BVPS CONVERSION TO IMPROVED STANDARD
TECHNICAL SPECIFICATIONS (ISTS)

SECTION 3.7 PLANT SYSTEMS

ENCLOSURES

1. MARKUP OF THE ISTS TO SHOW THE BVPS DIFFERENCE AND JUSTIFICATION FOR THE DEVIATION (JFD) FROM THE STANDARD
2. MARKUP OF THE ISTS BASES TO SHOW THE BVPS DIFFERENCE AND JFD FROM THE STANDARD
3. MARKUP OF THE CURRENT BVPS TECHNICAL SPECIFICATIONS (CTS) TO SHOW CHANGES AND DISCUSSION OF CHANGES (DOCs)
4. NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC) FOR CHANGES MADE TO THE CTS

ENCLOSURE 1

CHANGES TO THE ISTS

MARKUPS TO SHOW BVPS PLANT SPECIFIC DIFFERENCES
&
JUSTIFICATION FOR DEVIATION (JFD)
FROM THE STANDARD TS

Introduction
This enclosure contains the markup of the Improved Standard Technical Specifications (ISTS) to show the changes necessary to make the ISTS document specific to BVPS Units 1 and 2. Changes to the ISTS are identified with a number. The number is associated with a JFD that describes the reason for the change. The markup of the ISTS is followed by a document containing the numbered JFDs for the changes made to each of the ISTS. Not every change to the ISTS is identified and explained by a JFD. Changes that simply insert current Technical Specification (CTS) information into bracketed (optional) ISTS text are not identified with a separate JFD. Bracketed ISTS text identifies specific text that is to be replaced with the corresponding CTS information. Therefore, such changes to the ISTS are self-explanatory and represent the simple transference of CTS requirements to the ISTS. Other changes to the ISTS (i.e., less obvious changes) are described by a JFD.

As the BVPS Unit 1 & 2 Technical Specifications (TS) are being combined into a single set of TS, one markup of each ISTS is usually provided for both Units 1 and 2. In cases where significant Unit differences make separate Unit 1 and 2 TS desirable to preserve the presentation and clarity of the TS requirements, separate Unit specific TS are included. Unit differences are identified in each ISTS.

In addition, the ISTS in this enclosure are marked (where applicable) to show the changes to the standard text resulting from the Industry/NRC TS Task Force (TSTF) process. The TSTF revisions to the standard are marked-up and identified with the applicable TSTF number (i.e., TSTF-03, TSTF-19, etc.). Each TSTF change has its own justification associated with it as part of the Industry/NRC process. The TSTF justifications are not repeated in the BVPS ISTS conversion documentation.

The following Table contains the list of the ISTS and the corresponding BVPS CTS for this section along with the resulting BVPS specific ITS for the section. The Table provides a summary disposition of the ISTS and the CTS for this Section.

SECTION 3.7 PLANT SYSTEMS

ISTS	BVPS ITS	CTS
3.7.1 Main Steam Safety Valves (MSSVs)	3.7.1 Main Steam Safety Valves (MSSVs)	3.7.1.1 Main Steam Safety Valves (MSSVs)
3.7.2 Main Steam Isolation	3.7.2 Main Steam Isolation Valves	3.7.1.5 Main Steam Line

SECTION 3.7 PLANT SYSTEMS

ISTS	BVPS ITS	CTS
Valves (MSIVs)	(MSIVs)	Isolation Valves
3.7.3 Main Feedwater Isolation Valves (MFIVs) and Main Feedwater Regulation Valves (MFRVs) and [Associated Bypass Valves]	3.7.3 Main Feedwater Isolation Valves (MFIVs) and Main Feedwater Regulation Valves (MFRVs) and MFRV Bypass Valves	N/A
3.7.4 Atmospheric Dump Valves (ADVs)	3.7.4 Atmospheric Dump Valves (ADVs)	N/A
3.7.5 Auxiliary Feedwater (AFW) System	3.7.5 Auxiliary Feedwater (AFW) System	3.7.1.2 Auxiliary Feedwater System
3.7.6 Condensate Storage Tank (CST)	3.7.6 Condensate Storage Tank (CST)	3.7.1.3 Primary Plant Demineralized Water (PPDW)
3.7.7 Component Cooling Water (CCW) System	3.7.7 Component Cooling Water (CCW) System	3.7.3.1 Component Cooling Water System (Unit 1); 3.7.3.1 Primary Component Cooling Water System (Unit 2)
3.7.8 Service Water System (SWS)	3.7.8 Service Water System (SWS)	3.7.4.1 Reactor Plant River Water System (RPRWS) (Unit 1); 3.7.4.1 Service Water System (SWS) (Unit 2)
3.7.9 Ultimate Heat Sink (UHS)	3.7.9 Ultimate Heat Sink (UHS)	3.7.5.1 Ultimate Heat Sink – Ohio River
3.7.10 Control Room Emergency Filtration System (CREFS)	3.7.10 Control Room Emergency Ventilation System (CREVS)	3.7.7 Control Room Emergency Ventilation System (CREVS)
3.7.11 Control Room Emergency Air Temperature Control System (CREATCS)	3.7.11 Control Room Emergency Air Cooling System (CREACS)	3.7.6 Control Room Emergency Air Cooling System (CREACS)
3.7.12 Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS)	3.7.12 Supplemental Leak Collection and Release System (SLCRS)	3.7.8.1 Supplemental Leak Collection And Release System (SLCRS); 3.9.12 Fuel Building Ventilation System
3.7.13 Fuel Building Air Cleanup System (FBACS)	N/A	N/A
3.7.14 Penetration Room Exhaust Air Cleanup System (PREACS)	N/A	N/A

SECTION 3.7 PLANT SYSTEMS

ISTS	BVPS ITS	CTS
3.7.15 Fuel Storage Pool Water Level	3.7.15 Fuel Storage Pool Water Level	3.9.11 Storage Pool Water Level
3.7.16 Fuel Storage Pool Boron Concentration	3.7.16 Fuel Storage Pool Boron Concentration	3.9.15 Fuel Storage Pool Boron Concentration (Unit 2); 3.9.14 Spent Fuel Storage Pool (Unit 1)
3.7.17 Spent Fuel Pool Storage	3.7.14 Spent Fuel Pool Storage	3.9.14 Spent Fuel Storage Pool (Unit 1); 3.9.14 Spent Fuel Pool Storage (Unit 2)
3.7.18 Secondary Specific Activity	3.7.13 Secondary Specific Activity	3.7.1.4 Activity

3.7 PLANT SYSTEMS

3.7.1 Main Steam Safety Valves (MSSVs)

LCO 3.7.1 [Five] MSSVs per steam generator shall be OPERABLE.

CTS Value

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

- NOTE -

1 Separate Condition entry is allowed for each MSSV.

- REVIEWER'S NOTE -

The * noted text is required for units that ~~are licensed~~ to operate at partial power with a positive Moderator Temperature Coefficient (MTC).

