capability.

The Completion Time is intended to allow the operator time to evaluate and repair any discovered inoperabilities. This Completion Time also allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." For Required Action G.1, the Completion Time only begins upon discovery that the ADS cannot be automatically initiated due to inoperable channels within similar ADS trip system Functions as described in the paragraph above. The 1 hour Completion Time from discovery of loss of initiation capability is acceptable because it minimizes risk while allowing time for restoration or tripping of channels.

Because of the diversity of sensors available to provide initiation signals and the redundancy of the ECCS design, an allowable out of service time of 8 days has been shown to be acceptable (Ref. 5) to permit restoration of any inoperable channel to OPERABLE status if both HPCI and RCIC are OPERABLE (Required Action G.2). If either HPCI or RCIC is inoperable, the time shortens to 96 hours. If the status of HPCI or RCIC changes such that the Completion Time changes from 8 days to 96 hours, the 96 hours begins upon discovery of HPCI or RCIC inoperability. However, the total time for an inoperable channel cannot exceed 8 days. If the status of HPCI or RCIC changes such that the Completion Time changes from 96 hours to 8 days, the "time zero" for beginning the 8 day "clock" begins upon discovery of the

(continued)

BASES

ACTIONS

G.1 and G.2 (continued)

inoperable channel. If the inoperable channel cannot be restored to OPERABLE status within the allowable out of service time, Condition H must be entered and its Required Action taken. The Required Actions do not allow placing the channel in trip since this action would not necessarily result in a safe state for the channel in all events.

H.1

With any Required Action and associated Completion Time not met, the associated feature(s) may be incapable of performing the intended function, and the supported feature(s) associated with inoperable untripped channels must be declared inoperable immediately.

SURVEILLANCE REQUIREMENTS

As noted in the beginning of the SRs, the SRs for each ECCS instrumentation Function are found in the SRs column of Table 3.3.5.1-1.

The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours as follows: (a) for Functions 3.c and 3.f; and (b) for Functions other than 3.c and 3.f provided the associated Function or the redundant Function maintains initiation capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken. This Note is based on the reliability analysis (Ref. 5) assumption of the average time required to perform channel surveillance. That analysis demonstrated that the 6 hour testing allowance does not significantly reduce the probability that the ECCS will initiate when necessary.

(continued)

BASES

BACKGROUND

1. Main Steam Line Isolation (continued)

MSL Isolation Functions isolate the Group 1 valves.

2. Primary Containment Isolation

Most Primary Containment Isolation Functions receive inputs from four channels. The outputs from these channels are arranged into two two-out-of-two logic trip systems. One trip system initiates isolation of all inboard primary containment isolation valves, while the other trip system initiates isolation of all outboard primary containment isolation valves. Each logic closes one of the two valves on each penetration, so that operation of either logic isolates the penetration. The TIP ball valves isolation does not occur until the TIPs have been fully retracted (The logic also sends a TIP retraction signal).

The exception to this arrangement is the Drywell Radiation — High Function. This Function has two channels, whose outputs are arranged in two one-out-of-one logic trip systems. Each trip system isolates one valve per associated penetration, similar to the two-out-of-two logic described above.

Primary Containment Isolation Drywell Pressure — High and Reactor Vessel Water Level — Low, Level 3 Functions isolate the Group 2, 6, 7, 10, and 12 valves. Reactor Building and Refueling Floor Exhaust Radiation — High Functions isolate the Group 6, 10, and 12 valves. Primary Containment Isolation Drywell Radiation — High Function isolates the 18 inch containment purge and vent valves.

3, 4. High Pressure Coolant Injection System Isolation and Reactor Core Isolation Cooling System Isolation

Most Functions that isolate HPCI and RCIC receive input from two channels, with each channel in one trip system using a one-out-of-one logic. Each of the two trip systems in each isolation group is connected to one of the two valves on each associated penetration.

(continued)

BASES

BACKGROUND

3, 4. High Pressure Coolant Injection System Isolation and Reactor Core Isolation Cooling System Isolation (continued)

The exceptions are the HPCI and RCIC Turbine Exhaust Diaphragm Pressure — High and Steam Supply Line Pressure — Low Functions. These Functions receive inputs from four turbine exhaust diaphragm pressure and four steam supply pressure channels for each system. The outputs from the turbine exhaust diaphragm pressure and steam supply pressure channels are each connected to two two-out-of-two trip systems. Additionally, each trip system of the Steam Line Flow — High Functions receives input from a low differential pressure channel. The low differential pressure channels are not required for OPERABILITY. Each trip system isolates one valve per associated penetration.

HPCI and RCIC Functions isolate the Group 3, 4, 8, and 9 valves.

5. Reactor Water Cleanup System Isolation

The Reactor Vessel Water Level — Low Low, Level 2 Isolation Function receives input from four reactor vessel water level channels. The outputs from the reactor vessel water level channels are connected into two two-out-of-two trip systems. The Area Temperature — High Function receives input from six temperature monitors, three to each trip system. The Area Ventilation Differential Temperature — High Function receives input from six differential temperature monitors, three in each trip system. These are configured so that any one input will trip the associated trip system. Each of the two trip systems is connected to one of the two valves on the RWCU penetration. However, the SLC System Initiation Function only provides an input to one trip system, thus closes only one valve.

RWCU Functions isolate the Group 5 valves.

6. RHR Shutdown Cooling System Isolation

The Reactor Vessel Water Level — Low, Level 3 Function receives input from four reactor vessel water level channels. The outputs from the reactor vessel water level channels are connected to two two-out-of-two trip systems.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

2.d., 2.e. Reactor Building and Refueling Floor Exhaust Radiation — High

High secondary containment exhaust radiation is an indication of possible gross failure of the fuel cladding. The release may have originated from the primary containment due to a break in the RCPB. When Exhaust Radiation — High is detected, valves whose penetrations communicate with the primary containment atmosphere are isolated to limit the release of fission products.

The Exhaust Radiation — High signals are initiated from radiation detectors that are located near the ventilation exhaust ductwork coming from the reactor building and the refueling floor zones, respectively. The signal from each detector is input to an individual monitor whose trip outputs are assigned to an isolation channel. Four channels of Reactor Building Exhaust — High Function and four channels of Refueling Floor Exhaust — High Function are available and are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function.

The Allowable Values are chosen to ensure radioactive releases do not exceed offsite dose limits.

These Functions isolate the Group 6, 10, and 12 valves.

High Pressure Coolant Injection and Reactor Core Isolation Cooling Systems Isolation

3.a., 4.a. HPCI and RCIC Steam Line Flow — High

Steam Line Flow — High Functions are provided to detect a break of the RCIC or HPCI steam lines and initiate closure of the steam line isolation valves of the appropriate system. If the steam is allowed to continue flowing out of the break, the reactor will depressurize and the core can uncover. Therefore, the isolations are initiated on high flow to prevent or minimize core damage. The isolation action, along with the scram function of the RPS, ensures that the fuel peak cladding temperature remains below the limits of 10 CFR 50.46. Specific credit for these Functions is not assumed in any FSAR accident analyses since the bounding analysis is performed for large breaks such as

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

3.a., 4.a. HPCI and RCIC Steam Line Flow — High (continued)

recirculation and MSL breaks. However, these instruments prevent the RCIC or HPCI steam line breaks from becoming bounding.

The HPCI and RCIC Steam Line Flow — High signals are initiated from transmitters (two for HPCI and two for RCIC) that are connected to the system steam lines. Two channels of both HPCI and RCIC Steam Line Flow — High Functions are available and are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function.

The Allowable Values are chosen to be low enough to ensure that the trip occurs to prevent fuel damage and maintains the MSLB event as the bounding event. The Allowable Values correspond to ≤ 215 inches water column for HPCI and ≤ 190 inches water column for RCIC, which are the parameters monitored on control room instruments.

These Functions isolate the Group 3 and 4 valves, as appropriate.

3.b., 4.b. HPCI and RCIC Steam Supply Line Pressure — Low

Low MSL pressure indicates that the pressure of the steam in the HPCI or RCIC turbine may be too low to continue operation of the associated system's turbine. These isolations are for equipment protection and are not assumed in any transient or accident analysis in the FSAR. However, they also provide a diverse signal to indicate a possible system break. These instruments are included in Technical Specifications (TS) because of the potential for risk due to possible failure of the instruments preventing HPCI and RCIC initiations. Therefore, they meet Criterion 4 of the NRC Policy Statement (Ref. 6).

The HPCI and RCIC Steam Supply Line Pressure — Low signals are initiated from transmitters (four for HPCI and four for RCIC) that are connected to the system steam line. Four channels of both HPCI and RCIC Steam Supply Line Pressure — Low Functions are available and are required to

(continued)

B 3.3 INSTRUMENTATION

B 3.3.8.1 Loss of Power (LOP) Instrumentation

BASES

BACKGROUND

Successful operation of the required safety functions of the Emergency Core Cooling Systems (ECCS) is dependent upon the availability of adequate power sources for energizing the various components such as pump motors, motor operated valves, and the associated control components. The LOP instrumentation monitors the 4.16 kV emergency buses. Offsite power is the preferred source of power for the 4.16 kV emergency buses. If the monitors determine that insufficient power is available, the buses are disconnected from the offsite power sources and connected to the onsite diesel generator (DG) power sources.

Each 4.16 kV emergency bus has its own independent LOP instrumentation and associated trip logic. The voltage for each bus is monitored at two levels: 4.16 kV Emergency Bus Undervoltage Loss of Voltage and Degraded Voltage, however, only the Loss of Voltage Function is part of this LCO. The Loss of Voltage Function causes various bus transfers and disconnects and is monitored by two undervoltage relays for each emergency bus, whose outputs are arranged in a two-out-of-two logic configuration for all affected components except the DGs. The DG start logic configuration is one-out-of-two (Ref. 1). The channels include electronic equipment (e.g., trip units) that compares measured input signals with pre-established setpoints. When the setpoint is exceeded, the channel output relay actuates, which then outputs a LOP trip signal to the trip logic.

Each 4.16 kV emergency bus has its own independent LOP alarm instrumentation to provide an anticipatory alarm and the initiation of corrective measures to restore emergency bus voltages. The alarms are set higher than the LOP relays. The alarm setpoints are approximately midway between the calculated minimum expected voltage and the calculated minimum required voltage, based on the maximum expected operating; i.e., non-LOCA, load conditions. The alarm setpoints signify that adequate voltage is available for normal operations. The LOP anticipatory alarms provide a total time delay of 60 seconds to reduce the possibility of nuisance alarms, while permitting prompt detection of potential low voltage conditions.

(continued)

BASES

BACKGROUND (continued)	Each 4.16 kV emergency bus has a dedicated low voltage annunciator fed by two relays and their associated time delays. The logic for the annunciation function is arranged in a two-out-of-two configuration.
APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY	The LOP instrumentation is required for Engineered Safety Features to function in any accident with a loss of offsite power. The required channels of LOP instrumentation ensure that the ECCS and other assumed systems powered from the DGs, provide plant protection in the event of any of the Reference 2, 3, and 4 analyzed accidents in which a loss of offsite power is assumed. The initiation of the DGs on loss of offsite power, and subsequent initiation of the ECCS, ensure that the fuel peak cladding temperature remains below the limits of 10 CFR 50.46.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

The Bus Undervoltage Allowable Values are low enough to prevent inadvertent power supply transfer, but high enough to ensure that power is available to the required equipment. The Time Delay Allowable Values are long enough to provide time for the offsite power supply to recover to normal voltages, but short enough to ensure that power is available to the required equipment.

Two channels of 4.16 kV Emergency Bus Undervoltage (Loss of Voltage) Function per associated emergency bus are only required to be OPERABLE when the associated DG is required to be OPERABLE to ensure that no single instrument failure can preclude the DG function. (Two channels input to each of the three DGs.) Refer to LCO 3.8.1, "AC Sources — Operating," and 3.8.2, "AC Sources — Shutdown," for Applicability Bases for the DGs.

2. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage)

A reduced voltage condition on a 4.16 kV emergency bus indicates that, while offsite power may not be completely lost to the respective emergency bus, available power may be insufficient for starting large ECCS motors without risking damage to the motors that could disable the ECCS Function. Therefore, power supply to the bus is transferred from offsite power to onsite DG power when the voltage on the bus drops below the Degraded Voltage Function Allowable Values (degraded voltage with a time delay). This ensures that adequate power will be available to the required equipment.

The Bus Undervoltage Allowable Values are low enough to prevent inadvertent power supply transfer, but high enough to ensure that sufficient power is available to the large ECCS motors. The Time Delay Allowable Values are long enough for the offsite power supply to usually recover. This minimizes the potential that short duration disturbances will adversely impact the availability of the offsite power supply. Manual actions are credited in the range of 78.8 to 92% of 4.16 kV to restore bus voltages or to initiate a plant shutdown. The range specified for manual actions indicates that sufficient power is available to the large ECCS motors; however, sufficient voltage for equipment at lower voltages required for LOCA conditions may not be available.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

Two channels of 4.16 kV Emergency Bus Undervoltage (Degraded Voltage) Function per associated bus are only required to be OPERABLE when the associated DG is required to be OPERABLE to ensure that no single instrument failure can preclude the DG function. (Two channels input to each of the three emergency buses and DGs.) Refer to LCO 3.8.1 and LCO 3.8.2 for Applicability Bases for the DGs.

3. 4.16 kV Emergency Bus Undervoltage (Anticipatory Alarm)

A reduced voltage condition on a 4.16 kV emergency bus indicates that, while offsite power is adequate for normal operating conditions, available power may be marginal for some equipment required for LOCA conditions. Therefore, the anticipatory alarms actuate when the 4.16 kV bus voltages approach the minimum required voltage for normal; i.e., non-LOCA conditions. This ensures that manual actions will be initiated to restore the bus voltages or to initiate a plant shutdown.

Two channels of 4.16 kV Emergency Bus Undervoltage (Anticipatory Alarm) Function per associated bus are only required to be OPERABLE when the associated DG is required to be OPERABLE. (Two channels input to each of the three emergency buses.)

ACTIONS

A Note has been provided to modify the ACTIONS related to LOP instrumentation channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable LOP instrumentation channels provide appropriate compensatory measures for separate inoperable channels. As such, a Note has been provided that allows separate Condition entry for each inoperable LOP instrumentation channel.

(continued)

BASES

ACTIONS

A.1 (continued)

With one or more channels of Function 1 or 2 inoperable, the Function does not maintain initiation capability for the associated emergency bus. Therefore, only 1 hour is allowed to restore the inoperable channel to OPERABLE status. The Required Action does not allow placing a channel in trip since this action will result in a DG initiation.

(continued)

BASES

ACTIONS

A.1 (continued)

The Completion Time is intended to allow the operator time to evaluate and repair any discovered inoperabilities. The 1 hour Completion Time is acceptable because it minimizes risk while allowing time for restoration or tripping of channels.

B.1

Each 4.16 kV bus has a dedicated annunciator fed by two relays and associated time delays in a two-out-of-two logic configuration. Both relays and their associated time delays are required to be OPERABLE. Therefore, the loss of either required relay or time delay renders Function 3 incapable of performing the intended function. Since the intended function is to alert personnel to a lowering voltage condition and the voltage reading is available for each bus on the control room front panels, the Required Action is verification of the voltage to be above the annunciator setpoint (nominal) hourly.

C.1

If any Required Action and associated Completion Time are not met, the associated Function does not maintain initiation capability for the associated emergency bus. Therefore, the associated DG(s) is declared inoperable immediately. This requires entry into applicable Conditions and Required Actions of LCO 3.8.1 and LCO 3.8.2, which provide appropriate actions for the inoperable DG(s).

SURVEILLANCE REQUIREMENTS

As noted at the beginning of the SRs, the SRs for each LOP instrumentation Function are located in the SRs column of Table 3.3.8.1-1. The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains initiation capability (for Functions 1 and 2) and annunciation capability (for Function 3). Functions 1 and 2 maintain initiation capability provided that, for 2 of the 3 emergency buses, the following can be initiated by the Function: DG start, disconnect from the offsite power

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

source, DG output breaker closure, load shed, and activation of the ECCS pump power permissive. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken.

SR 3.3.8.1.1

Performance of the CHANNEL CHECK once every 12 hours ensures that a gross failure of instrumentation or a failure of annunciation has not occurred. A CHANNEL CHECK is defined for Function 3 to be a comparison of the annunciator status to the bus voltage and an annunciator test confirming the annunciator is capable of lighting and sounding. A CHANNEL CHECK will detect gross channel failure or an annunciator failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

If a channel is outside the match criteria, it may be an indication that the instrument has drifted outside its limit.

The frequency is based upon operating experience that demonstrates channel failure is rare. Thus, performance of the CHANNEL CHECK ensures that undetected outright channel or annunciator failure is limited to 12 hours. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with channels required by the LCO.

SR 3.3.8.1.2

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

The Frequency of 31 days is based on operating experience with regard to channel OPERABILITY and drift, which demonstrates that failure of more than one channel of a given Function in any 31 day interval is a rare event.

(continued)

BASES

ACTIONS

B.1 and B.2 (continued)

During the period when the reactor coolant is being circulated by an alternate method (other than by the required RHR shutdown cooling subsystem or recirculation pump), the reactor coolant temperature and pressure must be periodically monitored to ensure proper function of the alternate method. The once per hour Completion Time is deemed appropriate.

SURVEILLANCE REQUIREMENTS

SR 3.4.8.1

This Surveillance verifies that one RHR shutdown cooling subsystem or recirculation pump is in operation and circulating reactor coolant. The required flow rate is determined by the flow rate necessary to provide sufficient decay heat removal capability. The Frequency of 12 hours is sufficient in view of other visual and audible indications available to the operator for monitoring the RHR subsystem in the control room.

REFERENCES

1. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

B 3.4 REACTOR COOLANT SYSTEM (RCS)

B 3.4.9 RCS Pressure and Temperature (P/T) Limits

BASES

BACKGROUND

All components of the RCS are designed to withstand effects of cyclic loads due to system pressure and temperature changes. These loads are introduced by startup (heatup) and shutdown (cooldown) operations, power transients, and reactor trips. This LCO limits the pressure and temperature changes during RCS heatup and cooldown, within the design assumptions and the stress limits for cyclic operation.

This Specification contains P/T limit curves for heatup, cooldown, and inservice leakage and hydrostatic testing, and also limits the maximum rate of change of reactor coolant temperature. The criticality curve provides limits for both heatup and criticality.

Each P/T limit curve defines an acceptable region for normal operation. The usual use of the curves is operational guidance during heatup or cooldown maneuvering, when pressure and temperature indications are monitored and compared to the applicable curve to determine that operation is within the allowable region.

The LCO establishes operating limits that provide a margin to brittle failure of the reactor vessel and piping of the reactor coolant pressure boundary (RCPB). The vessel is the component most subject to brittle failure. Therefore, the LCO limits apply mainly to the vessel.

10 CFR 50, Appendix G (Ref. 1), requires the establishment of P/T limits for material fracture toughness requirements of the RCPB materials. Reference 1 requires an adequate margin to brittle failure during normal operation, anticipated operational occurrences, and system hydrostatic tests. It mandates the use of the ASME Code, Section III, Appendix G (Ref. 2).

The actual shift in the RT_{NDT} of the vessel material will be established periodically by removing and evaluating the irradiated reactor vessel material specimens, in accordance with ASTM E 185 (Ref. 3) and Appendix H of 10 CFR 50 (Ref. 4). The operating P/T limit curves will be adjusted,

(continued)

BASES

BACKGROUND (continued)

as necessary, based on the evaluation findings and the recommendations of Reference 5.

The P/T limit curves are composite curves established by superimposing limits derived from stress analyses of those portions of the reactor vessel and head that are the most restrictive. At any specific pressure, temperature, and temperature rate of change, one location within the reactor vessel will dictate the most restrictive limit. Across the span of the P/T limit curves, different locations are more restrictive, and, thus, the curves are composites of the most restrictive regions.

The heatup curve represents a different set of restrictions than the cooldown curve because the directions of the thermal gradients through the vessel wall are reversed. The thermal gradient reversal alters the location of the tensile stress between the outer and inner walls.

The criticality limits include the Reference 1 requirement that they be at least 40°F above the heatup curve or the cooldown curve and not lower than the minimum permissible temperature for the inservice leakage and hydrostatic testing.

The consequence of violating the LCO limits is that the RCS has been operated under conditions that can result in brittle failure of the RCPB, possibly leading to a nonisolable leak or loss of coolant accident. In the event these limits are exceeded, an evaluation must be performed to determine the effect on the structural integrity of the RCPB components. ASME Code, Section XI, Appendix E (Ref. 6), provides a recommended methodology for evaluating an operating event that causes an excursion outside the limits.

APPLICABLE SAFETY ANALYSES

The P/T limits are not derived from Design Basis Accident (DBA) analyses. They are prescribed during normal operation to avoid encountering pressure, temperature, and temperature rate of change conditions that might cause undetected flaws to propagate and cause nonductile failure of the RCPB, a condition that is unanalyzed. Reference 8 approved the curves and limits specified in this section. Since the

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

P/T limits are not derived from any DBA, there are no acceptance limits related to the P/T limits. Rather, the P/T limits are acceptance limits themselves since they preclude operation in an unanalyzed condition.

RCS P/T limits satisfy Criterion 2 of the NRC Policy Statement (Ref. 9).

LCO

The elements of this LCO are:

a. RCS pressure and temperature are within the limits specified in Figures 3.4.9-1 and 3.4.9-2, and heatup or cooldown rates are ≤ 100°F during RCS heatup, cooldown, and inservice leak and hydrostatic testing;

b. The temperature difference between the reactor vessel bottom head coolant and the reactor pressure vessel (RPV) coolant is ≤ 145°F during recirculation pump startup;

c. The temperature difference between the reactor coolant in the respective recirculation loop and in the reactor vessel is ≤ 50°F during recirculation pump startup;

d. RCS pressure and temperature are within the criticality limits specified in Figure 3.4.9-3, prior to achieving criticality; and

e. The reactor vessel flange and the head flange temperatures are ≥ 76°F when tensioning the reactor vessel head bolting studs.

These limits define allowable operating regions and permit a large number of operating cycles while also providing a wide margin to nonductile failure.

The rate of change of temperature limits controls the thermal gradient through the vessel wall and is used as input for calculating the heatup, cooldown, and inservice

(continued)

BASES

ACTIONS (continued)

C.1 and C.2

Operation outside the P/T limits in other than MODES 1, 2, and 3 (including defueled conditions) must be corrected so that the RCPB is returned to a condition that has been verified by stress analyses. The Required Action must be initiated without delay and continued until the limits are restored.

Besides restoring the P/T limit parameters to within limits, an evaluation is required to determine if RCS operation is allowed. This evaluation must verify that the RCPB integrity is acceptable and must be completed before approaching criticality or heating up to > 212°F. Several methods may be used, including comparison with pre-analyzed transients, new analyses, or inspection of the components. ASME Code, Section XI, Appendix E (Ref. 6), may be used to support the evaluation; however, its use is restricted to evaluation of the beltline.

Condition C is modified by a Note requiring Required Action C.2 be completed whenever the Condition is entered. The Note emphasizes the need to perform the evaluation of the effects of the excursion outside the allowable limits. Restoration alone per Required Action C.1 is insufficient because higher than analyzed stresses may have occurred and may have affected the RCPB integrity.

SURVEILLANCE REQUIREMENTS

SR 3.4.9.1

Verification that operation is within limits is required every 30 minutes when RCS pressure and temperature conditions are undergoing planned changes. This Frequency is considered reasonable in view of the control room indication available to monitor RCS status. Also, since temperature rate of change limits are specified in hourly increments, 30 minutes permits a reasonable time for assessment and correction of minor deviations.

Surveillance for heatup, cooldown, or inservice leakage and hydrostatic testing may be discontinued when the criteria given in the relevant plant procedure for ending the activity are satisfied.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.4.9.1 (continued)

This SR has been modified with a Note that requires this Surveillance to be performed only during system heatup and cooldown operations and RCS inservice leakage and hydrostatic testing.

SR 3.4.9.2

A separate limit is used when the reactor is approaching criticality. Consequently, the RCS pressure and temperature must be verified within the appropriate limits before withdrawing control rods that will make the reactor critical.

Performing the Surveillance within 15 minutes before control rod withdrawal for the purpose of achieving criticality provides adequate assurance that the limits will not be exceeded between the time of the Surveillance and the time of the control rod withdrawal.

SR 3.4.9.3 and SR 3.4.9.4

Differential temperatures within the applicable limits ensure that thermal stresses resulting from the startup of an idle recirculation pump will not exceed design allowances. In addition, compliance with these limits ensures that the assumptions of the analysis for the startup of an idle recirculation loop (Ref. 7) are satisfied.

Performing the Surveillance within 15 minutes before starting the idle recirculation pump provides adequate assurance that the limits will not be exceeded between the time of the Surveillance and the time of the idle pump start.

An acceptable means of demonstrating compliance with the temperature differential requirement in SR 3.4.9.4 is to compare the temperatures of the operating recirculation loop and the idle loop.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.4.9.3 and SR 3.4.9.4 (continued)

SR 3.4.9.3 and SR 3.4.9.4 have been modified by a Note that requires the Surveillance to be performed only in MODES 1, 2, 3, and 4. In MODE 5, the overall stress on limiting components is lower. Therefore, ΔT limits are not required.

SR 3.4.9.5, SR 3.4.9.6, and SR 3.4.9.7

Limits on the reactor vessel flange and head flange temperatures are generally bounded by the other P/T limits during system heatup and cooldown. However, operations approaching MODE 4 from MODE 5 and in MODE 4 with RCS temperature less than or equal to certain specified values require assurance that these temperatures meet the LCO limits.

The flange temperatures must be verified to be above the limits 30 minutes before and while tensioning the vessel head bolting studs to ensure that once the head is tensioned the limits are satisfied. When in MODE 4 with RCS temperature ≤ 86°F, 30 minute checks of the flange temperatures are required because of the reduced margin to the limits. When in MODE 4 with RCS temperature ≤ 106°F, monitoring of the flange temperature is required every 12 hours to ensure the temperature is within the limits specified.

The 30 minute Frequency reflects the urgency of maintaining the temperatures within limits, and also limits the time that the temperature limits could be exceeded. The 12 hour Frequency is reasonable based on the rate of temperature change possible at these temperatures.

SR 3.4.9.5 is modified by a Note that requires the Surveillance to be performed only when tensioning the reactor vessel head bolting studs. SR 3.4.9.6 is modified by a Note that requires the Surveillance to be initiated 30 minutes after RCS temperature ≤ 86°F in Mode 4. SR 3.4.9.7 is modified by a Note that requires the Surveillance to be initiated 12 hours after RCS temperature ≤ 106°F in Mode 4. The Notes contained in these SRs are necessary to specify when the reactor vessel flange and head flange temperatures are required to be verified to be within the limits specified.

(continued)

BASES

REFERENCES

1. 10 CFR 50, Appendix G.

2. ASME, Boiler and Pressure Vessel Code, Section III, Appendix G.

3. ASTM E 185-82, "Standard Practice for Conducting Surveillance Tests for Light-Water Cooled Nuclear Power Reactor Vessels," July 1982.

4. 10 CFR 50, Appendix H.

5. Regulatory Guide 1.99, Revision 2, May 1988.

6. ASME, Boiler and Pressure Vessel Code, Section XI, Appendix E.

7. FSAR, Section 14.3.6.2.

8. George W. Rivenbark (NRC) letter to J. T. Beckham, Jr. (GPC), Amendment 126 to the Operating License, dated June 20, 1986.

9. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3 6.4.2.2

Verifying that the isolation time of each power operated and each automatic Unit 1 SCIV is within limits is required to demonstrate OPERABILITY. The isolation time test ensures that the SCIV will isolate in a time period less than or equal to that assumed in the safety analyses. The Frequency of this SR was developed based upon engineering judgment and the similarity to PCIVs.

SR 3.6.4.2.3

Verifying that each automatic Unit 1 SCIV closes on a secondary containment isolation signal is required to prevent leakage of radioactive material from secondary containment following a DBA or other accidents. This SR ensures that each automatic SCIV will actuate to the isolation position on a secondary containment isolation signal. The LOGIC SYSTEM FUNCTIONAL TEST in SR 3.3.6.2.5 overlaps this SR to provide complete testing of the safety function. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

REFERENCES

1. FSAR, Section 14.3.3.
2. FSAR, Section 14.3.4.
3. Technical Requirements Manual.
4. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

B 3.6 CONTAINMENT SYSTEMS

B 3.6.4.3 Standby Gas Treatment (SGT) System

BASES

BACKGROUND

The SGT System is required by 10 CFR 50, Appendix A, GDC 41, "Containment Atmosphere Cleanup" (Ref. 1). The function of the SGT System is to ensure that radioactive materials that leak from the primary containment into the secondary containment following a Design Basis Accident (DBA) are filtered and adsorbed prior to exhausting to the environment.

The Unit 1 and Unit 2 SGT Systems each consists of two fully redundant subsystems, each with its own set of dampers, charcoal filter train, and controls. The Unit 1 SGT subsystems' ductwork is separate from the inlet to the filter train to the discharge of the fan. The rest of the ductwork is common. The Unit 2 SGT subsystems' ductwork is separate except for the suction from the drywell and torus, which is common (However, this suction path is not required for subsystem OPERABILITY).

Each charcoal filter train consists of (components listed in order of the direction of the air flow):

a. A demister or moisture separator;

b. An electric heater;

c. A prefilter;

d. A high efficiency particulate air (HEPA) filter;

e. Two charcoal adsorbers for Unit 1 subsystems and one charcoal adsorber for Unit 2 subsystems;

f. A second HEPA filter; and

g. An axial vane fan.

The sizing of the SGT Systems equipment and components is based on the results of an infiltration analysis, as well as an exfiltration analysis of the secondary containment. The internal pressure of the SGT Systems boundary region is

(continued)

BASES

BACKGROUND (continued)

maintained at a negative pressure of 0.25 inches water gauge when the system is in operation, which represents the internal pressure required to ensure zero exfiltration of air from the building when exposed to a 10 mph wind.

The demister is provided to remove entrained water in the air, while the electric heater reduces the relative humidity of the airstream to < 70% (Refs. 2 and 3). The prefilter removes large particulate matter, while the HEPA filter removes fine particulate matter and protects the charcoal from fouling. The charcoal adsorbers remove gaseous elemental iodine and organic iodides, and the final HEPA filter collects any carbon fines exhausted from the charcoal adsorber.

The Unit 1 and Unit 2 SGT Systems automatically start and operate in response to actuation signals indicative of conditions or an accident that could require operation of the system. Following initiation, all required charcoal filter train fans start. Upon verification that the required subsystems are operating, the redundant required subsystem is normally shut down.

APPLICABLE SAFETY ANALYSES

The design basis for the Unit 1 and Unit 2 SGT Systems is to mitigate the consequences of a loss of coolant accident and fuel handling accidents (Refs. 2 and 3). For all events analyzed, the SGT Systems are shown to be automatically initiated to reduce, via filtration and adsorption, the radioactive material released to the environment.

The SGT System satisfies Criterion 3 of the NRC Policy Statement (Ref. 4).

LCO

Following a DBA, a minimum of two SGT subsystems are required to maintain the Unit 1 secondary containment at a negative pressure with respect to the environment and to process gaseous releases. Meeting the LCO requirements for three OPERABLE subsystems (two Unit 1 SGT subsystems and one Unit 2 subsystem) ensures operation of at least two SGT subsystems in the event of a single active failure.

(continued)

BASES

LCO (continued)

In addition, with Unit 1 secondary containment in the modified configuration, the Unit 1 SGT System valves to the Unit 1 reactor building zone are not included as part of Unit 1 SGT System OPERABILITY (i.e., the valves may be secured closed and are not required to open on an actuation signal).

APPLICABILITY

In MODES 1, 2, and 3, a LOCA could lead to a fission product release to primary containment that leaks to secondary containment. Therefore, Unit 1 and Unit 2 SGT Systems OPERABILITY are required during these MODES.

In MODES 4 and 5, the probability and consequences of a LOCA are reduced due to the pressure and temperature limitations in these MODES. Therefore, maintaining the SGT Systems in OPERABLE status is not required in MODE 4 or 5, except for other situations under which significant releases of radioactive material can be postulated, such as during operations with a potential for draining the reactor vessel (OPDRVs), during CORE ALTERATIONS, or during movement of irradiated fuel assemblies in the secondary containment.

ACTIONS

A.1

With one required Unit 1 or Unit 2 SGT subsystem inoperable, the inoperable subsystem must be restored to OPERABLE status in 7 days. In this condition, the remaining required OPERABLE SGT subsystems are adequate to perform the required radioactivity release control function. However, the overall system reliability is reduced because a single failure in one of the remaining required OPERABLE subsystems could result in the radioactivity release control function not being adequately performed. The 7 day Completion Time is based on consideration of such factors as the availability of the OPERABLE redundant SGT subsystems and the low probability of a DBA occurring during this period.

B.1 and B.2

If the SGT subsystem cannot be restored to OPERABLE status within the required Completion Time in MODE 1, 2, or 3, the

(continued)

BASES

ACTIONS

B.1 and B.2 (continued)

plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

C.1, C.2.1, C.2.2, and C.2.3

During movement of irradiated fuel assemblies in the secondary containment, during CORE ALTERATIONS, or during OPDRVs, when Required Action A.1 cannot be completed within the required Completion Time, two remaining required OPERABLE SGT subsystems should immediately be placed in operation. This action ensures that the remaining subsystems are OPERABLE, that no failures that could prevent automatic actuation have occurred, and that any other failure would be readily detected.

An alternative to Required Action C.1 is to immediately suspend activities that represent a potential for releasing radioactive material to the secondary containment, thus placing the plant in a condition that minimizes risk. If applicable, CORE ALTERATIONS and movement of irradiated fuel assemblies must immediately be suspended. Suspension of these activities must not preclude completion of movement of a component to a safe position. Also, if applicable, actions must immediately be initiated to suspend OPDRVs in order to minimize the probability of a vessel draindown and subsequent potential for fission product release. Actions must continue until OPDRVs are suspended.

The Required Actions of Condition C have been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODE 4 or 5, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, in either case, inability to suspend movement of irradiated fuel assemblies would not be a sufficient reason to require a reactor shutdown.

(continued)

BASES

ACTIONS (continued)

D.1

If two or three required SGT subsystems are inoperable in MODE 1, 2 or 3, the Unit 1 and Unit 2 SGT Systems may not be capable of supporting the required radioactivity release control function. Therefore, LCO 3.0.3 must be entered immediately.

E.1, E.2, and E.3

When two or three required SGT subsystems are inoperable, if applicable, CORE ALTERATIONS and movement of irradiated fuel assemblies in secondary containment must immediately be suspended. Suspension of these activities shall not preclude completion of movement of a component to a safe position. Also, if applicable, actions must immediately be initiated to suspend OPDRVs in order to minimize the probability of a vessel draindown and subsequent potential for fission product release. Actions must continue until OPDRVs are suspended.

Required Action E.1 has been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODE 4 or 5, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, in either case, inability to suspend movement of irradiated fuel assemblies would not be a sufficient reason to require a reactor shutdown.

SURVEILLANCE REQUIREMENTS

SR 3.6.4.3.1

Operating each required Unit 1 and Unit 2 SGT subsystem for $\geq$ 10 continuous hours ensures that they are OPERABLE and that all associated controls are functioning properly. It also ensures that blockage, fan or motor failure, or excessive vibration can be detected for corrective action. Operation with the heaters on for $\geq$ 10 continuous hours every 31 days eliminates moisture on the adsorbers and HEPA filters. The 31 day Frequency was developed in consideration of the known reliability of fan motors and controls and the redundancy available in the system.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.4.3.2

This SR verifies that the required Unit 1 and Unit 2 SGT filter testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The VFTP includes testing HEPA filter performance, charcoal adsorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). Specific test frequencies and additional information are discussed in detail in the VFTP.

SR 3.6.4.3.3

This SR verifies that each required Unit 1 and Unit 2 SGT subsystem starts on receipt of an actual or simulated initiation signal. The LOGIC SYSTEM FUNCTIONAL TEST in SR 3.3.6.2.5 overlaps this SR to provide complete testing of the safety function. While this Surveillance can be performed with the reactor at power, operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency. Therefore, the Frequency was found to be acceptable from a reliability standpoint.

REFERENCES

1. 10 CFR 50, Appendix A, GDC 41.
2. FSAR, Section 5.3.
3. Unit 2 FSAR, Section 6.2.3.
4. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

(continued)

UNIT 1 MARKUP OF CURRENT TECHNICAL SPECIFICATIONS AND DISCUSSION OF CHANGES

A.16 S. Operating Cycle - An operating cycle is the interval between the end of one scheduled refueling outage and the end of the next subsequent scheduled refueling outage for the same unit.

Insert 1.1E A.3 T. Primary Containment Integrity - Primary containment integrity means that the drywell and suppression chamber are intact and all the following conditions are satisfied:

1. All non-automatic containment isolation valves on lines connected to the reactor coolant system or containment which are not required to be open during accident conditions are closed. These valves may be opened to perform operational activities.

2. At least one door in the personnel airlock is closed and sealed.

A.17

3. All automatic containment isolation valves are operable or deactivated in the isolated position.

4. All blind flanges and manways are closed.

E

A.7 U. Protective Action - A protective action is an action initiated by the protective system when a limit is reached. A protective action can be at a channel or system level and is essential to the accomplishment of a safety action.

A.7 V. Protective Function - A protective function is the monitoring of one or more plant variables or conditions and the associated initiation of intra-system actions which eventually result in protective action.

A.2 W. Rated Thermal Power (RTP) - Rated thermal power means the reactor is operating, at a steady state power of 2436 megawatts thermal. This is also referred to as 100 percent thermal power.

RTP shall be a total reactor core heat transfer rate to the reactor coolant

X. Reactor Mode - The reactor mode is established by the Mode Switch position. The switch positions are REFUEL, SHUTDOWN, START & HOT STANDBY and RUN; thus the four possible reactor modes are: Refuel Mode, Shutdown Mode, Start & Hot Standby Mode, and Run Mode.

Insert 1.1G A.18

A.7 Y. Reactor Power Operation - Reactor power operation is an operation with the Mode Switch in the START & HOT STANDBY or RUN position with the reactor critical and above 1% of rated thermal power.

Insert 1.1E

PHYSICS TESTS

PHYSICS TESTS shall be those tests performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation. These tests are:

a. Described in Section 13.6, Startup and Power Test Program, of the FSAR;

b. Authorized under the provisions of 10 CFR 50.59; or

c. Otherwise approved by the Nuclear Regulatory Commission.

Insert 1.1F (NOT USED)

E

Insert 1.1G

MODE

A MODE shall correspond to any one inclusive combination of mode switch position, average reactor coolant temperature, and reactor vessel head closure bolt tensioning specified in Table 1.1-1 with fuel in the reactor vessel.

Specification 3.4.9

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS

3.6 PRIMARY SYSTEM BOUNDARY

Applicability

The Limiting Conditions for Operation apply to the operating status of the reactor coolant system.

Objective

The objective of the Limiting Conditions for Operation is to assure the integrity and safe operation of the reactor coolant system.

4.6 PRIMARY SYSTEM BOUNDARY

Applicability

The Surveillance Requirements apply to the periodic examination and testing requirements for the reactor coolant system.

Objective

The objective of the Surveillance Requirements is to determine the condition of the reactor coolant system and the operation of the safety devices related to it.

A.1

Specifications

A. Reactor Coolant Heat-Up and Cooldown

LCO 3.4.9

E | SR 3.4.9.1.b

The average rate of reactor coolant temperature change during normal heatup or cooldown shall not exceed 100°F/hr when averaged over a one-hour period.

B. Reactor Vessel Temperature and Pressure

LCO 3.4.9

E | SR 3.4.9.1.a

1. The reactor vessel shell temperatures during inservice hydrostatic or leak testing shall be at or above the temperatures shown on the curve of Figure 3.6-1.

Specifications

A. Reactor Coolant Heat-Up and Cooldown

The reactor coolant system temperature and pressure shall be determined to be within the limits of Specifications 3.6.A. and 3.6.B. at least once every 30 minutes during reactor coolant heatup and cooldown. SR 3.4.9.1

Note to SR 3.4.9.1

B. Reactor Vessel Temperature and Pressure

Reactor vessel metal temperature at the outside surface of the bottom head in the vicinity of the control rod drive housing and reactor vessel shell adjacent to shell flange shall be recorded at least every ~~15~~ 30 (L.1) minutes during in-service hydrostatic or leak testing when the vessel pressure is ≥ 312 psig. SR 3.4.9.1

Note to SR 3.4.9.1

LIMITING CONDITIONS FOR OPERATION | SURVEILLANCE REQUIREMENTS

3.6.B. Reactor Vessel Temperature and Pressure (Continued)

2. During heatup by non-nuclear means, cooldown following nuclear shutdown or low level physics tests, the reactor vessel shell and fluid temperatures of Specification 4.6.A. shall be at or above the temperatures shown on the curve of Figure 3.6-2.