CONDITION	REQUIRED ACTION	COMPLETION TIME
1 A. One or more steam generators with one MSSV inoperable [and the Moderator Temperature Coefficient (MTC) zero or negative at all power levels]*.	A.1 Reduce THERMAL POWER to ≤ ~~[72]~~ 57 % RTP. CTS Value → 57	4 hours
1 B. One or more steam generators with two or more MSSVs inoperable. [OR One or more steam generators with one MSSV inoperable and the MTC positive at any power level.]*	B.1 Reduce THERMAL POWER to less than or equal to the Maximum Allowable % RTP specified in Table 3.7.1-1 for the number of OPERABLE MSSVs. AND	4 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
NUREG-1431, Rev 3	B.2	- NOTE - Only required in MODE 1. Reduce the Power Range Neutron Flux – High reactor trip setpoint to less than or equal to the Maximum Allowable % RTP specified in Table 3.7.1-1 for the number of OPERABLE MSSVs.	36 hours
C. Required Action and associated Completion Time not met. <u>OR</u> One or more steam generators with ≥ [4] MSSVs inoperable.	C.1 <u>AND</u> C.2	Be in MODE 3. Be in MODE 4.	6 hours 12 hours

CTS Value

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.1.1	- NOTE - Only required to be performed in MODES 1 and 2. Verify each required MSSV lift setpoint per ~~Table 3.7.1-2~~ in accordance with the Inservice Testing Program. Following testing, lift setting shall be within ± 1%.	In accordance with the Inservice Testing Program

Table 3.7.1-2a (Unit 1), Table 3.7.1-2b (Unit 2)

Table 3.7.1-1 (page 1 of 1)
OPERABLE Main Steam Safety Valves versus
Maximum Allowable Power

NUMBER OF OPERABLE MSSVs PER STEAM GENERATOR	MAXIMUM ALLOWABLE POWER (% RTP)
CTS Value [4]	~~[65]~~ ≤ 50
3	~~[46]~~ ≤ 34
2	~~[28]~~ ≤ 19

CTS Values

a

Unit 1 Main Steam Safety Valve Lift Settings

Table 3.7.1-~~2~~ (page 1 of 1)

Main Steam Safety Valve Lift Settings

VALVE NUMBER				LIFT SETTING (psig ± [3]%)
STEAM GENERATOR				
~~#1~~	~~#2~~	~~[#3]~~	[#4]	
[ ]	[ ]	[ ]	[ ]	[ ]
[ ]	[ ]	[ ]	[ ]	[ ]
[ ]	[ ]	[ ]	[ ]	[ ]
[ ]	[ ]	[ ]	[ ]	[ ]

Unit 1 CTS Table

	VALVE NUMBER	LIFT SETTING	LIFT SETTING TOLERANCES
a.	SV-MS101A, B & C	1075 psig	+1%/-3%
b.	SV-MS102A, B & C	1085 psig	±3%
c.	SV-MS103A, B & C	1095 psig	±3%
d.	SV-MS104A, B & C	1110 psig	±3%
e.	SV-MS105A, B & C	1125 psig	±3%

b

Unit 2

Table 3.7.1-2 (page 1 of 1)
Main Steam Safety Valve Lift Settings

VALVE NUMBER				LIFT SETTING (psig ± [3]%)
STEAM GENERATOR				
~~#1~~	~~#2~~	~~[#3]~~	[#4]	
~~[ ]~~	~~[ ]~~	~~[ ]~~	[ ]	~~[ ]~~
~~[ ]~~	~~[ ]~~	~~[ ]~~	[ ]	~~[ ]~~
~~[ ]~~	~~[ ]~~	~~[ ]~~	[ ]	~~[ ]~~
~~[ ]~~	~~[ ]~~	~~[ ]~~	[ ]	~~[ ]~~

Unit 2 CTS Table

	VALVE NUMBER	LIFT SETTING	LIFT SETTING TOLERANCES
a.	2MSS-SV101A, B & C	1075 psig	+1%/-3%
b.	2MSS-SV102A, B & C	1085 psig	±3%
c.	2MSS-SV103A, B & C	1095 psig	±3%
d.	2MSS-SV104A, B & C	1110 psig	±3%
e.	2MSS-SV105A, B & C	1125 psig	±3%

3.7 PLANT SYSTEMS

3.7.2 Main Steam Isolation Valves (MSIVs)

LCO 3.7.2 [~~Four~~] MSIVs shall be OPERABLE.

1 Three

APPLICABILITY: MODE 1,
MODES 2 and 3 except when all MSIVs are closed [and de-activated]. 2

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One MSIV inoperable in MODE 1.	A.1 Restore MSIV to OPERABLE status.	[8] hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 2.	6 hours
C. - NOTE - Separate Condition entry is allowed for each MSIV. One or more MSIVs inoperable in MODE 2 or 3.	C.1 Close MSIV. AND C.2 Verify MSIV is closed.	[8] hours Once per 7 days
D. Required Action and associated Completion Time of Condition C not met.	D.1 Be in MODE 3. AND D.2 Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.2.1	- NOTE - Only required to be performed in MODES 1 and 2. Verify the isolation time of each MSIV is ~~≤ [4.6] seconds~~. within limits.	In accordance with the Inservice Testing Program
SR 3.7.2.2	- NOTE - Only required to be performed in MODES 1 and 2. Verify each MSIV actuates to the isolation position on an actual or simulated actuation signal.	[18] months

3

3.7 PLANT SYSTEMS

3.7.3 Main Feedwater Isolation Valves (MFIVs) and Main Feedwater Regulation Valves (MFRVs) and [~~Associated~~ MFRV Bypass Valves] 1

LCO 3.7.3 Three ~~[Four]~~ MFIVs, three ~~[four]~~ MFRVs, ~~[and associated~~ MFRV bypass valves~~]~~ shall be OPERABLE.

APPLICABILITY: MODES 1, ~~[and 2]~~ [2, and 3] except when MFIV, MFRV, [or ~~associated~~ MFRV bypass valve] is ~~either~~ closed and [de-activated] [or isolated by a closed manual valve]. 1

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME	
A. One or more MFIVs inoperable.	A.1 Close or isolate MFIV. AND A.2 Verify MFIV is closed or isolated.	[72] hours Once per 7 days	1
B. One or more MFRVs inoperable.	B.1 Close or isolate MFRV. AND B.2 Verify MFRV is closed or isolated.	[72] hours Once per 7 days	1
C. ~~[~~ One or more [MFRV ~~or preheater]~~ bypass valves inoperable.	C.1 Close or isolate bypass valve. AND C.2 Verify bypass valve is closed or isolated.	[72] hours Once per 7 days]	1

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. Two valves in the same flow path inoperable.	D.1	Isolate affected flow path.	8 hours
E. Required Action and associated Completion Time not met.	E.1	Be in MODE 3.	6 hours
	[AND		
	E.2	Be in MODE 4.	12 hours]

1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	Verify the isolation time of each MFIV, MFRV[, and ~~associated~~ bypass valve] is ~~≤ [7] seconds.~~ MFRV within limits. 2	In accordance with the Inservice Testing Program 1
SR 3.7.3.2	Verify each MFIV, MFRV[, and ~~associated~~ bypass valve] actuates to the isolation position on an actual or simulated actuation signal.	[18] months 1

3.7 PLANT SYSTEMS

3.7.4 Atmospheric Dump Valves (ADVs)

For Unit 1, 1 ,

LCO 3.7.4 ~~[Three]~~ ADV lines shall be OPERABLE.

For Unit 2, four ADV lines shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when steam generator is relied upon for heat removal.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One required ADV line inoperable.	A.1	~~- NOTE - LCO 3.0.4 is not applicable.~~ TSTF-359 Restore required ADV line to OPERABLE status.	7 days
B. Two or more required ADV lines inoperable.	B.1	Restore all but one ADV line to OPERABLE status.	24 hours
C. Required Action and associated Completion Time not met.	C.1 AND C.2	Be in MODE 3. Be in MODE 4 without reliance upon steam generator for heat removal.	6 hours [24] hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.4.1	Verify one complete cycle of each ADV.	[18] months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.4.2	[-Verify one complete cycle of each ADV block valve.	[18] months-]
SR 3.7.4.3	-NOTE- Only applicable to Unit 2 Verify one complete cycle of each individual SG isolation valve associated with the Unit 2 Residual Heat Release Valve ADV line.	18 Months

2

3.7 PLANT SYSTEMS

3.7.5 Auxiliary Feedwater (AFW) System

and three feedwater injection headers

1

LCO 3.7.5 [Three] AFW trains shall be OPERABLE.

and the required feedwater injection header(s), are

- NOTE -
[Only one AFW train, which includes a motor driven pump, is required to be OPERABLE in MODE 4.]

TSTF-359

-NOTE-
LCO 3.0.4.b is not applicable-[when entering MODE 1.-]

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when steam generator is relied upon for heat removal.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. [~~One steam supply to turbine driven AFW pump inoperable.~~ Turbine driven AFW train inoperable due to one inoperable steam supply in MODE 1, 2 or 3. OR - NOTE - Only applicable if MODE 2 has not been entered following refueling. One turbine driven AFW pump inoperable in MODE 3 following refueling.	A.1 Restore affected equipment to OPERABLE status. (3)	7 days AND 10 days from discovery of failure to meet the LCO-]
	B.1 -NOTE- Only applicable if both supply headers are OPERABLE. Realign OPERABLE AFW pumps to separate train supply headers. AND	2 hours (2)
B. One AFW train inoperable in MODE 1, 2, or 3 [for reasons other than Condition A].	B.1 2 (B.2) Restore AFW train to OPERABLE status.	72 hours AND [-10 days from discovery of failure to meet the LCO-]

Insert 1

3

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
~~C~~. Required Action and associated Completion Time for Condition A ~~[or B]~~ not met. D , B, or C [OR Two AFW trains inoperable in MODE 1, 2, or 3] for reasons other than Condition C. 3	~~C~~.1 Be in MODE 3. D AND ~~C~~.2 [Be in MODE 4.	6 hours [18] hours]
~~D~~. [~~[Three] AFW trains inoperable in MODE 1, 2, or 3.~~ E Three feedwater injection headers inoperable in MODE 1, 2, or 3. OR 3 INSERT 2	~~D~~.1 E - NOTE - LCO 3.0.3 and all other LCO Required Actions requiring MODE changes are suspended until one AFW train is restored to OPERABLE status. 1 Initiate action to restore one AFW train to OPERABLE status.	Immediately]
~~E~~. Required AFW train inoperable in MODE 4. F	F ~~E~~.1 Initiate action to restore AFW train to OPERABLE status.	Immediately

with a capability of providing flow to the steam generator(s).

1

OR

Required feedwater injection header inoperable in MODE 4.

OR

One or two feedwater injection headers inoperable in MODE 1, 2, or 3.

3

OR

NOTE

This Condition is only applicable when the turbine-driven AFW train is inoperable solely due to one inoperable steam supply.

Three AFW trains inoperable in MODE 1, 2 or 3.

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.5.1	- NOTE - [AFW train(s) may be considered OPERABLE during alignment and operation for steam generator level control, if it is capable of being manually realigned to the AFW mode of operation.] Verify each AFW manual, power operated, and automatic valve in each water flow path, [and in both steam supply flow paths to the steam turbine driven pump,] that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.7.5.2	- NOTE - [Not required to be performed for the turbine driven AFW pump until [24 hours] after ≥ ~~[1000]~~ psig in the steam generator.] Verify the developed head of each AFW pump at the flow test point is greater than or equal to the required developed head.	600 CTS Value In accordance with the Inservice Testing Program
SR 3.7.5.3	s - NOTE- 1. [AFW train(s) may be considered OPERABLE during alignment and operation for steam generator level control, if it is capable of being manually realigned to the AFW mode of operation.] 2. Not required to be met in MODE 4 when steam generator(s) is relied upon for heat removal. Retained from CTS Verify each AFW automatic valve that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	4 [18] months

3. Not required to be met in MODE 4 when steam generator(s) is relied upon for heat removal.

4

Retained from CTS

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.7.5.4	- NOTES - 1. [Not required to be performed for the turbine driven AFW pump until [24 hours] after ≥ ~~[1000]~~ 600 psig in the steam generator.] 2. [AFW train(s) may be considered OPERABLE during alignment and operation for steam generator level control, if it is capable of being manually realigned to the AFW mode of operation.] Verify each AFW pump starts automatically on an actual or simulated actuation signal.	[18] months
SR 3.7.5.5	[Verify proper alignment of the required AFW flow paths by verifying flow from the condensate storage tank to each steam generator.	Prior to entering MODE 2 whenever unit has been in MODE 5, MODE 6, or defueled for a cumulative period of > 30 days]

CTS Value

INSERTS FOR ITS 3.7.5

Auxiliary Feedwater (AFW) System

1. <u>CONDITION C</u> (From TSTF-412)

C. Turbine driven AFW train inoperable due to one inoperable steam supply in MODE 1, 2 or 3. <u>AND</u> One motor driven AFW train inoperable in MODE 1, 2 or 3.	C.1 Restore the steam supply to the turbine driven train to OPERABLE status. <u>OR</u> C.2 Restore the motor driven AFW train to OPERABLE status.	[24] [48] hours [24] [48] hours

(For Information Only.) <u>TSTF-412 Condition C Completion Time Reviewers Note:</u>

The 24 hour Completion Time is applicable to plants that can no longer meet the safety analysis requirement of 100% AFW flow to the SG(s) assuming no single active failure and a FLB or MSLB results in the loss of the remaining steam supply to the turbine driven AFW pump.

The 48 hour Completion Time is applicable to plants that can still meet the safety analysis requirement of 100% AFW flow to the SG(s) assuming no single active failure and a FLB or MSLB results in the loss of the remaining steam supply to the turbine driven AFW pump.

2. <u>Condition E</u> (From TSTF-412)

---NOTE---
This Condition is only applicable when the turbine-driven AFW train is inoperable for reasons other than one inoperable steam supply.

Three AFW trains inoperable in MODE 1, 2, or 3.

3.7 PLANT SYSTEMS

3.7.6 Condensate Storage Tank (CST)

LCO 3.7.6 The CST shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when steam generator is relied upon for heat removal.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. CST inoperable.	A.1 Verify by administrative means OPERABILITY of backup water supply. AND A.2 Restore CST to OPERABLE status.	4 hours AND Once per 12 hours thereafter 7 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4, without reliance on steam generator for heat removal.	6 hours [24] hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.6.1	Verify the CST level is ~~≥ [110,000 gal]~~.	12 hours

≥ 130,000 gallons

CTS Value

3.7 PLANT SYSTEMS

3.7.7 Component Cooling Water (CCW) System

LCO 3.7.7 Two CCW trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CCW train inoperable.	A.1 - NOTE - Enter applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops - MODE 4," for residual heat (RHR) removal loops made inoperable by CCW. Restore CCW train to OPERABLE status.	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 5.	6 hours 36 hours
NOTE Only applicable in MODE 4 with inadequate CCW flow to the RHR heat exchangers to support the required decay heat removal needed to maintain the Unit in MODE 5. C. Two CCW trains inoperable.	NOTE LCO 3.0.3 and all other LCO Actions requiring a MODE change From MODE 4 to MODE 5 are suspended until adequate CCW flow to the RHR heat exchangers is established to maintain the unit in MODE 5. C.1 Initiate action to implement an alternative means of decay heat removal. AND C.2 Initiate actions to be in MODE 5.	Immediately Immediately

2

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.7.1	- NOTE - Isolation of CCW flow to individual components does not render the CCW System inoperable. 3 the RHR system, Verify each CCW manual, power operated, and automatic valve in the flow path servicing ~~safety related equipment,~~ that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.7.7.2	Verify each CCW automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	[18] months
SR 3.7.7.3	Verify each CCW pump starts automatically on an actual or simulated actuation signal.	[18] months