LCO 3.4.9 — (E) SR 3.4.9.1 .9

3. During all operation with a critical core, other than for low level physics tests, the reactor vessel shell and fluid temperatures of Specification 4.6.A. shall be at or above the temperatures shown on the curves of Figure 3.6-3.

LCO 3.4.9 — (E) SR 3.4.9.2

3.6.C. Reactor Vessel Head Stud Tensioning

The reactor vessel head bolting studs shall not be under tension unless the temperature of the vessel head flange and the head is greater than 76°F.

LCO 3.4.9 — (E) SR 3.4.9.5,6,7

D. Idle Recirculation Loop Startup

The pump in an idle recirculation loop shall not be started unless the temperatures of the coolant within the idle and operating recirculation loops are within 50°F of each other.

LCO 3.4.9 — (E) SR 3.4.9.4

4.6.B. Reactor Vessel Temperature and Pressure (Continued)

Test specimens representing the reactor vessel, base weld and weld heat affected zone metal were installed in the reactor vessel adjacent to the vessel wall at the core midplane level before the start of operation. The number and type of specimens are in accordance with GE report NEDO-10115. The specimens meet the intent of ASTM E185-70.

The next surveillance capsule shall be removed from the vessel at approximately 15 EFPY of operation, as recommended in ASTM E185-82, but not to exceed 16 EFPY.

(A.2)

proposed SR 3.4.9.2 (M.1)

C. Reactor Vessel Head Stud Tensioning

When the reactor vessel head studs are under tension and the reactor is in the Cold Shutdown Condition, the reactor vessel shell temperature immediately below the head flange shall be permanently recorded.

SR 3.4.9.5 SR 3.4.9.6 SR 3.4.9.7

(M.2) proposed frequencies for SR 3.4.9.5, SR 3.4.9.6, and SR 3.4.9.7

D. Idle Recirculation Loop Startup

(A.3) Prior to and during startup of an idle recirculation loop, the temperature of the reactor coolant in the operating and idle loops shall be compared and permanently recorded.

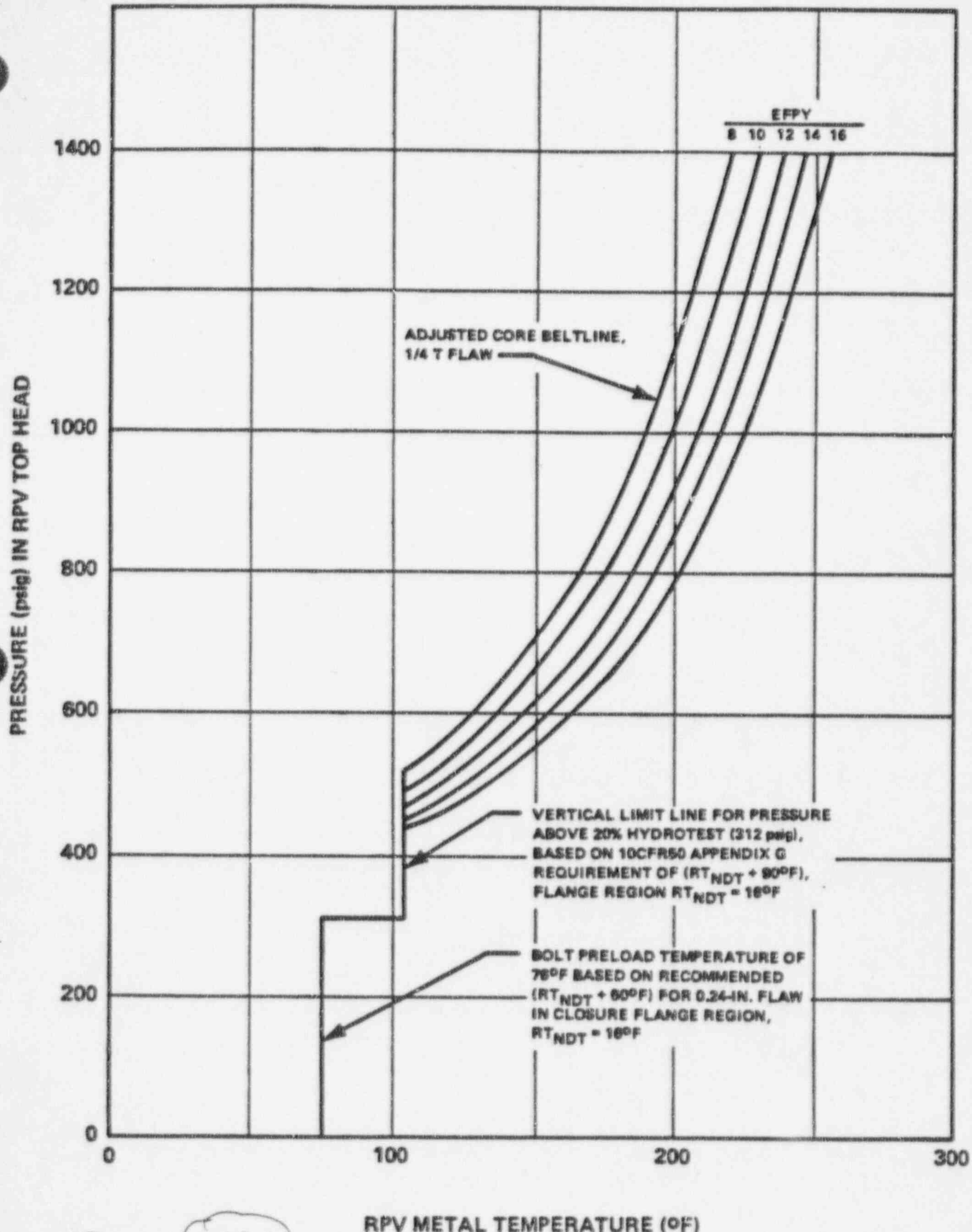
SR 3.4.9.4

Specification 3.4.9

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
3.6.E. Recirculation Pump Start	4.6.E. Recirculation Pump Start (A.3)
LCO 3.4.9 — E — SR 3.4.9.3 — The reactor recirculation pumps shall not be started unless the coolant temperatures between the dome and the bottom head drain are within 145°F.	Prior to starting a recirculation pump, the reactor coolant temperatures in the dome and in the bottom head drain shall be compared and permanently recorded. SR 3.4.9.3

Proposed ACTIONS A, B, and C (M.3)

3 of 6

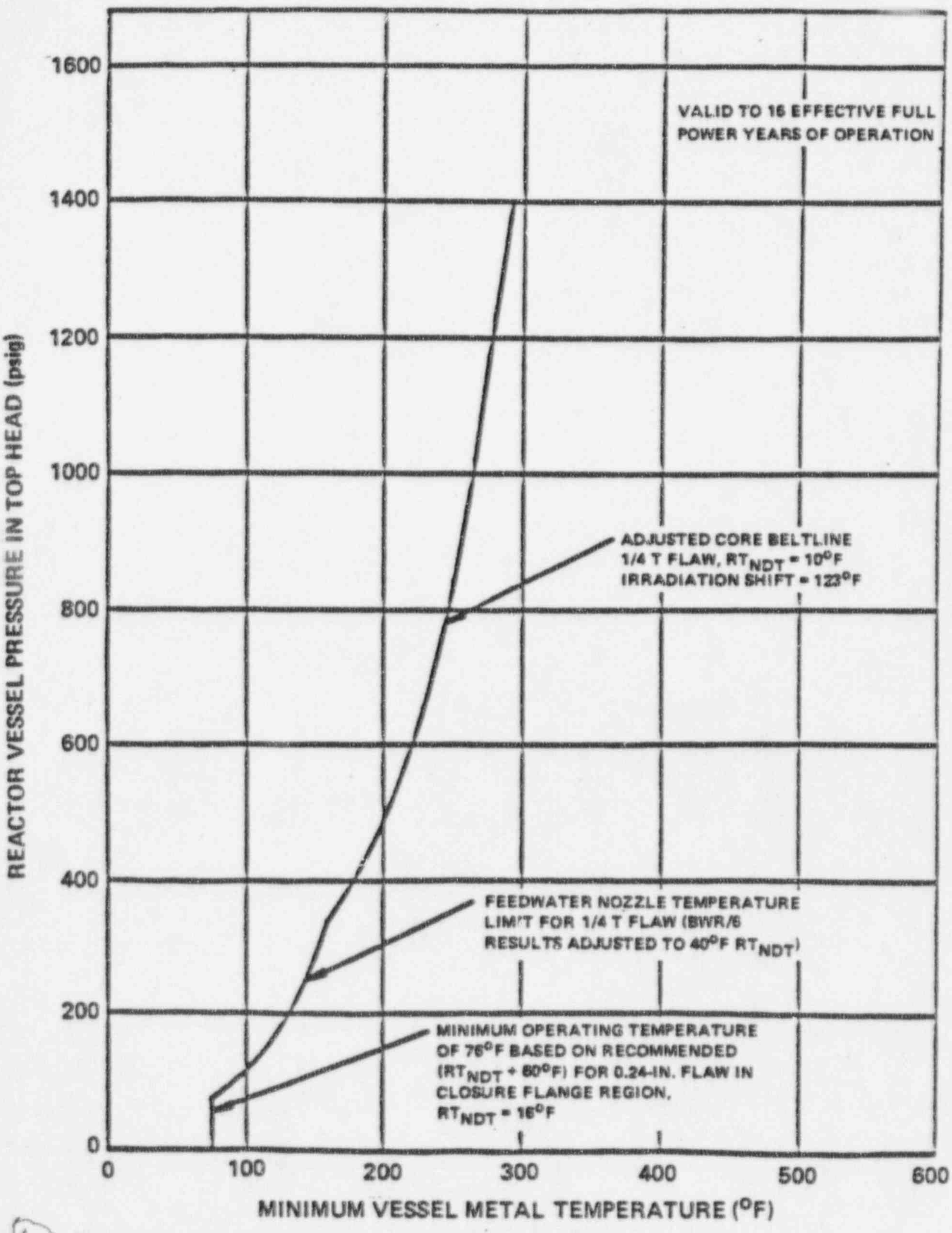


(4.4) Figure ~~3.6-1~~ (3.4.9-1) ~~Pressure versus Minimum Temperature for Pressure Tests, Based on Surveillance Test Results~~

Temperature - Pressure Limits For Inservice Hydrostatic and Inservice Leakage Tests

E

E STET page



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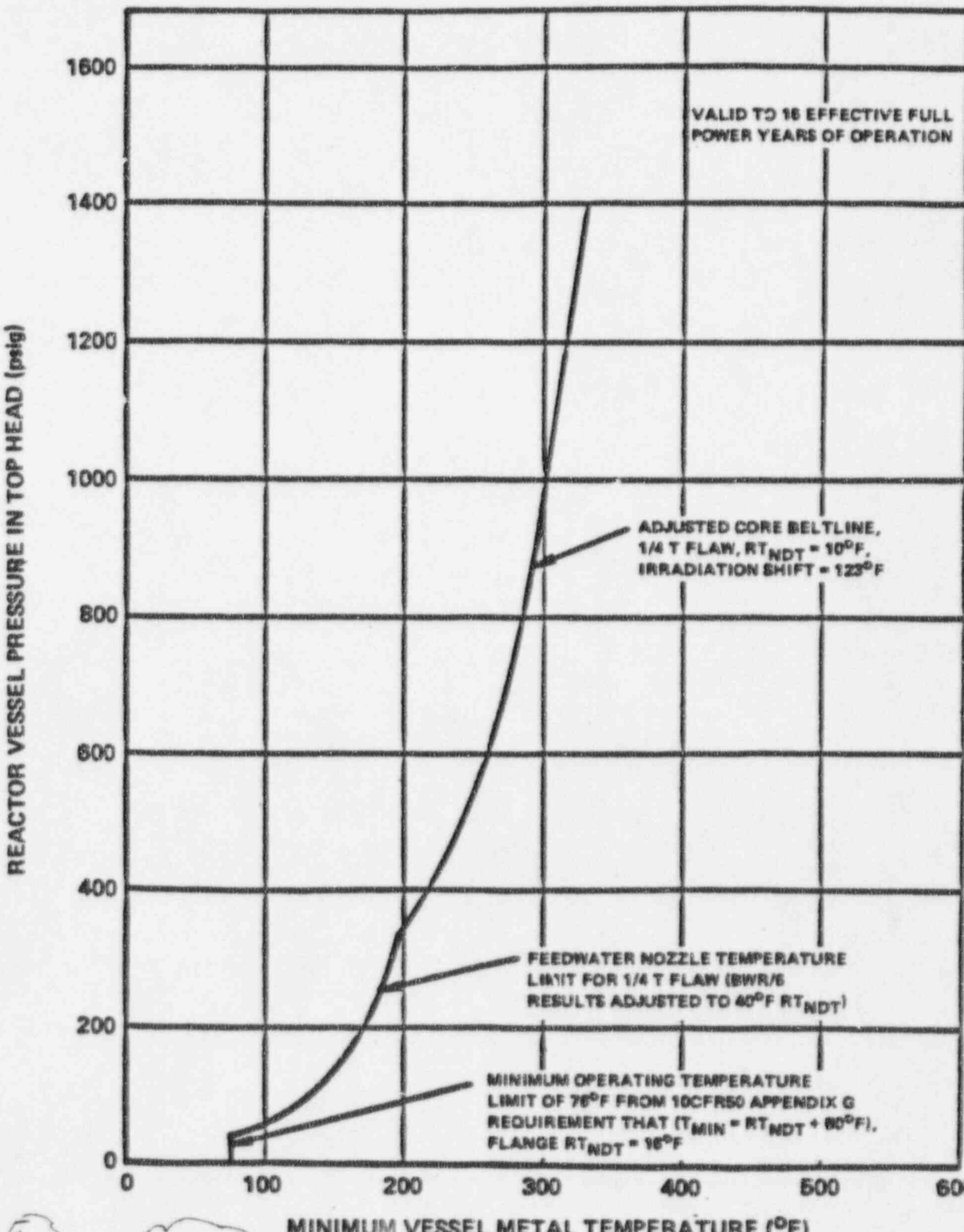
A.4 Figure ~~3.6-2~~ 3.4.9-2. ~~Pressure versus Minimum Temperature for Non-Nuclear Heatup/Cooldown and Low Power Physics Tests~~
Temperature - Pressure Limits for Non-Nuclear Heatup, Low Power Physics Tests and Cooldown Following A Shutdown

5 of 6

E - STET PAGE



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A.4

Figure ~~3.6-3.~~ 3.4.9-3 Temperature-Pressure Limits for Criticality ~~Pressure versus Minimum Temperature for Core Critical Operation other than Low Power Physics Tests (Includes 40°F Margin Required by 10CFR50 Appendix G)~~

6 of 6

DISCUSSION OF CHANGES
ITS: SECTION 3.4.9 - RCS PRESSURE AND TEMPERATURE (P/T) LIMITS

ADMINISTRATIVE

A.1 Reformatting and renumbering requirements are in accordance with the BWR Standard Technical Specifications, NUREG 1433. As a result, the Technical Specifications should be readily readable, and therefore, understandable by plant operators as well as other users. During this reformatting and renumbering process, no technical changes are to the Technical Specifications have been made unless there are identified and justified. In the specific case of the Primary System Boundary Section the new section number is 3.4, which has been titled "Reactor Coolant System (RCS)."

A.2 These surveillances are a duplication of the regulations found in 10 CFR 50 Appendix H. These regulations require licensee compliance and can not be revised by the licensee. Therefore, these details of the regulations within the Technical Specifications are repetitious. Furthermore, approved exemptions to the regulations, and exceptions presented within the regulations themselves, are also details which are adequately presented without repeating the details within the Technical Specifications. Therefore, retaining the requirement to meet the requirements of 10 CFR 50 Appendix H, as modified by approved exemptions, and eliminating the Technical Specification details that are also found in Appendix H, is considered a presentation preference which is administrative.

A.3 For clarity, the terms "prior to and during startup" and "prior to" have been replaced with "15 minutes." This Frequency is effectively the same since the proposed Surveillance now must be performed no more than 15 minutes prior to startup of the idle recirculation loop. This is essentially equivalent to the current requirements.

A.4 Title changes to the P/T curves have been made for consistency with the ITS SRs.

TECHNICAL CHANGE - MORE RESTRICTIVE

M.1 A Surveillance Requirement has been added. SR 3.4.9.2 ensures the RCS pressure and temperature are within the criticality limits once within 15 minutes prior to control rod withdrawal for the purpose of achieving criticality. This is an additional restriction on plant operation.

M.2 Three Surveillance Requirement Frequences have been added. SR 3.4.9.5 ensures the vessel head is not tensioned at too low a temperature every 30 minutes. SRs 3.4.9.6 and 3.4.9.7 ensure the vessel and head flange temperatures do not decrease below the minimum allowed temperature every 30 minutes or every 12 hours, depending upon the RCS temperature. These are additional restrictions on plant operation since the current requirements have no times specified.

M.3 ACTIONS have been added (proposed ACTIONS A, B, and C) to provide direction when the LCO is not met. Currently, no ACTIONS are provided. Proposed ACTIONS are consistent with the BWR Standard Technical Specifications, NUREG 1433, and are additional restrictions on plant operation.

TECHNICAL CHANGE - LESS RESTRICTIVE

"Specific"

L.1 The Frequency of this Surveillance has been changed from 15 minutes to 30 minutes. In addition, the Surveillance must be performed at all pressures, not just at ≥ 312 psig. The metal temperature is not expected to change rapidly due to its large mass. Thus a 30 minute Frequency is adequate. In addition, this new Frequency is consistent with current Unit 2 requirements as well as the BWR Standard Technical Specifications, NUREG 1433.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS

3.7.B.2. Performance Requirements

(A.1) moved to Specification 5.5.7

a. The results of the in-place DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal absorber banks shall show 99% DOP removal and 99% halogenated hydrocarbon removal when tested in accordance with ANSI N510-1975.

b. The results of laboratory carbon sample analysis shall show 90% of radioactive methyl iodine removal when tested in accordance with RDT-M16-1T (80°C, 95% R.H.).

c. Fans shall be shown to operate within +10% -0% design flow when tested in accordance with ANSI N510-1975.

2. Filter Testing

(A.1) moved to Specification 5.5.7

a. The tests and analysis shall be performed at least once per operating cycle, not to exceed 18 months, or after every 720 hours of system operation, or following painting, fire or chemical release in any ventilation zone communicating with the system.

b. DOP testing shall be performed after each complete or partial replacement of the HEPA filter bank or after any structural maintenance on the system housing.

c. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of the charcoal absorber bank or after any structural maintenance on the system housing.

d. Each circuit shall be operated with the heaters on at least 10 hours every month.

SR 3.6.4.3.1

(M.5)

DISCUSSION OF CHANGES
ITS: SECTION 3.6.4.3 - STANDBY GAS TREATMENT SYSTEM

ADMINISTRATIVE

A.1 The technical content of this requirement is being moved to Section 5 of the proposed Technical Specifications in accordance with the format of the BWR Standard Technical Specifications, NUREG 1433. Any technical changes to this requirement are addressed in the Discussion of Changes associated with proposed Specification 5.5.7. A surveillance requirement (proposed SR 3.6.4.3.2) is added to clarify that the tests of the Ventilation Filter Testing Program must also be completed and passed for determining OPERABILITY of the SGT System. Since this is a presentation preference that maintains current requirements, this change is considered administrative.

A.2 The description of the signal used to automatically initiate the SGT System "actual or simulated initiation signal" has been added for clarity. This is consistent with the BWR Standard Technical Specifications, NUREG 1433, and no change is intended.

A.3 This Surveillance has been deleted since there is no bypass valve in the system. The system has internal orifices for filter cooling.

A.4 A new ACTION is proposed (ACTION D) which directs entry into LCO 3.0.3 if two or more required standby gas treatment subsystems are inoperable in MODES 1, 2, or 3. This avoids confusion as to the proper action if in MODES 1, 2, or 3 and simultaneously handling irradiated fuel or conducting operations with a potential for draining the vessel. Since this proposed ACTION effectively results in the same action as the current specification, this change is considered administrative.

TECHNICAL CHANGE - MORE RESTRICTIVE

M.1 An Applicability has been added. The SGT System is now required to be OPERABLE during operations with a potential for draining the reactor vessel to provide mitigation if an inadvertent vessel draindown event occurs. Appropriate Required Actions have also been added (Required Actions C.2.3 and E.3. In addition, Required Actions have been added (proposed Required Actions C.2.2 and E.2) to suspend CORE ALTERATIONS, consistent with the Applicability of Secondary Containment (and SGT System). These are additional restrictions on plant operation.

M.2 An additional shutdown action has been added (Required Action B.1) to not only be in Cold Shutdown (MODE 4) within 36 hours, but to also be in Hot Shutdown (MODE 3) within 12 hours. This is an additional restriction on plant operation.

TECHNICAL CHANGE - MORE RESTRICTIVE
(continued)

M.3 The time to suspend fuel handling has been changed from 4 hours to immediately. This is an additional restriction on plant operation.

M.4 This allowance has been deleted since it is not needed in the proposed Specifications. The new Specifications will allow Unit 1 reactor operations for 7 days with both Unit 2 SGT subsystems inoperable (see comment L.2). Thus, an additional 12 hours, as provided by this allowance, is not needed. The deletion of this allowance is more restrictive on plant operation.

M.5 SR 3.6.4.3.1 requires the SGT System to be run 10 continuous hours each 31 days, while the CTS state a total of 10 hours. This is an additional restriction on plant operations.

TECHNICAL CHANGE - LESS RESTRICTIVE

"Specific"

L.1 The proposed change will delete the requirement to test the other SGT subsystems when one subsystem is inoperable. The requirement for demonstrating operability of the redundant subsystems was originally prescribed because there was a lack of plant operating history and a lack of sufficient equipment failure data. Since that time, plant operating experience has demonstrated that testing of the redundant subsystems when one subsystem is inoperable is not necessary to provide adequate assurance of system operability.

This change will allow credit to be taken for normal periodic Surveillances as a demonstration of operability and availability of the remaining components. The periodic frequencies specified to demonstrate operability of the remaining components have been shown to be adequate to ensure equipment operability. As stated in NRC Generic Letter 87-09, "It is overly conservative to assume that systems or components are inoperable when a surveillance requirement has not been performed. The opposite is in fact the case; the vast majority of surveillances demonstrate the systems or components in fact are operable." Therefore, reliance on the specified surveillance intervals does not result in a reduced level of confidence concerning the equipment availability. Also, the original General Electric Standard Technical Specifications (STS), NUREG 123, and, more specifically, all the Technical Specifications approved for recently licensed BWR's accept the philosophy of system operability based on satisfactory performance of monthly, quarterly, refueling interval, post maintenance or other specified performance tests without requiring additional testing when another system is inoperable (except for diesel generator testing, which is not being changed).

TECHNICAL CHANGE - LESS RESTRICTIVE
(continued)

L.2 An alternative is proposed to suspending operations if a SGT subsystem cannot be returned to OPERABLE status within seven days, and movement of irradiated fuel assemblies, CORE ALTERATIONS, or operations with the potential for draining the reactor vessel are being conducted. The alternative is to initiate two OPERABLE subsystems of SGT and continue to conduct the operations. Since two subsystems are sufficient for any accident, the risk of failure of the subsystems to perform their intended function is significantly reduced if they are running.

L.3 The proposed ACTIONS will allow the one required Unit 2 SGT subsystem to be inoperable (thus both Unit 2 SGT subsystems are inoperable) for up to 7 days without requiring a Unit 1 shutdown or suspension of operations. This is consistent with the 7 days allowed for an inoperable Unit 1 SGT subsystem. With two OPERABLE subsystems (two Unit 1, or one Unit 1 and one Unit 2), the safety analysis assumptions are met, provided no single active failure occurs. Thus, since 7 days has been found to be acceptable for one of the two cases (one Unit 1 SGT subsystem inoperable), it is considered justifiable for the other case (one required Unit 2 SGT subsystem inoperable).

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
B. Standby Gas Treatment System	B. Standby Gas Treatment System
1. Operability Requirements	1. Surveillance When System Operable
1.a. A minimum of three (2 of 2 in Unit 1 and 1 of 2 in Unit 2) of the four independent standby gas treatment system trains shall be operable at all times when Unit 1 secondary containment integrity is required.	5.5.7 At least once per operating cycle, not to exceed 18 months, the following conditions shall be demonstrated:
With one of the Unit 1 standby gas treatment systems inoperable, for any reason, Unit 1 reactor operation and fuel handling and/or handling of casks in the vicinity of the spent fuel pools is permissible for a period of seven (7) days provided that all active components in the remaining operable standby gas treatment systems in each unit (minimum of 1 in Unit 1 and 1 in Unit 2) shall be demonstrated to be operable within 4 hours, and daily thereafter.	5.5.7.d a. Pressure drop across the combined HEPA filters and charcoal absorber bank is less than 6 inches of water at the system design flow rate (+10% -0%). (A.3)
	5.5.7.e b. Operability of inlet heater at rated power when tested in accordance with ANSI N510-1975. (A.2)
	(LA.1) c. Air distribution is uniform within 20% across the filter train when tested in accordance with N510-1975.

See Discussion of Changes for ITS: 3.6.4.3, SGT System, in Section 3.6

(L.2) NOTE 1 to ITS 5.5.7

(A.1) NOTE 2 to ITS 5.5.7

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS

3.7.B.2. Performance Requirements

a. The results of the in-place DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal absorber banks shall show 99% DOP removal and 99% halogenated hydrocarbon removal when tested in accordance with ANSI N510-1975. (A.2) [5.5.7.a] [5.5.7.b]

b. The results of laboratory carbon sample analysis shall show 90% (M.2) of radioactive methyl iodine removal when tested in accordance with RDT-M16-1T (80°C, 95% R.H.). (M.1) [5.5.7.c]

c. Fans shall be shown to operate within +10% -0% design flow (A.3) when tested in accordance with ANSI N510-1975. (A.2) [5.5.7.d]

2. Filter Testing

a. The tests and analysis shall be performed at least once per operating cycle, not to exceed 18 months, or after every 720 hours of system operation, or following painting, fire or chemical release in any ventilation zone communicating with the system. [5.5.7]

b. DOP testing shall be performed after each complete or partial replacement of the HEPA filter bank or after any structural maintenance on the system housing. [5.5.7]

c. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of the charcoal absorber bank or after any structural maintenance on the system housing. [5.5.7]

d. Each circuit shall be operated with the heaters on at least 10 hours every month.

See Discussion of Changes for ITS: 3.6.4.3, in Section 3.6.

E

LIMITING CONDITIONS FOR OPERATION

3.12.A.2. Performance Requirements

a. The results of the in-place DOP and halogenated hydrocarbon tests at design flows on HEPA filters and charcoal absorber banks shall show ≥99-percent DOP removal and ≥99-percent halogenated hydrocarbon removal, respectively when tested in accordance with ANSI N510-1975. (A.2) [5.5.7.a, 5.5.7.b]

b. The results of laboratory carbon sample analysis shall show ≥90-percent (M.2) radioactive methyl iodide removal when tested in accordance with RDT-M16-1T (25°C, 95-percent R.H.). (M.1) [5.5.7.c]

c. Fans shall be shown to operate within ±10-percent design flow when tested in accordance with ANSI N510-1975. (A.2) [5.5.7.d]

(A.1) NOTE 2 to 5.5.7

B. Isolation Valve Operability and Closing Time

(Deleted)

SURVEILLANCE REQUIREMENTS

4.12.A.2. Filter Testing

a. The tests and analysis shall be performed at least once per operating cycle, not to exceed 18 months, or after every 720 hours of system operation or following painting, fire or chemical release in any ventilation zone communicating with the system. [5.5.7]

b. DOP testing shall be performed after each complete or partial replacement of the HEPA filter bank or after any structural maintenance on the system housing. [5.5.7]

c. Halogenated hydrocarbon testing shall be performed after each complete or partial replacement of the charcoal adsorber bank of after any structural maintenance on the system housing. [5.5.7]

B. Isolation Valve Testing

(Deleted)

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 The current Technical Specifications use laboratory test standard RDT-M16-IT (80°C and 95% relative humidity for SGT System, and 25°C and 95% relative humidity for MCREC System) for testing the charcoal in the SGT and MCREC Systems. Proposed ITS 5.5.7.c requires laboratory testing in accordance with ASTM D3803-1989 at a temperature ≤ 30°C and ≥ 70% relative humidity for SGT and 95% relative humidity for MCREC. The ASTM D3803-1989 testing standard is more conservative than the current RDT-M16-IT standard and is endorsed by the NRC for use throughout the industry.

M.2 CTS for SGT require laboratory carbon sample analysis to show 90% methyl iodide removal, which is equivalent to 10% penetration. The proposed penetration acceptance criterion is 0.2% penetration. This penetration acceptance criterion will ensure the adsorber efficiency assumed in the accident analyses is maintained.

CTS for MCREC require laboratory carbon sample analysis to show 90% methyl iodide removal, which is equivalent to 10% penetration. The proposed penetration acceptance criterion is 2.0% penetration. This penetration acceptance criterion will ensure the adsorber efficiency assumed in the accident analyses is maintained.

The laboratory testing acceptance criteria for both SGT and MCREC are more restrictive than CTS.

TECHNICAL CHANGE - LESS RESTRICTIVE

"Generic"

LA.1 Details of the methods for implementing this specification are relocated to the FSAR and procedures. Additionally, changes to the procedures and the FSAR are controlled in accordance with 10 CFR 50.59.

"Specific"

L.1 Comment number not used.

L.2 The current Technical Specifications require testing of the SGT System 1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or 2) following painting, a fire or chemical release in any ventilation zone communicating with the system. Plant Hatch has performed tests and evaluations and has determined that the use of water based paints and the performance of metal grinding, buffing or welding are not detrimental to the charcoal filters of the SGT System, either prior to or during operation. These activities should not require surveillance of the SGT system upon their conclusion. This applies to all types of welding conducted at Plant Hatch and tracking of the quantity of weld material used is not necessary.

Specification 5.6

5.6.4 MONTHLY OPERATING REPORT

6.9.1.10 Routine reports of operating statistics and shutdown experience shall be submitted on a monthly basis to the Director, Office of Management and Program Analysis, U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, with a copy to the Regional Office of Inspection and Enforcement no later than the 15th of each month following the calendar month covered by the report.

(A.1)

5.6.5 CORE OPERATING LIMITS REPORT

5.6.5.a 6.9.1.11.a. Core operating limits shall be established and documented in the CORE OPERATING LIMITS REPORT before each reload cycle or any remaining part of a reload cycle for the following:

5.6.5.a.1) (1) Operation with a Limiting Control Rod Pattern (for Rod Withdrawal Error, RWE) for Specification 3.3.F,

5.6.5.a.2) (2) The Average Planar Linear Heat Generation Rate (APLHGR) for Specification 3.11.A,

(A.8) (3) The Linear Heat Generation Rate (LHGR) for Specification 3.11.B, and

5.6.5.a.3) (4) The Minimum Critical Power Ratio (MCPR) for Specifications 3.3.F and 3.11.C and Surveillance Requirement 4.11.C.

5.6.5.b b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC in the following documents.

5.6.5.b.1) (1) NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel," (applicable amendment specified in the CORE OPERATING LIMITS REPORT).

5.6.5.b.2) (2) "Safety Evaluation by the Office of Nuclear Reactor Regulation Supporting Amendment No. 157 to Facility Operating License DPR-57," dated September 12, 1988.

D

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

5.6.5.d d. The CORE OPERATING LIMITS REPORT, including any mid-cycle revisions or supplements thereto, shall be provided upon issuance, for each reload cycle, to the NRC Document Control Desk with copies to the Regional Administrator and Resident Inspector.

(A.1)

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NOTES FOR TABLE 3.2-11 (Continued)

g.1. With the plant in the power operation, startup, or hot shutdown condition and with the number of operable channels less than the required operable channels, initiate the preplanned alternate method of monitoring the appropriate parameter within 72 hours and:

a. either restore the inoperable channel(s) to operable status within 7 days of the event, or

5.6.6 (E) b. prepare and submit a special report to the NRC pursuant to Specification 6.9.2, within 14 days following the event outlining the action taken, the cause of the inoperability, and the plans and schedule for restoring the system to operable status.

g.2. One instrument channel may be inoperable for up to 6 hours to perform required surveillances prior to entering other applicable actions.

h. A channel contains two detectors: one for mid-range noble gas, and one for high range noble gas. Both detectors must be operable to consider the channel operable.

i. Instrumentation shall be operable with continuous sampling capability within 30 minutes of an ECCS actuation during a LOCA. See Section 3.7.A.6.c for the LIMITING CONDITION FOR OPERATION.

See Discussion of Changes for ITS: 3.3.3.1, PAM Instrumentation, in Section 3.3

Specification 5.6

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 The current TS requirement in 6.9.1.5.b to submit an annual report for all challenges to safety/relief valves has been moved to proposed ITS 5.6.1.4 for monthly reports. Since the report is required on a monthly basis instead of the current annual basis, this change is more restrictive in nature.

M.2 This change details the information to be included in the report. These details are necessary to assure the reports are provided with similar content and format for comparison with other plants and with prior reports.

TECHNICAL CHANGE - LESS RESTRICTIVE

"Generic"

LA.1 The details associated with CTS 6.9.1.1, 6.9.1.2, and 6.9.1.3, "Start-Up Report," are proposed to be relocated to the FSAR. The Start-Up Report provides the NRC a mechanism to review the appropriateness of licensee activities after-the-fact, but provides no regulatory authority once the report is submitted (i.e., no requirement for NRC approval). The Quality Assurance requirements of 10 CFR 50, Appendix B and the Startup Test Program provisions contained in the FSAR provide assurance the listed activities will be adequately performed and that appropriate corrective actions, if required, are taken. The placement of these CTS requirements in the FSAR also ensures that change control is performed in accordance with 10 CFR 50.59.

UNIT 1 NO SIGNIFICANT HAZARDS DETERMINATION

L.4 CHANGE

Not used.

L.1 CHANGE

Not used.

UNIT 2 IMPROVED TECHNICAL SPECIFICATIONS

1.1 Definitions (continued)

LOGIC SYSTEM FUNCTIONAL TEST	A LOGIC SYSTEM FUNCTIONAL TEST shall be a test of all required logic components (i.e., all required relays and contacts, trip units, solid state logic elements, etc.) of a logic circuit, from as close to the sensor as practicable up to, but not including, the actuated device, to verify OPERABILITY. The LOGIC SYSTEM FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total system steps so that the entire logic system is tested.
MINIMUM CRITICAL POWER RATIO (MCPR)	The MCPR shall be the smallest critical power ratio (CPR) that exists in the core for each class of fuel. The CPR is that power in the assembly that is calculated by application of the appropriate correlation(s) to cause some point in the assembly to experience boiling transition, divided by the actual assembly operating power.
MODE	A MODE shall correspond to any one inclusive combination of mode switch position, average reactor coolant temperature, and reactor vessel head closure bolt tensioning specified in Table 1.1-1 with fuel in the reactor vessel.
OPERABLE — OPERABILITY	A system, subsystem, division, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication, and other auxiliary equipment that are required for the system, subsystem, division, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).
PHYSICS TESTS	PHYSICS TESTS shall be those tests performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation. These tests are: a. Described in Chapter 14, Initial Tests and Operation, of the FSAR;

(continued)

1.1 Definitions

PHYSICS TESTS (continued)	b. Authorized under the provisions of 10 CFR 50.59; or c. Otherwise approved by the Nuclear Regulatory Commission.
RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the reactor coolant of 2436 MWt.
REACTOR PROTECTION SYSTEM (RPS) RESPONSE TIME	The RPS RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its RPS trip setpoint at the channel sensor until de-energization of the scram pilot valve solenoids. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured.
SHUTDOWN MARGIN (SDM)	SDM shall be the amount of reactivity by which the reactor is subcritical or would be subcritical assuming that: a. The reactor is xenon free; b. The moderator temperature is 68°F; and c. All control rods are fully inserted except for the single control rod of highest reactivity worth, which is assumed to be fully withdrawn. With control rods not capable of being fully inserted, the reactivity worth of these control rods must be accounted for in the determination of SDM.

(continued)

3.3 INSTRUMENTATION

3.3.3.1 Post Accident Monitoring (PAM) Instrumentation

LCO 3.3.3.1 The PAM instrumentation for each Function in Table 3.3.3.1-1 shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

-------------------------------------NOTES-------------------------------------

1. LCO 3.0.4 is not applicable.
2. Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more Functions with one required channel inoperable.	A.1	Restore required channel to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met.	B.1	Initiate action in accordance with Specification 5.6.6.	Immediately
C. One or more Functions with two or more required channels inoperable.	C.1	Restore all but one required channel to OPERABLE status.	7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. Required Action and associated Completion Time of Condition C not met.	D.1	Enter the Condition referenced in Table 3.3.3.1-1 for the channel.	Immediately
E. As required by Required Action D.1 and referenced in Table 3.3.3.1-1.	E.1	Be in MODE 3.	12 hours
F. As required by Required Action D.1 and referenced in Table 3.3.3.1-1.	F.1	Initiate action in accordance with Specification 5.6.6.	Immediately

SURVEILLANCE REQUIREMENTS

-------------------------------------NOTES-------------------------------------

1. These SRs apply to each Function in Table 3.3.3.1-1.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the other required channel(s) in the associated Function is OPERABLE.

SURVEILLANCE		FREQUENCY
SR 3.3.3.1.1	Perform CHANNEL CHECK.	31 days
SR 3.3.3.1.2	Perform CHANNEL CALIBRATION.	18 months

SURVEILLANCE REQUIREMENTS

------------------------------------NOTES------------------------------------

1. Refer to Table 3.3.5.1-1 to determine which SRs apply for each ECCS Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed as follows: (a) for up to 6 hours for Functions 3.c and 3.f; and (b) for up to 6 hours for Functions other than 3.c and 3.f provided the associated Function or the redundant Function maintains initiation capability.

SURVEILLANCE		FREQUENCY
SR 3.3.5.1.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.5.1.2	Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.5.1.3	Perform CHANNEL CALIBRATION.	92 days
SR 3.3.5.1.4	Perform CHANNEL CALIBRATION.	18 months
SR 3.3.5.1.5	Perform LOGIC SYSTEM FUNCTIONAL TEST.	18 months
SR 3.3.5.1.6	Verify the ECCS RESPONSE TIME is within limits.	18 months on a STAGGERED TEST BASIS

Table 3.3.5.1-1 (page 1 of 6)
Emergency Core Cooling System Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS PER FUNCTION	CONDITIONS REFERENCED FROM REQUIRED ACTION A.1	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. Core Spray System					
a. Reactor Vessel Water Level - Low Low Low, Level 1	1,2,3, 4(a), 5(a)	4(b)	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 SR 3.3.5.1.6	≥ -113 inches
b. Drywell Pressure - High	1,2,3	4(b)	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 SR 3.3.5.1.6	≤ 1.92 psig
c. Reactor Steam Dome Pressure - Low (Injection Permissive)	1,2,3	4	C	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 SR 3.3.5.1.6	≥ 390 psig and ≤ 476 psig
	4(a), 5(a)	4	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 SR 3.3.5.1.6	≥ 390 psig and ≤ 476 psig
d. Core Spray Pump Discharge Flow - Low (Bypass)	1,2,3, 4(a), 5(a)	1 per subsystem	E	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5	≥ 570 gpm and ≤ 745 gpm
2. Low Pressure Coolant Injection (LPCI) System					
a. Reactor Vessel Water Level - Low Low Low, Level 1	1,2,3, 4(a), 5(a)	4(b)	B	SR 3.3.5.1.1 SR 3.3.5.1.2 SR 3.3.5.1.4 SR 3.3.5.1.5 SR 3.3.5.1.6	≥ -113 inches

(continued)

(a) When associated subsystem(s) are required to be OPERABLE.

(b) Also required to initiate the associated diesel generator (DG) and isolate the associated plant service water (PSW) turbine building (T/B) isolation valves.

3.3 INSTRUMENTATION

3.3.8.1 Loss of Power (LOP) Instrumentation

LCO 3.3.8.1 The LOP instrumentation for each Function in Table 3.3.8.1-1 shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
When the associated diesel generator (DG) is required to be OPERABLE by LCO 3.8.2, "AC Sources — Shutdown."

ACTIONS

--------------------------------------NOTE--------------------------------------
Separate Condition entry is allowed for each channel.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more channels inoperable for Functions 1 and 2.	A.1 Restore channel to OPERABLE status.	1 hour
B. One or more channels inoperable for Function 3.	B.1 Verify voltage on associated 4.16 kV bus is ≥ 3825 V.	Once per hour
C. Required Action and associated Completion Time not met.	C.1 Declare associated DG inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

------------------------------------NOTE------------------------------------

1. Refer to Table 3.3.8.1-1 to determine which SRs apply for each LOP Function.

2. When a 4.16 kV Emergency Bus Undervoltage channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains initiation capability (for Functions 1 and 2) and annunciation capability (for Function 3).