1

3.7 PLANT SYSTEMS

3.7.8 Service Water System (SWS)

LCO 3.7.8 Two SWS trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SWS train inoperable.	A.1 ------------------------------ - NOTES - 1. Enter applicable and Required Actions of LCO 3.8.1, "AC Sources - Operating," for emergency diesel generator made inoperable by SWS. 2. Enter applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops - MODE 4," for residual heat removal loops made inoperable by SWS. ------------------------------ Restore SWS train to OPERABLE status.	72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. <u>AND</u> B.2 Be in MODE 5.	6 hours 36 hours

<u>INSERT 1</u>

2

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.7.8.1	- NOTE - Isolation of SWS flow to individual components does not render the SWS inoperable. Verify each SWS manual, power operated, and automatic valve in the flow path servicing safety related equipment, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
SR 3.7.8.2	Verify each SWS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	[18] months 1
SR 3.7.8.3	Verify each SWS pump starts automatically on an actual or simulated actuation signal.	[18] months 1

ISTS 3.7.8 Service Water System Inserts

1. New Condition C

NOTE *Only applicable in MODE 4 with inadequate SWS flow to the Component Cooling Water (CCW) heat exchangers to support the required decay heat removal needed to maintain the Unit in MODE 5.*	NOTE *LCO 3.0.3 and all other LCO Actions requiring a MODE change from MODE 4 to MODE 5 are suspended until adequate SWS flow to the CCW heat exchangers is established to maintain the unit in MODE 5.*	
C. Two SWS trains inoperable.	C.1 Initiate action to implement an alternative means of decay heat removal. AND C.2 Initiate actions to be in MODE 5.	Immediately Immediately

3.7 PLANT SYSTEMS

3.7.9 Ultimate Heat Sink (UHS)

LCO 3.7.9 The UHS shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
~~A. [One or more cooling towers with one cooling tower fan inoperable.~~	~~A.1 Restore cooling tower fan(s) to OPERABLE status.~~	~~7 days]~~ 1
~~- REVIEWER'S NOTE - The [ ]°F is the maximum allowed UHS temperature value and is based on temperature limitations of the equipment that is relied upon for accident mitigation and safe shutdown of the unit.~~ A ~~B~~. [Water temperature of the UHS ~~> [90] °F and ≤ [ ] °F~~. > 90°F (Unit 1), > 89°F (Unit 2)	~~B~~.1 Verify water temperature of the UHS is ~~≤ [90] °F~~ averaged over the previous 24 hour period. A ≤ 90°F (Unit 1), ≤ 89°F (Unit 2)	Once per hour] 2
~~C.~~ ~~[~~ Required Action and associated Completion Time of Condition A ~~or B~~ not met. B OR ~~]~~ UHS inoperable [for reasons other than Condition A ~~or B~~].	~~C~~.1 Be in MODE 3. AND ~~C~~.2 Be in MODE 5.	6 hours 36 hours

654 ← CTS Value

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.9.1	[Verify water level of UHS is ≥ ~~[562]~~ ft [mean sea level].	[24] hours]
SR 3.7.9.2	[Verify average water temperature of UHS is ~~≤ [90] °F.~~	24 hours]
SR 3.7.9.3	[~~Operate each cooling tower fan for ≥ [15] minutes.~~	31 days]
SR 3.7.9.4	[~~Verify each cooling tower fan starts automatically on an actual or simulated actuation signal.~~	[18] months]

1

≤ 90 °F (Unit 1),
≤ 89 °F (Unit 2). ← CTS Values

3.7 PLANT SYSTEMS

3.7.10 Control Room Emergency ~~Filtration~~ Ventilation System (~~CREFS~~ CREVS) 1

LCO 3.7.10 Two ~~CREFS~~ CREVS trains shall be OPERABLE.

- NOTE -
The control room boundary may be opened intermittently under administrative control.

APPLICABILITY: MODES 1, 2, 3, and 4, ~~[5, and 6]~~,
During movement of [recently] irradiated fuel assemblies, and 1
During movement of fuel assemblies over recently irradiated fuel assemblies.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One ~~CREFS~~ required CREVS train inoperable.	A.1	Restore ~~CREFS~~ required CREVS train to OPERABLE status.	7 days
B Two ~~CREFS~~ required CREVS trains inoperable due to inoperable control room boundary in MODE 1, 2, 3, or 4.	B.1 1	Restore control room boundary to OPERABLE status.	24 hours
C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, 3, or 4.	C.1 AND C.2	Be in MODE 3. Be in MODE 5.	6 hours 36 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. Required Action and associated Completion Time of Condition A not met ~~[in MODE 5 or 6, or]~~ during movement of [recently] irradiated fuel assemblies or during movement of fuel assemblies over recently irradiated fuel. 1	D.1	~~- NOTE - [Place in toxic gas protection mode if automatic transfer to toxic gas protection mode is inoperable.]~~ 2 Place OPERABLE ~~CREFS~~ CREVS train in emergency ~~mode~~ pressurization mode of operation. 2	Immediately
	OR		
	D.2	Suspend movement of [recently] irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel.	Immediately
E. Two ~~CREFS~~ required CREVS trains inoperable ~~[in MODE 5 or 6, or]~~ during movement of [recently] irradiated fuel assemblies.	E.1	Suspend movement of [recently] irradiated fuel assemblies.	Immediately 1
F. Two ~~CREFS~~ CREVS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B.	F.1	Enter LCO 3.0.3	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.7.10.1 1	Operate each ~~CREFS~~ CREVS train for ~~[≥ 10 continuous hours with the heaters operating or (for systems without heaters)~~ ≥ 15 minutes] with heaters operating.	31 days
SR 3.7.10.2	Perform required ~~CREFS~~ CREVS filter testing in accordance with the ~~[~~Ventilation Filter Testing Program (VFTP)].	In accordance with [VFTP]

CTS

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.10.3	Verify each ~~CREFS~~ CREVS train actuates on an actual or simulated actuation signal.	[18] months
SR 3.7.10.4	1 Verify one ~~CREFS~~ CREVS train can maintain a positive pressure of ≥ ~~[0.125]~~ inches water gauge in the control room, relative to the ~~adjacent [turbine building]~~ outside atmosphere during the pressurization mode of operation at a ~~makeup~~ flow rate of 800 - 1000 ~~≤ [3000]~~ cfm.	[18] months on a STAGGERED TEST BASIS

During movement of irradiated fuel assemblies (Unit 1),
During movement of fuel assemblies over irradiated fuel assemblies (Unit 1).

~~CREATCS~~ CREACS
3.7.11

-NOTE -
For Unit 1, the heat removal function of CREACS is not required OPERABLE to support fuel movement involving non-recently irradiated fuel assemblies.

3.7 PLANT SYSTEMS

3.7.11 Control Room Emergency Air ~~Temperature Control~~ Cooling System (~~CREATCS~~ CREACS)

LCO 3.7.11 Two ~~CREATCS~~ CREACS trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4, ~~[5, and 6],~~
~~During movement of [recently] irradiated fuel assemblies.~~ [Unit 2],
During movement of fuel assemblies over recently irradiated fuel assemblies [Unit 2].

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One ~~CREATCS~~ CREACS train inoperable.	A.1	Restore ~~CREATCS~~ CREACS train to OPERABLE status.	30 days
B. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, 3, or 4.	B.1	Be in MODE 3.	6 hours
	AND		
	B.2	Be in MODE 5.	36 hours
C. Insert 1 Required Action and associated Completion Time of Condition A not met ~~[in MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies.~~	C.1	Place OPERABLE ~~CREATCS~~ CREACS train in operation.	Immediately
	OR		
	C.2	Suspend movement of ~~[recently]~~ irradiated fuel assemblies and fuel assemblies over irradiated fuel assemblies.	Immediately
D. Insert 1 Two ~~CREATCS~~ CREACS trains inoperable ~~[in MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies.~~	D.1	Suspend movement of ~~[recently]~~ irradiated fuel assemblies and fuel assemblies over irradiated fuel assemblies.	Immediately

1

1 ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Two ~~CREATCS~~ CREACS trains inoperable in MODE 1, 2, 3, or 4.	E.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.11.1	Verify each ~~CREATCS~~ CREACS train has the capability to remove the ~~assumed~~ required heat load and purge the control room atmosphere at the required flow rate.	[18] months

1

NOTE

For Unit 1, the verification of heat removal function of CREACS is not required to support the movement of non-recently irradiated fuel.

INSERTS FOR ITS 3.7.11

Control Room Emergency Air Cooling System (CREACS)

INSERT 1 Condition C and D Notes

- NOTES-

1. Only applicable to Unit 1 during movement of irradiated fuel assemblies or fuel assemblies over irradiated fuel assemblies.
2. Only applicable to Unit 2 during movement of recently irradiated fuel assemblies and fuel assemblies over recently irradiated fuel assemblies.

1

Supplemental Leak Collection and Release System (SLCRS)

3.7 PLANT SYSTEMS

3.7.12 ~~Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS)~~

One SLCRS

and in operation

LCO 3.7.12 ~~Two ECCS PREACS~~ trains shall be OPERABLE.

fuel building

- NOTE -

The ~~ECCS pump room~~ boundary may be opened intermittently under administrative control.

1

When required in accordance with LCO 3.9.3.c.3 (Unit 1 only);
During movement of recently irradiated fuel assemblies within the fuel storage pool;
During movement of fuel assemblies over recently irradiated fuel assemblies within the fuel storage pool.

APPLICABILITY: ~~MODES 1, 2, 3, and 4.~~

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One ECCS PREACS train inoperable.	A.1	Restore ECCS PREACS train to OPERABLE status.	7 days
B. Two ECCS PREACS trains inoperable due to inoperable ECCS pump room boundary.	B.1	Restore ECCS pump room boundary to OPERABLE status.	24 hours
C. Required Action and associated Completion Time not met.	C.1 AND	Be in MODE 3.	6 hours
	C.2	Be in MODE 5.	36 hours

Insert 1

1

SR 3.7.12.1	Verify required SLCRS train is in operation.	12 hours

1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
~~SR 3.7.12.1~~	~~Operate each ECCS PREACS train for [≥ 10 continuous hours with the heaters operating or (for systems without heaters) ≥ 15 minutes].~~	~~31 days~~
SR 3.7.12.2	Perform required ~~ECCS PREACS~~ SLCRS filter testing in accordance with the [Ventilation Filter Testing Program (VFTP)].	In accordance with the [VFTP]
~~SR 3.7.12.3~~	~~Verify each ECCS PREACS train actuates on an actual or simulated actuation signal.~~	~~[18] months~~
~~SR 3.7.12.4~~	~~Verify one ECCS PREACS train can maintain a pressure ≤ [-0.125] inches water gauge relative to atmospheric pressure during the [post accident] mode of operation at a flow rate of ≤ [3000] cfm.~~	~~[18] months on a STAGGERED TEST BASIS~~
~~SR 3.7.12.5~~	~~[Verify each ECCS PREACS filter bypass damper can be closed.~~	~~[18] months]~~

1

SR 3.7.12.3	- NOTE - Only required to be met during movement of recently irradiated fuel assemblies within the fuel storage pool and during movement of fuel assemblies over recently irradiated fuel assemblies within the fuel storage pool. Verify the required SLCRS train can maintain the fuel storage pool area at a negative pressure of ≥ 0.125 (Unit 1), ≥ 0.05 (Unit 2) inches water gauge relative to atmospheric pressure during system operation.	18 months

INSERTS FOR ITS 3.7.12

Supplemental Leak Collection and Release System (SLCRS)

1. BVPS Specific Actions A and B

A. -NOTE- Only applicable to Unit 1. Requirements of LCO not met when required in accordance with LCO 3.9.3.c.3.	A.1 Enter applicable Conditions and Required Actions of LCO 3.9.3, "Containment Penetrations."	Immediately
B. Requirements of LCO not met during fuel movement involving recently irradiated fuel assemblies within fuel storage pool.	- NOTE - LCO 3.0.3 is not applicable. B.1 Suspend movement of recently irradiated fuel assemblies within the fuel storage pool. <u>AND</u> B.2 Suspend movement of fuel assemblies over recently irradiated fuel assemblies within the fuel storage pool.	Immediately Immediately

3.7 PLANT SYSTEMS

3.7.13 Fuel Building Air Cleanup System (FBACS)

LCO 3.7.13 Two FBACS trains shall be OPERABLE.

- NOTE -
The fuel building boundary may be opened intermittently under administrative control.

APPLICABILITY: [MODES 1, 2, 3, and 4.]
During movement of [recently] irradiated fuel assemblies in the fuel building.

ACTIONS

- NOTE -
LCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One FBACS train inoperable.	A.1 Restore FBACS train to OPERABLE status.	7 days
B. Two FBACS trains inoperable due to inoperable fuel building boundary in MODE 1, 2, 3, or 4.	B.1 Restore fuel building boundary to OPERABLE status.	24 hours

1

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. [*Required Action and* associated Completion Time of Condition A or B not met in MODE 1, 2, 3, or 4. or Two FBACS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B.	C.1	Be in MODE 3.	6 hours
	AND		
	C.2	Be in MODE 5.	36 hours]
D. Required Action and associated Completion Time [of Condition A] not met during movement of [recently] irradiated fuel assemblies in the fuel building.	D.1	Place OPERABLE FBACS train in operation.	Immediately
	OR		
	D.2	Suspend movement of [recently] irradiated fuel assemblies in the fuel building.	Immediately
E. Two FBACS trains inoperable during movement of [recently] irradiated fuel assemblies in the fuel building.	E.1	Suspend movement of [recently] irradiated fuel assemblies in the fuel building.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.13.1	Operate each FBACS train for [≥ 10 continuous hours with the heaters operating or (for systems without heaters) ≥ 15 minutes].	31 days

1

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.13.2	Perform required FBACS filter testing in accordance with the [Ventilation Filter Testing Program (VFTP)].	In accordance with the [VFTP]
SR 3.7.13.3	[Verify each FBACS train actuates on an actual or simulated actuation signal.	[18] months]
SR 3.7.13.4	Verify one FBACS train can maintain a pressure ≤ [-0.125] inches water gauge relative to atmospheric pressure during the [post accident] mode of operation at a flow rate of ≤ [20,000] cfm.	[18] months on a STAGGERED TEST BASIS
SR 3.7.13.5	[Verify each FBACS filter bypass damper can be closed.	[18] months]

1

1

3.7 PLANT SYSTEMS

3.7.14 Penetration Room Exhaust Air Cleanup System (PREACS)

LCO 3.7.14 Two PREACS trains shall be OPERABLE.