SURVEILLANCE		FREQUENCY
SR 3.3.8.1.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.8.1.2	Perform CHANNEL FUNCTIONAL TEST.	31 days
SR 3.3.8.1.3	Perform CHANNEL CALIBRATION.	18 months
SR 3.3.8.1.4	Perform LOGIC SYSTEM FUNCTIONAL TEST.	18 months

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.9 RCS Pressure and Temperature (P/T) Limits

LCO 3.4.9 RCS pressure, RCS temperature, RCS heatup and cooldown rates, and the recirculation pump starting temperature requirements shall be maintained within limits.

APPLICABILITY: At all times.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. ---------NOTE--------- Required Action A.2 shall be completed if this Condition is entered. --------------------- Requirements of the LCO not met in MODES 1, 2, and 3.	A.1 Restore parameter(s) to within limits. AND A.2 Determine RCS is acceptable for continued operation.	30 minutes 72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	12 hours 36 hours

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. ---------NOTE--------- Required Action C.2 shall be completed if this Condition is entered. --------------------- Requirements of the LCO not met in other than MODES 1, 2, and 3.	C.1	Initiate action to restore parameter(s) to within limits.	Immediately
	<u>AND</u>		
	C.2	Determine RCS is acceptable for cperation.	Prior to entering MODE 2 or 3

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.4.9.1	-------------------NOTE------------------- Only required to be performed during RCS heatup and cooldown operations and RCS inservice leak and hydrostatic testing. -- Verify: a. RCS pressure and RCS temperature are within the limits specified in Figures 3.4.9-1 and 3.4.9-2; and b. RCS heatup and cooldown rates are $\leq$ 100°F in any 1 hour period.	30 minutes

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.9.2	Verify RCS pressure and RCS temperature are within the criticality limits specified in Figure 3.4.9-3.	Once within 15 minutes prior to control rod withdrawal for the purpose of achieving criticality

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.9.3	------------------NOTE------------------ Only required to be met in MODES 1, 2, 3, and 4 during startup of a recirculation pump. -- Verify the difference between the bottom head coolant temperature and the reactor pressure vessel (RPV) coolant temperature is ≤ 145°F.	15 minutes
SR 3.4.9.4	------------------NOTE------------------ Only required to be met in MODES 1, 2, 3, and 4 during startup of a recirculation pump. -- Verify the difference between the reactor coolant temperature in the recirculation loop to be started and the RPV coolant temperature is ≤ 50°F.	15 minutes
SR 3.4.9.5	------------------NOTE------------------ Only required to be performed when tensioning the reactor vessel head bolting studs. -- Verify reactor vessel flange and head flange temperatures are ≥ 90°F.	30 minutes

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.9.6	--------------------NOTE-------------------- Not required to be performed until 30 minutes after RCS temperature ≤ 100°F in MODE 4. -- Verify reactor vessel flange and head flange temperatures are ≥ 90°F.	 30 minutes
SR 3.4.9.7	--------------------NOTE-------------------- Not required to be performed until 12 hours after RCS temperature ≤ 120°F in MODE 4. -- Verify reactor vessel flange and head flange temperatures are ≥ 90°F.	 12 hours

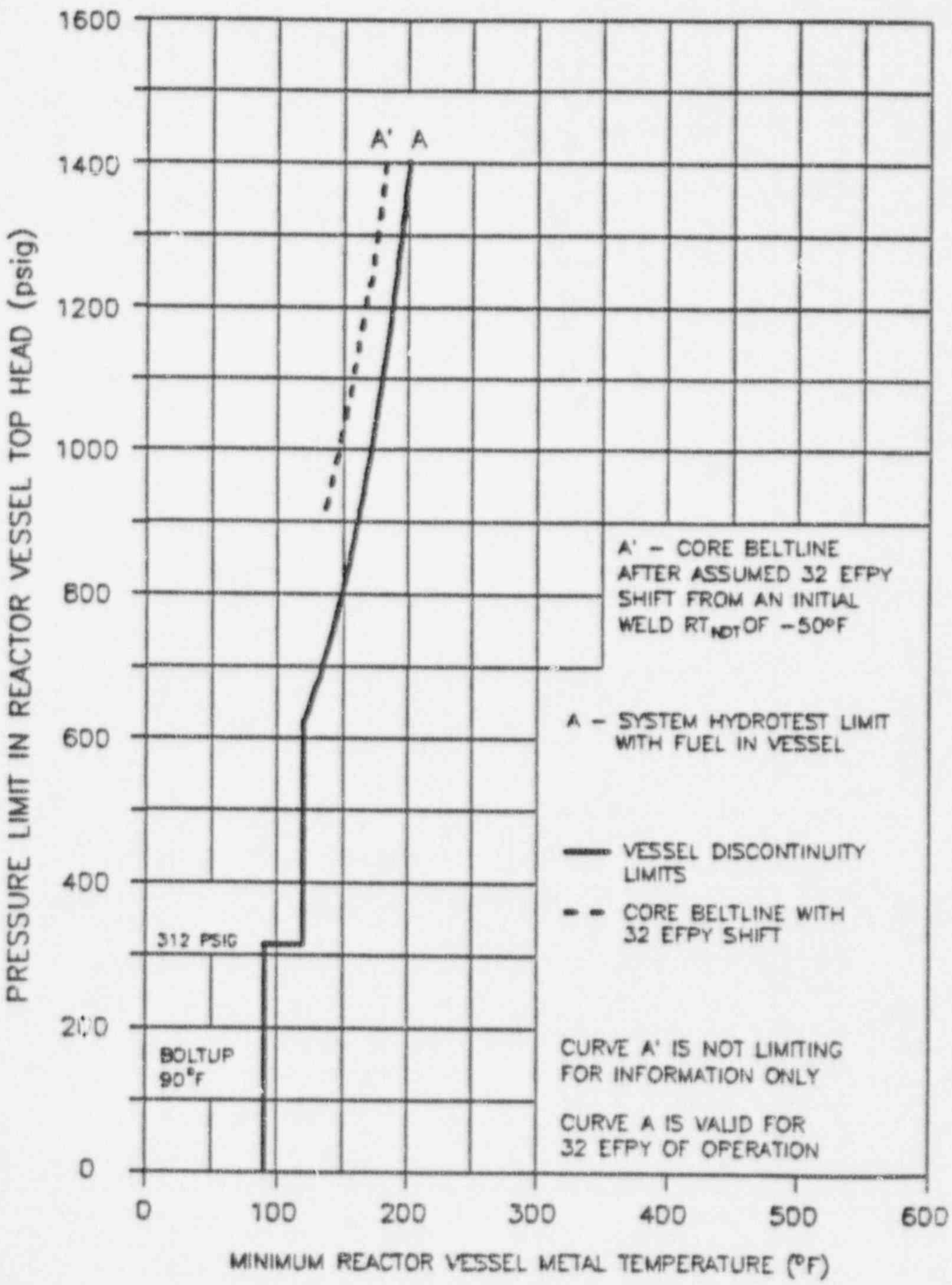

Figure 3.4.9-1 (page 1 of 1)
Temperature/Pressure Limits for
Inservice Hydrostatic and Inservice Leakage Tests

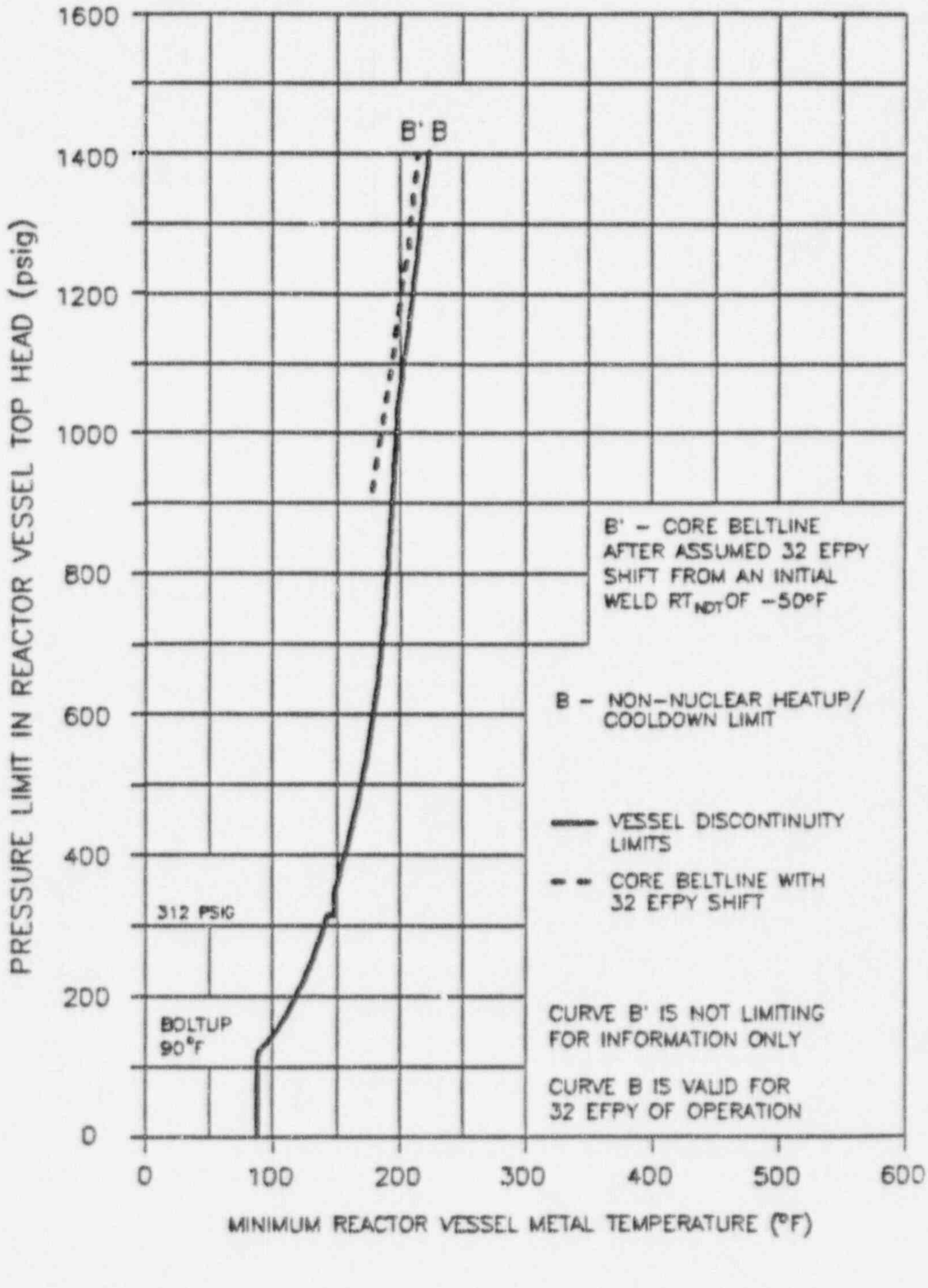

Figure 3.4.9-2 (page 1 of 1)
Temperature/Pressure Limits for Non-Nuclear Heatup,
Low Power Physics Tests, and Cooldown Following a Shutdown

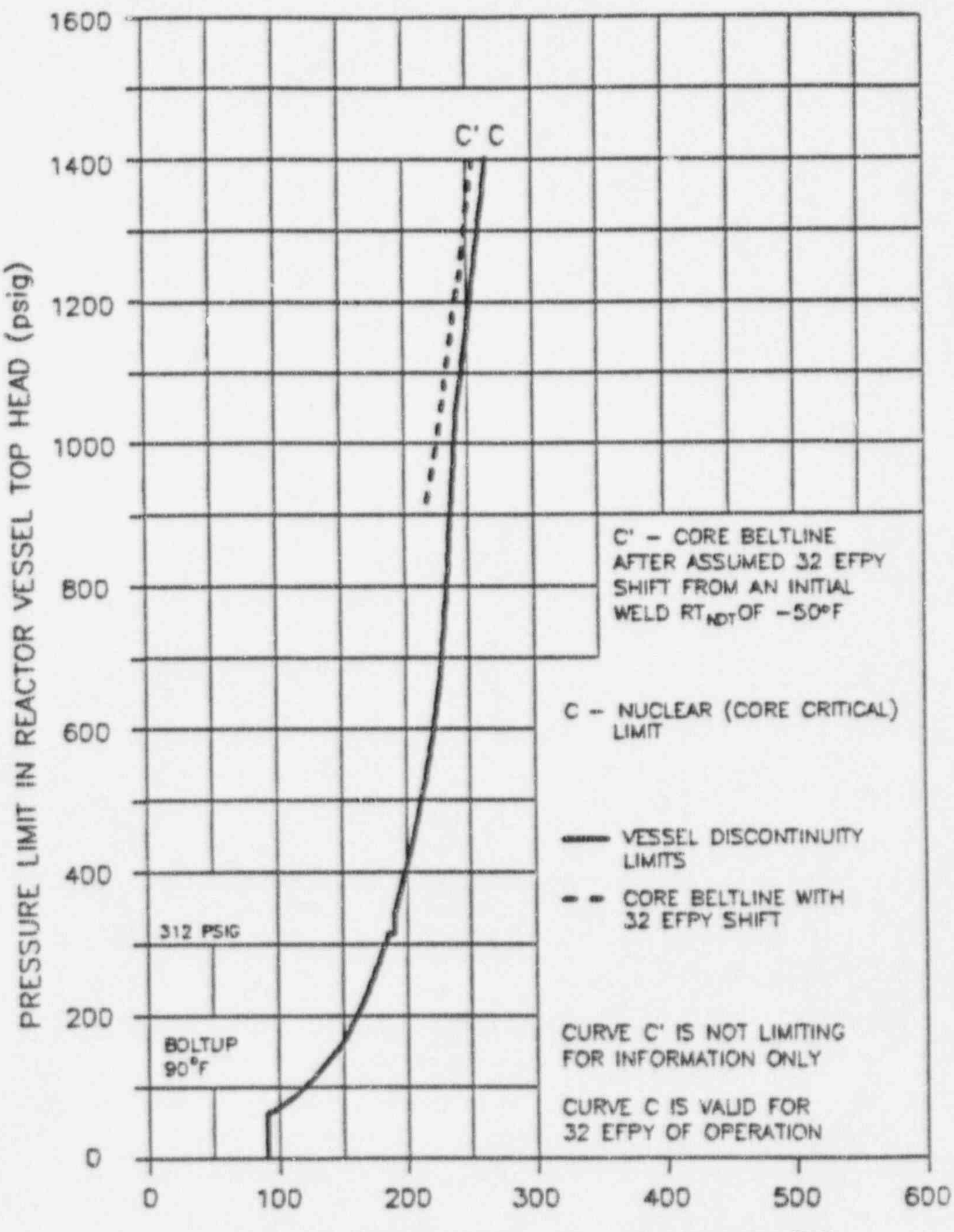

Figure 3.4.9-3 (page 1 of 1)
Temperature/Pressure Limits for Criticality

3.6 CONTAINMENT SYSTEMS

3.6.4.7 Standby Gas Treatment (SGT) System — Operating

LCO 3.6.4.7 Two Unit 1 and two Unit 2 SGT subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

------------------------------------NOTE------------------------------------
When two Unit 1 SGT subsystems are placed in an inoperable status solely for inspection of the Unit 1 hardened vent rupture disk, entry into associated Conditions and Required Actions may be delayed for up to 24 hours, provided both Unit 2 SGT subsystems are OPERABLE.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Unit 1 or Unit 2 SGT subsystem inoperable.	A.1 Restore SGT subsystem to OPERABLE status.	7 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.7.1	Operate each required Unit 1 and Unit 2 SGT subsystem for ≥ 10 continuous hours with heaters operating.	31 days
SR 3.6.4.7.2	Perform required Unit 1 and Unit 2 SGT filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.6.4.7.3	Verify each Unit 1 and Unit 2 SGT subsystem actuates on an actual or simulated initiation signal.	18 months

3.6 CONTAINMENT SYSTEMS

3.6.4.8 Standby Gas Treatment (SGT) System — OPDRVs

LCO 3.6.4.8 Two Unit 2 SGT subsystems shall be OPERABLE.

APPLICABILITY: During operations with a potential for draining the reactor vessel (OPDRVs).

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One Unit 2 SGT subsystem inoperable.	A.1	Restore SGT subsystem to OPERABLE status.	7 days
B. Required Action and associated Completion Time not met.	B.1	Place OPERABLE Unit 2 SGT subsystem in operation.	Immediately
	<u>OR</u>		
	B.2	Initiate action to suspend OPDRVs.	Immediately
C. Two Unit 2 SGT subsystems inoperable.	C.1	Initiate action to suspend OPDRVs.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.8.1	Operate each Unit 2 SGT subsystem for ≥ 10 continuous hours with heaters operating.	31 days
SR 3.6.4.8.2	Perform required Unit 2 SGT filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.6.4.8.3	Verify each Unit 2 SGT subsystem actuates on an actual or simulated initiation signal.	18 months

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.9.1	Operate each required Unit 1 and Unit 2 SGT subsystem for ≥ 10 continuous hours with heaters operating.	31 days
SR 3.6.4.9.2	Perform required Unit 1 and Unit 2 SGT filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.6.4.9.3	Verify each required Unit 1 and Unit 2 SGT subsystem actuates on an actual or simulated initiation signal.	18 months

5.5 Programs and Manuals (continued)

5.5.7 <u>Ventilation Filter Testing Program (VFTP)</u>

The VFTP will establish the required testing of Engineered Safety Feature (ESF) filter ventilation systems at the frequencies specified in Regulatory Guide 1.52, Revision 2, Section 5a and at least once per 18 months or 1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, 2) following painting, fire or chemical release in any ventilation zone communicating with the system, or 3) after every 720 hours of charcoal adsorber operation.

---------------------------------NOTES----------------------------

1. Tests and evaluations have determined the impact on the Standby Gas Treatment (SGT) System filters of certain types of painting, buffing and grinding, and welding. The use of water based paints and the performance of metal grinding, buffing, or welding are not detrimental to the charcoal filters of the SGT System, either prior to or during operation. These activities will not require surveillance of the system upon their conclusion. This applies to all types of welding conducted at Plant Hatch, and tracking of the quantity of weld material used is not necessary.

2. For testing purposes, the use of refrigerants equivalent to those specified in ASME N510-1989 is acceptable.

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a. Demonstrate for each of the ESF systems that an inplace test of the HEPA filters shows a penetration and system bypass < 0.05% when tested in accordance with Regulatory Guide 1.52, Revision 2, Section 5c and ASME N510-1989, Section 10, at the system flowrate specified below.

<u>ESF Ventilation System</u>	<u>Flowrate (cfm)</u>
SGT System	3000 to 4000
Main Control Room Environmental Control (MCREC) System	2250 to 2750

(continued)

5.5 Programs and Manuals

5.5.7 Ventilation Filter Testing Program (VFTP) (continued)

b. Demonstrate for each of the ESF systems that an inplace test of the charcoal adsorber shows a penetration and system bypass < 0.05% when tested in accordance with Regulatory Guide 1.52, Revision 2, Section 5d and ASME N510-1989, Section 11, at the system flowrate specified below.

ESF Ventilation System	Flowrate (cfm)
SGT System	3000 to 4000
MCREC System	2250 to 2750

c. Demonstrate for each of the ESF systems that a laboratory test of a sample of the charcoal adsorber, when obtained as described in Regulatory Guide 1.52, Revision 2, Section 6b and ASME N510-1989, Section 15 and Appendix B, shows the methyl iodide penetration less than the value specified below when tested in accordance with ASTM D3803-1989 at a temperature of ≤ 30°C and greater than or equal to the relative humidity specified below.

ESF Ventilation System	Penetration(%)	RH(%)
SGT System	0.2	70
MCREC System	2.0	95

d. Demonstrate for each of the ESF systems that the pressure drop across the combined HEPA filters, the prefilters, and the charcoal adsorbers is less than the value specified below when tested in accordance with ASME N510-1989, Section 8.5.1, at the system flowrate specified below.

ESF Ventilation System	ΔP (inches wg)	Flowrate (cfm)
SGT System	< 6	3000 to 4000
MCREC System	< 6	2250 to 2750

e. Demonstrate that the heaters for the ESF system dissipate the value specified below when testing in accordance with ASME N510-1989, Section 14.5.1.

ESF Ventilation System	Wattage (kW)
SGT System	17 to 20

(continued)

5.5 Programs and Manuals

5.5.7 Ventilation Filter Testing Program (VFTP) (continued)

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the VFTP test frequencies.

(continued)

5.6 Reporting Requirements (continued)

5.6.5 CORE OPERATING LIMITS REPORT (COLR)

a. Core operating limits shall be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and shall be documented in the COLR for the following:

1) Control Rod Block Instrumentation - Rod Block Monitor for Specification 3.3.2.1.

2) The Average Planar Linear Heat Generation Rate for Specification 3.2.1.

3) The Minimum Critical Power Ratio for Specifications 3.2.2 and 3.3.2.1.

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 the following documents:

1) NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel," (applicable amendment specified in the COLR).

2) "Safety Evaluation by the Office of Nuclear Reactor Regulation Supporting Amendment Nos. 151 and 89 to Facility Operating Licenses DPR-57 and NPF-5," dated January 22, 1988.

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

d. The COLR, including any mid-cycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

(continued)

5.6 Reporting Requirements (continued)

5.6.6 Post Accident Monitoring (PAM) Instrumentation Report

When a report is required by LCO 3.3.3.1, "Post Accident Monitoring (PAM) Instrumentation," a report shall be submitted within the following 14 days. The report shall outline the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the Function to OPERABLE status.

UNIT 2 IMPROVED BASES

BASES

LCO

12. RHR Service Water Flow (continued)

primary indication used by the operator during an accident. Therefore, the PAM specification deals specifically with this portion of the instrument channel.

APPLICABILITY

The PAM instrumentation LCO is applicable in MODES 1 and 2. These variables are related to the diagnosis and preplanned actions required to mitigate DBAs. The applicable DBAs are assumed to occur in MODES 1 and 2. In MODES 3, 4, and 5, plant conditions are such that the likelihood of an event that would require PAM instrumentation is extremely low; therefore, PAM instrumentation is not required to be OPERABLE in these MODES.

ACTIONS

Note 1 has been added to the ACTIONS to exclude the MODE change restriction of LCO 3.0.4. This exception allows entry into the applicable MODE while relying on the ACTIONS even though the ACTIONS may eventually require plant shutdown. This exception is acceptable due to the passive function of the instruments, the operator's ability to diagnose an accident using alternative instruments and methods, and the low probability of an event requiring these instruments.

Note 2 has been provided to modify the ACTIONS related to PAM instrumentation channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent divisions, subsystems, components, or variables expressed in the Condition discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable PAM instrumentation channels provide appropriate compensatory measures for separate Functions. As such, a Note has been provided that allows separate Condition entry for each inoperable PAM Function.

(continued)

BASES

ACTIONS (continued)

A.1

When one or more Functions have one required channel that is inoperable, the required inoperable channel must be restored to OPERABLE status within 30 days. The 30 day Completion Time is based on operating experience and takes into account the remaining OPERABLE channels (or, in the case of a Function that has only one required channel, other non-Regulatory Guide 1.97 instrument channels to monitor the Function), the passive nature of the instrument (no critical automatic action is assumed to occur from these instruments), and the low probability of an event requiring PAM instrumentation during this interval.

B.1

If a channel has not been restored to OPERABLE status in 30 days, this Required Action specifies initiation of action in accordance with Specification 5.6.6, which requires a written report to be submitted to the NRC. This report discusses the results of the root cause evaluation of the inoperability and identifies proposed restorative actions. This action is appropriate in lieu of a shutdown requirement, since alternative actions are identified before loss of functional capability, and given the likelihood of plant conditions that would require information provided by this instrumentation.

C.1

When one or more Functions have two or more required channels that are inoperable (i.e., two channels inoperable in the same Function), all but one channel in the Function should be restored to OPERABLE status within 7 days. The Completion Time of 7 days is based on the relatively low probability of an event requiring PAM instrument operation and the availability of alternate means to obtain the required information. Continuous operation with two required channels inoperable in a Function is not acceptable because the alternate indications may not fully meet all performance qualification requirements applied to the PAM instrumentation. Therefore, requiring restoration of one inoperable channel of the Function limits the risk that the

(continued)

BASES

ACTIONS

C.1 (continued)

PAM Function will be in a degraded condition should an accident occur.

D.1

This Required Action directs entry into the appropriate Condition referenced in Table 3.3.3.1-1. The applicable Condition referenced in the Table is Function dependent. Each time an inoperable channel has not met the Required Action of Condition C, and the associated Completion Time has expired, Condition D is entered for that channel and provides for transfer to the appropriate subsequent Condition.

E.1

For the majority of Functions in Table 3.3.3.1-1, if any Required Action and associated Completion Time of Condition C is not met, the plant must be brought to a MODE in which the LCO not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

F.1

Since alternate means of monitoring drywell area radiation have been developed and tested, the Required Action is not to shut down the plant, but rather to follow the directions of Specification 5.6.6. These alternate means may be temporarily installed if the normal PAM channel cannot be restored to OPERABLE status within the allotted time. The report provided to the NRC should discuss the alternate means used, describe the degree to which the alternate means are equivalent to the installed PAM channels, justify the areas in which they are not equivalent, and provide a schedule for restoring the normal PAM channels.

(continued)

BASES (continued)

SURVEILLANCE REQUIREMENTS

As noted at the beginning of the SRs, the following SRs apply to each PAM instrumentation Function in Table 3.3.3.1-1.

The Surveillances are modified by a second Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours, provided the other required channel(s) in the associated Function are OPERABLE. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken. The Note is based upon a NRC Safety Evaluation Report (Reference 1) which concluded that the 6 hour testing allowance does not significantly reduce the probability of properly monitoring post accident parameters, when necessary.

SR 3.3.3.1.1

Performance of the CHANNEL CHECK once every 31 days ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is normally a comparison of the parameter indicated on one channel against a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between instrument channels could be an indication of excessive instrument drift in one of the channels or something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

Agreement criteria are determined by the plant staff, based on a combination of the channel instrument uncertainties, including isolation, indication, and readability. If a channel is outside the criteria, it may be an indication that the sensor or the signal processing equipment has drifted outside its limit.

(continued)

BASES

ACTIONS

F.1 and F.2 (continued)

it is not desired to place the channel in trip (e.g., as in the case where placing the inoperable channel in trip would result in an initiation), Condition H must be entered and its Required Action taken.

G.1 and G.2

Required Action G.1 is intended to ensure that appropriate actions are taken if multiple, inoperable channels within similar ADS trip system Functions result in automatic initiation capability being lost for the ADS. In this situation (loss of automatic initiation capability), the 96 hour or 8 day allowance, as applicable, of Required Action G.2 is not appropriate, and all ADS valves must be declared inoperable within 1 hour after discovery of loss of ADS initiation capability.

The Completion Time is intended to allow the operator time to evaluate and repair any discovered inoperabilities. This Completion Time also allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." For Required Action G.1, the Completion Time only begins upon discovery that the ADS cannot be automatically initiated due to inoperable channels within similar ADS trip system Functions as described in the paragraph above. The 1 hour Completion Time from discovery of loss of initiation capability is acceptable because it minimizes risk while allowing time for restoration or tripping of channels.

Because of the diversity of sensors available to provide initiation signals and the redundancy of the ECCS design, an allowable out of service time of 8 days has been shown to be acceptable (Ref. 5) to permit restoration of any inoperable channel to OPERABLE status if both HPCI and RCIC are OPERABLE (Required Action G.2). If either HPCI or RCIC is inoperable, the time shortens to 96 hours. If the status of HPCI or RCIC changes such that the Completion Time changes from 8 days to 96 hours, the 96 hours begins upon discovery of HPCI or RCIC inoperability. However, the total time for an inoperable channel cannot exceed 8 days. If the status of HPCI or RCIC changes such that the Completion Time changes from 96 hours to 8 days, the "time zero" for beginning the 8 day "clock" begins upon discovery of the

(continued)

BASES

ACTIONS

G.1 and G.2 (continued)

inoperable channel. If the inoperable channel cannot be restored to OPERABLE status within the allowable out of service time, Condition H must be entered and its Required Action taken. The Required Actions do not allow placing the channel in trip since this action would not necessarily result in a safe state for the channel in all events.

H.1

With any Required Action and associated Completion Time not met, the associated feature(s) may be incapable of performing the intended function, and the supported feature(s) associated with inoperable untripped channels must be declared inoperable immediately.

SURVEILLANCE REQUIREMENTS

As noted in the beginning of the SRs, the SRs for each ECCS instrumentation Function are found in the SRs column of Table 3.3.5.1-1.

The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours as follows: (a) for Functions 3.c and 3.f; and (b) for Functions other than 3.c and 3.f provided the associated Function or the redundant Function maintains initiation capability. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken. This Note is based on the reliability analysis (Ref. 5) assumption of the average time required to perform channel surveillance. That analysis demonstrated that the 6 hour testing allowance does not significantly reduce the probability that the ECCS will initiate when necessary.

(continued)

BASES

BACKGROUND

1. Main Steam Line Isolation (continued)

MSL Isolation Functions isolate the Group 1 valves.

2. Primary Containment Isolation

Most Primary Containment Isolation Functions receive inputs from four channels. The outputs from these channels are arranged into two two-out-of-two logic trip systems. One trip system initiates isolation of all inboard primary containment isolation valves, while the other trip system initiates isolation of all outboard primary containment isolation valves. Each logic closes one of the two valves on each penetration, so that operation of either logic isolates the penetration. The TIP ball valves isolation does not occur until the TIPs have been fully retracted (The logic also sends a TIP retraction signal).

The exception to this arrangement is the Drywell Radiation—High Function. This Function has two channels, whose outputs are arranged in two one-out-of-one logic trip systems. Each trip system isolates one valve per associated penetration, similar to the two-out-of-two logic described above.

Primary Containment Isolation Drywell Pressure—High and Reactor Vessel Water Level—Low, Level 3 Functions isolate the Group 2, 6, 7, 10, and 12 valves. Reactor Building and Refueling Floor Exhaust Radiation—High Functions isolate the Group 6, 10, and 12 valves. Primary Containment Isolation Drywell Radiation—High Function isolates the 18 inch containment purge and vent valves.

3, 4. High Pressure Coolant Injection System Isolation and Reactor Core Isolation Cooling System Isolation

Most Functions that isolate HPCI and RCIC receive input from two channels, with each channel in one trip system using a one-out-of-one logic. Each of the two trip systems in each isolation group is connected to one of the two valves on each associated penetration.

(continued)

BASES

BACKGROUND

3, 4. High Pressure Coolant Injection System Isolation and Reactor Core Isolation Cooling System Isolation (continued)

The exceptions are the HPCI and RCIC Turbine Exhaust Diaphragm Pressure — High and Steam Supply Line Pressure — Low Functions. These Functions receive inputs from four turbine exhaust diaphragm pressure and four steam supply pressure channels for each system. The outputs from the turbine exhaust diaphragm pressure and steam supply pressure channels are each connected to two two-out-of-two trip systems. Additionally, each trip system of the Steam Line Flow - High Functions receives input from a low differential pressure channel. The low differential pressure channels are not required for OPERABILITY. Each trip system isolates one valve per associated penetration.

HPCI and RCIC Functions isolate the Group 3, 4, 8, and 9 valves.

5. Reactor Water Cleanup System Isolation

The Reactor Vessel Water Level — Low Low, Level 2 Isolation Function receives input from four reactor vessel water level channels. The outputs from the reactor vessel water level channels are connected into two two-out-of-two trip systems. The Area Temperature — High Function receives input from six temperature monitors, three to each trip system. The Area Ventilation Differential Temperature — High Function receives input from six differential temperature monitors, three in each trip system. These are configured so that any one input will trip the associated trip system. Each of the two trip systems is connected to one of the two valves on the RWCU penetration. However, the SLC System Initiation Function only provides an input to one trip system, thus closes only one valve.

RWCU Functions isolate the Group 5 valves.

6. RHR Shutdown Cooling System Isolation

The Reactor Vessel Water Level — Low, Level 3 Function receives input from four reactor vessel water level channels. The outputs from the reactor vessel water level channels are connected to two two-out-of-two trip systems.

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

2.d., 2.e. Reactor Building and Refueling Floor Exhaust Radiation—High

High secondary containment exhaust radiation is an indication of possible gross failure of the fuel cladding. The release may have originated from the primary containment due to a break in the RCPB. When Exhaust Radiation—High is detected, valves whose penetrations communicate with the primary containment atmosphere are isolated to limit the release of fission products.

The Exhaust Radiation—High signals are initiated from radiation detectors that are located near the ventilation exhaust ductwork coming from the reactor building and the refueling floor zones, respectively. The signal from each detector is input to an individual monitor whose trip outputs are assigned to an isolation channel. Four channels of Reactor Building Exhaust—High Function and four channels of Refueling Floor Exhaust—High Function are available and are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function.

The Allowable Values are chosen to ensure radioactive releases do not exceed offsite dose limits.

These Functions isolate the Group 6, 10, and 12 valves.

High Pressure Coolant Injection and Reactor Core Isolation Cooling Systems Isolation

3.a., 4.a. HPCI and RCIC Steam Line Flow—High

Steam Line Flow—High Functions are provided to detect a break of the RCIC or HPCI steam lines and initiate closure of the steam line isolation valves of the appropriate system. If the steam is allowed to continue flowing out of the break, the reactor will depressurize and the core can uncover. Therefore, the isolations are initiated on high flow to prevent or minimize core damage. The isolation action, along with the scram function of the RPS, ensures that the fuel peak cladding temperature remains below the limits of 10 CFR 50.46. Specific credit for these Functions is not assumed in any FSAR accident analyses since the bounding analysis is performed for large breaks such as

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

3.a., 4.a. HPCI and RCIC Steam Line Flow -- High (continued)

recirculation and MSL breaks. However, these instruments prevent the RCIC or HPCI steam line breaks from becoming bounding.

The HPCI and RCIC Steam Line Flow — High signals are initiated from transmitters (two for HPCI and two for RCIC) that are connected to the system steam lines. Two channels of both HPCI and RCIC Steam Line Flow — High Functions are available and are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function.

The Allowable Values are chosen to be low enough to ensure that the trip occurs to prevent fuel damage and maintains the MSLB event as the bounding event. The Allowable Values correspond to ≤ 200 inches water column for HPCI and ≤ 139 inches water column for RCIC, which are the parameters monitored on control room instruments.

These Functions isolate the Group 3 and 4 valves, as appropriate.

3.b., 4.b. HPCI and RCIC Steam Supply Line Pressure — Low

Low MSL pressure indicates that the pressure of the steam in the HPCI or RCIC turbine may be too low to continue operation of the associated system's turbine. These isolations are for equipment protection and are not assumed in any transient or accident analysis in the FSAR. However, they also provide a diverse signal to indicate a possible system break. These instruments are included in Technical Specifications (TS) because of the potential for risk due to possible failure of the instruments preventing HPCI and RCIC initiations. Therefore, they meet Criterion 4 of the NRC Policy Statement (Ref. 7).

The HPCI and RCIC Steam Supply Line Pressure — Low signals are initiated from transmitters (four for HPCI and four for RCIC) that are connected to the system steam line. Four channels of both HPCI and RCIC Steam Supply Line Pressure — Low Functions are available and are required to

(continued)

BASES

ACTIONS

A.1

With one or more channels of Function 1 or 2 inoperable, the Function does not maintain initiation capability for the associated emergency bus. Therefore, only 1 hour is allowed to restore the inoperable channel to OPERABLE status. The Required Action does not allow placing a channel in trip since this action will result in a DG initiation.

(continued)

BASES

ACTIONS

A.1 (continued)

The Completion Time is intended to allow the operator time to evaluate and repair any discovered inoperabilities. The 1 hour Completion Time is acceptable because it minimizes risk while allowing time for restoration or tripping of channels.

B.1

Each 4.16 kV bus has a dedicated annunciator fed by two relays and their associated time delays in a one-out-of-two logic configuration. Only one relay and its associated time delay is required to be OPERABLE. Therefore, the loss of the required relay or time delay renders Function 3 incapable of performing the intended function. Since the intended function is to alert personnel to a lowering voltage condition and the voltage reading is available for each bus on the control room front panels, the Required Action is verification of the voltage to be above the annunciator setpoint (nominal) hourly.

C.1

If any Required Action and associated Completion Time are not met, the associated Function does not maintain initiation capability for the associated emergency bus. Therefore, the associated DG(s) is declared inoperable immediately. This requires entry into applicable Conditions and Required Actions of LCO 3.8.1 and LCO 3.8.2, which provide appropriate actions for the inoperable DG(s).

SURVEILLANCE REQUIREMENTS

As noted at the beginning of the SRs, the SRs for each LOP instrumentation Function are located in the SRs column of Table 3.3.8.1-1. The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains initiation capability (for Functions 1 and 2) and annunciation capability (for Function 3). Functions 1 and 2 maintain initiation capability provided that, for 2 of the 3

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

emergency buses, the following can be initiated by the Function: DG start, disconnect from the offsite power source, DG output breaker closure, load shed, and activation of the ECCS pump power permissive.

Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken.

SR 3.3.8.1.1

Performance of the CHANNEL CHECK once every 12 hours ensures that a gross failure of instrumentation or a failure of annunciation has not occurred. A CHANNEL CHECK is defined for Function 3 to be a comparison of the annunciator status to the bus voltage and an annunciator test confirming the annunciator is capable of lighting and sounding. A CHANNEL CHECK will detect gross channel failure or an annunciator failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

If a channel is outside the match criteria, it may be an indication that the instrument has drifted outside its limit.

The frequency is based upon operating experience that demonstrates channel failure is rare. Thus, performance of the CHANNEL CHECK ensures that undetected outright channel or annunciator failure is limited to 12 hours. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with channels required by the LCO.

SR 3.3.8.1.2

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function. Any setpoint adjustment shall be consistent with the assumptions of the current plant specific setpoint methodology.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.3.8.1.2 (continued)

The Frequency of 31 days is based on operating experience with regard to channel OPERABILITY and drift, which demonstrates that failure of more than one channel of a given Function in any 31 day interval is a rare event.

(continued)

BASES

ACTIONS

B.1 and B.2 (continued)

During the period when the reactor coolant is being circulated by an alternate method (other than by the required RHR shutdown cooling subsystem or recirculation pump), the reactor coolant temperature and pressure must be periodically monitored to ensure proper function of the alternate method. The once per hour Completion Time is deemed appropriate.

SURVEILLANCE REQUIREMENTS

SR 3.4.8.1

This Surveillance verifies that one RHR shutdown cooling subsystem or recirculation pump is in operation and circulating reactor coolant. The required flow rate is determined by the flow rate necessary to provide sufficient decay heat removal capability. The Frequency of 12 hours is sufficient in view of other visual and audible indications available to the operator for monitoring the RHR subsystem in the control room.

REFERENCES

1. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

B 3.4 REACTOR COOLANT SYSTEM (RCS)

B 3.4.9 RCS Pressure and Temperature (P/T) Limits

BASES

BACKGROUND

All components of the RCS are designed to withstand effects of cyclic loads due to system pressure and temperature changes. These loads are introduced by startup (heatup) and shutdown (cooldown) operations, power transients, and reactor trips. This LCO limits the pressure and temperature changes during RCS heatup and cooldown, within the design assumptions and the stress limits for cyclic operation.

This Specification contains P/T limit curves for heatup, cooldown, and inservice leakage and hydrostatic testing, and also limits the maximum rate of change of reactor coolant temperature. The criticality curve provides limits for both heatup and criticality.

Each P/T limit curve defines an acceptable region for normal operation. The usual use of the curves is operational guidance during heatup or cooldown maneuvering, when pressure and temperature indications are monitored and compared to the applicable curve to determine that operation is within the allowable region.

The LCO establishes operating limits that provide a margin to brittle failure of the reactor vessel and piping of the reactor coolant pressure boundary (RCPB). The vessel is the component most subject to brittle failure. Therefore, the LCO limits apply mainly to the vessel.

10 CFR 50, Appendix G (Ref. 1), requires the establishment of P/T limits for material fracture toughness requirements of the RCPB materials. Reference 1 requires an adequate margin to brittle failure during normal operation, anticipated operational occurrences, and system hydrostatic tests. It mandates the use of the ASME Code, Section III, Appendix G (Ref. 2).

The actual shift in the RT_{NDT} of the vessel material will be established periodically by removing and evaluating the irradiated reactor vessel material specimens, in accordance with ASTM E 185 (Ref. 3) and Appendix H of 10 CFR 50 (Ref. 4). The operating P/T limit curves will be adjusted,

(continued)

BASES

BACKGROUND (continued)

as necessary, based on the evaluation findings and the recommendations of Reference 5.

The P/T limit curves are composite curves established by superimposing limits derived from stress analyses of those portions of the reactor vessel and head that are the most restrictive. At any specific pressure, temperature, and temperature rate of change, one location within the reactor vessel will dictate the most restrictive limit. Across the span of the P/T limit curves, different locations are more restrictive, and, thus, the curves are composites of the most restrictive regions.

The heatup curve represents a different set of restrictions than the cooldown curve because the directions of the thermal gradients through the vessel wall are reversed. The thermal gradient reversal alters the location of the tensile stress between the outer and inner walls.