- NOTE -
The penetration room boundary may be opened intermittently under administrative control.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One PREACS train inoperable.	A.1	Restore PREACS train to OPERABLE status.	7 days
B. Two PREACS trains inoperable due to inoperable penetration room boundary.	B.1	Restore penetration room boundary to OPERABLE status.	24 hours
C. Required Action and associated Completion Time not met.	C.1	Be in MODE 3.	6 hours
	AND		
	C.2	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.14.1	Operate each PREACS train for [≥ 10 continuous hours with the heaters operating or (for systems without heaters) ≥ 15 minutes].	31 days

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.14.2	Perform required PREACS filter testing in accordance with the [Ventilation Filter Testing Program (VFTP)].	In accordance with the [VFTP]
SR 3.7.14.3	[Verify each PREACS train actuates on an actual or simulated actuation signal.	[18] months]
SR 3.7.14.4	[Verify one PREACS train can maintain a pressure ≤ [-0.125] inches water gauge relative to atmospheric pressure during the [post accident] mode of operation at a flow rate of ≤ [3000] cfm.	[18] months on a STAGGERED TEST BASIS]
SR 3.7.14.5	[Verify each PREACS filter bypass damper can be closed.	[18] months]

1

3.7 PLANT SYSTEMS

3.7.15 Fuel Storage Pool Water Level

LCO 3.7.15 The fuel storage pool water level shall be ≥ 23 ft over the top of irradiated fuel assemblies seated in the storage racks.

During movement of fuel assemblies over irradiated fuel assemblies in the fuel storage pool. 1

APPLICABILITY: During movement of irradiated fuel assemblies in the fuel storage ~~pool~~ pool,

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Fuel storage pool water level not within limit.	~~A.1 - NOTE - LCO 3.0.3 is not applicable. Suspend movement of irradiated fuel assemblies in the fuel storage pool.~~	~~Immediately~~

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.15.1	Verify the fuel storage pool water level is ≥ 23 ft above the top of the irradiated fuel assemblies seated in the storage racks.	7 days

- NOTE - LCO 3.0.3 is not applicable.	
A.1 Suspend movement of irradiated fuel assemblies in the fuel storage pool.	Immediately
AND	
A.2 Suspend movement of fuel assemblies over irradiated fuel assemblies in the fuel storage pool.	Immediately

1

3.7 PLANT SYSTEMS

3.7.16 ~~[~~Fuel Storage Pool Boron Concentration~~]~~

≥ 1050 ppm (Unit 1),
≥ 2000 ppm (Unit 2)

CTS Values

LCO 3.7.16 The fuel storage pool boron concentration shall be ~~≥ [2300] ppm~~.

(Unit 1)

APPLICABILITY: When fuel assemblies are stored in the fuel storage pool and a ~~fuel~~ storage pool verification has not been performed since the ~~last~~ movement of fuel assemblies in the fuel storage pool.

1

When fuel assemblies are stored in the fuel storage pool (Unit 2).

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Fuel storage pool boron concentration not within limit.	- NOTE - LCO 3.0.3 is not applicable.	
	A.1 Suspend movement of fuel assemblies in the fuel storage pool.	Immediately
	AND	
-NOTE- Required Action A.2.2 is only applicable for Unit 1.	A.2.1 Initiate action to restore fuel storage pool boron concentration to within limit.	Immediately
	OR	
1	A.2.2 Initiate action to perform a fuel storage pool verification.	Immediately

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SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.16.1	Verify the fuel storage pool boron concentration is within limit.	7 days

3.7 PLANT SYSTEMS

the spent fuel storage pool shall be within the limits specified in Table 3.7.14-1A (Unit 1), Table 3.7.14-1B (Unit 2)

3.7.~~17~~ [Spent Fuel Pool Storage]

4

LCO 3.7.~~17~~ The combination of initial enrichment and burnup of each fuel assembly stored in ~~[Region 2] shall be within the Acceptable [Burnup Domain] of Figure 3.7.17-1 or in accordance with Specification 4.3.1.1.~~

1

APPLICABILITY: Whenever any fuel assembly is stored in ~~[Region 2] of~~ the spent fuel storage pool.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Requirements of the LCO not met.	A.1 -------------------- - NOTE – LCO 3.0.3 is not applicable. --------------------	
1	to a location that complies with Table 3.7.14-1A (Unit 1), 3.7.14-1B (Unit 2). Initiate action to move the noncomplying fuel assembly ~~from [Region 2].~~	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.~~17~~.1 14	Verify by administrative means the initial enrichment and burnup of the fuel assembly is in accordance with ~~Figure 3.7.17-1 or Specification 4.3.1.1.~~	Prior to storing the fuel assembly in ~~[Region 2]~~

Table 3.7.14-1A (Unit 1), Table 3.7.14-1B (Unit 2)

1

the spent fuel storage pool

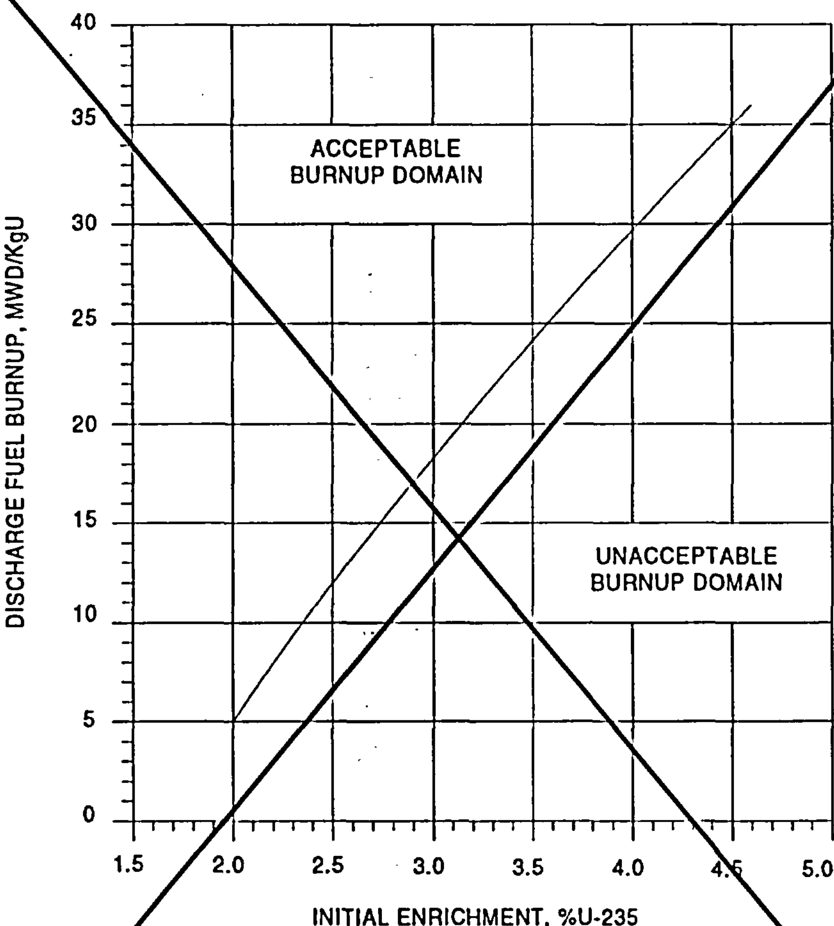

Figure 3.7.17-1 (page 1 of 1)
Fuel Assembly Burnup Limits in Region 2

CTS Value

Insert 1

INSERT 1 FOR ITS 3.7.14

TABLE 3.7.14-1A (Unit 1 Spent Fuel Pool Storage)
(Page 1 of 1)

Fuel Assembly Minimum Burnup versus U-235 Initial Enrichment for Storage in Spent Fuel Rack Regions 1, 2, and 3

Nominal Enrichment Value (w/o U-235)	**Region 3** Assembly Discharge Burnup (MWD/MTU)	**Region 2** Assembly Discharge Burnup (MWD/MTU)	**Region 1** Assembly Discharge Burnup (MWD/MTU)
2.0	0	2585	0
2.348	0	7911 (calculated)	0
2.5	1605	9551	0
3.0	6980	15784	0
3.5	11682	21643	0
4.0	16239	27260	0
4.5	20672	33710	0
5.0	25000	40000	0

NOTES:

Region 2: The data in the above Table may be interpreted linearly or may be calculated by the conservative equation below. This equation provides a linear fit to the design burnup limits.