The criticality limits include the Reference 1 requirement that they be at least 40°F above the heatup curve or the cooldown curve and not lower than the minimum permissible temperature for the inservice leakage and hydrostatic testing.

The consequence of violating the LCO limits is that the RCS has been operated under conditions that can result in brittle failure of the RCPB, possibly leading to a nonisolable leak or loss of coolant accident. In the event these limits are exceeded, an evaluation must be performed to determine the effect on the structural integrity of the RCPB components. ASME Code, Section XI, Appendix E (Ref. 6), provides a recommended methodology for evaluating an operating event that causes an excursion outside the limits.

APPLICABLE SAFETY ANALYSES

The P/T limits are not derived from Design Basis Accident (DBA) analyses. They are prescribed during normal operation to avoid encountering pressure, temperature, and temperature rate of change conditions that might cause undetected flaws to propagate and cause nonductile failure of the RCPB, a condition that is unanalyzed. Reference 8 approved the curves and limits specified in this section. Since the

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

P/T limits are not derived from any DBA, there are no acceptance limits related to the P/T limits. Rather, the P/T limits are acceptance limits themselves since they preclude operation in an unanalyzed condition.

RCS P/T limits satisfy Criterion 2 of the NRC Policy Statement (Ref. 8).

LCO

The elements of this LCO are:

a. RCS pressure and temperature are within the limits specified in Figures 3.4.9-1 and 3.4.9-2, and heatup or cooldown rates are ≤ 100°F during RCS heatup, cooldown, and inservice leak and hydrostatic testing;

b. The temperature difference between the reactor vessel bottom head coolant and the reactor pressure vessel (RPV) coolant is ≤ 145°F during recirculation pump startup;

c. The temperature difference between the reactor coolant in the respective recirculation loop and in the reactor vessel is ≤ 50°F during recirculation pump startup;

d. RCS pressure and temperature are within the criticality limits specified in Figure 3.4.9-3, prior to achieving criticality; and

e. The reactor vessel flange and the head flange temperatures are ≥ 90°F when tensioning the reactor vessel head bolting studs.

These limits define allowable operating regions and permit a large number of operating cycles while also providing a wide margin to nonductile failure.

The rate of change of temperature limits controls the thermal gradient through the vessel wall and is used as input for calculating the heatup, cooldown, and inservice

(continued)

BASES

ACTIONS (continued)

C.1 and C.2

Operation outside the P/T limits in other than MODES 1, 2, and 3 (including defueled conditions) must be corrected so that the RCPB is returned to a condition that has been verified by stress analyses. The Required Action must be initiated without delay and continued until the limits are restored.

Besides restoring the P/T limit parameters to within limits, an evaluation is required to determine if RCS operation is allowed. This evaluation must verify that the RCPB integrity is acceptable and must be completed before approaching criticality or heating up to > 212°F. Several methods may be used, including comparison with pre-analyzed transients, new analyses, or inspection of the components. ASME Code, Section XI, Appendix E (Ref. 6), may be used to support the evaluation; however, its use is restricted to evaluation of the beltline.

Condition C is modified by a Note requiring Required Action C.2 be completed whenever the Condition is entered. The Note emphasizes the need to perform the evaluation of the effects of the excursion outside the allowable limits. Restoration alone per Required Action C.1 is insufficient because higher than analyzed stresses may have occurred and may have affected the RCPB integrity.

SURVEILLANCE REQUIREMENTS

SR 3.4.9.1

Verification that operation is within limits is required every 30 minutes when RCS pressure and temperature conditions are undergoing planned changes. This Frequency is considered reasonable in view of the control room indication available to monitor RCS status. Also, since temperature rate of change limits are specified in hourly increments, 30 minutes permits a reasonable time for assessment and correction of minor deviations.

Surveillance for heatup, cooldown, or inservice leakage and hydrostatic testing may be discontinued when the criteria given in the relevant plant procedure for ending the activity are satisfied.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.4.9.1 (continued)

This SR has been modified with a Note that requires this Surveillance to be performed only during system heatup and cooldown operations and RCS inservice leakage and hydrostatic testing.

SR 3.4.9.2

A separate limit is used when the reactor is approaching criticality. Consequently, the RCS pressure and temperature must be verified within the appropriate limits before withdrawing control rods that will make the reactor critical.

Performing the Surveillance within 15 minutes before control rod withdrawal for the purpose of achieving criticality provides adequate assurance that the limits will not be exceeded between the time of the Surveillance and the time of the control rod withdrawal.

SR 3.4.9.3 and SR 3.4.9.4

Differential temperatures within the applicable limits ensure that thermal stresses resulting from the startup of an idle recirculation pump will not exceed design allowances. In addition, compliance with these limits ensures that the assumptions of the analysis for the startup of an idle recirculation loop (Ref. 7) are satisfied.

Performing the Surveillance within 15 minutes before starting the idle recirculation pump provides adequate assurance that the limits will not be exceeded between the time of the Surveillance and the time of the idle pump start.

An acceptable means of demonstrating compliance with the temperature differential requirement in SR 3.4.9.4 is to compare the temperatures of the operating recirculation loop and the idle loop.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.4.9.3 and SR 3.4.9.4 (continued)

SR 3.4.9.3 and SR 3.4.9.4 have been modified by a Note that requires the Surveillance to be performed only in MODES 1, 2, 3, and 4. In MODE 5, the overall stress on limiting components is lower. Therefore, ΔT limits are not required.

SR 3.4.9.5, SR 3.4.9.6, and SR 3.4.9.7

Limits on the reactor vessel flange and head flange temperatures are generally bounded by the other P/T limits during system heatup and cooldown. However, operations approaching MODE 4 from MODE 5 and in MODE 4 with RCS temperature less than or equal to certain specified values require assurance that these temperatures meet the LCO limits.

The flange temperatures must be verified to be above the limits 30 minutes before and while tensioning the vessel head bolting studs to ensure that once the head is tensioned the limits are satisfied. When in MODE 4 with RCS temperature ≤ 100°F, 30 minute checks of the flange temperatures are required because of the reduced margin to the limits. When in MODE 4 with RCS temperature ≤ 120°F, monitoring of the flange temperature is required every 12 hours to ensure the temperature is within the limits specified.

The 30 minute Frequency reflects the urgency of maintaining the temperatures within limits, and also limits the time that the temperature limits could be exceeded. The 12 hour Frequency is reasonable based on the rate of temperature change possible at these temperatures.

SR 3.4.9.5 is modified by a Note that requires the Surveillance to be performed only when tensioning the reactor vessel head bolting studs. SR 3.4.9.6 is modified by a Note that requires the Surveillance to be initiated 30 minutes after RCS temperature ≤ 100°F in Mode 4. SR 3.4.9.7 is modified by a Note that requires the Surveillance to be initiated 12 hours after RCS temperature ≤ 120°F in Mode 4. The Notes contained in these SRs are

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.4.9.5, SR 3.4.9.6, and SR 3.4.9.7 (continued)

necessary to specify when the reactor vessel flange and head flange temperatures are required to be verified to be within the limits specified.

REFERENCES

1. 10 CFR 50, Appendix G.
2. ASME, Boiler and Pressure Vessel Code, Section III, Appendix G.
3. ASTM E 185-82, "Standard Practice for Conducting Surveillance Tests for Light-Water Cooled Nuclear Power Reactor Vessels," July 1982.
4. 10 CFR 50, Appendix H.
5. Regulatory Guide 1.99, Revision 2, May 1988.
6. ASME, Boiler and Pressure Vessel Code, Section XI, Appendix E.
7. FSAR, Section 15.1.26.
8. Kahtan N. Jabbour (NRC) letter to W. G. Hairston, III (GPC), Amendment 118 to the Operating License, dated January 10, 1992.
9. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

B 3.6 CONTAINMENT SYSTEMS

B 3.6.4.7 Standby Gas Treatment (SGT) System—Operating

BASES

BACKGROUND

The SGT System is required by 10 CFR 50, Appendix A, GDC 41, "Containment Atmosphere Cleanup" (Ref. 1). The function of the SGT System is to ensure that radioactive materials that leak from the primary containment into the secondary containment following a Design Basis Accident (DBA) are filtered and adsorbed prior to exhausting to the environment.

The Unit 1 and Unit 2 SGT Systems each consists of two fully redundant subsystems, each with its own set of dampers, charcoal filter train, and controls. The Unit 1 SGT subsystems' ductwork is separate from the inlet to the filter train to the discharge of the fan. The rest of the ductwork is common. The Unit 2 SGT subsystems' ductwork is separate except for the suction from the drywell and torus, which is common (However, this suction path is not required for subsystem OPERABILITY).

Each charcoal filter train consists of (components listed in order of the direction of the air flow):

a. A demister or moisture separator;

b. An electric heater;

c. A prefilter;

d. A high efficiency particulate air (HEPA) filter;

e. Two charcoal adsorbers for Unit 1 subsystems and one charcoal adsorber for Unit 2 subsystems;

f. A second HEPA filter; and

g. A centrifugal fan.

The sizing of the SGT Systems equipment and components is based on the results of an infiltration analysis, as well as an exfiltration analysis of the Unit 1 and Unit 2 secondary containments. The internal pressure of the SGT Systems

(continued)

BASES

BACKGROUND (continued)

boundary region is maintained at a negative pressure of 0.25 inches water gauge when the system is in operation, which represents the internal pressure required to ensure zero exfiltration of air from the building when exposed to a 10 mph wind.

The demister is provided to remove entrained water in the air, while the electric heater reduces the relative humidity of the airstream to < 70% (Refs. 2 and 3). The prefilter removes large particulate matter, while the HEPA filter removes fine particulate matter and protects the charcoal from fouling. The charcoal adsorbers remove gaseous elemental iodine and organic iodides, and the final HEPA filter collects any carbon fines exhausted from the charcoal adsorber.

The Unit 1 and Unit 2 SGT Systems automatically start and operate in response to actuation signals indicative of conditions or an accident that could require operation of the system. Following initiation, all required charcoal filter train fans start. Upon verification that the required subsystems are operating, the redundant required subsystem is normally shut down.

APPLICABLE SAFETY ANALYSES

The design basis for the Unit 1 and Unit 2 SGT Systems during MODES 1, 2, and 3 is to mitigate the consequences of a loss of coolant accident (Refs. 2, 3, and 4). For this event, the SGT Systems are shown to be automatically initiated to reduce, via filtration and adsorption, the radioactive material released to the environment. One SGT subsystem is required to draw-down the Unit 2 secondary containment and two SGT subsystems are required to draw-down the Unit 1 secondary containment. The need for Unit 1 secondary containment during a Unit 2 LOCA arises because of potential leakage past the Unit 2 drywell head onto the refueling floor (i.e., into the Unit 1 secondary containment).

The SGT System satisfies Criterion 3 of the NRC Policy Statement (Ref. 5).

(continued)

BASES

LCO (continued)	In addition, with Unit 1 secondary containment in the modified configuration, the Unit 1 SGT System valves to the Unit 1 reactor building zone are not included as part of Unit 1 SGT System OPERABILITY (i.e., the valves may be secured closed and are not required to open on an actuation signal).
APPLICABILITY	In MODES 1, 2, and 3, a LOCA could lead to a fission product release to primary containment that leaks to Unit 1 and Unit 2 secondary containments. Therefore, Unit 1 and Unit 2 SGT Systems OPERABILITY are required during these MODES. SGT System requirements for MODES 4 and 5 are covered by LCOs 3.6.4.8 and 3.6.4.9, "SGT System—OPDRVs" and "—Refueling," respectively.
ACTIONS	The Actions are modified by a Note to indicate that when both Unit 1 SGT subsystems are placed in an inoperable status for inspection of the Unit 1 hardened vent rupture disk, entry into associated Conditions and Required Actions may be delayed for up to 24 hours, provided both Unit 2 SGT subsystems are OPERABLE. Upon completion of the inspection or expiration of the 24 hour allowance, the Unit 1 SGT subsystems must be returned to OPERABLE status or the applicable Conditions entered and Required Actions taken. The 24 hour allowance is based upon precluding a dual unit shutdown to perform the inspection, yet minimizing the time both Unit 1 SGT subsystems are inoperable. <u>A.1</u> With one Unit 1 or Unit 2 SGT subsystem inoperable, the inoperable subsystem must be restored to OPERABLE status in 7 days. In this condition, the remaining OPERABLE SGT subsystems are adequate to perform the required radioactivity release control function. However, the overall system reliability is reduced because a single failure in one of the OPERABLE subsystems could result in the radioactivity release control function not being adequately performed. The 7 day Completion Time is based on consideration of such factors as the availability of the

(continued)

BASES

ACTIONS

A.1 (continued)

OPERABLE redundant SGT subsystems and the low probability of a DBA occurring during this period.

B.1 and B.2

If the SGT subsystem cannot be restored to OPERABLE status within the required Completion Time in MODE 1, 2, or 3, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours and to MODE 4 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.6.4.7.1

Operating each required Unit 1 and Unit 2 SGT subsystem for ≥ 10 continuous hours ensures that they are OPERABLE and that all associated controls are functioning properly. It also ensures that blockage, fan or motor failure, or excessive vibration can be detected for corrective action. Operation with the heaters on for ≥ 10 continuous hours every 31 days eliminates moisture on the adsorbers and HEPA filters. The 31 day Frequency was developed in consideration of the known reliability of fan motors and controls and the redundancy available in the system.

SR 3.6.4.7.2

This SR verifies that the required Unit 1 and Unit 2 SGT filter testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The VFTP includes testing HEPA filter performance, charcoal adsorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). Specific test frequencies

(continued)

BASES (continued)

APPLICABILITY

In MODES 4 and 5, the probability and consequences of a LOCA event is reduced due to the pressure and temperature limitations in these MODES. Therefore, maintaining the Unit 2 SGT System in OPERABLE status is not required in MODE 4 or 5, except for other situations under which significant releases of radioactive material can be postulated, such as during OPDRVs, since this condition could lead to an inadvertent vessel draindown event. SGT System requirements for MODES 1, 2 and 3, and during other conditions for which significant releases of radioactive material can be postulated, are covered by LCOs 3.6.4.7 and 3.6.4.9, "Standby Gas Treatment (SGT) System—Operating" and "—Refueling," respectively.

ACTIONS

A.1

With one Unit 2 SGT subsystem inoperable, the inoperable subsystem must be restored to OPERABLE status in 7 days. In this condition, the remaining OPERABLE Unit 2 SGT subsystem is adequate to perform the required radioactivity release control function. However, the overall system reliability is reduced because a single failure in the OPERABLE subsystem could result in the radioactivity release control function not being adequately performed. The 7 day Completion Time is based on consideration of such factors as the availability of the OPERABLE redundant Unit 2 SGT subsystem and the low probability of a DBA occurring during this period.

B.1 and B.2

During OPDRVs, when Required Action A.1 cannot be completed within the required Completion Time, the OPERABLE Unit 2 SGT subsystem should immediately be placed in operation. This action ensures that the remaining subsystem is OPERABLE, that no failures that could prevent automatic actuation have occurred, and that any other failure would be readily detected.

An alternative to Required Action B.1 is to immediately suspend activities that represent a potential for releasing radioactive material to the Unit 2 secondary containment, thus placing the plant in a condition that minimizes risk.

(continued)

BASES

ACTIONS

B.1 and B.2 (continued)

Therefore, actions must immediately be initiated to suspend OPDRVs in order to minimize the probability of a vessel draindown and subsequent potential for fission product release. Actions must continue until OPDRVs are suspended.

C.1 and C.2

When two Unit 2 SGT subsystems are inoperable, actions must immediately be initiated to suspend OPDRVs in order to minimize the probability of a vessel draindown and subsequent potential for fission product release. Actions must continue until OPDRVs are suspended.

SURVEILLANCE REQUIREMENTS

SR 3.6.4.8.1

Operating each Unit 2 SGT subsystem for ≥ 10 continuous hours ensures that they are OPERABLE and that all associated controls are functioning properly. It also ensures that blockage, fan or motor failure, or excessive vibration can be detected for corrective action. Operation with the heaters on for ≥ 10 continuous hours every 31 days eliminates moisture on the adsorbers and HEPA filters. The 31 day Frequency was developed in consideration of the known reliability of fan motors and controls and the redundancy available in the system.

SR 3.6.4.8.2

This SR verifies that the required Unit 2 SGT filter testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The VFTP includes testing HEPA filter performance, charcoal adsorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). Specific test frequencies and additional information are discussed in detail in the VFTP.

(continued)

BASES

LCO (continued)

valves may be secured closed and are not required to open on an actuation signal).

APPLICABILITY

During CORE ALTERATIONS or movement of irradiated fuel assemblies in the Unit 1 secondary containment, a fuel handling accident could lead to a fission product release to the Unit 1 secondary containment. Therefore, Unit 1 and Unit 2 SGT System OPERABILITY is required during these conditions.

SGT System requirements in MODES 1, 2 and 3, and during other conditions for which significant releases of radioactive material can be postulated, are covered by LCOs 3.6.4.7 and 3.6.4.8, "SGT System—Operating" and "—OPDRVs," respectively.

ACTIONS

A.1

With one required Unit 1 or Unit 2 SGT subsystem inoperable, the inoperable subsystem must be restored to OPERABLE status in 7 days. In this condition, the remaining required OPERABLE SGT subsystems are adequate to perform the required radioactivity release control function. However, the overall system reliability is reduced because a single failure in one of the remaining required OPERABLE subsystems could result in the radioactivity release control function not being adequately performed. The 7 day Completion Time is based on consideration of such factors as the availability of the OPERABLE redundant SGT subsystem and the low probability of a DBA occurring during this period.

B.1, B.2.1, and B.2.2

During movement of irradiated fuel assemblies, in the Unit 1 secondary containment or during CORE ALTERATIONS, when Required Action A.1 cannot be completed within the required Completion Time, the two remaining required OPERABLE SGT subsystems should immediately be placed in operation. This action ensures that the remaining subsystems are OPERABLE, that no failures that could prevent automatic actuation have

(continued)

BASES

ACTIONS

B.1, B.2.1, and B.2.2 (continued)

An alternative to Required Action B.1 is to immediately suspend activities that represent a potential for releasing radioactive material to the Unit 1 secondary containment, thus placing the plant in a condition that minimizes risk. If applicable, CORE ALTERATIONS and movement of irradiated fuel assemblies must immediately be suspended. Suspension of these activities must not preclude completion of movement of a component to a safe position.

The Required Actions of Condition B have been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODE 4 or 5, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, in either case, inability to suspend movement of irradiated fuel assemblies would not be a sufficient reason to require a reactor shutdown.

C.1 and C.2

When two or three required SGT subsystems are inoperable, if applicable, CORE ALTERATIONS and movement of irradiated fuel assemblies in Unit 1 secondary containment must immediately be suspended. Suspension of these activities shall not preclude completion of movement of a component to a safe position.

Required Action C.1 has been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODE 4 or 5, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, or 3, the fuel movement is independent of reactor operations. Therefore, in either case, inability to suspend movement of irradiated fuel assemblies would not be a sufficient reason to require a reactor shutdown.

SURVEILLANCE REQUIREMENTS

SR 3.6.4.9.1

Operating each required Unit 1 and Unit 2 SGT subsystem for ≥ 10 continuous hours ensures that they are OPERABLE and

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.4.9.1 (continued)

that all associated controls are functioning properly. It also ensures that blockage, fan or motor failure, or excessive vibration can be detected for corrective action. Operation with the heaters on for ≥ 10 continuous hours every 31 days eliminates moisture on the adsorbers and HEPA filters. The 31 day Frequency was developed in consideration of the known reliability of fan motors and controls and the redundancy available in the system.

SR 3.6.4.9.2

This SR verifies that the required Unit 1 and Unit 2 SGT filter testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The VFTP includes testing HEPA filter performance, charcoal adsorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). Specific test frequencies and additional information are discussed in detail in the VFTP.

SR 3.6.4.9.3

This SR verifies that each required Unit 1 and Unit 2 SGT subsystem starts on receipt of an actual or simulated initiation signal. The LOGIC SYSTEM FUNCTIONAL TEST in SR 3.3.6.2.5 overlaps this SR to provide complete testing of the safety function. While this Surveillance can be performed with the reactor at power, operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency. Therefore, the Frequency was found to be acceptable from a reliability standpoint.

REFERENCES

1. Unit 1 FSAR, Section 5.3.

2. FSAR, Section 6.2.3.

(continued)

BASES

REFERENCES (continued)

3. FSAR, Section 15.1.41.
4. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

UNIT 2 MARKUP OF CURRENT TECHNICAL SPECIFICATIONS AND DISCUSSION OF CHANGES

Section 1.0

DEFINITIONS

MINIMUM CRITICAL POWER RATIO (MCPR)

A.3

The ~~MINIMUM CRITICAL POWER RATIO~~ (MCPR) shall be the smallest (CPR) ~~which~~ that exists in the core. critical power ratio

Insert 1.1I A.10

Insert 1.1J

OPERABLE - OPERABILITY

A.17 A.18

A system, subsystem, ~~train~~ division, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when ~~Implicit in this definition shall be the assumption that~~ all necessary attendant instrumentation, controls, normal ~~and~~ or emergency electrical power ~~sources~~, cooling ~~or~~ and seal water, lubrication, ~~or~~ and other auxiliary equipment that are required for the system, subsystem, ~~train~~ division, component or device to perform its specified safety function(s) are also capable of performing their related support function(s). A.3 A.19 A.18

A.17

~~OPERATIONAL CONDITION~~

~~An OPERATIONAL CONDITION shall be any one inclusive combination of mode switch position and average reactor coolant temperature as indicated in Table 1.2.~~

PHYSICS TESTS

PHYSICS TESTS shall be those tests, Initial Tests and Operation, performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation. These tests are: ~~and 1)~~ a) described in Chapter 14~~.0~~ of the FSAR; b) ~~2)~~ authorized under the provisions of 10 CFR 50.59; or 3) otherwise approved by the Nuclear Regulatory Commission. A.3

A.13

d. Pressure Boundary LEAKAGE

~~PRESSURE BOUNDARY LEAKAGE shall be~~ leakage through a nonisolable fault in a Reactor Coolant System (RCS) component body, pipe wall, or vessel wall. A.3

move to page 1-3 as part of LEAKAGE definition

E

Insert 1.1I

for each class of fuel. The CPR is that power in the assembly that is calculated by application of the appropriate correlation(s) to cause some point in the assembly to experience boiling transition, divided by the actual assembly operating power.

Insert 1.1J

MODE

A MODE shall correspond to any one inclusive combination of mode switch position, average reactor coolant temperature, and reactor vessel head closure bolt tensioning specified in Table 1.1-1 with fuel in the reactor vessel.

Insert 1.1K (not used)

E

ADMINISTRATIVE

A.19 (continued)

In LCO 3.8.1, new times have been provided to perform the determination of redundant feature OPERABILITY. These changes are discussed in the Discussion of Changes for LCO 3.8.1.

A.20 Comment number not used.

A.21 The definitions of Primary Containment Integrity and Secondary Containment Integrity have been deleted from the proposed Hatch Unit 2 Technical Specifications. This was done because of the confusion associated with these definitions compared to their use in their respective LCOs. The change is editorial in that all the requirements are specifically addressed in the LCOs for the Primary Containment and Secondary Containment, along with the remainder of the LCOs in the Containment Systems section. Therefore, the change is an administrative presentation preference adopted by the BWR Standard Technical Specifications, NUREG 1433.

A.22 The definition of SHUTDOWN MARGIN has been modified to address stuck control rods. This is consistent with the existing requirement found in Surveillance 4.1.1.b to account for the worth of a stuck control rod. The relocation of this requirement is considered to be editorial.

A.23 The definition of STAGGERED TEST BASIS has been modified to be consistent with its usage throughout the proposed Hatch Unit 2 Technical Specifications. The intent of the frequency of testing components on a Staggered Test Basis is not changed. The revised definition allows the minimum Surveillance interval to be specified in the Surveillance Requirements' Frequency column of the applicable LCOs independent of the number of subsystems. This represents a human factored improvement to the current approach, which requires a determination of the Surveillance sub-interval from the test schedule based on the number of subsystems.

A.24 The definitions of OFFSITE DOSE CALCULATION MANUAL and PROCESS CONTROL PROGRAM have been moved to the Administrative Controls section. Any technical changes to these definitions are addressed in the Discussion of Changes associated with Section 5.0.

A.25 These footnotes are addressed by the exceptions allowed to LCO requirements in the proposed Special Operations section (currently titled "Special Test Exceptions"). Any technical changes to this requirement will be addressed with the content of the proposed chapter location. Refer to proposed LCO 3.10.1, LCO 3.10.2, LCO 3.10.3, and LCO 3.10.4.

Specification 3.4.9

3/4.4.6 PRESSURE/TEMPERATURE LIMITS

REACTOR COOLANT SYSTEM

LIMITING CONDITION FOR OPERATION

LCO 3.4.9

3.4.6.1 The reactor coolant system temperature and reactor vessel pressure shall be limited in accordance with the limit lines shown on (1) Figure 3.4.6.1-1 for heatup by non-nuclear means, cooldown following a nuclear shutdown and low power PHYSICS TESTS; (2) Figure 3.4.6.1-2 for operations with a critical core other than low power PHYSICS TESTS; and (3) Figure 3.4.6.1-3 for inservice hydrostatic or leak testing, with:

SR 3.4.9.2, SR 3.4.9.3, SR 3.4.9.1.a, A.4

E

SR 3.4.9.1.b

a. A maximum heatup of 100°F in any one hour period, and

b. A maximum cooldown of 100°F in any one hour period.

APPLICABILITY: At all times.

ACTION: Proposed Conditions A and C Notes (A.1)

Actions A and C

With any of the above limits exceeded, (A.2) restore the temperature and/or pressure to within the limits within 30 minutes; perform an engineering evaluation to determine the effects of the out-of-limit condition on the fracture toughness properties of the reactor coolant system; determine that the reactor coolant system remains acceptable for continued operations or be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.

Action B

(M.1) Proposed Required Actions A.2 and C.2 Completion Times

SURVEILLANCE REQUIREMENTS

SR 3.4.9.1

4.4.6.1.1 The reactor coolant system temperature and reactor vessel pressure shall be determined to be within the limits at least once per 30 minutes during system heatup, cooldown and inservice leak and hydrostatic testing operations.

Note

SR 3.4.9.4

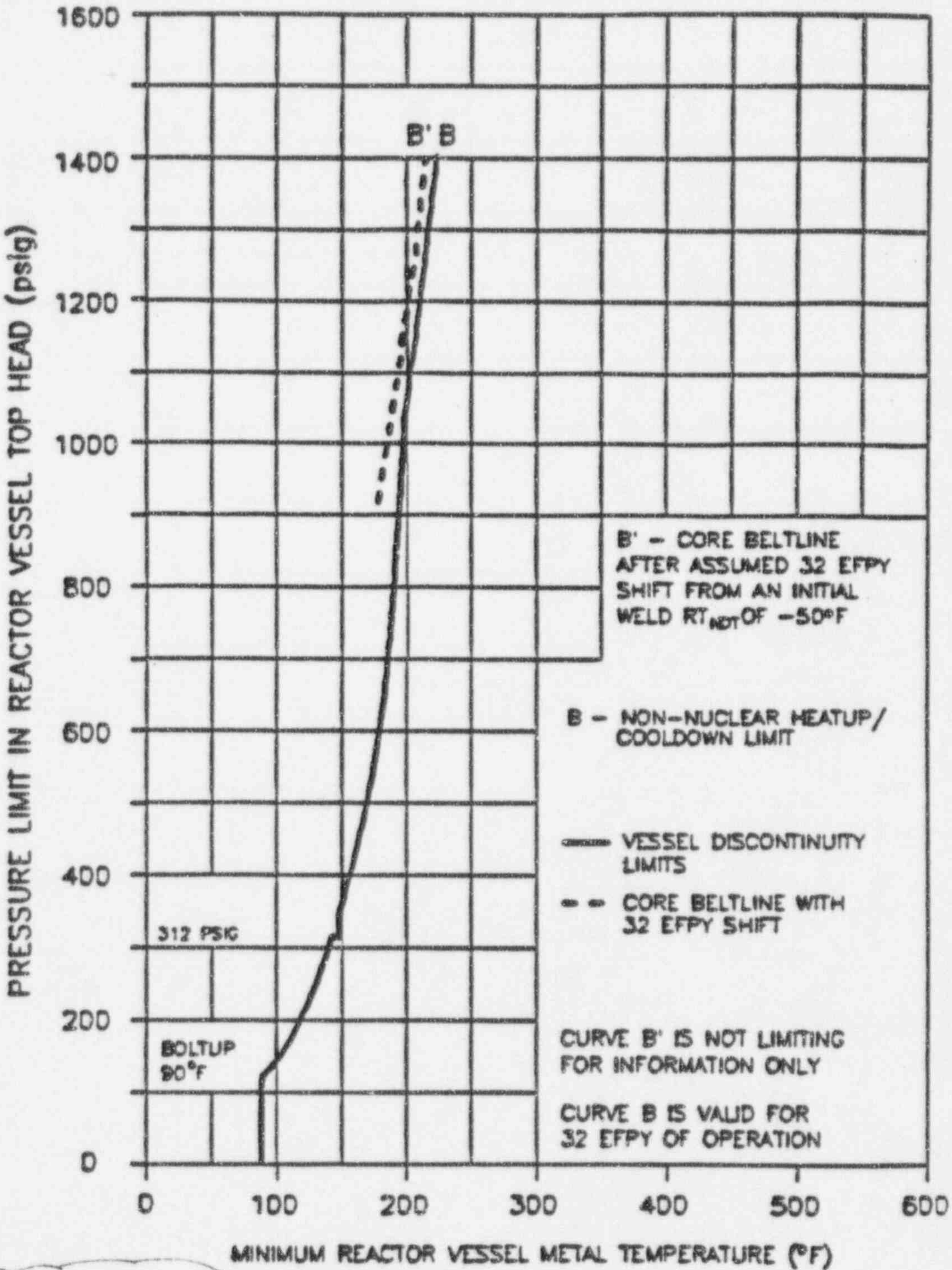
4.4.6.1.2 The reactor coolant system temperature and reactor vessel pressure shall be determined to be to the right of the criticality limit line of Figure 3.4.6.1-2 within 15 minutes prior to the withdrawal of control rods to bring the reactor to criticality.

E

~~4.4.6.1.3 The reactor material irradiation surveillance specimens shall be removed and examined to determine changes in material properties, as required by 10 CFR 50, Appendix H. The results of these examinations shall be used to update Figures 3.4.6.1-1, 3.4.6.1-2 and 3.4.6.1-3.~~

(A.3)

(M.2) Proposed SR 3.4.9.5, SR 3.4.9.6, SR 3.4.9.7



E

FIGURE 3.4.9-2

TEMPERATURE PRESSURE LIMITS FOR NON-NUCLEAR HEATUP, LOW POWER PHYSICS TESTS AND COOLDOWN FOLLOWING A SHUTDOWN

~~FIGURE 3.4.6.1-1~~

2 of 5

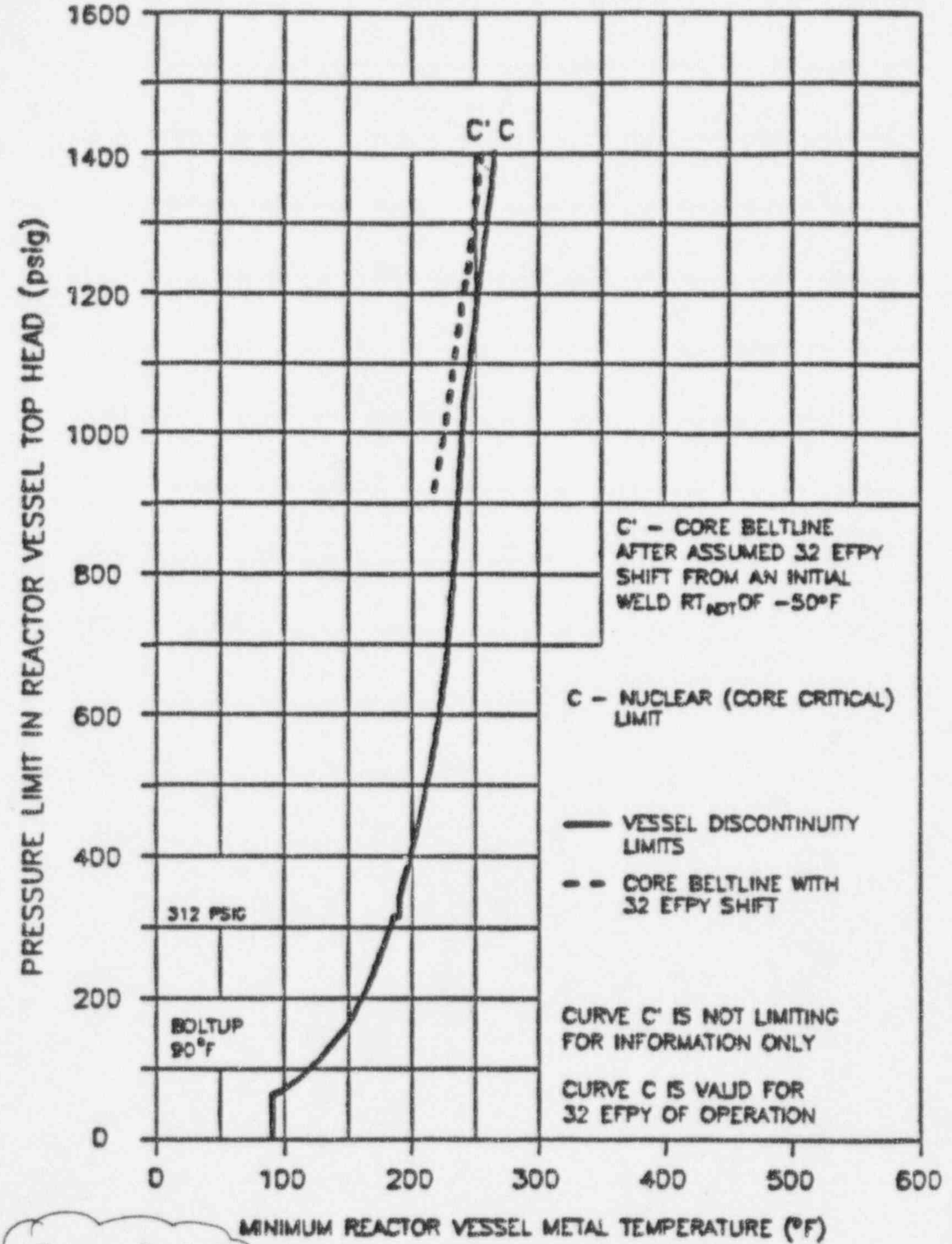


FIGURE 3.4.9–3

TEMPERATURE-PRESSURE LIMITS FOR CRITICALITY
~~(INCLUDES ADDITIONAL 40°F MARGIN REQ'D BY 10CFR50, APP G)~~ A.5
~~FIGURE 3.4.6.1-2~~

E

3 of 5

E - Stet page

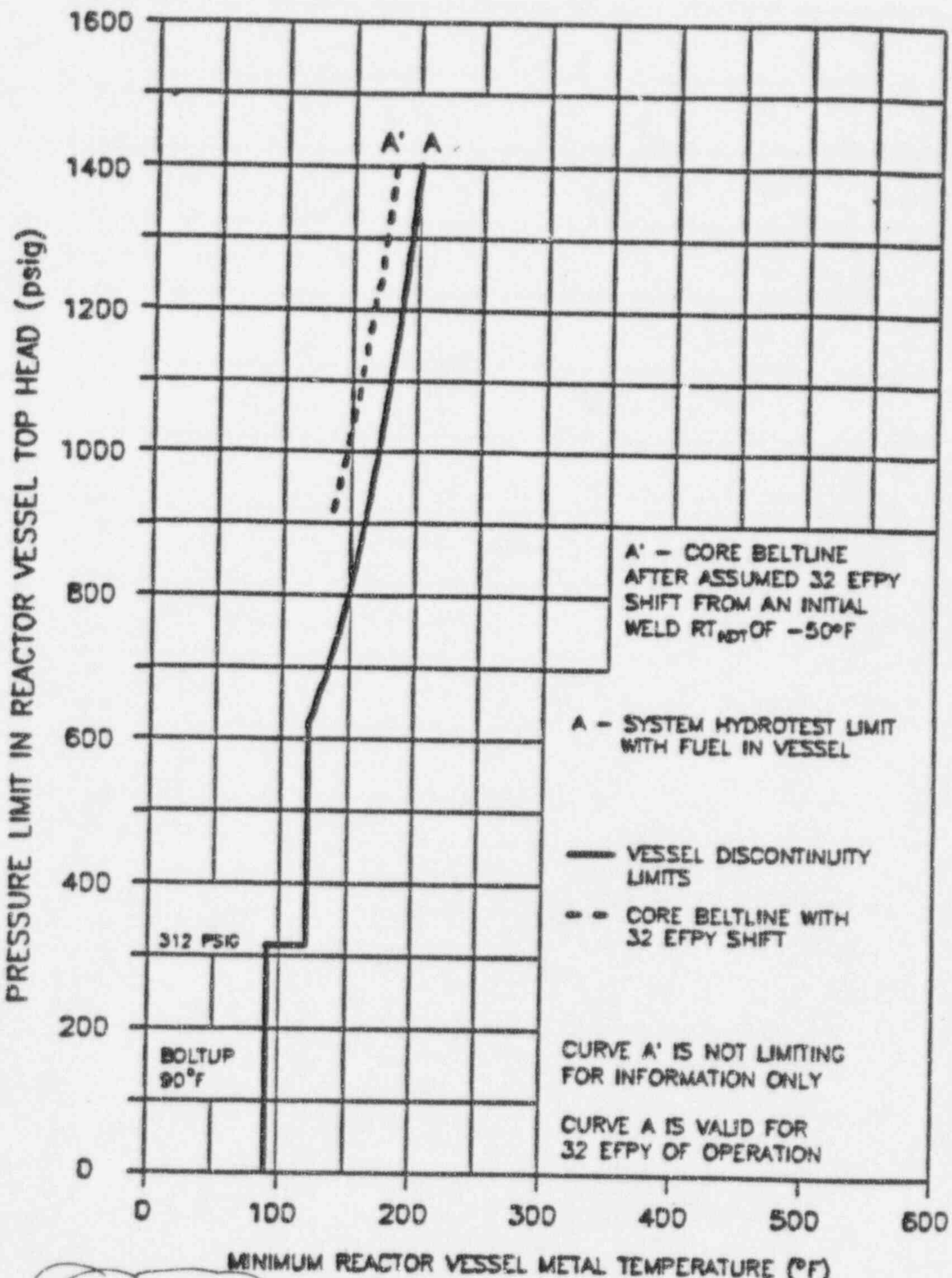


FIGURE 3.4.9-1

TEMPERATURE-PRESSURE LIMITS FOR INSERVICE HYDROSTATIC ~~TEST~~ and Inservice Leakage Tests (A.5)

~~**FIGURE 3.4.6.1-3**~~

E

REACTOR COOLANT SYSTEM

IDLE RECIRCULATION LOOP STARTUP

LIMITING CONDITION FOR OPERATION

LCO 3.4.9

3.4.1.3 An idle recirculation loop shall not be started unless the temperature differential between the reactor coolant within the dome and the bottom head drain is ≤ 145°F, and | E

A.4

a. The temperature differential between the reactor coolant within the idle loop to be started up and the coolant in the reactor pressure vessel is ≤ 50°F when both loops have been idle, or | E

b. The temperature differential between the reactor coolant within the idle and operating recirculation loops is ≤ 50°F when only one loop has been idle, and the operating loop flow rate is ≤ 50% of rated loop flow. | E

LA.1

APPLICABILITY: CONDITIONS 1, 2, 3 and 4. NOTE to SRs 3.4.9.3 and 3.4.9.4

ACTION:

With temperature differences and/or flow rate exceeding the above limits, suspend startup of any idle recirculation loop.

Proposed ACTIONS A, B, and C — M.3

SURVEILLANCE REQUIREMENTS

SR 3.4.9.3 and SR 3.4.9.4

4.4.1.3 The temperature differential and flow rate shall be determined to be within the limit within 30 minutes prior to startup of an idle recirculation loop.

15 — M.4

ADMINISTRATIVE
(continued)

A.4 These requirements are presented as Surveillances in the P/T limits Specification. The requirements remain unchanged. As such, this change is administrative.

A.5 Title changes to the P/T curves have been made for consistency with the ITS SRs.

TECHNICAL CHANGE - MORE RESTRICTIVE

M.1 A specific Completion Time for the engineering evaluation and determination is proposed. The proposed time of 72 hours is considered reasonable for operation in MODES 1, 2, and 3 because the limits represent controls on long term vessel fatigue and usage factors. In MODES 4 and 5, the proposed time (prior to entering MODE 2 or 3) would prevent entry in the operating MODES which is consistent with the current LCO 3.0.4.

M.2 Three Surveillance Requirements have been added. SR 3.4.9.5 ensures the vessel head is not tensioned at too low a temperature. SRs 3.4.9.6 and 3.4.9.7 ensure the vessel and head flange temperatures do not decrease below the minimum allowed temperature every 30 minutes, or every 12 hours, depending upon the RCS temperature. These are additional restrictions on plant operation.

M.3 The ACTIONS required to be taken when a recirculation pump is started without having met the temperature requirements have been changed. Currently, the ACTION only states to suspend the startup of a recirculation loop. This however, does not provide an action if the loop is already operating. Proposed ACTIONS A, B, and C now require an engineering evaluation to be performed to ensure continued operation is acceptable. This is an additional restriction on plant operation.

M.4 The Surveillance Frequency has been changed to require the temperature checks to be performed within 15 minutes prior to startup of the idle recirculation pump, instead of the current 30 minutes. This is an additional restriction on plant operation.

TECHNICAL CHANGE - LESS RESTRICTIVE

"Generic"

LA.1 The details relating to system design and operational limits have been relocated to plant controlled documents (e.g., updated FSAR and procedures). The single operating loop limit on flow rate is considered an operational limit since it is not directly related to the ability of the system to perform its safety analysis function. The flow rate is limited only to minimize reactor vessel internals vibration. Changes to plant controlled documents will be in accordance with the provisions of 10 CFR 50.59.

3/4.6.6 CONTAINMENT ATMOSPHERE CONTROL

STANDBY GAS TREATMENT SYSTEM

Specification 3.6.4.7

LIMITING CONDITION FOR OPERATION

LCO 3.6.4.7 3.6.6.1 Two Hatch-Unit 2 independent standby gas treatment subsystems and two Hatch-Unit 1 independent standby gas treatment subsystems shall be OPERABLE.

APPLICABILITY: CONDITIONS 1, 2, 3, and *.

ACTION: Note for Actions L.3

a. With one of the above required standby gas treatment subsystems inoperable, restore the inoperable subsystem to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours. (ACTION A; ACTION B)

b. With two or more of the above required standby gas treatment subsystems inoperable, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours, except as allowed by Action c. (LCO 3.0.3)

c. With both of the Hatch-Unit 1 independent standby gas treatment subsystems inoperable for installation of the Unit 1 torus hardened vent, Unit 2 operation may continue for a cumulative total of up to 7 days provided all of the following requirements are met: (A.1)

1. Prior to removing either Unit 1 standby gas treatment subsystem from service, demonstrate that a negative pressure can be maintained in the Unit 2 secondary containment and the Unit 1 modified secondary containment under the following conditions:
   - The Unit 1 secondary containment is in the modified mode.
   - Both Unit 2 standby gas treatment subsystems are aligned with suction from both of the subject areas and are operating with each filter train flow rate not more than 4000 cfm.
   - Calm wind conditions (< 5 mph) exist.
2. Maintain both Unit 2 standby gas treatment subsystems OPERABLE.
3. Maintain Unit 2 secondary containment integrity, except for Unit 1 standby gas treatment system OPERABILITY requirements.
4. Maintain Unit 1 modified secondary containment integrity, except for Unit 1 standby gas treatment system OPERABILITY requirements.
5. Allow no Unit 1 CORE ALTERATIONS.
6. Allow no handling of irradiated fuel or spent fuel shipping casks in the modified Unit 1 secondary containment.

If both Unit 1 standby gas treatment subsystems are not restored to OPERABLE status within the allowable cumulative time period of 7 days, or if any of the above requirements cannot be met, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

SURVEILLANCE REQUIREMENTS

4.6.6.1.1 Each Hatch-Unit 2 standby gas treatment subsystem shall be demonstrated OPERABLE:

a. By initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least a total of 10 hours each 31 days with the heaters on automatic control. (LA.1) (M.2) SR 3.6.4.7.1

b. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the system by: (SR 3.6.4.7.2) (A.2 moved to Specification 5.5.7)

1. Verifying that the cleanup system satisfies the in-place testing acceptance criteria and uses the test procedures of Regulatory Positions C.5.a, C.5.c and C.5.d of Regulatory Guide 1.52, Revision 1, July 1976, and the system flow rate is 4000 + 0, -1000 cfm.
2. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 1, July 1976, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 1, July 1976.

1 E

*When performing inservice hydrostatic or leak testing with the reactor coolant temperature above 212°F.

See Discussion of Changes for ITS 3.10.1, Inservice Leak and Hydrostatic Testing Operations, in chapter 3.10

ADMINISTRATIVE

A.1 This allowance is being deleted since it is a one-time allowance only and the hardened vent has been installed.

A.2 The technical content of this requirement is being moved to Section 5 of the proposed Technical Specifications in accordance with the format of the BWR Standard Technical Specifications, NUREG 1433. Any technical changes to this requirement are addressed in the Discussion of Changes associated with proposed Specification 5.5.7. A surveillance requirement is added (proposed SR 3.6.4.7.2) to clarify that the tests of the Ventilation Filter Testing Program must also be completed and passed for determining OPERABILITY of the SGT System. Since this is a presentation preference that maintains current requirements, this change is considered administrative.

A.3 The technical content of this requirement is being divided into two Surveillances. The majority of the Surveillance will be performed in LCO 3.3.6.2 requirements. The actual system functional test portion will be performed as SR 3.6.4.7.3. This ensures the entire system is tested with proper overlap.

TECHNICAL CHANGE - MORE RESTRICTIVE

M.1 The Unit 1 SGT System Surveillances have been specifically written into this LCO instead of providing a cross reference. The current Hatch Unit 1 surveillances are written as proposed SRs 3.6.4.7.1 and SR 3.6.4.7.2. Also, proposed SR 3.6.4.7.3 now applies to the Unit 1 SGT System. This is not currently required by the Unit 1 Technical Specifications. These changes and additions, therefore, are considered an additional restriction on plant operation.

M.2 SR 3.6.4.7.1 requires the SGT System to be run 10 continuous hours each 31 days, while the CTS state a total of 10 hours. This is an additional restriction on plant operations.

TECHNICAL CHANGE - LESS RESTRICTIVE

"Generic"

LA.1 Details of the methods for performing this surveillance are relocated to the Bases and procedures. Changes to the Bases will be controlled by the provisions of the proposed Bases Control Process described in Chapter 5 of the Technical Specifications. Changes to the procedures will be controlled by the provisions of 10 CFR 50.59.

TECHNICAL CHANGE - LESS RESTRICTIVE

"Specific"

L.1 The phrase "actual or," in reference to the automatic initiation signal, has been added to the surveillance requirement for verifying that each subsystem actuates on an automatic initiation signal. This allows satisfactory automatic system initiations for other than surveillance purposes to be used to fulfill the surveillance requirements. Operability is adequately demonstrated in either case since the subsystem itself cannot discriminate between "actual" or "simulated" signals.

L.2 Comment number not used.

L.3 An ACTION Note is proposed to allow inspection of the Unit 1 hardened vent rupture disk while Unit 2 is operating. This inspection will cause both the Unit 1 SGT subsystems to be inoperable and, thus the allowance to delay entry into associated Conditions and Required Actions is needed, provided both the Unit 2 SGT subsystems are operable. The 24 hour allowance allows Unit 2 to continue operation during the inspection and minimizes the time when the Unit 1 SGT subsystems are inoperable.

Specification 5.5.7

CONTAINMENT SYSTEMS

3/4.6.6 CONTAINMENT ATMOSPHERE CONTROL

STANDBY GAS TREATMENT SYSTEM

LIMITING CONDITION FOR OPERATION

See Discussion of Changes for ITS: 3.6.4.7 SGT System-Operating, in Section 3.6.

3.6.6.1 Two Hatch-Unit 2 independent standby gas treatment subsystems and two Hatch-Unit 1 independent standby gas treatment subsystems shall be OPERABLE.

APPLICABILITY: CONDITIONS 1, 2, 3, and *.

ACTION:

a. With one of the above required standby gas treatment subsystems inoperable, restore the inoperable subsystem to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. With two or more of the above required standby gas treatment subsystems inoperable, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours, except as allowed by Action c.

c. With both of the Hatch-Unit 1 independent standby gas treatment subsystems inoperable for installation of the Unit 1 torus hardened vent, Unit 2 operation may continue for a cumulative total of up to 7 days provided all of the following requirements are met:

1. Prior to removing either Unit 1 standby gas treatment subsystem from service, demonstrate that a negative pressure can be maintained in the Unit 2 secondary containment and the Unit 1 modified secondary containment under the following conditions:
   - The Unit 1 secondary containment is in the modified mode
   - Both Unit 2 standby gas treatment subsystems are aligned with suction from both of the subject areas and are operating with each filter train flow rate not more than 4000 cfm.
   - Calm wind conditions (< 5 mph) exist.
2. Maintain both Unit 2 standby gas treatment subsystems OPERABLE.
3. Maintain Unit 2 secondary containment integrity, except for Unit 1 standby gas treatment system OPERABILITY requirements.
4. Maintain Unit 1 modified secondary containment integrity, except for Unit 1 standby gas treatment system OPERABILITY requirements.
5. Allow no Unit 1 CORE ALTERATIONS.
6. Allow no handling of irradiated fuel or spent fuel shipping casks in the modified Unit 1 secondary containment.

If both Unit 1 standby gas treatment subsystems are not restored to OPERABLE status within the allowable cumulative time period of 7 days, or if any of the above requirements cannot be met, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

SURVEILLANCE REQUIREMENTS

4.6.6.1.1 Each Hatch-Unit 2 standby gas treatment subsystem shall be demonstrated OPERABLE:

a. By initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least a total of 10 hours each 31 days with the heaters on automatic control.

5.5.7 b. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the system by:

5.5.7.a 1. Verifying that the cleanup system satisfies the in-place testing acceptance criteria and uses the test procedures of Regulatory Positions C.5.a, C.5.c and C.5.d of Regulatory Guide 1.52, Revision 1, July 1976, and the system flow rate is 4000 + 0, -1000 cfm. (A.2) (LA.1)

5.5.7.c 2. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 1, July 1976, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 1, July 1976. (A.3)

Testing Method (M.1)
Acceptance Criteria (A.6)
(E)

*When performing inservice hydrostatic or leak testing with the reactor coolant temperature above 212°F.

Specification 5.5.7

5.5.7.d 3. Verifying a system flow rate of 4000 +0, -1000 cfm during system operation when tested in accordance with ANSI N510-1975. A.4

LA.1 c. After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 1, July 1976, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 1, July 1976. 5.7.7.c A.3 M.1 A.6 1A

d. At least once per 18 months by:

5.5.7.d 1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is < 6 inches Water Gauge while operating the filter train at a flow rate of 4000 +0, -1000 cfm.

See Discussion of Changes for ITS: 3.6.4.7, in Section 3.6

2. Verifying that the filter train starts and isolation dampers open on each of the following test signals:

   a. Drywell pressure-high,

   b. High radiation on the;

      1) Refueling floor,

      2) Reactor building.

   c. Reactor Vessel Water Level-Low Low (Level 2).

3. Verifying that the heaters dissipate 18.5 ± 1.5 kw when tested in accordance with ANSI N510-1975. A.4 1E 1

L.2 Note 1 to ITS 5.5.7

A.1 Note 2 to ITS 5.5.7

2056

CONTAINMENT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

5.5.7.a e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove ≥ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 (A.4) while operating the system at a flow rate of 4000 +0, -1000 cfm.

5.5.7.b f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove ≥ 99% of a halogenated hydrocarbon regrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 (A.4) while operating the system at a flow rate of 4000 + 0, -1000 cfm.

4.6.6.1.2 Each Hatch-Unit 1 standby gas treatment subsystem shall be demonstrated OPERABLE per Hatch-Unit 1 Technical Specifications.

See Discussion of Changes for ITS: 3.6.4.3, in Section 3.6.

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Specification 5.5.7

SURVEILLANCE REQUIREMENTS (Continued)

5.5.7.a 2. Verifying that the cleanup system satisfies the in-place testing acceptance criteria and uses the test procedures of Regulatory Positions C.5.a, C.5.c and C.5.d of Regulatory Guide 1.52, Revision 1, July 1976, and the system flow rate is 2500 cfm ± 10 percent. (A.2)

(LA.1)

3. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 1, July 1976, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 1, July 1976. (A.3) (L.4) (M.1)

5.5.7.d 4. Verifying a system flow rate of 2500 cfm ± 10 percent during system operation when tested in accordance with ANSI N510-1975. (A.4)

(LA.1)

d. After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 1, July 1976, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 1, July 1976. (A.3) (L.4) (M.1)

e. At least once per 18 months by:

5.5.7.d 1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is < 6 in. W. G. while operating the system at a flow rate of 2500 cfm ± 10 percent.

2. (Deleted)

Specification 5.5.7

SURVEILLANCE REQUIREMENTS (Continued)

3. Verifying that on each of the below pressurization mode actuation test signals, the system automatically switches to the pressurization mode of operation and maintains the main control room at a positive pressure of ≥ 0.1-in. W.G. relative to the adjacent turbine building during system operation at a flow rate ≤ 400 cfm.

   a) Reactor vessel water level - low low low

   b) Drywell pressure - high

   c) Refueling floor area radiation - high

   d) (Deleted)

   e) Main steam line flow - high

   f) Control room intake monitors radiation - high

See Discussion of Changes for ITS: 3.7.4, in Section 3.7.

f. 5.5.7.a After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove ≥ 99 percent of the DOP when they are tested in-place in accordance with ANSI N510-1975 (A.4) while operating the system at a flow rate of 2500 cfm ± 10 percent.

g. 5.5.7.b After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove ≥ 99 percent of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 (A.4) while operating the system at a flow rate of 2500 cfm ± 10 percent.

(A.5) SR 3.0.2 and SR 3.0.3 are applicable

DISCUSSION OF CHANGES
ITS: SECTION 5.5.7 - VENTILATION FILTER TESTING PROGRAM (VFTP)

ADMINISTRATIVE

A.1 Note 2 is added to the proposed Technical Specifications to provide an allowance, in the future, to use refrigerants equivalent to those specified in ASME N510-1989 for testing purposes. The use of R-11 as a test gas is expected to be changed due to environmental considerations. This change maintains equivalent test methods to those currently specified in the standards and is, therefore, considered an administrative change.

A.2 Current Technical Specifications for in-place testing of the SGT and MCREC Systems reference Regulatory Position C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 1, July 1976. Proposed Technical Specification 5.5.7.a references Regulatory Guide 1.52, Revision 2, Section 5c and ASME N510-1989, Section 10. The change to the current reference is an update to the later revision of Regulatory Guide 1.52 but does not change the current testing requirements. Therefore, this change is considered administrative.

A.3 Current Technical Specifications for the SGT and MCREC Systems reference Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 1, July 1976, for obtaining a representative sample of charcoal for testing purposes. This reference is proposed to be changed to Regulatory Guide 1.52, Revision 2, Section 6b and ASME N510-1989, Section 15, and Appendix B. The proposed change updates the present reference without changing current testing requirements. Since present Technical Specification testing methods are retained, this change is considered administrative.

A.4 The current Technical Specification reference to ANSI N510-1975 is proposed to be changed to ASME N510-1989 for the SGT and MCREC Systems. The proposed change in testing standards will provide an update to the present standard without changing current testing requirements. Therefore, the proposed change is considered administrative.

A.5 A statement of applicabilty of SR 3.0.2 and SR 3.0.3 is needed to clarify that the allowances for surveillance frequency extensions do apply, since these SRs are not normally applied to frequencies identified in the Administrative Controls section of the Technical Specifications. Since this change is a clarification needed to maintain provisions that would be allowed in the LCO sections of the Technical Specifications, it is considered administrative.

A.6 CTS state testing criterion as C.6.a of Regulatory Guide 1.52, Rev. 1. This is replaced with explicit acceptance criterion of 0.2% penetration, which is consistent with the value specified in Regulatory Guide 1.52, Rev. 2, March 1978 (when rounded) and with the penetration value calculated using the formula stated in BWR Standard Technical Specifications, NUREG 1433. This change is considered administrative. See Discussion of Change 5.5.7, Comment M.1, for details of laboratory testing method change.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 Current Technical Specifications for the SGT and MCREC Systems reference Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 1, July 1976, for the laboratory testing of the charcoal samples. The current laboratory test standard used for the charcoal is RDT-M16-IT. Proposed ITS 5.7.12.c requires laboratory testing in accordance with ASTM D3803-1989 at a temperature $\leq$ 30°C and $\geq$ 95% relative humidity. The ASTM D3803-1989 testing standard is more conservative than the current RDT-M16-IT standard and is endorsed by the NRC for use throughout the industry.

M.2 Comment number not used.

TECHNICAL CHANGES - LESS RESTRICTIVE

"Generic"

LA.1 Details of the methods for implementing this specification are relocated to the FSAR and procedures. Additionally, changes to the procedures and the FSAR are controlled in accordance with 10 CFR 50.59.

TECHNICAL CHANGES - LESS RESTRICTIVE

LA.2 The visual inspection of the MCREC System and all components before each leak test is not included in the proposed TS. This type of general maintenance inspection is included in procedures and not usually made a part of Technical Specification requirements. The placement of this type of requirement in plant procedures is considered a generic less restrictive change.

"Specific"

L.1 Comment number not used.

L.2 The current Technical Specifications require testing of the SGT System 1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or 2) following painting, a fire or chemical release in any ventilation zone communicating with the system. Plant Hatch has performed tests and evaluations and has determined that the use of water based paints and the performance of metal grinding, buffing, or welding are not detrimental to the charcoal filters of the SGT System, either prior to or during operation. These activities should not require surveillance of the SGT System upon their conclusion. This applies to all types of welding conducted at Plant Hatch and tracking of the quantity of weld material used is not necessary.

L.3 Comment number not used.

L.4 CTS require that charcoal carbon samples meet the laboratory testing criterion of Regulatory Guide 1.52, Revision 1, Position C.6.a. This position in turn references you to Table 2 of the Regulatory Guide. ITS proposes an explicit acceptance criterion of 2.0% when tested at 95% RH.

Background

The Hatch Main Control Room Environmental Control (MCREC) system contains two filtration units, each complete with upstream and downstream HEPA filters, a 2-in. bed charcoal adsorber section, and a fan. Note that the system does not contain heaters which would be equivalent to that described in RG 1.52. The MCREC system design considers the operation of only one filtration unit at a time. The air entering each filtration unit consists of 400 cfm (maximum) of outside air and a portion of main control room recirculated air (2100 cfm) for a total of approximately 2500 cfm.

TECHNICAL CHANGES - LESS RESTRICTIVE

The leaving air from each filtration unit mixes with the remainder of the recirculated air from the main control room, and then flows through air handling units with direct expansion cooling coils. The air handling units control the temperature and dehumidify the air in the main control room. Thus, heaters are not installed in the filtration units. However, as discussed in the Analysis section below, the MCREC system will maintain relative humidity of the air entering the filtration units less than 70% RH.

The main control room dose calculations for plant accident conditions credit the charcoal in the filtration unit adsorber bed section with an overall average efficiency of 95% for all forms of iodine. To provide assurance of the quality of charcoal to meet its intended design function, the charcoal is periodically laboratory tested. Since the licensing of the plant, the charcoal in the MCREC system has been tested using the RDT-M16-1T standard. The Technical Specification Improvement Program (TSIP) will introduce the NRC recommended ASTM D3803-1989 standard. It is therefore necessary to establish the laboratory testing and acceptance criteria.

Proposed Charcoal Testing Criterion:

Testing Method:	ASTM D3803-1989
Testing Parameters:	30°C @ 95% RH
Acceptance Criterion:	Maximum Methyl Iodide Penetration of 2.0%

Analysis:

A calculation has been performed which documents the relative humidity in the main control room during normal and pressurization modes of operation. The calculation documents the condition of the air entering the filtration unit during pressurization mode of operation as being less than 70% RH, assuming that the recirculated air from the control room mixes with outside air at 100% RH. The calculation is based on the design heat load of the main control room. The MCREC system will maintain relatively constant relative humidity in the control room for varying heat load conditions because the temperature of the air leaving the air handling units is held constant by the direct expansion cooling coils. Based on this discussion, it should be acceptable from a design and safety perspective to test the charcoal using the ASTM D3803-1989 standard for the 30°C and 70% RH condition. However, since the system does not have heaters which maintain the 70% RH, the testing relative humidity recommended by the NRC is 95%.

To maintain a filter efficiency equivalent to the current credited FSAR value of 95% while testing the charcoal using the ASTM D3803-1989 test

TECHNICAL CHANGES - LESS RESTRICTIVE

criterion, it is necessary to establish a safety factor. The proposed safety factor is 2.5. Using the methodology of RG Guide 1.52:

$$\text{Removal Efficiency (for test)} = 100\% - \frac{100\%\text{-efficiency credited in safety analysis}}{\text{Safety Factor}} = 100 - \frac{(100 - 95)}{2.5}$$

will yield a required test efficiency of 98%, which corresponds to a penetration of 2.0%.

This required test removal efficiency is based on assumed removal efficiencies of elemental and organic iodide being the same at 95%. However, it is generally recognized that removal efficiency of elemental iodine is considerably higher than that of organic (methyl) iodide.

The expected iodine species primarily exists in the form of elemental and organic iodide. Laboratory testing of carbon is performed by challenging carbon samples with methyl iodide which is an organic form of iodine. However, if the testing of the carbon samples were performed using elemental iodine, it is presumed that the efficiency established would have been much higher, because of the higher removal efficiency of elemental iodine.

To demonstrate this effect, assume an iodine species partition as described in Regulatory Guide 1.3 (91% elemental, 5% particulate, 4% organic). Then assume relative efficiencies for elemental/particulate versus organic, as described in Regulatory Guide 1.52, for uncontrolled humidity, instead of assuming equal removal efficiencies of 95%, to demonstrate expected differences in removal efficiency (30% organic versus 90% elemental yields (1-0.30/1-0.90=7)). Then the following estimates are made:

$0.96E_e + 0.04E_o = 0.95$ (FSAR credited value)

$(1-E_e)7 = 1-E_o$ (elemental vs organic penetration)

Where: E_e = elemental + particulate efficiencies
E_o = organic efficiency

Solving simultaneously yields $E_e = 0.96$ and $E_o = 0.72$

It is proposed that the laboratory tested methyl iodide penetration be 2.0% maximum.

Then Allowable Penetration = (1-0.72)/(Safety Factor) = .02 (or 2.0% maximum)

Safety factor established by this methodology: 14

TECHNICAL CHANGES - LESS RESTRICTIVE

Comparing the two safety factors, adequate assurance exists that sufficient safety margin will still be present to protect the credited charcoal efficiency in the dose calculations.

Recommendation:

The laboratory testing of the charcoal in the MCREC system filters will be conducted using the ASTM D3803-1989 standard to demonstrate ≤ 2.0% methyl iodide penetration for 2-inch bed depths at 30°C and 95% RH. This will maintain or exceed the charcoal efficiency credited in the FSAR accident analyses and with an established safety margin.

5.6.4 MONTHLY OPERATING REPORT

6.9.1.10 Routine reports of operating statistics and shutdown experience shall be submitted on a monthly basis to the Director, Office of Management and Program Analysis, U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, with a copy to the Regional Office of Inspection and Enforcement no later than the 15th of each month following the calendar month covered by the report. (A.1)

5.6.5 CORE OPERATING LIMITS REPORT

5.6.5.a 6.9.1.11.a. Core operating limits shall be established and documented in the CORE OPERATING LIMITS REPORT before each reload cycle or any remaining part of a reload cycle for the following:

5.6.5.a.1) (1) Control Rod Program Controls - Rod Block Monitor for Specification 3.1.4.3,

5.6.5.a.2) (2) The Average Planar Linear Heat Generation Rate for Specification 3.2.1 and Surveillance Requirement 4.2.1,

5.6.5.a.3) (3) The Minimum Critical Power Ratio for Specifications 3.1.4.3 and 3.2.3 and Surveillance Requirement 4.2.3, and

(A.8) (4) The Linear Heat Generation Rate for Specification 3.2.4 and Surveillance Requirement 4.2.4.

5.6.5.b b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC in the following documents.

5.6.5.b.1) (1) NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel," (applicable amendment specified in the CORE OPERATING LIMITS REPORT).

5.6.5.b.2) (2) "Safety Evaluation by the Office of Nuclear Reactor Regulation Supporting Amendment Nos. 151 and 89 to Facility Operating Licenses DPR-57 and NPF-5," dated January 22, 1988.

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

5.6.5.d d. The CORE OPERATING LIMITS REPORT, including any mid-cycle revisions or supplements thereto, shall be provided upon issuance, for each reload cycle, to the NRC Document Control Desk with copies to the Regional Administrator and Resident Inspector. (A.1)

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HATCH UNIT 2
ITS 5.6.6

TABLE 3.3.6.4-1 (Continued)

POST ACCIDENT MONITORING INSTRUMENTATION

a) If either the primary or secondary indication is inoperable, the torus temperature will be monitored at least once per shift to observe any unexplained temperature increases which might be indicative of an open S/RV. With both the primary and secondary monitoring channels of an S/RV inoperable, either verify that the S/RV is closed through monitoring the backup low low set logic position indicators (2B21-N302 A-H and K-M) at least once per shift or restore sufficient inoperable channels such that no more than one S/RV has both primary and secondary channels inoperable within 7 days or be in at least hot shutdown within the next 12 hours.

b) With the number of operable channels less than required by the minimum channels operable requirements, initiate the pre-planned alternate method of monitoring the appropriate parameters within 72 hours and:

1. either restore the inoperable channel(s) to operable status within 7 days of the event, or

2. prepare and submit a Special Report to NRC pursuant to Specification 6.9.2 within 14 days following the event, outlining the action taken, the cause of the inoperability, and the plans and schedule for restoring the system to operable status.

c) A channel contains two detectors: one for mid-range noble gas and one for high-range noble gas. Both detectors must be operable to consider the channel operable.

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See Discussion of changes for ITS: 3.3.3.1, PAM Instrumentation, in Section 3.3.

TECHNICAL CHANGES - MORE RESTRICTIVE

M.1 The current TS requirement in 6.9.1.5.b to submit an annual report for all challenges to safety/relief valves has been moved to proposed ITS 5.6.1.4 for monthly reports. Since the report is required on a monthly basis instead of the current annual basis, this change is more restrictive in nature.

M.2 This change details the information to be included in the report. These details are necessary to assure the reports are provided with similar content and format for comparison with other plants and with prior reports.

TECHNICAL CHANGE - LESS RESTRICTIVE

"Generic"

LA.1 The details associated with CTS 6.9.1.1, 6.9.1.2, and 6.9.1.3, "Start-Up Report," are proposed to be relocated to the FSAR. The Start-Up Report provides the NRC a mechanism to review the appropriateness of licensee activities after-the-fact, but provides no regulatory authority once the report is submitted (i.e., no requirement for NRC approval). The Quality Assurance requirements of 10 CFR 50, Appendix B, and the Startup Test Program provisions contained in the FSAR provide assurance the listed activities will be adequately performed and that appropriate corrective actions, if required, are taken. The placement of these CTS requirements in the FSAR also ensures that change control is performed in accordance with 10 CFR 50.59.

UNIT 2 NO SIGNIFICANT HAZARDS DETERMINATION

L.2 CHANGE

Not used.

L.1 CHANGE

Not used.

L.3 CHANGE

Not used.

L.4 CHANGE

In accordance with the criteria set forth in 10 CFR 50.92, Georgia Power Company has evaluated this proposed Technical Specifications change and determined it does not involve a significant hazards consideration based on the following:

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   Current Technical Specifications specify charcoal laboratory testing acceptance criterion as "in accordance with Regulatory Guide 1.52." This testing is to ensure that the charcoal adsorber efficiency assumed in the accident analyses is met. It has been demonstrated the 95% average filter efficiency assumed in the accident analyses will be ensured if the laboratory testing acceptance criterion is 2% methyl iodide penetration. The Main Control Room Environmental Control System is not an accident initiator in any previously evaluated accident. Therefore, the change in acceptance criterion will not increase the probability of an accident previously evaluated. Since the proposed laboratory testing acceptance criterion will still ensure that the filter efficiency assumed in the accident analyses is met, the proposed change does not involve a significant increase in the consequences of an accident previously evaluated.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed change does not introduce a new mode of plant operation and does not involve physical modifications to the plant. Therefore, it does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the change involve a significant reduction in a margin of safety?

   This change does not involve a significant reduction in a margin of safety, since the proposed change will continue to ensure charcoal adsorber removal efficiencies assumed in the accident analyses.

NUREG 1433 COMPARISON DOCUMENT - SPECIFICATIONS

1.1 Definitions

LEAKAGE (continued)

2. LEAKAGE into the drywell atmosphere from sources that are both specifically located and known either not to interfere with the operation of leakage detection systems or not to be pressure boundary LEAKAGE;

b. Unidentified LEAKAGE

All LEAKAGE into the drywell that is not identified LEAKAGE;

c. Total LEAKAGE

Sum of the identified and unidentified LEAKAGE;

d. Pressure Boundary LEAKAGE

LEAKAGE through a nonisolable fault in a Reactor Coolant System (RCS) component body, pipe wall, or vessel wall.

P.3

LINEAR HEAT GENERATION RATE (LHGR) — The LHGR shall be the heat generation rate per unit length of fuel rod. It is the integral of the heat flux over the heat transfer area associated with the unit length.

LOGIC SYSTEM FUNCTIONAL TEST — A LOGIC SYSTEM FUNCTIONAL TEST shall be a test of all logic components (i.e., all relays and contacts, trip units, solid state logic elements, etc.) of a logic circuit, from as close to the sensor as practicable up to, but not including, the actuated device, to verify OPERABILITY. The LOGIC SYSTEM FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total system steps so that the entire logic system is tested.

GA.7 required

MAXIMUM FRACTION OF LIMITING POWER DENSITY (MFLPD) — The MFLPD shall be the largest value of the fraction of limiting power density in the core. The fraction of limiting power density shall be the LHGR existing at a given location divided by the specified LHGR limit for that bundle type.

P.3

(continued)

1.1 Definitions (continued)

MINIMUM CRITICAL POWER RATIO (MCPR) (P.5)	The MCPR shall be the smallest critical power ratio (CPR) that exists in the core [for each class of fuel]. The CPR is that power in the assembly that is calculated by application of the appropriate correlation(s) to cause some point in the assembly to experience boiling transition, divided by the actual assembly operating power.
MODE	A MODE shall correspond to any one inclusive combination of mode switch position, average reactor coolant temperature, and reactor vessel head closure bolt tensioning specified in Table 1.1-1 with fuel in the reactor vessel.
OPERABLE—OPERABILITY (or have OPERABILITY) (GA.7) (division) (GA.3)	A system, subsystem, ~~train~~ (division) (GA.3), component, or device shall be OPERABLE when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication, and other auxiliary equipment that are required for the system, subsystem, ~~train~~, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).
PHYSICS TESTS (P.6) (Unit 1 version is "Section 13.6, Startup and Power Test Program")	PHYSICS TESTS shall be those tests performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation. These tests are: (P.6) (Unit 2 version) a. Described in Chapter [14, Initial Tests and Operation Program] of the FSAR; b. Authorized under the provisions of 10 CFR 50.59; or c. Otherwise approved by the Nuclear Regulatory Commission.
~~PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)~~ (P.8)	~~The PTLR is the unit specific document that provides the reactor vessel pressure and temperature limits, including heatup and cooldown rates, for the current reactor vessel fluence period. These pressure and temperature limits~~ (E)

(continued)

1.1 Definitions

PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR) (continued)	shall be determined for each fluence period in accordance with Specification 5.9.1.7. Plant operation within these operating limits is addressed in LCO 3.4.10, "RCS Pressure and Temperature (P/T) Limits."
RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the reactor coolant of [2436] MWt.
REACTOR PROTECTION SYSTEM (RPS) RESPONSE TIME	The RPS RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its RPS trip setpoint at the channel sensor until de-energization of the scram pilot valve solenoids. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured.
SHUTDOWN MARGIN (SDM)	SDM shall be the amount of reactivity by which the reactor is subcritical or would be subcritical assuming that: a. The reactor is xenon free; b. The moderator temperature is 68°F; and c. All control rods are fully inserted except for the single control rod of highest reactivity worth, which is assumed to be fully withdrawn. With control rods not capable of being fully inserted, the reactivity worth of these control rods must be accounted for in the determination of SDM.
STAGGERED TEST BASIS	A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during *n* Surveillance Frequency intervals, where *n* is the total number of systems, subsystems, channels, or other designated components in the associated function.

P.8 GP.13 P.5 GP.9 E

(continued)

1.1 Definitions (continued)

THERMAL POWER

THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

TURBINE BYPASS SYSTEM RESPONSE TIME

The TURBINE BYPASS SYSTEM RESPONSE TIME consists of two components:

GA.3

P.5

a. The time ~~for~~ from initial movement of the main turbine stop valve or control valve until 80% of the turbine bypass capacity is established; and

b. The time ~~for~~ from initial movement of the main turbine stop valve or control valve until initial movement of the turbine bypass valve.

The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured.

P.5

SURVEILLANCE REQUIREMENTS

------------------------------------NOTE------------------------------------
When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided feedwater and main turbine trip capability is maintained. (high water level) (P.3)

SURVEILLANCE		FREQUENCY
(P.11) [SR 3.3.2.2.1	Perform CHANNEL CHECK.	24 hours]
SR 3.3.2.2.2 (P.1) – (1)	Perform CHANNEL FUNCTIONAL TEST.	[92] days (P.1)
SR 3.3.2.2.3 (P.1) (2)	Perform CHANNEL CALIBRATION. The Allowable Value shall be ≤ [58.0] inches. (55.5) *U2 only (56.5) *U1 only	[18] months (P.1)
SR 3.3.2.2.4 (P.1) (3)	Perform LOGIC SYSTEM FUNCTIONAL TEST including [valve] actuation. (P.1)	[18] months (P.1)

3.3 INSTRUMENTATION

3.3.3.1 Post Accident Monitoring (PAM) Instrumentation

LCO 3.3.3.1 The PAM instrumentation for each Function in Table 3.3.3.1-1 shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTIONS

------------------------------------NOTES------------------------------------

1. LCO 3.0.4 is not applicable.
2. Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more Functions with one required channel inoperable.	A.1 Restore required channel to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met.	B.1 Initiate action in accordance with Specification 5.~~9.2.c.~~ 6.6. (GP.6) (P.12)	Immediately (E) (C)
C. ~~----------NOTE---------- Not applicable to [hydrogen monitor] channels.~~ ------------------------ (P.13) One or more Functions with two (or more) required channels inoperable. (P.14)	C.1 Restore (all but) one required channel to OPERABLE status. (P.14)	7 days

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. Two [required hydrogen monitor] channels inoperable.	D.1	Restore one [required hydrogen monitor] channel to OPERABLE status.	72 hours
E. Required Action and associated Completion Time of Condition C not met.	E.1	Enter the Condition referenced in Table 3.3.3.1-1 for the channel.	Immediately
F. As required by Required Action E.1 and referenced in Table 3.3.3.1-1.	F.1	Be in MODE 3.	12 hours
[G. As required by Required Action E.1 and referenced in Table 3.3.3.1-1.	G.1	Initiate action in accordance with Specification 5.9.2.c.	Immediately]

SURVEILLANCE REQUIREMENTS

-----------------------------------NOTE-----------------------------------
These SRs apply to each Function in Table 3.3.3.1-1.

INSERT A

SURVEILLANCE		FREQUENCY
SR 3.3.3.1.1	Perform CHANNEL CHECK.	31 days
SR 3.3.3.1.2	Perform CHANNEL CALIBRATION.	[18] months

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
G. As required by Required Action A.1 and referenced in Table 3.3.5.1-1.	G.1	--------NOTE-------- Only applicable for Functions 4.c, 4.e, 4.f, 4.g, 5.c, 5.e, 5.f, and 5.g. -------------------- (P.19) Declare ADS valves inoperable.	1 hour from discovery of loss of ADS initiation capability in both trip systems
	AND		
	G.2	Restore channel to OPERABLE status. (GP.1)	96 hours from discovery of inoperable channel concurrent with HPCI or RCIC inoperable AND 8 days if both HPCI and RCIC are OPERABLE
H. Required Action and associated Completion Time of Condition B, C, D, E, F, or G not met.	H.1	Declare associated supported feature(s) inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

-------------------------------------NOTES-------------------------------------

1. Refer to Table 3.3.5.1-1 to determine which SRs apply for each ECCS Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed as follows: (a) for up to 6 hours for Functions 3.c, 3.f, and [struck]; and (b) for up to 6 hours for Functions other than 3.c, 3.f, and [struck] provided the associated Function or the redundant Function maintains ECCS initiation capability.

P.19 P.72 E

SURVEILLANCE		FREQUENCY
SR 3.3.5.1.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.5.1.2	Perform CHANNEL FUNCTIONAL TEST.	~~{92}~~ days
~~[SR 3.3.5.1.3~~ P.5	~~Calibrate the trip unit.~~	~~[92] days]~~
[SR 3.3.5.1.~~4~~ 3 P.1	Perform CHANNEL CALIBRATION.	92 days]
SR 3.3.5.1.~~5~~ 4 P.1	Perform CHANNEL CALIBRATION.	~~{18}~~ months P.1
SR 3.3.5.1.~~6~~ 5 P.1	Perform LOGIC SYSTEM FUNCTIONAL TEST.	~~{18}~~ months P.1
*U2 only P.6 SR 3.3.5.1.~~7~~ 6 P.1	Verify the ECCS RESPONSE TIME is within limits.	~~{18}~~ months on a STAGGERED TEST BASIS P.1

SURVEILLANCE REQUIREMENTS

------------------------------------NOTES------------------------------------

1. Refer to Table 3.3.8.1-1 to determine which SRs apply for each LOP Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 2 6 hours provided the associated Function maintains initiation capability (for Functions 1 and 2) and annunciation capability (for Function 3).