Minimum Burnup, MWD/MTU = 12,100 * E% - 20,500

Where E = Enrichment ($E \leq 5\%$)

Region 3: The data in the above Table may be interpreted linearly or may be calculated by the conservative equation below. This equation provides a best fit to the design burnup limits.

Minimum Burnup, MWD/MTU = $-480 * (E\%)^2 + 12{,}900 * E\% - 27{,}400$

Where E = Enrichment ($E \leq 5\%$)

INSERT 1 (CONTINUED) FOR ITS 3.7.14

TABLE 3.7.14-1B (Unit 2 Spent Fuel Pool Storage)
(Page 1 of 1)

Fuel Assembly Minimum Burnup versus U-235 Initial Enrichment for Storage in Spent Fuel Rack Regions 1, 2, and 3

Nominal Enrichment Value (w/o U-235)	**Region 3** 4-out-of-4 Burnup (MWD/MTU)	**Region 2** 3-out-of-4 Checkerboard Burnup (MWD/MTU)	**Region 1** 2-out-of-4 Checkerboard Burnup (MWD/MTU)
1.9	0	0	0
2.0	1615	0	0
2.2	4629	0	0
2.4	7295	0	0
2.6	9677	0	0
2.8	11877	1798	0
3.0	13995	3556	0
3.2	16112	5268	0
3.4	18235	6940	0
3.6	20349	8581	0
3.8	22443	10198	0
4.0	24503	11800	0
4.2	26519	13394	0
4.4	28492	14979	0
4.6	30428	16552	0
4.8	32329	18110	0
5.0	34201	19650	0

NOTE:

Linear interpolation yields conservative results.

13

3.7 PLANT SYSTEMS

3.7.18 Secondary Specific Activity

3

CTS Value

LCO 3.7.18 The specific activity of the secondary coolant shall be ≤ [0.10] μCi/gm DOSE EQUIVALENT I-131.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Specific activity not within limit.	A.1 Be in MODE 3. AND A.2 Be in MODE 5.	6 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.18.1	Verify the specific activity of the secondary coolant is ~~≤~~[0.10] μCi/gm DOSE EQUIVALENT I-131.	31 days

3

CTS Value

13

3.7 Plant Systems

JUSTIFICATIONS FOR DEVIATION

ITS 3.7.1 Main Steam Safety Valves (MSSVs)

JUSTIFICATION FOR DEVIATION (JFD)

1. Editorial changes were made in the ISTS LCO and associated Bases for the removal of the Reviewer's Note and associated bracketed requirements consistent with the ISTS Writers' Guide. The Reviewer's Note provides an option for the construction of Actions depending on the Unit's licensing basis for operating at partial power with a positive moderator temperature coefficient. These Actions have been retained since the BVPS current licensing basis contains this allowance.

ITS 3.7.2 Main Steam Isolation Valves (MSIVs)

JUSTIFICATION FOR DEVIATION (JFD)

1. Brackets have been removed in the ISTS LCO and associated Bases for the inclusion of plant specific values or details.

2. Brackets have been removed in the ISTS LCO for the inclusion of details associated with de-activation of the MSIVs in MODE 3. When the MSIVs are closed and de-activated, they are performing their assumed safety function when there is significant mass and energy in the RCS and steam generators.

3. The ISTS SR is revised to remove the isolation time for the MSIVs and to add a reference that the isolation time of each MSIV is "within limits." The required valve isolation time is relocated to the Licensing Requirements Manual (see DOC LA.1) consistent with other BVPS valve isolation and response times (such as the isolation time for the containment isolation valves and the ESFAS and RPS instrument response times).

   It also should be noted that the MSIVs perform an ESF function (i.e., Main Steam Isolation). The ESFAS response time definition in Section 1.1 of the ITS specifically includes the time it takes for ESF equipment to perform its safety function "i.e., the valves travel to their required positions...." Therefore, the MSIV isolation time is included in the ESFAS response time required to be met for the main steam isolation Function in ITS 3.3.2, ESFAS Instrumentation. The ESFAS response times are currently specified in the BVPS LRM. The inclusion of a separate valve actuation time in the MSIV specification is redundant and unnecessary to assure the MSIV isolates within the required time.

ITS 3.7.3 Main Feedwater Isolation Valucs (MFIVs) and Main Feedwater Regulating Valves (MFRVs) and Associated Bypass Valves

JUSTIFICATION FOR DEVIATION (JFD)

1. Brackets have been removed in the ISTS LCO and associated Bases for the inclusion of plant specific values, names, or other details. The word either is deleted from the Applicability consistent with NUREG-1431, Rev. 3.

2. The ISTS SR is revised to delete the valve isolation time for each MFIV, MFRV, and associated bypass valve and to add a reference that the isolation time of each MFIV, MFRV, and associated bypass valve is "within limits." The required valve isolation time is relocated in the Licensing Requirements Manual (LRM) consistent with other BVPS valve isolation and response times (such as the containment valve isolation times and the ESFAS and RPS instrument response times).

   It also should be noted that the MFIVs, MFRVs, and associated bypass valves perform an ESF function (i.e., Feedwater Isolation). The ESFAS response time definition in Section 1.1 of the ITS specifically includes the time it takes for ESF equipment to perform its safety function "...i.e., the valves travel to their required positions...." Therefore, the valve isolation time is included in the ESFAS response time required to be met for the Feedwater Isolation Function in ITS 3.3.2, ESFAS Instrumentation. The ESFAS response times are currently specified in the BVPS LRM. The inclusion of a separate valve actuation time in the MFIVs, MFRVs, and associated bypass valves specification is redundant and unnecessary to assure the valves isolate within the required time.

ITS 3.7.4 Atmospheric Dump Valves (ADVs)

JUSTIFICATION FOR DEVIATION (JFD)

1. This is a new Technical Specification for BVPS Units 1 and 2. Brackets have been removed in the ISTS LCO for the inclusion of plant specific values. The proposed ITS 3.7.4 LCO reflects the BVPS Unit 1 and 2 design and safety analysis. The Unit 1 ADVs are larger (greater relief capacity) than the corresponding Unit 2 ADVs. Therefore, a total of 3 Unit 1 ADVs are sufficient to meet the applicable safety analysis assumptions while Unit 2 requires 4 lines (the three ADVs, one per SG, and the larger capacity Residual Heat Release Valve which is connected to all three SGs).

   The BVPS Steam Generator (SG) Tube Rupture (SGTR) safety analysis (as described in the Unit 1 and 2 UFSARs) relies on the operation of the ADVs to depressurize the SG to mitigate the primary to secondary leakage. The accident analysis described in the UFSAR assumes a loss of power and that the condenser is unavailable for normal condenser steam dump valve operation. Therefore, the ADVs have been included in the BVPS ITS consistent with the criteria in 10 CFR 50.36 for Technical Specification selection.

2. New SR 3.7.4.3 is added to the ISTS for BVPS Unit 2. This BVPS specific SR addresses the individual SG isolation valves associated with the Unit 2 Residual Heat Release Valve. As the individual SG isolation valves are separate and different isolation valves from the block valve associated with the Unit 2 Residual Heat Release Valve they are not considered "the ADV block valve." As such, the requirement to verify the individual SG isolation valve operability is included in a separate BVPS specific SR to avoid any confusion.