SURVEILLANCE		FREQUENCY
SR 3.3.8.1.1	Perform CHANNEL CHECK.	12 hours
SR 3.3.8.1.2	Perform CHANNEL FUNCTIONAL TEST.	31 days
SR 3.3.8.1.3	Perform CHANNEL CALIBRATION.	[18] months
SR 3.3.8.1.4	Perform LOGIC SYSTEM FUNCTIONAL TEST.	[18] months

Table 3.3.8.1-1 (page 1 of 1)
Loss of Power Instrumentation

FUNCTION	REQUIRED CHANNELS PER BUS	SURVEILLANCE REQUIREMENTS	ALLOWABLE VALUE
1. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage)			
a. Bus Undervoltage	[2]	(P.11) ~~[SR 3.3.8.1.1]~~ SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4	≥ [2800] V ~~and ≤ [ ] V~~ (P.35)
b. Time Delay	[2]	[SR 3.3.8.1.2] SR 3.3.8.1.3 SR 3.3.8.1.4	~~≥ [ ] seconds and~~ ≤ [6.5] seconds (P.35)
2. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage)			
a. Bus Undervoltage	[2]	~~[SR 3.3.8.1.1]~~ SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4	≥ [3280] V ~~and ≤ [ ] V~~ (P.35)
b. Time Delay	[2]	[SR 3.3.8.1.2] SR 3.3.8.1.3 SR 3.3.8.1.4	~~≥ [ ] seconds and~~ ≤ [21.5] seconds (P.35)
3. 4.16 kV Emergency Bus Undervoltage Annunciation			
a. Bus Undervoltage	1 Unit 2, 2 Unit 1	SR 3.3.8.1.1 SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4	≥ 3825 V
b. Time Delay	1 Unit 2, 2 Unit 1	SR 3.3.8.1.2 SR 3.3.8.1.3 SR 3.3.8.1.4	≤ 60 seconds

(P.70)

1A

1A

C

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. No RHR shutdown cooling subsystem in operation. AND No recirculation pump in operation.	B.1 Verify reactor coolant circulating by an alternate method. AND B.2 Monitor reactor coolant temperature.	1 hour from discovery of no reactor coolant circulation AND Once per 12 hours thereafter Once per hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.9 8.1 (P.2)	Verify one RHR shutdown cooling subsystem or recirculation pump is operating.	12 hours

(P.2)

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.~~10~~ 9 RCS Pressure and Temperature (P/T) Limits

LCO 3.4.~~10~~ 9 (P.2) RCS pressure, RCS temperature, RCS heatup and cooldown rates, and the recirculation pump starting temperature requirements shall be maintained within ~~the~~ limits, ~~specified in the PTLR.~~ (P.30) (E)

APPLICABILITY: At all times.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. ---------NOTE--------- Required Action A.2 shall be completed if this Condition is entered. ---------------------- Requirements of the LCO not met in MODES 1, 2, and 3.	A.1 AND A.2	Restore parameter(s) to within limits. Determine RCS is acceptable for continued operation.	30 minutes 72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 AND B.2	Be in MODE 3. Be in MODE 4.	12 hours 36 hours

(continued)

(P.2)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. ---------NOTE--------- Required Action C.2 shall be completed if this Condition is entered. --------------------- Requirements of the LCO not met in other than MODES 1, 2, and 3.	C.1 Initiate action to restore parameter(s) to within limits. AND C.2 Determine RCS is acceptable for operation.	Immediately Prior to entering MODE 2 or 3. (P.3)

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.~~10~~9.1 (P.2) --------------------NOTE-------------------- Only required to be performed during RCS heatup and cooldown operations and RCS inservice leak and hydrostatic testing. -- (P.30) Verify: a. ~~Verify~~ RCS pressure, and RCS temperature ~~, and~~ are within the limits specified in ~~the PTLR.~~ Figures 3.4.9-1 and 3.4.9-2. b. RCS heatup and cooldown rates are ≤ 100°F in any 1 hour period.	30 minutes
SR 3.4.~~10~~9.2 (P.2) Verify RCS pressure and RCS temperature are within the criticality limits specified in ~~the PTLR.~~ Figure 3.4.9-3. (P.30)	Once within 15 minutes prior to control rod withdrawal for the purpose of achieving criticality

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.~~10~~ 9.3 (p.2)	------------------NOTE------------------ Only required to be met in MODES 1, 2, 3, and 4 ~~[with reactor steam dome pressure ≥ 25 psig].~~ -- Verify the difference between the bottom head coolant temperature and the reactor pressure vessel (RPV) coolant temperature is ~~within the limits specified in the PTLR~~. ≤ 145°F. (p.30)	(p.31) during ~~Once within~~ 15 minutes ~~prior to each~~ startup of a recirculation pump.
SR 3.4.~~10~~ 9.4 (p.2)	------------------NOTE------------------ Only required to be met in MODES 1, 2, 3, and 4. -- Verify the difference between the reactor coolant temperature in the recirculation loop to be started and the RPV coolant temperature is ~~within the limits specified in the PTLR~~. ≤ 50°F (p.30)	(p.31) during ~~Once within~~ 15 minutes ~~prior to each~~ startup of a recirculation pump.
SR 3.4.~~10~~ 9.5 (p.2)	------------------NOTE------------------ Only required to be performed when tensioning the reactor vessel head bolting studs. -- Verify reactor vessel flange and head flange temperatures are ~~within the limits specified in the PTLR~~. ≥ 76°F } u1; ≥ 90°F } u2 (p.30)	30 minutes

(continued)

(P.2)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.~~10~~9.6 (P.2)	--------------------NOTE-------------------- Not required to be performed until 30 minutes after RCS temperature ≤ ~~80~~°F in MODE 4. [86 } u1; 100 } u2] (P. 30) -- Verify reactor vessel flange and head flange temperatures are ~~within the limits specified in the PTLR~~. [≥ 76°F. } u1; ≥ 90°F. } u2] (P. 30)	30 minutes
SR 3.4.~~10~~9.7 (P.2)	--------------------NOTE-------------------- Not required to be performed until 12 hours after RCS temperature ≤ ~~100~~°F in MODE 4. [106 } u1; 120 } u2] (P. 30) -- Verify reactor vessel flange and head flange temperatures are ~~within the limits specified in the PTLR~~. [≥ 76 °F. } u1; ≥ 90 °F. } u2] (P. 30)	12 hours

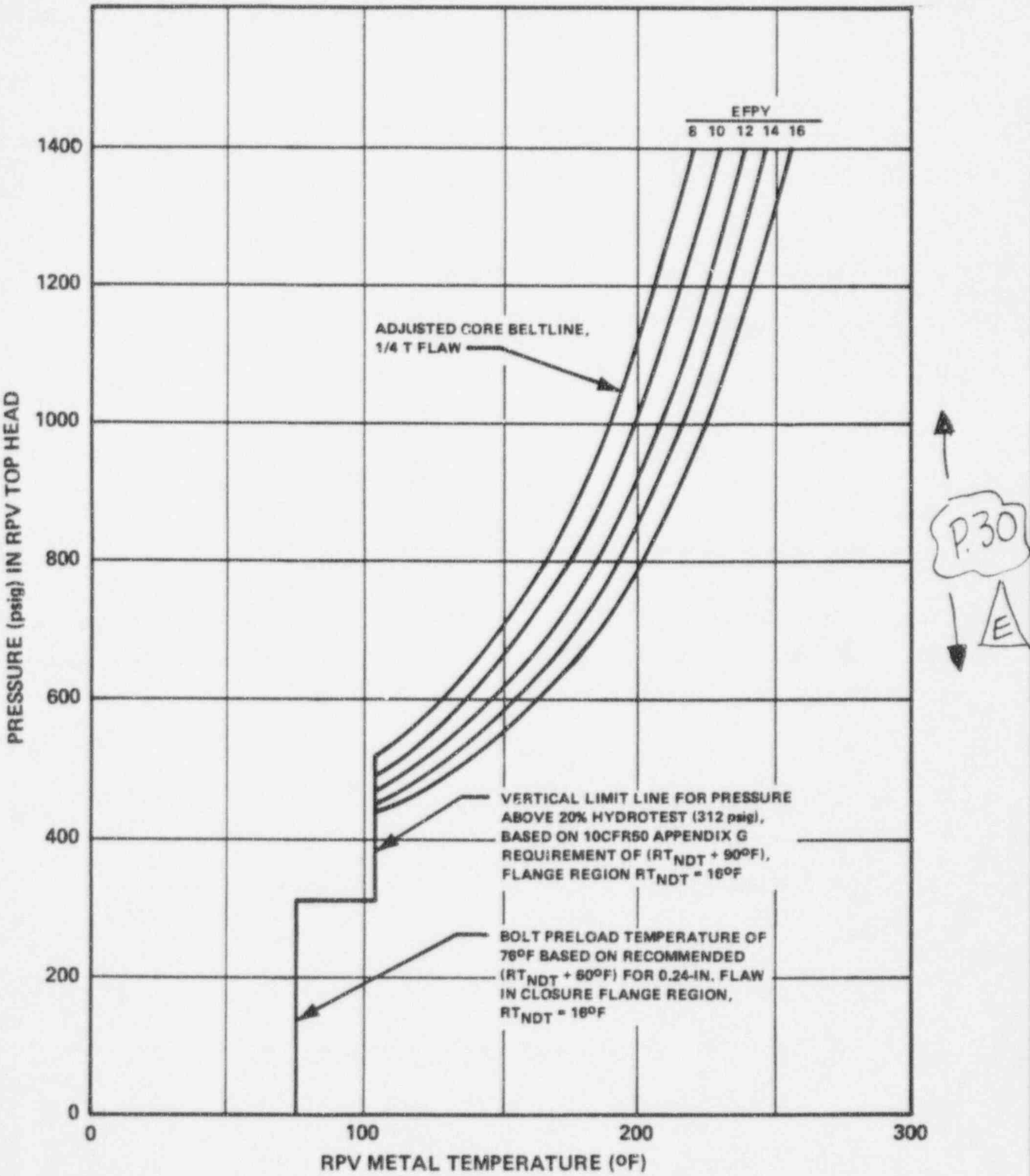


Figure 3.4.9-1 (page 1 of 1)
Temperature/Pressure Limits for
Inservice Hydrostatic and Inservice Leakage Tests

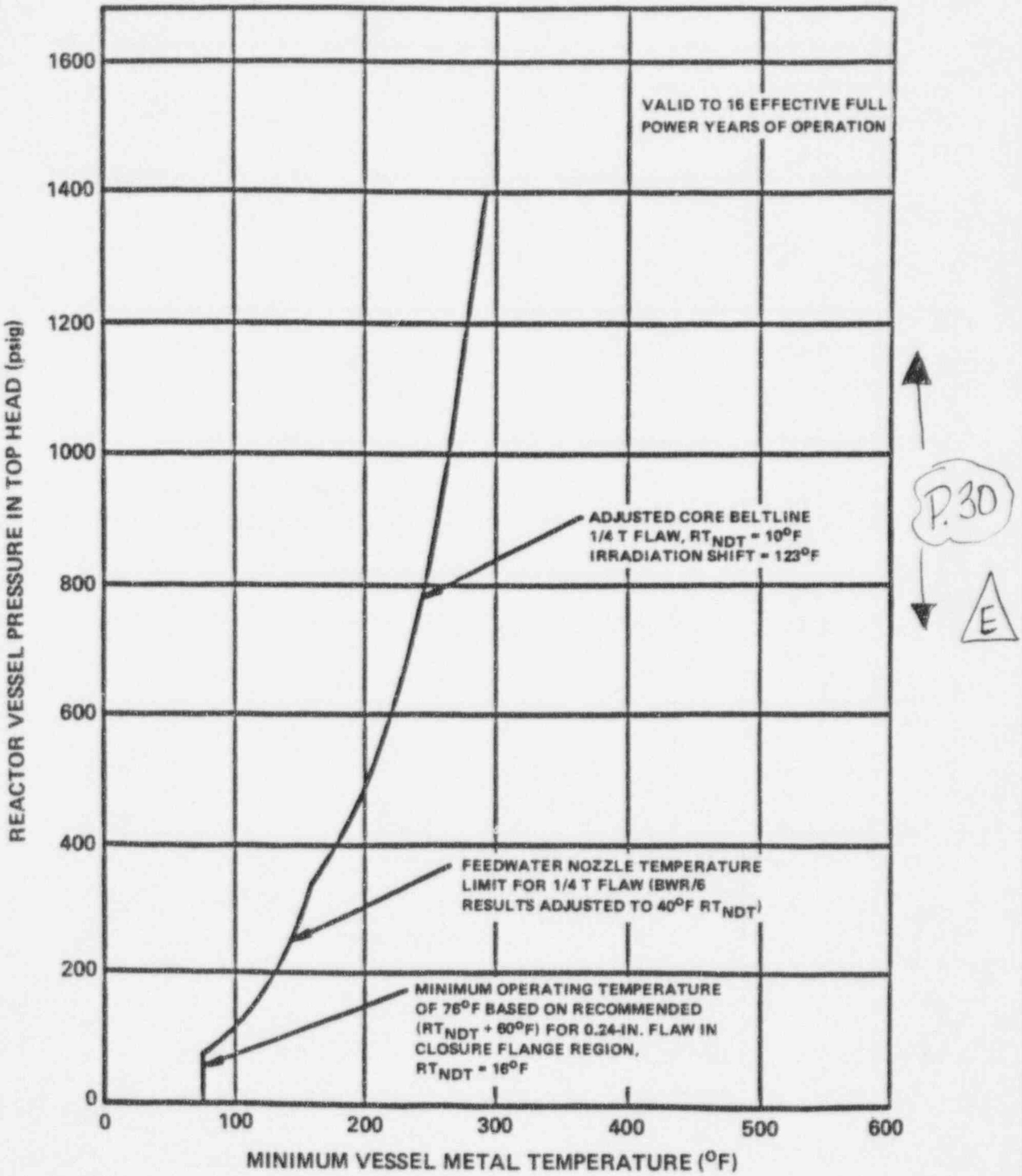


Figure 3.4.9-2 (page 1 of 1)
Temperature/Pressure Limits for Non-Nuclear Heatup,
Low Power Physics Tests, and Cooldown Following a Shutdown

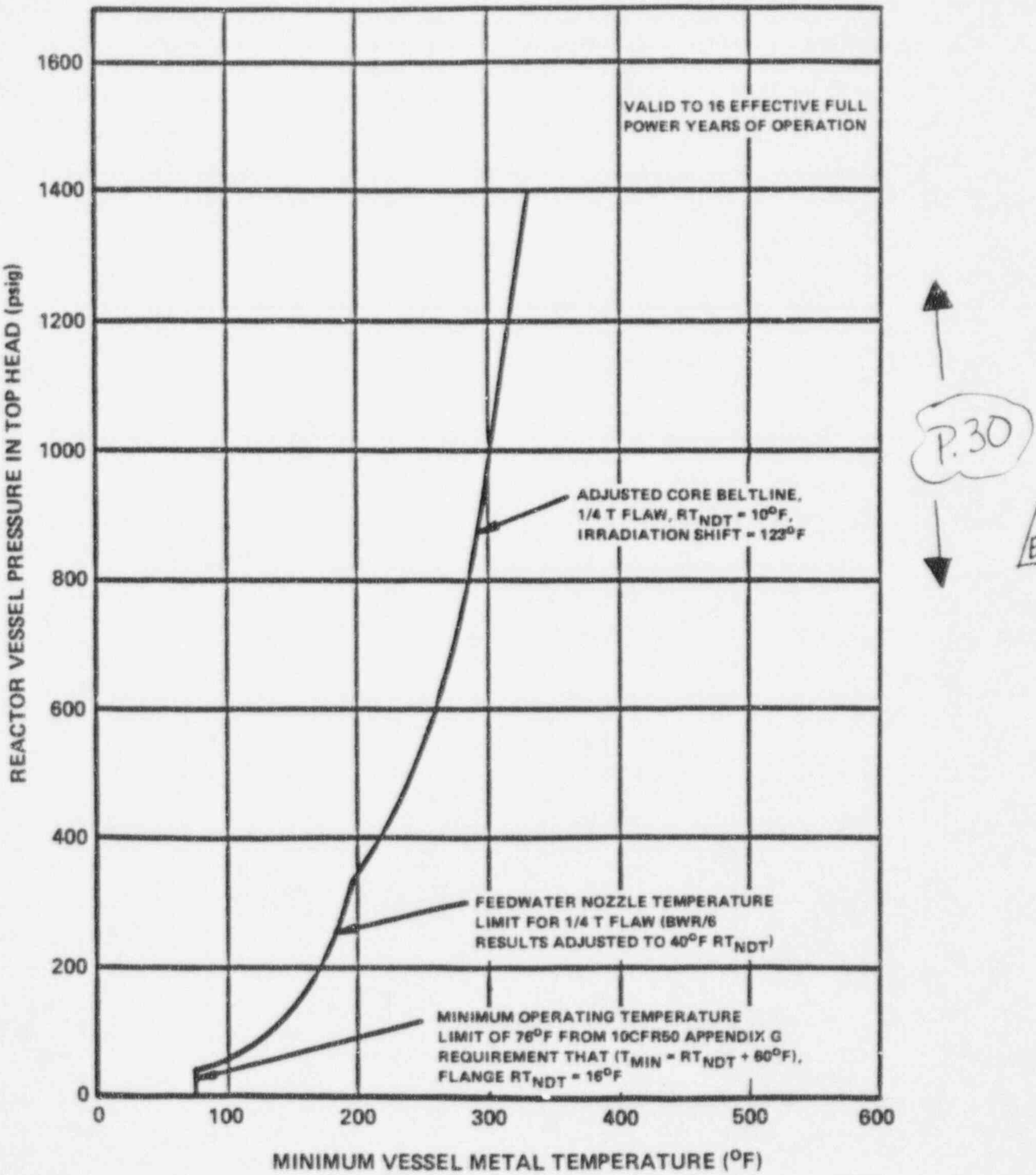
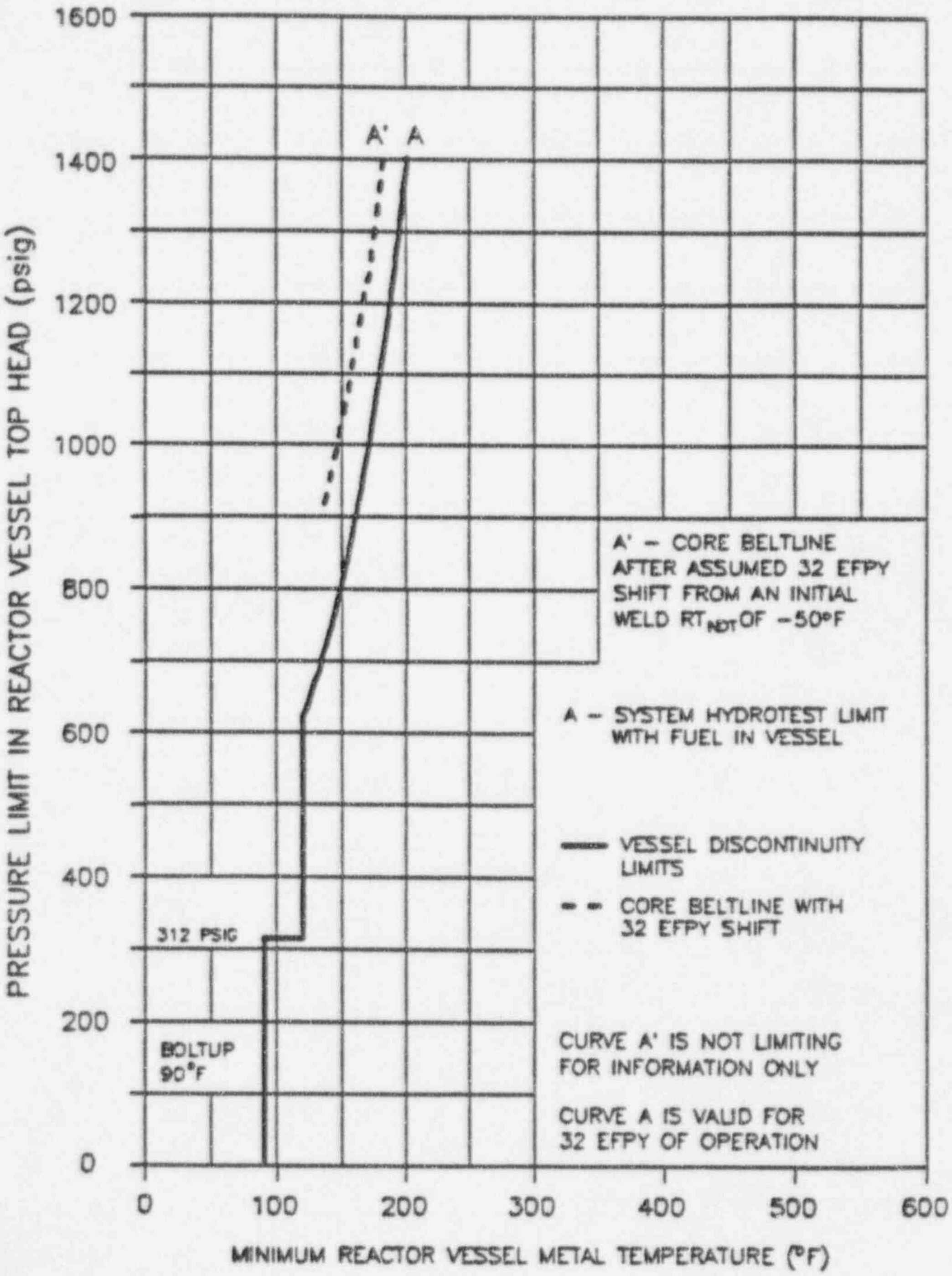


Figure 3.4.9-3 (page 1 of 1)
Temperature/Pressure Limits for Criticality



P.30

E

Figure 3.4.9-1 (page 1 of 1)
Temperature/Pressure Limits for
Inservice Hydrostatic and Inservice Leakage Tests

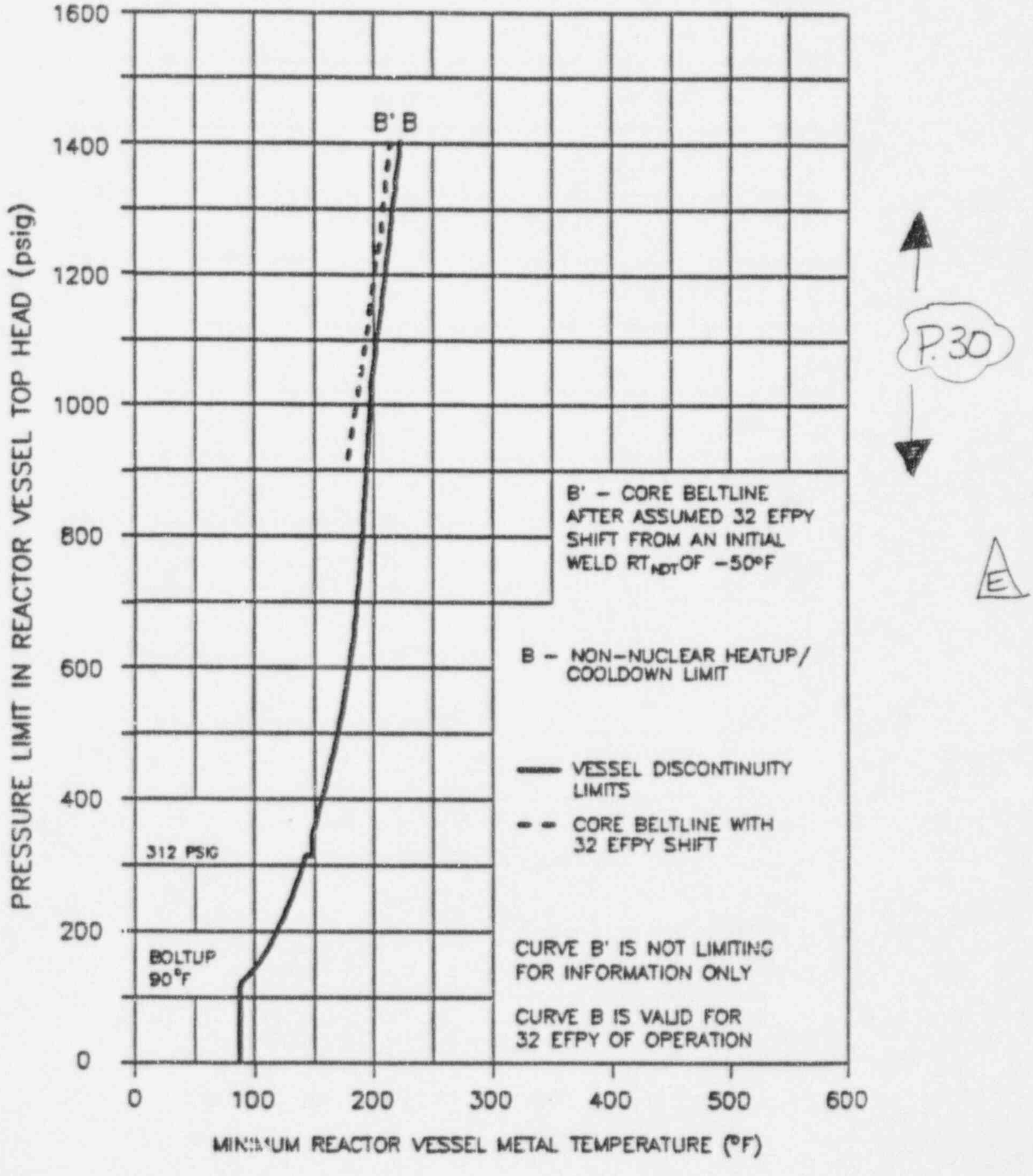
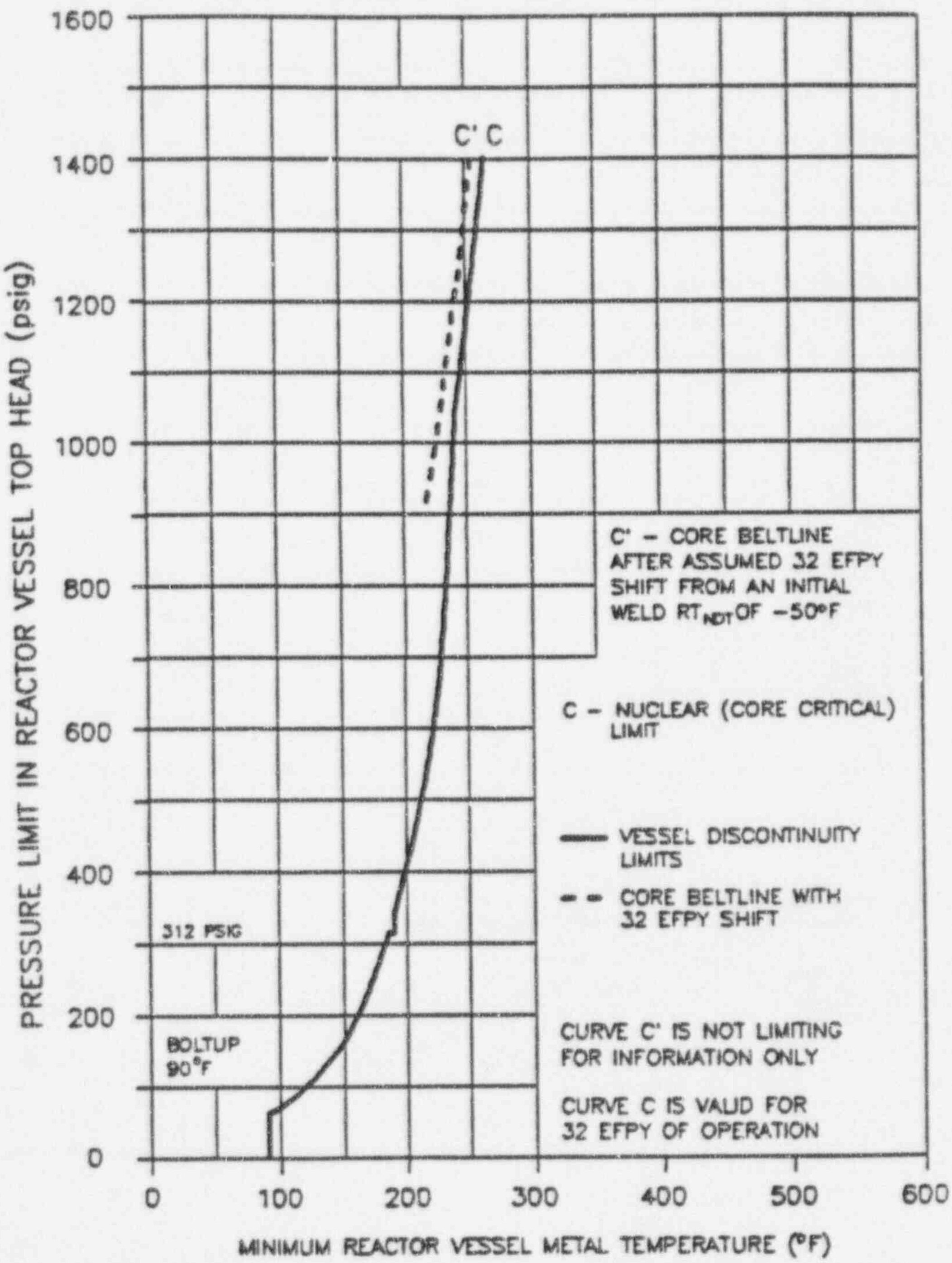


Figure 3.4.9-2 (page 1 of 1)
Temperature/Pressure Limits for Non-Nuclear Heatup,
Low Power Physics Tests, and Cooldown Following a Shutdown



P.30

E

Figure 3.4.9-3 (page 1 of 1)
Temperature/Pressure Limits for Criticality

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.11 10 Reactor Steam Dome Pressure

(P.2)

LCO 3.4.11 10 The reactor steam dome pressure shall be ≤ [1020] psig. (P.2)

APPLICABILITY: MODES 1 and 2.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Reactor steam dome pressure not within limit.	A.1 Restore reactor steam dome pressure to within limit.	15 minutes
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.11 10.1 Verify reactor steam dome pressure is ≤ [1020] psig. (P.2)	12 hours

* UNIT 1 VERSION

(P.27) all changes not specifically numbered

SURVEILLANCE REQUIREMENTS

SURVEILLANCE (P.30)		FREQUENCY
SR 3.6.4.3.1	Operate each (required) SGT subsystem for ≥ [10] continuous hours [with heaters operating]. (P.2)	31 days
SR 3.6.4.3.2	Perform required SGT filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.6.4.3.3	Verify each (required) (P.30) SGT subsystem actuates on an actual or simulated initiation signal.	[18] months (P.2)
~~[SR 3.6.4.3.4~~	~~Verify each SGT filter cooler bypass damper can be opened and the fan started.~~	~~[18] months]~~

(P.32)

E

* Unit 2 Version

(P.27)

(P.27)

3.6 CONTAINMENT SYSTEMS

3.6.4.1 [Secondary] Containment (- Operating)

(P.27) LCO 3.6.4.1 The (Unit 1) [secondary] (P.2) containment (and Unit 2 secondary containment) shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.
~~During movement of irradiated fuel assemblies in the [secondary] containment,~~
(P.27) ~~During CORE ALTERATIONS,~~
~~During operations with a potential for draining the reactor vessel (OPDRVs).~~

ACTIONS

(all changes not specifically numbered P.27)

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. [Secondary] (P.2) (for one or both units) containment(s) inoperable. ~~in MODE 1, 2, or 3.~~	A.1	Restore (Unit 1 and Unit 2) [secondary] (P.2) containment(s) to OPERABLE status.	4 hours
B. Required Action and associated Completion Time ~~of Condition A~~ not met.	B.1	Be in MODE 3.	12 hours
	AND		
	B.2	Be in MODE 4.	36 hours
~~C. [Secondary] containment inoperable during movement of irradiated fuel assemblies in the [secondary] containment, during CORE ALTERATIONS, or during OPDRVs.~~	~~C.1~~	~~---------NOTE--------- LCO 3.0.3 is not applicable. ---------------------~~ ~~Suspend movement of irradiated fuel assemblies in the [secondary] containment.~~	~~Immediately~~
	~~AND~~		

(continued)

*Unit 2 Version

(P.27) all changes not specifically numbered

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.3.1 (7)	Operate each SGT subsystem for ≥ [10] continuous hours [with heaters operating]. (P.2)	31 days
SR 3.6.4.3.2 (7)	Perform required SGT filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.6.4.3.3 (7)	Verify each (Unit 1 and Unit 2) SGT subsystem actuates on an actual or simulated initiation signal.	[18] months (P.2)
~~[SR 3.6.4.3.4~~	~~Verify each SGT filter cooler bypass damper can be opened and the fan started.~~	~~[18] months]~~

(P.32)

(E)

* Unit 2 Version

(P.27) all changes not specifically numbered

3.6 CONTAINMENT SYSTEMS

3.6.4.~~3~~ (2) (B) Standby Gas Treatment (SGT) System (-OPDRVs)

LCO 3.6.4.~~3~~ (B) ~~[Two]~~ (P.2) (Unit 2) SGT subsystems shall be OPERABLE.

APPLICABILITY: ~~MODES 1, 2, and 3,~~
~~During movement of irradiated fuel assemblies in the [secondary] containment,~~
~~During CORE ALTERATIONS,~~
During operations with a potential for draining the reactor vessel (OPDRVs).

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One (Unit 2) SGT subsystem inoperable.	A.1 Restore SGT subsystem to OPERABLE status.	7 days
~~B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, or 3.~~	~~B.1 Be in MODE 3.~~ ~~AND~~ ~~B.2 Be in MODE 4.~~	~~12 hours~~ ~~36 hours~~
(B) ~~C~~. Required Action and associated Completion Time ~~of Condition A~~ not met, ~~during movement of irradiated fuel assemblies in the [secondary] containment, during CORE ALTERATIONS, or during OPDRVs.~~	------------NOTE------------ LCO 3.0.3 is not applicable. ----------------------------- ~~C~~.1 (B) Place OPERABLE (Unit 2) SGT subsystem in operation. OR	Immediately (continued)

* Unit 2 Version

(P.27) all changes not specifically numbered

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
~~C~~. (B) (continued)	C.2.1	Suspend movement of irradiated fuel assemblies in [secondary] containment.	Immediately
		AND	
	C.2.2	Suspend CORE ALTERATIONS.	Immediately
		AND	
	~~C.2.3~~ B.2	Initiate action to suspend OPDRVs.	Immediately
~~D~~. (C) Two (unit 2) SGT subsystems inoperable. ~~during movement of irradiated fuel assemblies in the [secondary] containment, during CORE ALTERATIONS, or during OPDRVs.~~	D.1	--------NOTE--------- LCO 3.0.3 is not applicable. --------------------- Suspend movement of irradiated fuel assemblies in [secondary] containment.	Immediately
	AND		
	D.2	Suspend CORE ALTERATIONS.	Immediately
	AND		
	~~D.3~~ C.1	Initiate action to suspend OPDRVs.	Immediately

Proposed Action D added per BWR-04, Item C.8 — (P.34)

* Unit 2 Version
(P.27) All changes not specifically numbered

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.4.3.1	Operate each SGT subsystem for ≥ [10] continuous hours [with heaters operating].	31 days
SR 3.6.4.3.2	Perform required SGT filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.6.4.3.3	Verify each SGT subsystem actuates on an actual or simulated initiation signal.	[18] months
[SR 3.6.4.3.4	Verify each SGT filter cooler bypass damper can be opened and the fan started.	[18] months]

*
Unit 2 Version
(P.27) all changes not specifically numbered

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE (P.30) (P.27)	FREQUENCY
SR 3.6.4.3.1 (9)	Operate each (required Unit 1 and Unit 2) SGT subsystem for ≥ [10] continuous hours [with heaters operating]. (P2)	31 days
SR 3.6.4.3.2 (9)	Perform required (Unit 1 and Unit 2) SGT filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.6.4.3.3 (9)	Verify each (required Unit 1 and Unit 2) SGT subsystem actuates on an actual or simulated initiation signal. (P.30) (P.27)	[18] months (P2)
[SR 3.6.4.3.4 (P.32)	Verify each SGT filter cooler bypass damper can be opened and the fan started.	[18] months]

E

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Required Action and associated Completion Time of Condition A or B not met. OR Both [PSW] subsystems inoperable for reasons other than Condition[s] B [and C]. OR [UHS] inoperable ~~for reasons other than Condition C.~~	E.1 Be in MODE 3. AND E.2 Be in MODE 4.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
[SR 3.7.2.1	Verify the water level of each [PSW] cooling tower basin is ≥ [ ] ft.	24 hours]
[SR 3.7.2.2	Verify the water level [in each PSW pump well of the intake structure] is ≥ [60.1] ft [mean sea level].	~~24 hours~~] 14 days AND Once within 12 hours and every 12 hours thereafter when water level is ≤ 61.7 ft MSL
[SR 3.7.2.3	Verify the average water temperature of [UHS] is ≤ [ ]°F.	24 hours]

(continued)

(P.2)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
~~[SR 3.7.2.4~~ (P.5)	~~Operate each [PSW] cooling tower fan for ≥ [15] minutes.~~	~~31 days]~~
SR 3.7.2.~~5~~ 2 (P.2)	------------------NOTE------------------ Isolation of flow to individual components [or systems (P.29)] does not render [PSW] System inoperable. -- Verify each [PSW] subsystem manual, power operated, and automatic valve in the flow paths servicing safety related systems or components, that is not locked, sealed, or otherwise secured in position, is in the correct position. (P.2)	31 days
SR 3.7.2.~~6~~ 3	Verify each [PSW] subsystem actuates on an actual or simulated initiation signal. (P.2)	[18] months (P.2)

E

5.7 Procedures, Programs, and Manuals

5.7.2.12 Inservice Testing Program (continued)

ASME Boiler and Pressure Vessel Code and applicable Addenda terminology for inservice testing activities	Required Frequencies for performing inservice testing activities
Weekly	At least once per 7 days
Monthly	At least once per 31 days
Quarterly or every 3 months	At least once per 92 days
Semiannually or every 6 months	At least once per 184 days
~~Every 9 months~~	~~At least once per 276 days~~
Yearly or annually	At least once per 366 days
~~Biennially or every 2 years~~	~~At least once per 731 days~~

b. The provisions of SR 3.0.2 are applicable to the above required Frequencies for performing inservice testing activities;

c. The provisions of SR 3.0.3 are applicable to inservice testing activities; and

d. Nothing in the ASME Boiler and Pressure Vessel Code shall be construed to supersede the requirements of any TS.

5.7.2.13 Ventilation Filter Testing Program (VFTP)

A program shall be established to implement the following required testing of Engineered Safety Feature (ESF) filter ventilation systems at the frequencies specified in [Regulatory Guide], and in accordance with [Regulatory Guide 1.52, Revision 2; ASME N510-1989; and AG-1].

INSERT C

(continued)

5.5 ~~Procedures,~~ Programs, and Manuals

5.5.7 ~~5.7.2.13~~ Ventilation Filter Testing Program (VFTP) (continued)

INSERT D

a. Demonstrate for each of the ESF systems that an inplace test of the HEPA filters shows a penetration and system bypass < [0.05]% when tested in accordance with [Regulatory Guide 1.52, Revision 2, and ASME N510-1989] Section 5c at the system flowrate specified below ~~[± 10%]~~.

ESF Ventilation System	Flowrate (cfm)
SGT System	3000 to 4000
Main Control Room Environmental Control (MCREC) System	2250 to 2750

b. Demonstrate for each of the ESF systems that an inplace test of the charcoal adsorber shows a penetration and system bypass < ~~[0.5]~~ 0.05% when tested in accordance with [Regulatory Guide 1.52, Revision 2, and ASME N510-1989] Section 5d at the system flowrate specified below ~~[± 10%]~~.

ESF Ventilation System	Flowrate (cfm)
SGT System	3000 to 4000
MCREC System	2250 to 2750

c. Demonstrate for each of the ESF systems that a laboratory test of a sample of the charcoal adsorber, when obtained as described in [Regulatory Guide 1.52, Revision 2] Section 6b and ASME N510-1989, Section 15 and Appendix B, shows the methyl iodide penetration less than the value specified below when tested in accordance with [ASTM D3803-1989] at a temperature of ≤ [30°C] and greater than or equal to the relative humidity specified below.

ESF Ventilation System	Penetration (%)	RH (%)
SGT System	0.2%	70%
MCREC System	2%	95%

(continued)

5.5.7 Ventilation Filter Testing Program (VFTP) (continued)

Reviewer's Note: Allowable penetration = [100% - methyl iodide efficiency for charcoal credited in staff safety evaluation]/(safety factor).

Safety factor = [5] for systems with heaters.
= [7] for systems without heaters.

d. Demonstrate for each of the ESF systems that the pressure drop across the combined HEPA filters, the prefilters, and the charcoal adsorbers is less than the value specified below when tested in accordance with [Regulatory Guide 1.52, Revision 2, and ASME N510-1989] at the system flowrate specified below [± 10%].

ESF Ventilation System	Delta P	Flowrate
[SGT System]	[< 6 in wg]	[3000 cfm to 4000 cfm]
[MCREC System]	[< 6 in wg]	[2250 cfm to 2750 cfm]

e. Demonstrate that the heaters for each of the ESF system dissipate the value specified below [± 10%] when tested in accordance with [ASME N510-1989].

ESF Ventilation System	Wattage
[SGT System]	[17 to 20 kW (U2) 15 to 20 kW (U1)]

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the VFTP test frequencies.

5.5.8 Explosive Gas and Storage Tank Radioactivity Monitoring Program

This program provides controls for potentially explosive gas mixtures contained in the [Waste Gas Holdup System], [the quantity of radioactivity contained in gas storage tanks or fed into the offgas treatment system, and the quantity of radioactivity contained in unprotected outdoor liquid storage tanks]. The gaseous radioactivity quantities shall be determined following the methodology in [Branch Technical Position (BTP) ETSB 11-5, "Postulated Radioactive Release due to Waste Gas System Leak or

(continued)

P.9 5.7.2.14 5.5.8 Explosive Gas and Storage Tank Radioactivity Monitoring Program (continued) P.9

P.20 Failure"]. The liquid radwaste quantities shall be determined in accordance with [Standard Review Plan, Section 15.7.3, "Postulated Radioactive Release due to Tank Failures"].

The program shall include:

a. The limits for the concentrations of hydrogen and oxygen in the [Waste Gas Holdup System] and a surveillance program to ensure the limits are maintained. Such limits shall be appropriate to the system's design criteria (i.e., whether or not the system is designed to withstand a hydrogen explosion);

P.21

P.2 main condenser offgas treatment system

P.21 b. A surveillance program to ensure that the quantity of radioactivity contained in [each gas storage tank and fed into the offgas treatment system] is less than the amount that would result in a whole body exposure of ≥ 0.5 rem to any individual in an unrestricted area, in the event of [an uncontrolled release of the tank's contents]; and

c. b. A surveillance program to ensure that the quantity of radioactivity contained in all outdoor liquid radwaste tanks that are not surrounded by liners, dikes, or walls, capable of holding the tanks' contents and that do not have tank overflows and surrounding area drains connected to the [Liquid Radwaste Treatment System] is less than the amount that would result in concentrations less than the limits of 10 CFR 20, Appendix B, Table II 2, Column 2, at the nearest potable water supply and the nearest surface water supply in an unrestricted area, in the event of an uncontrolled release of the tanks' contents. P.9 P.2 P.9

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Explosive Gas and Storage Tank Radioactivity Monitoring Program surveillance frequencies.

P.9 5.7.2.15 5.5.9 Diesel Fuel Oil Testing Program P.9

A diesel fuel oil testing program to implement required testing of both new fuel oil and stored fuel oil shall be established. The program shall include sampling and testing requirements, and

P.9 a.

(continued)

GP.1

5.9 6 Reporting Requirements

GP.1

~~5.9.1 Routine Reports (continued)~~

~~5.9.1.4~~ 5.6.3 Radioactive Effluent Release Report P.9

--------------------------------NOTE--------------------------------
P.2 A single submittal may be made for a multiple unit station. The submittal should combine sections 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 Radioactive Effluent Release Report covering the operation of the unit shall be submitted in accordance with 10 CFR 50.36a. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be consistent with the objectives outlined in the ODCM and Process Control Program and in conformance with 10 CFR 50.36a and 10 CFR 50, Appendix I, Section IV.B.1. P.9 the

GP.1 ~~5.9.1.5~~ 5.6.4 Monthly Operating Reports P.27 main steam P.2

Routine reports of operating statistics and shutdown experience*, including documentation of all challenges to the safety/relief valves,* shall be submitted on a monthly basis no later than the 15th of each month following the calendar month covered by the report.

GP.1 ~~5.9.1.6~~ 5.6.5 CORE OPERATING LIMITS REPORT (COLR) P.9

a. Core operating limits shall be established prior to each reload cycle, or prior to any remaining portion of a reload cycle, and shall be documented in the COLR for the following:

P.2 INSERT E

~~[The individual specifications that address core operating limits must be referenced here.]~~

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 the following documents:

(continued)

6 — GP.1

5.9 Reporting Requirements

GP.1 — 5.6.5

5.9.1.6 CORE OPERATING LIMITS REPORT (COLR) (continued)

P.2

INSERT F →

[Identify the Topical Report(s) by number, title, date, and NRC staff approval document, or identify the staff Safety Evaluation Report for a plant specific methodology by NRC letter and date.]

c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, Emergency Core Cooling Systems (ECCS) limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met. D

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

P.3B

5.9.1.7 Reactor Coolant System (RCS) PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR) 1/E

E

The RCS pressure and temperature limits, including heatup and cooldown rates, criticality, and hydrostatic and leak test limits, shall be established and documented in the PTLR. [The individual Specifications that address the reactor vessel pressure and temperature limits and the heatup and cooldown rates may be referenced.] The analytical methods used to determine the pressure and temperature limits including the heatup and cooldown rates shall be those previously reviewed and approved by the NRC in [Topical Report(s), number, title, date, and NRC staff approval document, or staff safety evaluation report for a plant specific methodology by NRC letter and date]. The reactor vessel pressure and temperature limits, including those for heatup and cooldown rates, shall be determined so that all applicable limits (e.g., heatup limits, cooldown limits, and inservice leak and hydrostatic testing limits) of the analysis are met. The PTLR, including revisions or supplements thereto, shall be provided upon issuance for each reactor vessel fluency period.

GP.1 — 5.9.2 Special Reports Reviewers Note: — GA.3

P.2

[Special Reports may be required covering inspection, test, and maintenance activities. These special reports are determined on

(continued)

GP.1

5.6 Reporting Requirements

5.9.2 Special Reports (continued)

P.2

[an individual basis for each unit and their preparation and submittal are designated in the Technical Specifications.]

Special Reports shall be submitted in accordance with 10 CFR 50.4 within the time period specified for each report.

The following Special Reports shall be submitted:

GP.1

a. In the event an ECCS is actuated and injects water into the RCS in MODE 1, 2, or 3, a Special Report shall be prepared and submitted within 90 days describing the circumstances of the actuation and the total accumulated actuation cycles to date. The current value of the usage factor for each affected safety injection nozzle shall be provided in this Special Report whenever its value exceeds 0.70.

P.33

b. If an individual emergency diesel generator (EDG) experiences four or more valid failures in the last 25 demands, these failures and any nonvalid failures experienced by that EDG in that time period shall be reported within 30 days. Reports on EDG failures shall include the information recommended in Regulatory Guide 1.9, Revision 3, Regulatory Position C.5, or existing Regulatory Guide 1.108 reporting requirement.

GP.1

P.2

c. When a Special Report is required by Condition B or G of LCO 3.3.[3.1], "Post Accident Monitoring (PAM) Instrumentation," a report shall be submitted within the following 14 days. The report shall outline the preplanned alternate method of monitoring, the cause of the inoperability, and the plans and schedule for restoring the instrumentation channels of the Function to OPERABLE status.

P.29

GP.1 P.9

5.6.6 Post Accident Monitoring (PAM) Instrumentation Report

P.38

C

E

5.0 ADMINISTRATIVE CONTROLS

5.10 Record Retention

5.10.1 The following records shall be retained for at least 3 years:

a. All License Event Reports required by 10 CFR 50.73;

b. Records of changes made to the procedures required by Specification 5.7.1.1; and

c. Records of radioactive shipments.

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

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

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

c. Records of surveillance activities, inspections, and calibrations required by the Technical Specifications (TS) [and the Fire Protection Program];

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

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

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

a. Records and drawing changes reflecting unit design modifications made to systems and equipment described in the FSAR;

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

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

GP.1

(continued)

NUREG 1433 COMPARISON DOCUMENT - BASES

BASES

LCO (9) ~~13.~~ Suppression Pool Water Temperature (continued)

(p.15) INSERT K (continued)

~~that there is a group of sensors within a 30 ft line of sight of each relief valve discharge location.~~

~~Thus, six groups of sensors are sufficient to monitor each relief valve discharge location. Each group of four sensors includes two sensors for normal suppression pool temperature monitoring and two sensors for PAM. The outputs for the PAM sensors are recorded on four independent recorders in the control room (channels A and C are redundant to channels B and D, respectively). All four of these recorders must be OPERABLE to furnish two channels of PAM indication for each of the relief valve discharge locations.~~ These recorders are the primary indication used by the operator during an accident. Therefore, the PAM Specification deals specifically with this portion of the instrument channels.

INSERT L

APPLICABILITY

The PAM instrumentation LCO is applicable in MODES 1 and 2. These variables are related to the diagnosis and preplanned actions required to mitigate DBAs. The applicable DBAs are assumed to occur in MODES 1 and 2. In MODES 3, 4, and 5, plant conditions are such that the likelihood of an event that would require PAM instrumentation is extremely low; therefore, PAM instrumentation is not required to be OPERABLE in these MODES.

ACTIONS

Note 1 has been added to the ACTIONS to exclude the MODE change restriction of LCO 3.0.4. This exception allows entry into the applicable MODE while relying on the ACTIONS even though the ACTIONS may eventually require plant shutdown. This exception is acceptable due to the passive function of the instruments, the operator's ability to diagnose an accident using alternative instruments and methods, and the low probability of an event requiring these instruments.

Note 2 has been provided to modify the ACTIONS related to PAM instrumentation channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent ~~trains~~ divisions, subsystems, components, or variables expressed in the Condition discovered to be inoperable or

(G.1)

(continued)

BASES

ACTIONS (continued)

not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable PAM instrumentation channels provide appropriate compensatory measures for separate Functions. As such, a Note has been provided that allows separate Condition entry for each inoperable PAM Function.

A.1

When one or more Functions have one required channel that is inoperable, the required inoperable channel must be restored to OPERABLE status within 30 days. The 30 day Completion Time is based on operating experience and takes into account the remaining OPERABLE channels (or, in the case of a Function that has only one required channel, other non-Regulatory Guide 1.97 instrument channels to monitor the Function), the passive nature of the instrument (no critical automatic action is assumed to occur from these instruments), and the low probability of an event requiring PAM instrumentation during this interval.

B.1

(P.12) (6.6) (BP.b)

If a channel has not been restored to OPERABLE status in 30 days, this Required Action specifies initiation of action in accordance with Specification 5.~~9.2.c, "Special Reports,"~~ which requires a written report ~~approved by the [onsite review committee]~~ to be submitted to the NRC. This report discusses the results of the root cause evaluation of the inoperability and identifies proposed restorative actions. This action is appropriate in lieu of a shutdown requirement, since alternative actions are identified before loss of functional capability, and given the likelihood of plant conditions that would require information provided by this instrumentation. (LA.1)

C.1

When one or more Functions have two (or more) (P.14) required channels that are inoperable (i.e., two channels inoperable in the same

(continued)

BASES

ACTIONS

C.1 (continued) (all but) (p.14)

Function), one channel in the Function should be restored to OPERABLE status within 7 days. The Completion Time of 7 days is based on the relatively low probability of an event requiring PAM instrument operation and the availability of alternate means to obtain the required information. Continuous operation with two required channels inoperable in a Function is not acceptable because the alternate indications may not fully meet all performance qualification requirements applied to the PAM instrumentation. Therefore, requiring restoration of one inoperable channel of the Function limits the risk that the PAM Function will be in a degraded condition should an accident occur. ~~Condition C is modified by a Note that excludes hydrogen monitor channels. Condition D provides appropriate Required Actions for two inoperable hydrogen monitor channels.~~ (p.13)

~~D.1~~

~~When two hydrogen monitor channels are inoperable, one hydrogen monitor channel must be restored to OPERABLE status within 72 hours. The 72 hour Completion Time is based on the low probability of the occurrence of a LOCA that would generate hydrogen in amounts capable of exceeding the flammability limit; the length of time after the event that operator action would be required to prevent hydrogen accumulation from exceeding this limit; and the availability of the hydrogen recombiners, the Hydrogen Purge System, and the Post Accident Sampling System.~~ (p.13)

(p.1) (D) ~~E~~.1

This Required Action directs entry into the appropriate Condition referenced in Table 3.3.3.1-1. The applicable Condition referenced in the Table is Function dependent. Each time an inoperable channel has not met ~~any~~ (the) (p.26) Required Action of Condition C ~~or D, as applicable~~, and the associated Completion Time has expired, Condition ~~E~~ (D) (p.1) is entered for that channel and provides for transfer to the appropriate subsequent Condition. (p.13)

(continued)

BASES

ACTIONS (continued)

D.1

For the majority of Functions in Table 3.3.3.1-1, if any Required Action and associated Completion Time of Condition C ~~or D are~~ not met, the plant must be brought to a MODE in which the LCO not apply. To achieve this status, the plant must be brought to at least MODE 3 within 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

E.1

Since alternate means of monitoring ~~water level and primary containment~~ area radiation have been developed and tested, the Required Action is not to shut down the plant, but rather to follow the directions of Specification 5.~~9.2.c~~. These alternate means may be temporarily installed if the normal PAM channel cannot be restored to OPERABLE status within the allotted time. The report provided to the NRC should discuss the alternate means used, describe the degree to which the alternate means are equivalent to the installed PAM channels, justify the areas in which they are not equivalent, and provide a schedule for restoring the normal PAM channels.

SURVEILLANCE REQUIREMENTS

The following SRs apply to each PAM instrumentation Function in Table 3.3.3.1-1.

SR 3.3.3.1.1

Performance of the CHANNEL CHECK once every 31 days ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is a comparison of the parameter indicated on one channel against a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between instrument channels could be an indication of excessive instrument drift in one of the channels or something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it

(continued)

BASES

ACTIONS

G.1 and G.2 (continued)

(p. 45) Function 4.g channels and one or more Function 5.g channels are inoperable.

(p. 26 move to prior para) In this situation (loss of automatic initiation capability), the 96 hour or 8 day allowance, as applicable, of Required Action G.2 is not appropriate, and all ADS valves must be declared inoperable within 1 hour after discovery of loss of ADS initiation capability. The Note to Required Action G.1 states that Required Action G.1 is only applicable for Functions 4.c, 4.e, 4.f, 4.g, 5.c, 5.e, 5.f, and 5.g. Required Action G.1 is not applicable to Functions 4.h and 5.h (which also require entry into this Condition if a channel in these Functions is inoperable), since they are the Manual Initiation Functions and are not assumed in any accident or transient analysis. Thus, a total loss of manual initiation capability for 96 hours or 8 days (as allowed by Required Action G.2) is allowed. (p. 19)

The Completion Time is intended to allow the operator time to evaluate and repair any discovered inoperabilities. This Completion Time also allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." For Required Action G.1, the Completion Time only begins upon discovery that the ADS cannot be automatically initiated due to inoperable channels within similar ADS trip system Functions as described in the paragraph above. The 1 hour Completion Time from discovery of loss of initiation capability is acceptable because it minimizes risk while allowing time for restoration or tripping of channels.

Because of the diversity of sensors available to provide initiation signals and the redundancy of the ECCS design, an allowable out of service time of 8 days has been shown to be acceptable (Ref. 5) to permit restoration of any inoperable channel to OPERABLE status if both HPCI and RCIC are OPERABLE (Required Action G.2). If either HPCI or RCIC is inoperable, the time shortens to 96 hours. If the status of HPCI or RCIC changes such that the Completion Time changes from 8 days to 96 hours, the 96 hours begins upon discovery of HPCI or RCIC inoperability. However, the total time for an inoperable channel cannot exceed 8 days. If the status of HPCI or RCIC changes such that the Completion Time changes from 96 hours to 8 days, the "time zero" for beginning the 8 day "clock" begins upon discovery of the

(continued)

BASES

ACTIONS

G.1 and G.2 (continued)

inoperable channel. If the inoperable channel cannot be restored to OPERABLE status within the allowable out of service time, Condition H must be entered and its Required Action taken. The Required Actions do not allow placing the channel in trip since this action would not necessarily result in a safe state for the channel in all events.

H.1

With any Required Action and associated Completion Time not met, the associated feature(s) may be incapable of performing the intended function, and the supported feature(s) associated with inoperable untripped channels must be declared inoperable immediately.

SURVEILLANCE REQUIREMENTS

(p.44)

[Reviewer's Note: Certain Frequencies are based on approved topical reports. In order for a licensee to use these Frequencies, the licensee must justify the Frequencies as required by the staff SER for the topical report.]

As noted in the beginning of the SRs, the SRs for each ECCS instrumentation Function are found in the SRs column of Table 3.3.5.1-1.

E | (p.72) (p.15)

The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours as follows: (a) for Functions 3.c, 3.f, and 3.g; and (b) for Functions other than 3.c, 3.f, and 3.g provided the associated Function maintains ECCS initiation. Upon completion of the Surveillance, or expiration of the 6 hour allowance, the channel must be returned to OPERABLE status or the applicable Condition entered and Required Actions taken. This Note is based on the reliability analysis (Ref. 5) assumption that 6 hours is the average time required to perform channel surveillance. That analysis demonstrated that the 6 hour testing allowance does not significantly reduce the probability that the ECCS will initiate when necessary.

(GP.1) or the redundant Function

capability (GP.1) of

(continued)

BASES

BACKGROUND (continued)

1. Main Steam Line Isolation

Most MSL Isolation Functions receive inputs from four channels. The outputs from these channels are combined in a one-out-of-two taken twice logic to initiate isolation of all main steam isolation valves (MSIVs). The outputs from the same channels are arranged into two two-out-of-two logic trip systems to isolate all MSL drain valves. Each MSL drain line has two isolation valves with one two-out-of-two logic system associated with each valve.

The exceptions to this arrangement are the Main Steam Line Flow—High Function and Area and Differential Temperature Functions. The Main Steam Line Flow—High Function uses 16 flow channels, four for each steam line. One channel from each steam line inputs to one of the four trip strings. Two trip strings make up each trip system and both trip systems must trip to cause an MSL isolation. Each trip string has four inputs (one per MSL), any one of which will trip the trip string. The trip strings are arranged in a one-out-of-two taken twice logic. This is effectively a one-out-of-eight taken twice logic arrangement to initiate isolation of the MSIVs. Similarly, the 16 flow channels are connected into two two-out-of-two logic trip systems (effectively, two one-out-of-four twice logic), with each trip system isolating one of the two MSL drain valves on the associated steam line.

The Main Steam Tunnel Temperature—High Function receives input from 16 channels. The logic is arranged similar to the Main Steam Line Flow—High Function. The Turbine Building Area Temperature—High Function receives input from 64 channels. The inputs are arranged in a one-out-of-thirty-two taken twice logic trip system to isolate all MSIVs. Similarly, the inputs are arranged in two one-out-of-sixteen twice logic trip systems, with each trip system isolating one of the two MSL drain valves per drain line.

MSL Isolation Functions isolate the Group 1 valves.

2. Primary Containment Isolation

Most Primary Containment Isolation Functions receive inputs from four channels. The outputs from these channels are

(continued)

BASES

BACKGROUND

2. Primary Containment Isolation (continued)

arranged into two two-out-of-two logic trip systems. One trip system initiates isolation of all inboard primary containment isolation valves, while the other trip system initiates isolation of all outboard primary containment isolation valves. Each logic closes one of the two valves on each penetration, so that operation of either logic isolates the penetration. ← INSERT F (p.39)

The exception to this arrangement is the Drywell Radiation—High Function. This Function has two channels, whose outputs are arranged in two one-out-of-one logic trip systems. Each trip system isolates one valve per associated penetration, similar to the two-out-of-two logic described above.

Primary Containment Isolation Drywell Pressure—High and Reactor Vessel Water Level—Low, Level 3 Functions isolate the Group 2, 6, 7, 10, and 12 valves. Reactor Building and Refueling Floor Exhaust Radiation—High Functions isolate the Group 6, 10, and 12 valves. Primary Containment Isolation Drywell Radiation—High Function isolates the containment purge and vent valves. ← 18 inch (p.26)

3, 4. High Pressure Coolant Injection System Isolation and Reactor Core Isolation Cooling System Isolation

Most Functions that isolate HPCI and RCIC receive input from two channels, with each channel in one trip system using a one-out-of-one logic. Each of the two trip systems in each isolation group is connected to one of the two valves on each associated penetration.

The exceptions are the HPCI and RCIC Turbine Exhaust Diaphragm Pressure—High and Steam Supply Line Pressure—Low Functions. These Functions receive inputs from four turbine exhaust diaphragm pressure and four steam supply pressure channels for each system. The outputs from the turbine exhaust diaphragm pressure and steam supply pressure channels are each connected to two two-out-of-two trip systems. ^ Each trip system isolates one valve per associated penetration. E

INSERT G (p.39)

(continued)

INSERT F for proposed BASES B 3.3.6.1

The TIP ball valves isolation does not occur until the TIPs have been fully retracted (The logic also sends a TIP retraction signal).

INSERT G for proposed BASES B 3.3.6.1

Additionally, each trip system of the Steam Line Flow-High Functions receives input from a low differential pressure channel. The low differential pressure channels are not required for OPERABILITY. E

INSERT TO
B 3.3-152

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

High Pressure Coolant Injection and Reactor Core Isolation Cooling Systems Isolation

3.a., 4.a. HPCI and RCIC Steam Line Flow—High

Steam Line Flow—High Functions are provided to detect a break of the RCIC or HPCI steam lines and initiate closure of the steam line isolation valves of the appropriate system. If the steam is allowed to continue flowing out of the break, the reactor will depressurize and the core can uncover. Therefore, the isolations are initiated on high flow to prevent or minimize core damage. The isolation action, along with the scram function of the RPS, ensures that the fuel peak cladding temperature remains below the limits of 10 CFR 50.46. Specific credit for these Functions is not assumed in any FSAR accident analyses since the bounding analysis is performed for large breaks such as recirculation and MSL breaks. However, these instruments prevent the RCIC or HPCI steam line breaks from becoming bounding.

The HPCI and RCIC Steam Line Flow—High signals are initiated from transmitters (two for HPCI and two for RCIC) that are connected to the system steam lines. Two channels of both HPCI and RCIC Steam Line Flow—High Functions are available and are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function. E

The Allowable Values are chosen to be low enough to ensure that the trip occurs to prevent fuel damage and maintains the MSLB event as the bounding event. ← INSERT L (p.26)

These Functions isolate the Group 3 and 4 valves, as appropriate.

3.b., 4.b. HPCI and RCIC Steam Supply Line Pressure—Low

Low MSL pressure indicates that the pressure of the steam in the HPCI or RCIC turbine may be too low to continue operation of the associated system's turbine. These isolations are for equipment protection and are not assumed in any transient or accident analysis in the FSAR. However, they also provide a diverse signal to indicate a possible system break. These instruments are included in Technical Specifications (TS) because of the potential for risk due to

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

3.b., 4.b. HPCI and RCIC Steam Supply Line Pressure—Low (continued)

possible failure of the instruments preventing HPCI and RCIC initiations, ~~(Ref. 3).~~ (Ref. 6) (Ref. 7) Therefore, they meet Criterion 4 of the NRC Policy Statement. (P.52) (P.12)

The HPCI and RCIC Steam Supply Line Pressure—Low signals are initiated from transmitters (four for HPCI and four for RCIC) that are connected to the system steam line. Four channels of both HPCI and RCIC Steam Supply Line Pressure—Low Functions are available and are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function.

The Allowable Values are selected to be high enough to prevent damage to the system's turbine.

These Functions isolate the Group 3 and 4 valves, as appropriate.

3.c., 4.c. HPCI and RCIC Turbine Exhaust Diaphragm Pressure—High

High turbine exhaust diaphragm pressure indicates that the pressure may be too high to continue operation of the associated system's turbine. That is, one of two exhaust diaphragms has ruptured and pressure is reaching turbine casing pressure limits. These isolations are for equipment protection and are not assumed in any transient or accident analysis in the FSAR. These instruments are included in the TS because of the potential for risk due to possible failure of the instruments preventing HPCI and RCIC initiations, ~~(Ref. 3).~~ (Ref. 6) (Ref. 7) Therefore, they meet Criterion 4 of the NRC Policy Statement. (P.12) (P.52)

The HPCI and RCIC Turbine Exhaust Diaphragm Pressure—High signals are initiated from transmitters (four for HPCI and four for RCIC) that are connected to the area between the rupture diaphragms on each system's turbine exhaust line. Four channels of both HPCI and RCIC Turbine Exhaust Diaphragm Pressure—High Functions are available and are required to be OPERABLE to ensure that no single instrument failure can preclude the isolation function.

The Allowable Values are ~~high~~ low enough to prevent damage to the system's turbine. (P.7)

(continued)

INSERT K

<u>INSERT L for proposed BASES B 3.3.6.1</u>

E

The Allowable Values correspond to ≤ 215 inches water column for HPCI and ≤ 190 inches water column for RCIC, which are the parameters monitored on control room instruments.

INSERT TO
B 3.3-163

INSERT 6   3.3.8.1 Background Section (Unit 1) (page B3.3-219)

Each 4.16 kV emergency bus has a dedicated low voltage annunciator fed by two relays and their associated time delays. The logic for the annunciation function is arranged in a two-out-of-two configuration.

E

3.3.8.1 Background Section (Unit 2)

Each 4.16 kV emergency bus has a dedicated low voltage annunciator fed by two relays and their associated time delays. The logic for the annunciation function is arranged in a one-out-of-two configuration.

UNIT 1 AND UNIT 2

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY (continued)

The specific Applicable Safety Analyses, LCO, and Applicability discussions are listed below on a Function by Function basis.

C

1. 4.16 kV Emergency Bus Undervoltage (Loss of Voltage)

Loss of voltage on a 4.16 kV emergency bus indicates that offsite power may be completely lost to the respective emergency bus and is unable to supply sufficient power for proper operation of the applicable equipment. Therefore, the power supply to the bus is transferred from offsite power to DG power when the voltage on the bus drops below the Loss of Voltage Function Allowable Values (loss of voltage with a short time delay). This ensures that adequate power will be available to the required equipment.

The Bus Undervoltage Allowable Values are low enough to prevent inadvertent power supply transfer, but high enough to ensure that power is available to the required equipment. The Time Delay Allowable Values are long enough to provide time for the offsite power supply to recover to normal voltages, but short enough to ensure that power is available to the required equipment.

Two channels of 4.16 kV Emergency Bus Undervoltage (Loss of Voltage) Function per associated emergency bus are only required to be OPERABLE when the associated DG is required to be OPERABLE to ensure that no single instrument failure can preclude the DG function. (Two channels input to each of the three DGs.) Refer to LCO 3.8.1, "AC Sources—Operating," and 3.8.2, "AC Sources—Shutdown," for Applicability Bases for the DGs.

2. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage)

A reduced voltage condition on a 4.16 kV emergency bus indicates that, while offsite power may not be completely lost to the respective emergency bus, available power may be insufficient for starting large ECCS motors without risking damage to the motors that could disable the ECCS function. Therefore, power supply to the bus is transferred from offsite power to onsite DG power when the voltage on the bus drops below the Degraded Voltage Function Allowable Values

C

(continued)

BASES

APPLICABLE SAFETY ANALYSES, LCO, and APPLICABILITY

2. 4.16 kV Emergency Bus Undervoltage (Degraded Voltage) (continued)

(degraded voltage with a time delay). This ensures that adequate power will be available to the required equipment.

The Bus Undervoltage Allowable Values are low enough to prevent inadvertent power supply transfer, but high enough to ensure that sufficient power is available to the ~~required equipment~~ [large ECCS motors]. The Time Delay Allowable Values are long enough ~~to provide time for the offsite power supply to recover to normal voltages, but short enough to ensure that sufficient power is available to the required equipment.~~ [P.70] [for the offsite power supply to usually recover. This minimizes the potential that short duration disturbances will adversely impact the availability of the offsite power supply. INSERT 4]

Two channels of 4.16 kV Emergency Bus Undervoltage (Degraded Voltage) Function per associated bus are only required to be OPERABLE when the associated DG is required to be OPERABLE to ensure that no single instrument failure can preclude the DG function. (Two channels input to each of the three emergency buses and DGs.) Refer to LCO 3.8.1 and LCO 3.8.2 for Applicability Bases for the DGs.

3. ← INSERT 5 (P.70)

ACTIONS

A Note has been provided to modify the ACTIONS related to LOP instrumentation channels. Section 1.3, Completion Times, specifies that once a Condition has been entered, subsequent ~~trains~~ [divisions] (GP.1), subsystems, components, or variables expressed in the Condition, discovered to be inoperable or not within limits, will not result in separate entry into the Condition. Section 1.3 also specifies that Required Actions of the Condition continue to apply for each additional failure, with Completion Times based on initial entry into the Condition. However, the Required Actions for inoperable LOP instrumentation channels provide appropriate compensatory measures for separate inoperable channels. As such, a Note has been provided that allows separate Condition entry for each inoperable LOP instrumentation channel.

A.1

With one or more channels of ~~a~~ Function [1 or 2] (P.70) inoperable, the Function ~~is not capable of performing the intended function~~ [does not maintain initiation capability for the associated emergency bus.] (P.26). Therefore, only 1 hour is allowed to restore the inoperable

(continued)

INSERT 5 3.3.8.1 Applicable Safety Analysis Section (Unit 2)
(page B 3.3-222)

3. 4.16 kV Emergency Bus Undervoltage (Anticipatory Alarms)

A reduced voltage condition on a 4.16 kV emergency indicated that, while offsite power is adequate for normal operating conditions, available power may be marginal for some equipment required for LOCA conditions. Therefore, the anticipatory alarms actuate when the 4.16 kV bus voltages approach the minimum required voltage for normal; i.e., non-LOCA, conditions. This ensures that manual actions will be initiated to restore the bus voltages or to initiate a plant shutdown.

One channel of the 4.16 kV emergency bus undervoltage (Anticipatory Alarm) function per the associated bus is only required to be OPERABLE when the associated DG is required to be OPERABLE. (Two channels input to each of the three emergency buses.)

3.3.8.1 Applicable Safety Analysis Section (Unit 1)
(page B 3.3-222)

3. 4.16 kV Emergency Bus Undervoltage (Anticipatory Alarms)

A reduced voltage condition on a 4.16 kV emergency indicated that, while offsite power is adequate for normal operating conditions, available power may be marginal for some equipment required for LOCA conditions. Therefore, the anticipatory alarms actuate when the 4.16 kV bus voltages approach the minimum required voltage for normal; i.e., non-LOCA, conditions. This ensures that manual actions will be initiated to restore the bus voltages or to initiate a plant shutdown.

Two channels of the 4.16 kV emergency bus undervoltage (Anticipatory Alarm) function per the associated bus are only required to be OPERABLE when the associated DG is required to be OPERABLE. (Two channels input to each of the three emergency buses.)

BASES

ACTIONS

A.1 (continued)

channel to OPERABLE status. If the inoperable channel cannot be restored to OPERABLE status within the allowable out of service time, the channel must be placed in the tripped condition per Required Action A.1. Placing the inoperable channel in trip would conservatively compensate for the inoperability, restore capability to accommodate a single failure (within the LOP instrumentation), and allow operation to continue. Alternately, if it is not desired to place the channel in trip (e.g., as in the case where placing the channel in trip would result in a DG initiation), Condition B must be entered and its Required Action taken.

P.67 — The Required Action does not allow placing a channel in trip since this action will result in a DG initiation.

The Completion Time is intended to allow the operator time to evaluate and repair any discovered inoperabilities. The 1 hour Completion Time is acceptable because it minimizes risk while allowing time for restoration or tripping of channels.

INSERT C — P.70

C B.1 — P.70

If any Required Action and associated Completion Time are not met, the associated Function is not capable of performing the intended function. Therefore, the associated DG(s) is declared inoperable immediately. This requires entry into applicable Conditions and Required Actions of LCO 3.8.1 and LCO 3.8.2, which provide appropriate actions for the inoperable DG(s).

does not maintain initiation capability for the associated emergency bus — P.26

SURVEILLANCE REQUIREMENTS

As noted at the beginning of the SRs, the SRs for each LOP instrumentation Function are located in the SRs column of Table 3.3.8.1-1.

The Surveillances are modified by a Note to indicate that when a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 2 6 hours provided the associated Function maintains DG initiation capability. Upon completion of the Surveillance, or expiration of the 2 6 hour allowance, the channel must be

(P.8) (P.72) (P.73) Functions 1 and 2 maintain initiation capability provided that, for 2 of the 3 emergency buses, the following can be initiated by the Function: DG start, disconnect from the offsite power source, DG output breaker closure, load shed, and activation of the ECCS pump power permissive.

(continued)

P.26 — (for Functions 1 and 2) and annunciation capability (for Function 3).

P.26 defined for Function 3 to be a comparison of the annunciator status to the bus voltage and an annunciator test confirming the annunciator is capable of lighting and sounding

BASES

SURVEILLANCE REQUIREMENTS (continued)

returned to OPERABLE status or the applicable Condition entered and Required Actions taken.

P.26 or a failure of annunciation

SR 3.3.8.1.1

Performance of the CHANNEL CHECK once every 12 hours ensures that a gross failure of instrumentation has not occurred. A CHANNEL CHECK is a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that instrument channels monitoring the same parameter should read approximately the same value. Significant deviations between the instrument channels could be an indication of excessive instrument drift in one of the channels or something even more serious. A CHANNEL CHECK will detect gross channel failure; thus, it is key to verifying the instrumentation continues to operate properly between each CHANNEL CALIBRATION.

P.26 or an annunciator failure

P.70

C

Agreement criteria are determined by the plant staff based on a combination of the channel instrument uncertainties, including indication and readability. If a channel is outside the match criteria, it may be an indication that the instrument has drifted outside its limit.

The Frequency is based upon operating experience that demonstrates channel failure is rare. Thus, performance of the CHANNEL CHECK ensures that undetected outright channel or annunciator failure is limited to 12 hours. The CHANNEL CHECK supplements less formal, but more frequent, checks of channels during normal operational use of the displays associated with channels required by the LCO.

P.26

SR 3.3.8.1.2

A CHANNEL FUNCTIONAL TEST is performed on each required channel to ensure that the entire channel will perform the intended function.

L.P.1 INSERT B

The Frequency of 31 days is based on operating experience with regard to channel OPERABILITY and drift, which demonstrates that failure of more than one channel of a given Function in any 31 day interval is a rare event.

(continued)

INSERT C (Unit 2) ACTIONS (continued) (page B 3.3 - 223)

Each 4.16 kV bus has a dedicated annunciator fed by two relays and their associated time delays in a one-out-of-two logic configuration. Only one relay and its associated time delays is required to be OPERABLE. Therefore, the loss of the required relay or time delay renders Function incapable of performing the intended function. Since the intended function is to alert personnel to a lowering voltage condition and the voltage reading is available for each bus on the control room front panels, the Required Action is verification of the voltage to be above the annunciator setpoint (nominal) hourly.

E

(Unit 1) ACTIONS

Each 4.16 kV bus has a dedicated annunciator fed by two relays and their associated time delays in a two-out-of-two logic configuration. Both relays and their associated time delays are required to be OPERABLE. Therefore, either required relay or time delay renders Function incapable of performing the intended function. Since the intended function is to alert personnel to a lowering voltage condition and the voltage reading is available for each bus on the control room front panels, the Required Action is verification of the voltage to be above the annunciator setpoint (nominal) hourly.

E

BASES

ACTIONS (continued)

B.1 and B.2

(GP.1) [1]

With no RHR shutdown cooling subsystem and no recirculation pump in operation, except as permitted by ~~the~~ LCO Note~~,~~ and until RHR or recirculation pump operation is re-established, an alternate method of reactor coolant circulation must be placed into service. This will provide the necessary circulation for monitoring coolant temperature. The 1 hour Completion Time is based on the coolant circulation function and is modified such that the 1 hour is applicable separately for each occurrence involving a loss of coolant circulation. Furthermore, verification of the functioning of the alternate method must be reconfirmed every 12 hours thereafter. This will provide assurance of continued temperature monitoring capability.

During the period when the reactor coolant is being circulated by an alternate method (other than by the [or recirculation pump (GP.1)] required RHR Shutdown Cooling System [sub.]), the reactor coolant temperature [and pressure (GP.1) (P.23)] must be periodically monitored to ensure proper function of the alternate method. The once per hour Completion Time is deemed appropriate.

SURVEILLANCE REQUIREMENTS

SR 3.4.9.1 8 (P.2)

This Surveillance verifies that one RHR shutdown cooling subsystem or recirculation pump is in operation and circulating reactor coolant. The required flow rate is determined by the flow rate necessary to provide sufficient decay heat removal capability. The Frequency of 12 hours is sufficient in view of other visual and audible indications available to the operator for monitoring the RHR subsystem in the control room.

REFERENCES

~~None~~.

1. ← INSERT B45 (P.12)

B 3.4 REACTOR COOLANT SYSTEM (RCS)

B 3.4.10 RCS Pressure and Temperature (P/T) Limits

BASES

BACKGROUND

All components of the RCS are designed to withstand effects of cyclic loads due to system pressure and temperature changes. These loads are introduced by startup (heatup) and shutdown (cooldown) operations, power transients, and reactor trips. This LCO limits the pressure and temperature changes during RCS heatup and cooldown, within the design assumptions and the stress limits for cyclic operation.

The PTLR contains P/T limit curves for heatup, cooldown, and inservice leakage and hydrostatic testing, and data for the maximum rate of change of reactor coolant temperature. The heatup curve provides limits for both heatup and criticality.

Each P/T limit curve defines an acceptable region for normal operation. The usual use of the curves is operational guidance during heatup or cooldown maneuvering, when pressure and temperature indications are monitored and compared to the applicable curve to determine that operation is within the allowable region.

The LCO establishes operating limits that provide a margin to brittle failure of the reactor vessel and piping of the reactor coolant pressure boundary (RCPB). The vessel is the component most subject to brittle failure. Therefore, the LCO limits apply mainly to the vessel.

10 CFR 50, Appendix G (Ref. 1), requires the establishment of P/T limits for material fracture toughness requirements of the RCPB materials. Reference 1 requires an adequate margin to brittle failure during normal operation, anticipated operational occurrences, and system hydrostatic tests. It mandates the use of the ASME Code, Section III, Appendix G (Ref. 2).

The actual shift in the RT_{NDT} of the vessel material will be established periodically by removing and evaluating the irradiated reactor vessel material specimens, in accordance with ASTM E 185 (Ref. 3) and Appendix H of 10 CFR 50 (Ref. 4). The operating P/T limit curves will be adjusted,

(continued)

BASES

BACKGROUND (continued)

as necessary, based on the evaluation findings and the recommendations of Reference 5.

The P/T limit curves are composite curves established by superimposing limits derived from stress analyses of those portions of the reactor vessel and head that are the most restrictive. At any specific pressure, temperature, and temperature rate of change, one location within the reactor vessel will dictate the most restrictive limit. Across the span of the P/T limit curves, different locations are more restrictive, and, thus, the curves are composites of the most restrictive regions.

The heatup curve represents a different set of restrictions than the cooldown curve because the directions of the thermal gradients through the vessel wall are reversed. The thermal gradient reversal alters the location of the tensile stress between the outer and inner walls.

The criticality limits include the Reference 1 requirement that they be at least 40°F above the heatup curve or the cooldown curve and not lower than the minimum permissible temperature for the inservice leakage and hydrostatic testing.

The consequence of violating the LCO limits is that the RCS has been operated under conditions that can result in brittle failure of the RCPB, possibly leading to a nonisolable leak or loss of coolant accident. In the event these limits are exceeded, an evaluation must be performed to determine the effect on the structural integrity of the RCPB components. ASME Code, Section XI, Appendix E (Ref. 6), provides a recommended methodology for evaluating an operating event that causes an excursion outside the limits.

APPLICABLE SAFETY ANALYSES

The P/T limits are not derived from Design Basis Accident (DBA) analyses. They are prescribed during normal operation to avoid encountering pressure, temperature, and temperature rate of change conditions that might cause undetected flaws to propagate and cause nonductile failure of the RCPB, a condition that is unanalyzed. ~~Reference 7 establishes the methodology for determining the P/T limits~~. Since the P/T limits are not derived from any DBA, there are no acceptance

(continued)

Reference 8 approved the curves and limits specified in this section

BASES

APPLICABLE SAFETY ANALYSES (continued)

limits related to the P/T limits. Rather, the P/T limits are acceptance limits themselves since they preclude operation in an unanalyzed condition.

RCS P/T limits satisfy Criterion 2 of the NRC Policy Statement (Ref. 9).

LCO

The elements of this LCO are:

a. RCS pressure and temperature are within the limits specified in Figures 3.4.9-1 and 3.4.9-2 during RCS heatup, cooldown, an inservice leak and hydrostatic testing, and heatup or cooldown rates are ≤ 100°F;

b. The temperature difference between the reactor vessel bottom head coolant and the reactor pressure vessel (RPV) coolant is ≤ 145°F during recirculation pump startup;

c. The temperature difference between the reactor coolant in the respective recirculation loop and in the reactor vessel ≤ 50°F during recirculation pump startup;

d. RCS pressure and temperature are within the criticality limits specified in Figure 3.4.9-3 prior to achieving criticality; and

e. The reactor vessel flange and the head flange temperatures are ≥ 76°F (U1) ≥ 90°F (U2) when tensioning the reactor vessel head bolting studs.

These limits define allowable operating regions and permit a large number of operating cycles while also providing a wide margin to nonductile failure.

The rate of change of temperature limits is the thermal gradient through the vessel wall and used as inputs for calculating the heatup, cooldown, and inservice leakage and hydrostatic testing P/T limit curves. Thus, the LCO for the rate of change of temperature restricts stresses caused by thermal gradients and also ensures the validity of the P/T limit curves.

Violation of the limits places the reactor vessel outside of the bounds of the stress analyses and can increase stresses

(continued)

BASES

ACTIONS (continued)

C.1 and C.2

Operation outside the P/T limits in other than MODES 1, 2, and 3 (including defueled conditions) must be corrected so that the RCPB is returned to a condition that has been verified by stress analyses. The Required Action must be initiated without delay and continued until the limits are restored.

Besides restoring the P/T limit parameters to within limits, an evaluation is required to determine if RCS operation is allowed. This evaluation must verify that the RCPB integrity is acceptable and must be completed before approaching criticality or heating up to > 200°F. Several methods may be used, including comparison with pre-analyzed transients, new analyses, or inspection of the components. ASME Code, Section XI, Appendix E (Ref. 6), may be used to support the evaluation; however, its use is restricted to evaluation of the beltline.

SURVEILLANCE REQUIREMENTS

SR 3.4.10.1

Verification that operation is within PTLR limits is required every 30 minutes when RCS pressure and temperature conditions are undergoing planned changes. This Frequency is considered reasonable in view of the control room indication available to monitor RCS status. Also, since temperature rate of change limits are specified in hourly increments, 30 minutes permits a reasonable time for assessment and correction of minor deviations.

Surveillance for heatup, cooldown, or inservice leakage and hydrostatic testing may be discontinued when the criteria given in the relevant plant procedure for ending the activity are satisfied.

This SR has been modified with a Note that requires this Surveillance to be performed only during system heatup and cooldown operations and inservice leakage and hydrostatic testing.

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SR 3.4.~~10~~9.2 (P.2)

A separate limit is used when the reactor is approaching criticality. Consequently, the RCS pressure and temperature must be verified within the appropriate limits before withdrawing control rods that will make the reactor critical.

Performing the Surveillance within 15 minutes before control rod withdrawal for the purpose of achieving criticality provides adequate assurance that the limits will not be exceeded between the time of the Surveillance and the time of the control rod withdrawal.

(P.2) SR 3.4.~~10~~9.3 and SR 3.4.~~10~~9.4

Differential temperatures within the applicable ~~PTLR~~ (P.30) limits ensure that thermal stresses resulting from the startup of an idle recirculation pump will not exceed design allowances. In addition, compliance with these limits ensures that the assumptions of the analysis for the startup of an idle recirculation loop (Ref. ~~8~~ 7) are satisfied. (P.2)

Performing the Surveillance within 15 minutes before starting the idle recirculation pump provides adequate assurance that the limits will not be exceeded between the time of the Surveillance and the time of the idle pump start.

An acceptable means of demonstrating compliance with the temperature differential requirement in SR 3.4.~~10~~9.4 is to compare the temperatures of the operating recirculation loop and the idle loop. (P.2)

SR 3.4.~~10~~9.3 (P.2) and SR 3.4.9.4 have (P.25) ~~has~~ been modified by a Note that requires the Surveillance to be performed only in MODES 1, 2, 3, and 4. ~~with reactor steam dome pressure ≥ 25 psig.~~ (P.25) In MODE 5, the overall stress on limiting components is lower. Therefore, ΔT limits are not required.

SR 3.4.~~10~~9.5, SR 3.4.~~10~~9.6, and SR 3.4.~~10~~9.7 (P.2)

Limits on the reactor vessel flange and head flange temperatures are generally bounded by the other P/T limits

(continued)

BASES

SURVEILLANCE REQUIREMENTS (P.2) SR 3.4.~~10~~9.5, SR 3.4.~~10~~9.6, and SR 3.4.~~10~~9.7 (continued)

during system heatup and cooldown. However, operations approaching MODE 4 from MODE 5 and in MODE 4 with RCS temperature less than or equal to certain specified values require assurance that these temperatures meet the LCO limits.

The flange temperatures must be verified to be above the limits 30 minutes before and while tensioning the vessel head bolting studs to ensure that once the head is tensioned the limits are satisfied. When in MODE 4 with RCS temperature ≤ ~~80~~°F [U1 ... 86°F, U2 ... 100°F (P.30)], 30 minute checks of the flange temperatures are required because of the reduced margin to the limits. When in MODE 4 with RCS temperature ≤ ~~100~~°F [106 U1, 120 U2 (P.30)], monitoring of the flange temperature is required every 12 hours to ensure the temperature is within the limits specified in the PTLR.

The 30 minute Frequency reflects the urgency of maintaining the temperatures within limits, and also limits the time that the temperature limits could be exceeded. The 12 hour Frequency is reasonable based on the rate of temperature change possible at these temperatures.

(P.26) INSERT B53a →

REFERENCES

1. 10 CFR 50, Appendix G.

2. ASME, Boiler and Pressure Vessel Code, Section III, Appendix G.

3. ASTM E 185-82, "Standard Practice for Conducting Surveillance Tests for Light-Water Cooled Nuclear Power Reactor Vessels," July 1982. (P.12)

4. 10 CFR 50, Appendix H.

5. Regulatory Guide 1.99, Revision 2, May 1988.

6. ASME, Boiler and Pressure Vessel Code, Section XI, Appendix E.

~~7. NEDO-21778-A, December 1978.~~

~~8.~~7 FSAR, Section ~~[15.1.26]~~ 14.3.6.2 ....(unit 1) ...(unit 2) (P.12)

8. 9 INSERT B53 b

B 3.4 REACTOR COOLANT SYSTEM (RCS)

B 3.4.~~11~~ 10 Reactor Steam Dome Pressure (P.2)

BASES

BACKGROUND

The reactor steam dome pressure is an assumed initial condition of design basis accidents and transients. ~~and is also~~ an assumed value in the determination of compliance with reactor pressure vessel overpressure protection criteria, and is also (P.28)

APPLICABLE SAFETY ANALYSES

The reactor steam dome pressure of ≤ [1020] psig is an initial condition of the vessel overpressure protection analysis of Reference 1. This analysis assumes an initial maximum reactor steam dome pressure and evaluates the response of the pressure relief system, primarily the safety/relief valves, during the limiting pressurization transient. The determination of compliance with the overpressure criteria is dependent on the initial reactor steam dome pressure; therefore, the limit on this pressure ensures that the assumptions of the overpressure protection analysis are conserved. Reference 2 also assumes an initial reactor steam dome pressure for the analysis of design basis accidents and transients used to determine the limits for fuel cladding integrity (see Bases for LCO 3.2.2, "MINIMUM CRITICAL POWER RATIO (MCPR)") and 1% cladding plastic strain (see Bases for LCO 3.2.1, "AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)"). (P.2)

Reactor steam dome pressure satisfies the requirements of Criterion 2 of the NRC Policy Statement (Ref. 3). (P.12)

LCO

The specified reactor steam dome pressure limit of ≤ [1020] psig ensures the plant is operated within the assumptions of the ~~transient analyses~~ overpressure protection analysis. Operation above the limit may result in a ~~transient~~ response more severe than analyzed. (P.2) (P.28)

APPLICABILITY

In MODES 1 and 2, the reactor steam dome pressure is required to be less than or equal to the limit. In these

(continued)

INSERT B53a

SR 3.4.9.5 is modified by a Note that requires the Surveillance to be performed only when tensioning the reactor vessel head bolting studs. SR 3.4.9.6 is modified by a Note that requires the Surveillance to be initiated 30 minutes after RCS temperature ≤ 80°F in Mode 4. SR 3.4.9.7 is modified by a Note that requires the Surveillance to be initiated 12 hours after RCS temperature ≤ 100°F in Mode 4. The Notes contained in these SRs are necessary to specify when the reactor vessel flange and head flange temperatures are required to be verified to be within the limits specified ~~in the PTLR~~.

(P.30) U1 (86) U2 (100) U1 (106) U2 (120) E

INSERT TO B 3.4-53

E

INSERT B53 b

Unit 1 → { 8. George W. Riverbark (NRC) Letter to J. T. Beckham, Jr. (GPC), Amendment 126 to the Operating License, dated June 22, 1986.

Unit 2 → { 8. Kahtan N. Jabbour (NRC) Letter to W. G. Hairston, III (GPC), Amendment 118 to the Operating License, dated January 10, 1992.

9. NRC No. 93-102, "Final Policy Statement on Technical Specification Improvements," July 23, 1993.

E

Hatch Units 1 & 2

INSERT TO B 3.4-53

(P.27)

B 3.6 CONTAINMENT SYSTEMS

B 3.6.4.3 Standby Gas Treatment (SGT) System

BASES

BACKGROUND

The SGT System is required by 10 CFR 50, Appendix A, GDC 41, "Containment Atmosphere Cleanup" (Ref. 1). The function of the SGT System is to ensure that radioactive materials that leak from the primary containment into the {secondary} (P.2) containment following a Design Basis Accident (DBA) are filtered and adsorbed prior to exhausting to the environment.

(P.27) Unit 1 and Unit 2

The SGT System(s) consists of two (each) fully redundant subsystems, each with its own set of ~~ductwork~~, dampers, charcoal filter train, and controls.

Insert A.1 (P.40)

Each charcoal filter train consists of (components listed in order of the direction of the air flow):

a. A demister or moisture separator;

b. An electric heater;

c. A prefilter;

d. A high efficiency particulate air (HEPA) filter;

e. (Two) ~~A~~ charcoal adsorber; INSERT A (P.40)

f. A second HEPA filter; and

g. (P.40) A ~~centrifugal~~ axial vane fan.

The sizing of the SGT System(s) (P.27) equipment and components is based on the results of an infiltration analysis, as well as an exfiltration analysis of the {secondary} (P.2) containment. The internal pressure of the SGT System(s) (P.27) boundary region is maintained at a negative pressure of {0.25} inches water gauge when the system is in operation, which represents the internal pressure required to ensure zero exfiltration of air from the building when exposed to a {10} (P.2) mph wind. ~~blowing at an angle of [45]° to the building.~~ (P.59)

The demister is provided to remove entrained water in the air, while the electric heater reduces the relative humidity

(continued)

* Unit 1 version

(p.27)

BASES

BACKGROUND (continued)

of the airstream to less than [70]% (Ref. 2). The prefilter removes large particulate matter, while the HEPA filter removes fine particulate matter and protects the charcoal from fouling. The charcoal adsorber removes gaseous elemental iodine and organic iodides, and the final HEPA filter collects any carbon fines exhausted from the charcoal adsorber.

The SGT System automatically starts and operates in response to actuation signals indicative of conditions or an accident that could require operation of the system. Following initiation, both charcoal filter train fans start. Upon verification that both subsystems are operating, the redundant subsystem is normally shut down.

APPLICABLE SAFETY ANALYSES

The design basis for the SGT System is to mitigate the consequences of a loss of coolant accident and fuel handling accidents (Ref. 2). For all events analyzed, the SGT System is shown to be automatically initiated to reduce, via filtration and adsorption, the radioactive material released to the environment.

The SGT System satisfies Criterion 3 of the NRC Policy Statement.

LCO

Following a DBA, a minimum of one SGT subsystem is required to maintain the [secondary] containment at a negative pressure with respect to the environment and to process gaseous releases. Meeting the LCO requirements for two OPERABLE subsystems ensures operation of at least one SGT subsystem in the event of a single active failure.

APPLICABILITY

In MODES 1, 2, and 3, a DBA could lead to a fission product release to primary containment that leaks to secondary containment. Therefore, SGT System OPERABILITY is required during these MODES.

In MODES 4 and 5, the probability and consequences of these events are reduced due to the pressure and temperature limitations in these MODES. Therefore, maintaining the SGT

(continued)

UNIT 1

(p.27)

BASES

ACTIONS (E) (LA.5)

E.1, E.2, and E.3 (continued)

operations. Therefore, in either case, inability to suspend movement of irradiated fuel assemblies would not be a sufficient reason to require a reactor shutdown.

SURVEILLANCE REQUIREMENTS

SR 3.6.4.3.1

(required Unit 1 and Unit 2) (P.26) (P2) (they)

Operating each SGT subsystem for ≥ [10] continuous hours ensures that ~~[both] subsystems~~ they are OPERABLE and that all associated controls are functioning properly. It also ensures that blockage, fan or motor failure, or excessive vibration can be detected for corrective action. Operation [with the heaters on ~~(automatic heater cycling to maintain temperature)~~] for ≥ [10] continuous hours every 31 days eliminates moisture on the adsorbers and HEPA filters. The 31 day Frequency was developed in consideration of the known reliability of fan motors and controls and the redundancy available in the system. (P2) (P.26) (E)

SR 3.6.4.3.2

This SR verifies that the required SGT filter testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). ~~The SGT System filter tests are in accordance with Regulatory Guide 1.52 (Ref. 3).~~ The VFTP includes testing HEPA filter performance, charcoal adsorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). Specific test frequencies and additional information are discussed in detail in the VFTP. (P.60)

(P.27) (required Unit 1 and 2)

SR 3.6.4.3.3

This SR verifies that each required Unit 1 and 2 SGT subsystem starts on receipt of an actual or simulated initiation signal. While this Surveillance can be performed with the reactor at power, operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. The LOGIC SYSTEM FUNCTIONAL TEST in SR 3.3.6.2.5 overlaps this SR to provide complete testing of the safety (P.2) (P.49)

(continued)

* Unit 1 version

(p.27)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.4.3.3 (continued)

move to previous page

function. Therefore, the Frequency was found to be acceptable from a reliability standpoint.

(p.32)

~~SR 3.6.4.3.4~~

~~This SR verifies that the filter cooler bypass damper can be opened and the fan started. This ensures that the ventilation mode of SGT System operation is available. While this Surveillance can be performed with the reactor at power, operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency, which is based on the refueling cycle. Therefore, the Frequency was found to be acceptable from a reliability standpoint.~~

REFERENCES

1. 10 CFR 50, Appendix A, GDC 41.

2. FSAR, Section ~~[6.2.3]~~ 5.3.

(p.36)

~~3. Regulatory Guide 1.52, Rev. [2].~~

Insert Ref.

3. Unit 2 FSAR, Section 6.2.3.

A Unit 2 version

(P.27) all changes not specifically numbered

B 3.6 CONTAINMENT SYSTEMS

B 3.6.4.3 7 Standby Gas Treatment (SGT) System — Operating

BASES

BACKGROUND

The SGT System is required by 10 CFR 50, Appendix A, GDC 41, "Containment Atmosphere Cleanup" (Ref. 1). The function of the SGT System is to ensure that radioactive materials that leak from the primary containment into the [secondary] (P.2) containment following a Design Basis Accident (DBA) are filtered and adsorbed prior to exhausting to the environment.

The (Unit 1 and Unit 2) SGT Systems (each) consists of two fully redundant subsystems, each with its own set of ~~ductwork,~~ dampers, charcoal filter train, and controls.

(Insert A1) (P.40)

Each charcoal filter train consists of (components listed in order of the direction of the air flow):

a. A demister or moisture separator;

b. An electric heater;

c. A prefilter;

d. A high efficiency particulate air (HEPA) filter;

e. (P.40) Two ~~A~~ charcoal adsorber ~~;~~ for Unit 1 subsystems and one charcoal adsorber for Unit 2 subsystems (P.40)

f. A second HEPA filter; and

g. A centrifugal fan.

The sizing of the SGT Systems equipment and components is based on the results of an infiltration analysis, as well as an exfiltration analysis of the (Unit 1 and Unit 2) [secondary] containments. The internal pressure of the SGT Systems boundary region is maintained at a negative pressure of [0.25] inches water gauge when the system is in operation, which represents the internal pressure required to ensure zero exfiltration of air from the building when exposed to a [10] mph wind. (P.2) ~~blowing at an angle of [45]° to the building.~~ (P.59)

The demister is provided to remove entrained water in the air, while the electric heater reduces the relative humidity

(continued)

UNIT 2

A Unit 2 version
(P.27) all changes not specifically numbered

BACKGROUND (continued)

of the airstream to less than [70]% (Ref. 2) and 3 (P.36) (P.2). The prefilter removes large particulate matter, while the HEPA filter removes fine particulate matter and protects the charcoal from fouling. The charcoal adsorbers removes gaseous elemental iodine and organic iodides, and the final HEPA filter collects any carbon fines exhausted from the charcoal adsorber. (P.40)

The (Unit 1 and Unit 2) SGT Systems automatically starts and operates in response to actuation signals indicative of conditions or an accident that could require operation of the system. Following initiation, both charcoal filter train fans start. Upon verification that ~~both~~ (the required) subsystems are operating, the redundant (required) subsystem is normally shut down (during MODES 1, 2, and 3).

APPLICABLE SAFETY ANALYSES

The design basis for the (Unit 1 and Unit 2) SGT Systems is to mitigate the consequences of a loss of coolant accident ~~and fuel handling accidents~~ (Refs. 2, 3, and 4). For ~~all~~ (this) events ~~analyzed~~, the SGT Systems ~~is~~ (are) shown to be automatically initiated to reduce, via filtration and adsorption, the radioactive material released to the environment. INSERT C (P.27)

The SGT System satisfies Criterion 3 of the NRC Policy Statement (Ref. 5) (P.36).

LCO

Following a ~~DBA~~ LOCA, a minimum of ~~one~~ three (P.2) SGT subsystems ~~is~~ are required to maintain the (Unit 1 and Unit 2) [secondary] containments at a negative pressure with respect to the environment and to process gaseous releases. Meeting the LCO requirements for ~~two~~ four OPERABLE subsystems ensures operation of at least ~~one~~ three SGT subsystems in the event of a single active failure.

(P.58) (Insert A)

APPLICABILITY

In MODES 1, 2, and 3, a ~~DBA~~ LOCA (P.40) could lead to a fission product release to primary containment that leaks to (Unit 1 and Unit 2) secondary containments. Therefore, (Unit 1 and Unit 2) SGT Systems OPERABILITY ~~is~~ are required during these MODES.

(Insert B) ~~In MODES 4 and 5, the probability and consequences of these events are reduced due to the pressure and temperature limitations in these MODES. Therefore, maintaining the SGT~~

(continued)

UNIT 2

BASES

ACTIONS

D.1, D.2, and D.3 (continued)

operations. Therefore, in either case, inability to suspend movement of irradiated fuel assemblies would not be a sufficient reason to require a reactor shutdown.

SURVEILLANCE REQUIREMENTS

SR 3.6.4.3.1

Operating each SGT subsystem for ≥ [10] continuous hours ensures that ~~[both] subsystems~~ are OPERABLE and that all associated controls are functioning properly. It also ensures that blockage, fan or motor failure, or excessive vibration can be detected for corrective action. Operation [with the heaters on ~~(automatic heater cycling to maintain temperature)~~] for ≥ [10] continuous hours every 31 days eliminates moisture on the adsorbers and HEPA filters. The 31 day Frequency was developed in consideration of the known reliability of fan motors and controls and the redundancy available in the system.

SR 3.6.4.3.2

This SR verifies that the required SGT filter testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). ~~The SGT System filter tests are in accordance with Regulatory Guide 1.52 (Ref. 3).~~ The VFTP includes testing HEPA filter performance, charcoal adsorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). Specific test frequencies and additional information are discussed in detail in the VFTP.

SR 3.6.4.3.3

This SR verifies that each SGT subsystem starts on receipt of an actual or simulated initiation signal. While this Surveillance can be performed with the reactor at power, operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. The LOGIC SYSTEM FUNCTIONAL TEST in SR 3.3.6.2.6 overlaps this SR to provide complete testing of the safety

(continued)

UNIT 2

A Unit 2 version

(P.27) all changes not specifically numbered

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.4.3.3 (continued)

function. Therefore, the Frequency was found to be acceptable from a reliability standpoint.

move to prev. page

(P.32)

SR 3.6.4.3.4

This SR verifies that the filter cooler bypass damper can be opened and the fan started. This ensures that the ventilation mode of SGT System operation is available. While this Surveillance can be performed with the reactor at power, operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency, which is based on the refueling cycle. Therefore, the Frequency was found to be acceptable from a reliability standpoint.

REFERENCES

(P.36)

1. 10 CFR 50, Appendix A, GDC 41.
2. Unit 1 FSAR, Section 5.3.
3. FSAR, Section [6.2.3].
4. FSAR, Section 15.1.39
5. ~~Regulatory Guide 1.52, Rev. [2].~~

Insert Ref.

UNIT 2

BASES

ACTIONS

D.1, D.2, and D.3 (continued)

operations. Therefore, in either case, inability to suspend movement of irradiated fuel assemblies would not be a sufficient reason to require a reactor shutdown.

SURVEILLANCE REQUIREMENTS

SR 3.6.4.3.1

Operating each SGT subsystem for ≥ [10] continuous hours ensures that [both] subsystems are OPERABLE and that all associated controls are functioning properly. It also ensures that blockage, fan or motor failure, or excessive vibration can be detected for corrective action. Operation [with the heaters on (automatic heater cycling to maintain temperature)] for ≥ [10] continuous hours every 31 days eliminates moisture on the adsorbers and HEPA filters. The 31 day Frequency was developed in consideration of the known reliability of fan motors and controls and the redundancy available in the system.

SR 3.6.4.3.2

This SR verifies that the required SGT filter testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The SGT System filter tests are in accordance with Regulatory Guide 1.52 (Ref. 3). The VFTP includes testing HEPA filter performance, charcoal adsorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). Specific test frequencies and additional information are discussed in detail in the VFTP.

SR 3.6.4.3.3

This SR verifies that each SGT subsystem starts on receipt of an actual or simulated initiation signal. While this Surveillance can be performed with the reactor at power, operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. The LOGIC SYSTEM FUNCTIONAL TEST in SR 3.3.6.2.5 overlaps this SR to provide complete testing of the safety

(continued)

* Unit 2 Version

(p.29) all changes not specifically numbered

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.4.3.3 (continued)

move to previous page — function. Therefore, the Frequency was found to be acceptable from a reliability standpoint.

(p.32)

[SR 3.6.4.3.4

This SR verifies that the filter cooler bypass damper can be opened and the fan started. This ensures that the ventilation mode of SGT System operation is available. While this Surveillance can be performed with the reactor at power, operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency, which is based on the refueling cycle. Therefore, the Frequency was found to be acceptable from a reliability standpoint.]

REFERENCES

~~1. 10 CFR 50, Appendix A, GDC 41.~~

1 ~~2~~. FSAR, Section ~~[~~6.2.3~~]~~.

(p.36)

~~3. Regulatory Guide 1.52, Rev. [2].~~

Insert Ref.

2. FSAR, Section 15.1.39.

UNIT 2

*Unit 2 Version

(P.27) all changes not specifically numbered

BASES

ACTIONS

~~D.1, D.2, and D.3~~ (continued) C C

operations. Therefore, in either case, inability to suspend movement of irradiated fuel assemblies would not be a sufficient reason to require a reactor shutdown.

SURVEILLANCE REQUIREMENTS

SR 3.6.4.3.1 (9) (required Unit 1 and Unit 2) (P.26)

Operating each SGT subsystem for ≥ [10] continuous hours ensures that ~~[both] subsystems~~ (they) (P2) are OPERABLE and that all associated controls are functioning properly. It also ensures that blockage, fan or motor failure, or excessive vibration can be detected for corrective action. Operation (P26) [with the heaters on ~~(automatic heater cycling to maintain temperature)~~] for ≥ [10] continuous hours every 31 days eliminates moisture on the adsorbers and HEPA filters. The 31 day Frequency was developed in consideration of the known reliability of fan motors and controls and the redundancy available in the system. (P2) (E)

SR 3.6.4.3.2 (9) (Unit 1 and Unit 2)

This SR verifies that the required SGT filter testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). ~~The SGT System filter tests are in accordance with Regulatory Guide 1.52 (Ref. 3).~~ (P60) The VFTP includes testing HEPA filter performance, charcoal adsorber efficiency, minimum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations). Specific test frequencies and additional information are discussed in detail in the VFTP.

SR 3.6.4.3.3 (9) (required Unit 1 and Unit 2)

This SR verifies that each SGT subsystem starts on receipt of an actual or simulated initiation signal. While this Surveillance can be performed with the reactor at power, operating experience has shown that these components usually pass the Surveillance when performed at the [18] month (A2) Frequency. The LOGIC SYSTEM FUNCTIONAL TEST in SR 3.3.6.2.6 (5) overlaps this SR to provide complete testing of the safety (P.49)

(continued)

UNIT 2

*Unit 2 version
(f.27) all changes not specifically numbered

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.4.3.3 (continued) [9]

function. Therefore, the Frequency was found to be acceptable from a reliability standpoint.

move to prev. pg

SR 3.6.4.3.4

(P.32) This SR verifies that the filter cooler bypass damper can be opened and the fan started. This ensures that the ventilation mode of SGT System operation is available. While this Surveillance can be performed with the reactor at power, operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency, which is based on the refueling cycle. Therefore, the Frequency was found to be acceptable from a reliability standpoint.

REFERENCES

~~1. 10 CFR 50, Appendix A, GDC 41.~~
1. Unit 1 FSAR, Section 5.3.
2. FSAR, Section [6.2.3].
3. FSAR, Section 15.1.41
~~3. Regulatory Guide 1.52, Rev. [2].~~

(P.36) Insert Ref.

UNIT 2

NUREG 1433 COMPARISON DOCUMENT - JUSTIFICATION FOR DEVIATION

PLANT SPECIFIC DIFFERENCES

P.1 The Plant Hatch Unit 1 Improved Technical Specifications (ITS) do not include this definition. The definition is only used in one Specifications in the NUREG, LCO 3.3.5.1, in a Surveillance Requirement. Since the Surveillance Requirement was not added to the Plant Hatch Unit 1 ITS, the definition was also not added. Refer to the Discussion of Changes to NUREG 1433 for ITS: Section 3.3-Instrumentation, for further discussion.

P.2 The Plant Hatch Unit 1 ITS do not include this definition. The definition is only used in two Specifications in the NUREG, LCOs 3.3.6.1 and 3.3.6.2, in Surveillance Requirements. Since the Surveillance Requirements were not added to the Plant Hatch Unit 1 ITS, the definition was also not added. Refer to the Discussion of Changes to NUREG 1433 for ITS: Section 3.3-Instrumentation, for further discussion.

P.3 LINEAR HEAT GENERATION RATE (LHGR) and MAXIMUM FRACTION OF LIMITING POWER DENSITY (MFLPD) are not utilized in the Plant Hatch Units 1 and 2 ITS; therefore, these definitions are deleted.

P.4 Brackets are removed and the proper plant specific optional wording/value is used, consistent with the current Plant Hatch Units 1 and 2 Technical Specifications.

P.5 Brackets are removed and the optional wording is used.

P.6 The proper FSAR section/chapter and title, and proper Specification/LCO numbers have been provided for each unit.

P.7 Typographical/grammatical errors are corrected.

P.8 The utilization of a Pressure and Temperature Limits Report (PTLR) requires the development, and NRC Staff approval, of detailed methodologies for future revisions to P/T limits. At this time, Plant Hatch does not have the necessary methodologies submitted to the NRC for review and approval. Discussions with the NRC related to developing vendor generic methodologies have indicated that providing the limits specifically within the Technical Specifications, rather than pursuing an approved PTLR presentation, is acceptable. Therefore, the proposed presentation removes references to the PTLR and proposes that the specific limits and curves be included in the P/T Limits Specification (LCO 4.5.9).

GENERIC APPROVED/PENDING CHANGES TO NUREG 1433

GA.1 Change approved per package BWR-06 Item C1, 5/20/93 and BWR-06, Revision 1, Item C.3, 6/29/93.

GA.2 Change approved per package BWR-05 Item C.1, Rev. 1, 6/29/93.

PLANT SPECIFIC DIFFERENCES

P.72
(continued)

Similar rationale applies for secondary containment isolation, ECCS initiation, and DG-LOP initiation. See Generic Change BWR-18 C.88 which has been approved.

P.73 Clarification of "initiation capability" has been provided in the Bases for the LOP instrumentation. This clarification includes the entire sequence of events which must be performed by the logic for the LOP instrumentation to satisfy its intended Function. The reference to "DG initiation" was potentially confusing in the ITS and was changed to the generic "initiation" with the appropriate clarification provided in the Bases.

GENERIC APPROVED/PENDING CHANGES TO NUREG 1433

GA.1 Changed to be consistent with NUREG change package BWR-18, Items C.2 Rev 1, C.18 Rev 1, C.19, C.20, C.21 Rev 1, C.22, C.23 Rev 1, C.24 Rev 1, C.25, C.28, C.29, C.30, C.32, C.33, C.34, C.35, C.36, C.37, C.38, C.39 Rev 1, C.40, C.41, C.42, C.43, C.44, and C.45 C.88 Rev 1. Approved 3/39/94 and 5/6/94.

GA.2 Change approved per package BWR-01A, Item C.1, 3/20/93.

GA.3 Changed to be consistent with NUREG change package BWR-19, Items C.1, C.2, C.4, C.7, C.8, and C.9, approved 3/29/94.

GA.4 Change approved per package BWR-06 Item C.9, Revs. 2 and 3, 10/13/93.

GA.5 Change approved per package NRC-02, Items C.15 and C.21, 5/20/93.

GA.6 Changed to be consistent with NUREG package BWOG-09, Item C.26, Rev 1 6/8/94.

The final status of items annotated in the NUREG 1433 Comparison Documents as GP is shown here.

PLANT SPECIFIC DIFFERENCES (continued)

P.28 The reason for this LCO is to ensure the initial assumption of the overpressure protection analysis is met. Therefore, the words have been modified to enforce this reason.

P.29 To alleviate confusion (since the two units are different with regards to the location of all the transmitters and indicators) and to improve clarity of this Specification, this sentence has been deleted.

P.30 The utilization of a Pressure and Temperature Limits Report (PTLR) requires the development, and NRC Staff approval, of detailed methodologies for future revisions to P/T limits. At this time, Plant Hatch does not have the necessary methodologies submitted to the NRC for review and approval. Discussions with the NRC related to developing vendor generic methodologies have indicated that providing the limits specifically within the Technical Specifications, rather than pursuing an approved PTLR presentation, is acceptable. Therefore, the proposed presentation removes references to the PTLR and proposes the specific limits and curves be included in the P/T Limits Specification (LCO 3.4.9) and its Bases.

P.31 The basic premise of SR 3.0.1 is that an SR is a requirement for the LCO compliance at all times during the Applicability or other specified condition (in this case, only MODES 1, 2, 3, and 4), not just at the time required for performance as specified in the Frequency. However, in the case of these two SRs, the intent is not consistent with the presentation. The recirc ΔT limits do not apply at all times in MODES 1, 2, 3, and 4. The temperature limits are only intended for the event of the pump start itself. The revised presentation corrects this oversight.

P.32 The Bases wording added in BWR-18 regarding low power or loop flow is not included in this LCO and is not in the CTS. Therefore, this wording is not applicable.

J TIFICATION FOR DEVIATION FROM NUREG 1433
TS: SECTION 3.4 - REACTOR COOLANT SYSTEM

GENERIC APPROVED/PENDING CHANGES TO NUREG 1433

GA.1 Changed to be consistent with NUREG change package BWR-18 Items C.2 Rev 1, C.37, C.47 Rev 3, C.48, C.49, C.50, C.51, C.52, C.53, C.54, C.55, and C.56. Approved 3/29/94, 5/6/94 and 6/8/94.

GA.2 Changed to be consistent with NUREG change package BWR-12 Item C.1, except minor changes were made in the LCO (deleting the ":" and the "a." and moving the words to be part of the sentence) for consistency. Approved 6/29/94.

GA.3 Changed to be consistent with NUREG change package BWOG-02 Item C.3, rev 1. Approved 3/29/94.

GA.4 Change approved per package BWR-03 Items C.1 (and its rev. 1) and C.3, 3/20/93.

GA.5 Changed to be consistent with NUREG change package BWR-19 Items C.10 and C.11. Approved 3/29/94.

The final status of items annotated in the NUREG 1433 Comparison Documents as GP is shown here.

PLANT SPECIFIC DIFFERENCES (continued)

P.29 All secondary containment penetration flow paths have two isolation valves, therefore this Note is unnecessary and has been deleted.

P.30 Since there are more installed RHR pumps than are required to meet LCO 3.6.2.3, and more installed SGT subsystems than are required to meet LCO 3.6.4.3 (Unit 1) and LCO 3.6.4.9 (Unit 2); the word "required" has been added to the applicable places, consistent with its use throughout the NUREG.

P.31 Comment number not used.

P.32 This SR has been deleted since the Hatch design does not include a filter cooler bypass damper and fan.

P.33 A Note has been added to the ACTIONS to allow inspection of the Unit 1 hardened vent rupture disk while Unit 2 is operating. This inspection will cause both the Unit 1 SGT subsystems to be inoperable, thus the allowance is needed to continue operating Unit 2 while this inspection is being performed. Without this allowance, a dual unit shutdown would be required.

It is expected that the hardened vent inspection from hanging of the first tag of the clearance through completion of the inspection and restoration to operability will take aproximately 12 hours. Should, during the course of the inspection, there be an emergent need to return one of the tagged-out SGT trains to service, this action (bolting the rupture disk flange, racking the breaker, and removing clearance tags) should, at most, take approximately 1 hour.

P.34 The proposed ACTION D added per NUREG change package BWR-04, Item C.8 has not been added into the Unit 2 ITS since it is not needed. The change was made to the NUREG because a Condition allowed two SGT subsystems to be inoperable (NUREG Condition D), and confusion existed as to which requirement applied if the Unit was in MODE 1, 2, or 3 at the same time fuel was being moved. Since the Unit 2 LCOs have been split up with the MODES 1, 2, and 3 requirements in a different LCO than the handling of irradiated fuel assemblies in the secondary containment, the confusion does not exist. In the Unit 2 ITS, no ACTIONS exist in the Operating LCO (MODES 1, 2, and 3) to allow two SGT subsystems to be inoperable; therefore, LCO 3.0.3 will apply, just as the proposed NUREG Condition requires. In addition, this proposed NUREG ACTION only applies for MODES 1, 2, and 3. Therefore, it is not needed in the other two Unit 2 SGT System LCOs.

PLANT SPECIFIC DIFFERENCES (continued)

P.21 The proposed Plant Hatch testing is not all in accordance with RG 1.52, but it is in accordance with the VFTP as stated in the previous sentence. Thus the reference to RG 1.52 has been deleted.

P.22 Reference 5, RG 1.52, does not specify the Frequency for this test. The proper basis for the Frequency has been added. The basis is consistent with other Bases for similar Surveillance Frequencies.

P.23 The NRC staff approved Hatch licensing basis is "well within the limits of 10 CFR 100", thus this extra statement is not needed and has been deleted.

P.24 The words have been changed to be consistent with the Plant Hatch design.

P.25 The analysis that assumes the Main Turbine Bypass System to be OPERABLE is the feedwater controller failure to maximum demand event transient analysis. Therefore, the Bases have been changed to reflect this analysis.

P.26 Plant Hatch has an specific analysis for a fuel handling accident in the spent fuel storage pool (in addition to the analysis for a fuel handing accident in the RPV). The Plant Hatch licensing basis is not "≤ 25% of 10 CFR 100 exposure guidelines NUREG-0800," but is well below the guideline doses of 10 CFR 100 and met the exposure guidelines of NUREG-0800. Therefore, the Bases have been modified.

P.27 These words have been added to clarify that the boundary is not necessarily required to be leak-tight, but is required to meet the leak tightness requirements of SR 3.7.4.4 (i.e., leakage can occur as long as a 0.1 inch pressure is maintained in the control room). Also, an allowance to open control room access doors for entry and exit has been added since the design of the boundary only has one door.

P.28 The words are changed consistent with the Plant Hatch analysis, described in the Applicable Safety Analyses section.

P.29 "Or systems" has been added to the Note for SR 3.7.2.2 for clarification and consistency, such that the Note reads: "Isolation of flow to individual components or systems does not render PSW System inoperable." The NUREG 1433 Bases for this SR states: "...isolation of the PSW System to components or systems may render those components or

PLANT SPECIFIC DIFFERENCES (continued)

P.29 (continued)

systems inoperable, but does not affect the OPERABILITY of the PSW System. As such, when all PSW pumps, valves, and piping are OPERABLE, but a branch connection off the main header is isolated, the PSW System is still OPERABLE." An evaluation performed by the Hatch Architect Engineer confirms that an isolation of PSW flow to any system or component would not create a flow perturbation that would result in starving another system or component of PSW flow (i.e., flow imbalance resulting from system or component isolation is not a problem at Hatch.)

PLANT SPECIFIC DIFFERENCES

P.1 Brackets have been removed and the proper value/words have been used for each of the two units. Also, Bases changes were made to be consistent with the Specifications.

P.2 Due to the design of the Units 1 and 2 secondary containments, these changes have been made to reference the proper LCO for Unit 2. Refer to the Discussion of Changes for Section 3.6, "Containment Systems."

P.3 Typographical/grammatical errors have been corrected.

P.4 The allowances provided by these Specifications are not needed at Plant Hatch; consequently, they have been deleted.

P.5 The proper references have been provided.

P.6 The Startup Test Program has been completed at Plant Hatch; thus, a reference is not needed.

P.7 Changes were made to provide for consistency with other Specifications.

P.8 Changes were made to either provide additional information or clarity, or to incorporate plant-specific terminology.

P.9 The proposed hydrostatic testing requirement for RCS temperature is > 212°F (plant specific value). Therefore a sentence saying that the requirement may eventually be greater than 200°F is unnecessary. The last sentence in the fourth paragraph has been deleted since this LCO is not exempting the Safety Limit from being met during a hydrostatic test. Therefore the Safety Limit is required to be met in accordance with SL 2.1.2. The temperature requirements are included in LCO 3.4.9. Additionally, a sentence regarding the system test pressure is added.

P.10 Since Plant Hatch does not have a reactor high water level scram or a suppression pool makeup system; these references have been deleted.

P.11 The previous sentence states that, the rod patterns assumed in the safety analysis may not be preserved. This sentence has been changed to state that a special CRDA analysis "may be" required.

P.12 The correct power level (corresponding to the analysis value) is 10% RTP. As written, the power level corresponds to the low power setpoint.

PLANT SPECIFIC DIFFERENCES (continued)

P.17 Two notes are added to the NUREG for the Ventilation Filter Testing Program. Note 1 implements a current Technical Specification Clarification concerning the impact of certain types of painting, buffing and grinding, and welding on Standby Gas Treatment System filters. Evaluations have determined that the use of water based paints, and the performance of metal grinding, buffing or welding is not detrimental to the charcoal filters of the SGT System, either prior to or during operation. Note 2 is added to allow, in the future, the use of environmentally friendly refrigerants equivalent to those specified in ASME N510-1989, without requiring a Technical Specification change.

P.18 The actual allowable flowrates for the two systems are written out in the proposed ITS rather than specifying a ± 10 range.

P.19 The actual allowable wattage values for the SGT System heaters are written out in the proposed ITS rather than specifying at ±10% range.

P.20 The provisions in the NUREG for Waste Gas Systems are for PWRs and not applicable to Plant Hatch. Quantities of radioactivity contained in all outdoor liquid radwaste tanks meeting the conditions of NUREG 5.7.2.14.e are determined in accordance with the specified surveillance program. The sentence in the introductory paragraph is not necessary to specify a method to determine liquid radwaste quantities.

P.21 These provisions are only for PWRs and are not applicable for Plant Hatch.

P.22 The current Plant Hatch Technical Specifications do not contain requirements for testing of new fuel oil. Instead of the NUREG requirements for this testing, the Plant Hatch ITS contains requirements in current use to ensure acceptability of the new fuel oil.

P.23 Current Technical Specifications for testing of fuel oil in the storage tanks is conducted on a 92 day interval. This current interval has been found acceptable for use at Plant Hatch and is being retained in the proposed ITS.

PLANT SPECIFIC DIFFERENCES (continued)

P.24 The provisions of SR 3.0.2 and SR 3.0.3 would have been applicable to the diesel fuel oil testing provisions if they had been left in the LCOs of Section 3.8. Since these Section 3.0 provisions are not generally applicable to Administrative Controls, then the applicability must be specifically stated in Section 5.0 provisions.

P.25 The description of the entry conditions into the SFDP are clarified and generalized to assure that they include all possible required entry conditions. See Also BWR 25.C3 which was approved 6/7/94.

P.26 A clarification is added to include in the annual occupational radiation exposure report, only those other personnel for whom monitoring was required. This change does not modify the present intent of the NUREG.

P.27 A clarification is added to the monthly operating report requirement to state that the safety/relief valves are those for "main steam." This change does not modify the present intent of the NUREG.

P.28 Comment number not used.

P.29 Reference to LCO 3.3.3.1 for Post Accident Monitoring Instrumentation is all that is necessary to locate this special reporting requirement.

P.30 Changes to be consistent with plant specific terminology.

P.31 Changes to clarify the control room command function and shift crew composition for a dual unit plant with a common control room.

P.32 A direct reference to 10 CFR 50.54 for determination of minimum shift crew composition is added. Without this reference, ITS 5.2.2.b could be incorrectly construed to define these requirements.

PLANT SPECIFIC DIFFERENCES (continued)

P.33 The diesel generator accelerated test frequency requirements are relocated in their current licensing bases form to plant procedures. A plant procedure implements the current Technical Specifications requirements, as well as the requirements and responsibilities for tracking emergency DG failures for the determination and reporting of reaching trigger values specified in NUMARC 87-00. These requirements are more restrictive than those specified in NUREG 1433.

P.34 The staff's October 25, 1993 correspondence proposed a change to 5.2.2.f and 5.1.2 to require the person satisfying the control room command function (5.1.2) and the [Operations Manger] to have an active SRO license. Current Specifications only require that the [Operations Manager] "hold" an SRO license. For consistency with 5.1.2 (as accepted in BWR-09, C.2), 5.2.2.f has been clarified that the operations manager shall hold an active or inactive SRO license.

P.35 Changes to the program description have been made to eliminate the references to ASME XI and applicable Addenda as required by 10 CFR 50.55a. The deletion of item (a) of section 5.7.2.12 is consistent with the NRC letter dated October 25, 1993 regarding section 5.0. Frequencies listed in the NUREG which are not in the CTS have been deleted.

P.36 NUREG 1433 is modified consistent with Hatch current Technical Specifications which in turn are consistent with 10 CFR 20. Plant specific nomeclature is used where applicable.

P.37 Consistent with the current Hatch Technical Specifications the limitation on liquid and gaseous effluents have been modified. The SER for these limitations were issued with Unit 1 Amendment 190 and Unit 2 Amendment 129.

P.38 The utilization of a Pressure and Temperature Limits Report (PTLR) requires the development, and NRC Staff approval, of detailed methodologies for future revisions to P/T limits. At this time, Plant Hatch does not have the necessary methodologies submitted to the NRC for review and approval. Discussions with the NRC related to developing vendor generic methodologies have indicated that providing the limits specifically within the Technical Specifications, rather than pursuing an approved PTLR presentation, is acceptable. Therefore, the proposed presentation removes references to the PTLR and proposes the specific limits and curves be included in P/T limits Specification LCO 3.4.9.

PLANT SPECIFIC DIFFERENCES (continued)

P.38 (continued)

Removal of the PTLR description in the Administrative Controls section also results in renumbering the PAM Report.

Generic changes associated with the PTLR are not shown.

GENERIC APPROVED/PENDING CHANGES TO NUREG 1433

GA.1 Changed to be consistent with NUREG change package BWOG-09, Items C.1 through C.4, C.6 through C.16 and C.19 through C.24, 3/29/94.

GA.2 Change approved per package WOG-06, Items C.1, C.5, and C.7, 3/20/93.

GA.3 Change approved per package BWR-06, Item C.7, 5/20/93.

GA.4 Change approved per package NRC-02, Item C.22, 5/20/93.

Final status of items annotated in the NUREG 1433 Comparison Documents as GP is shown here.