   In addition to the three ADVs (one dedicated to each SG), the BVPS Unit 2 design includes the Residual Heat Release Valve, which functions as larger capacity ADV that is connected to all three SGs via a separate normally open manual isolation valve for each SG. The individual SG isolation valves must be capable of closing in order to isolate a faulted SG from the Residual Heat Release valve. Thus, the individual SG isolation valves for the Residual Heat Release Valve are required to change position in order for the Residual Heat Release Valve to be used for accident mitigation purposes (i.e., steam generator tube rupture). Isolation of the faulted SG from the Residual Heat Release Valve is necessary to assure the dose consequences of the accident are maintained within the required limits if the Residual Heat Release Valve is used to mitigate a steam generator tube rupture accident.

   Therefore, a new Unit 2 specific SR is added to the ISTS to verify the capability of the individual SG isolation valves to be closed, if necessary, to isolate the Residual Heat Release Valve from a faulted SG.

ITS 3.7.5 Auxiliary Feedwater (AFW) System

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS LCO and associated Bases are edited to insert BVPS specific information in addition to or in place of the ISTS wording. The ISTS LCO and Bases is revised consistent with the corresponding CTS and CTS Bases descriptions or design of the plant. The specific change incorporates the CTS requirements and associated Actions for the feedwater injection headers. The BVPS design includes common feedwater injection headers where the two train related AFW supply headers are combined to feed a single SG. The common feedwater injection headers contain check valves. An inoperable feedwater injection header (i.e., due to a leaking check valve) could block flow from both AFW train related supply headers to the affected SG. Incorporating the CTS requirements and associated Actions for the common feedwater injection headers into the ITS provides the appropriate BVPS specific requirements to address inoperable feedwater injection headers along with the corresponding Action to ensure the capability of providing flow to the SGs is restored. This is necessary to ensure the required AFW flow acceptance criteria of design basis accidents are met (e.g., two operable feedwater injection headers are not sufficient to meet the feedline break analysis requirements).
2. The ISTS LCO and associated Bases are edited to insert BVPS specific information in addition to or in place of the ISTS wording. The ISTS LCO and Bases is revised consistent with the corresponding CTS and CTS Bases descriptions or BVPS design basis. The specific change incorporates the CTS requirements for realigning Operable AFW pumps to separate train supply headers. There are two BVPS AFW supply headers, one supply header associated with each of the motor driven AFW pumps. The turbine driven AFW pump has the capability of being aligned to either of the two supply headers. When a motor driven AFW pump becomes inoperable, the remaining two Operable AFW pumps may be aligned to the same train related supply header. Therefore, a CTS Action is incorporated into the BVPS ITS to realign the Operable AFW pumps to separate supply headers to preserve independence and enhance system reliability while the Action Condition is applicable.
3. The ISTS LCO and associated Bases are edited to reflect TSTF-412. The TSTF, as incorporated herein, clarifies the OPERABILITY of the turbine driven AFW pump whenever one steam supply is inoperable in Mode 1, 2, or 3. ISTS 3.7.5 currently requires an entry into Condition A for an inoperable steam supply. Assuming a motor driven AFW pump became inoperable during the Completion Time of Condition A, Condition B would be entered for an inoperable motor driven AFW train and Condition C would be entered for two inoperable AFW trains. The affected turbine driven AFW train remains capable of performing its specified function, but with a lack of redundancy with respect to its steam supplies. A turbine driven AFW pump with a single OPERABLE steam supply is capable of performing its safety function in the absence of a single failure or a faulted steam generator associated with the steam supply. The ITS ACTIONS in many Specifications recognize that loss of single failure protection is a less degraded condition than inoperability and provide longer Completion Times for those

situations. Condition C as modified by TSTF-412 provides two Completion Times to address the situation where the flow assumed in the safety analysis can still be met (48 hours) and where the required flow can not be met (24 hours). The applicable Completion Time is selected for the BVPS design.

4. The ISTS LCO and associated Bases are edited to insert a SR Note exempting the Applicability of SR 3.7.5.3 and SR 3.7.5.4 in Mode 4. These SRs verify the automatic actuation of AFW pumps and valves. The Note states that the SR is "Not required to be met in MODE 4 when steam generator(s) is relied upon for heat removal." These Notes are consistent with the CTS which provides the same exceptions. The CTS Notes are also consistent with the instrumentation requirements specified in ITS 3.3.2, "ESFAS", which do not require AFW system automatic start instrumentation operable in Mode 4. The exceptions contained in the Notes are justified due to the plant conditions in Mode 4 that would allow time for manual operation of AFW pumps and valves.

ITS 3.7.6 Condensate Storage Tank (CST)

JUSTIFICATION FOR DEVIATION (JFD)

None

ITS 3.7.7 Component Cooling Water (CCW)

JUSTIFICATION FOR DEVIATION (JFD)

1. ISTS SR 3.7.7.2 and SR 3.7.7.3 and associated Bases are edited to delete the surveillance requirements. The purpose of the ISTS SR 3.7.7.2 requirement is to verify automatic operation of the CCW valves on an actual or simulated actuation signal. The purpose of the ISTS SR 3.7.7.3 requirement is to verify the automatic operation of the CCW pumps on an actual or simulated signal. These SRs ensure the operability of the CCW Systems for responding to the design basis accident (DBA) LOCA. The CCW system described in the ISTS assumes the CCW System removes DBA post LOCA heat loads from the containment. The CCW System at BVPS serves no DBA LOCA mitigation function. The CCW System design consists of redundant trains to ensure performance of the cooling function in the event of a single failure. The principal function of the CCW System is the removal of decay heat from the reactor via the RHR System. The RHR System does not perform a DBA LOCA mitigation function at BVPS.

2. ISTS 3.7.7 Actions and associated Bases are revised to include a new Condition (Condition C) for two CCW trains inoperable with insufficient CCW flow to the RHR heat exchangers to support the required decay heat removal in Mode 4. The proposed change to the ISTS (and CTS) provides a more appropriate Action than the application of LCO 3.0.3 when two CCW trains are inoperable and can not supply the RHR system with the necessary cooling water to support a cooldown to reach and maintain the plant in Mode 5. The proposed Action Condition is similar to a Condition provided in the AFW System specification for three inoperable AFW trains that requires the restoration of at least one AFW train before reducing operating Modes.

   LCO 3.0.3, which would otherwise be applicable with two inoperable trains of CCW, simply requires that the plant be placed in Mode 5 within the specified time. However, the CCW System at BVPS functions to supply the RHR heat exchangers with cooling water to cool the unit from RHR entry conditions to Mode 5. Without the cooling capacity of the CCW, the ability of the plant to transition from Mode 4 to Mode 5 and to stay in Mode 5 may be adversely affected. The proposed new Condition for two CCW trains inoperable in Mode 4 with inadequate flow to the RHR heat exchangers provides more appropriate Actions for the specified plant condition than LCO 3.0.3.

   LCO 3.0.3 would remain applicable for transitioning from Modes 1 to 4 if two trains of CCW were inoperable. However, once in Mode 4, if the RHR cooling capability is adversely affected, the proposed new Condition would provide the appropriate Actions instead of LCO 3.0.3. If the required RHR cooling capacity to place the unit in Mode 5 is not affected, the proposed new Condition would not be applicable. Therefore, LCO 3.0.3 would remain applicable for the condition of two inoperable CCW trains and result in the unit being placed in Mode 5 within the time specified in LCO 3.0.3.

   The proposed change includes immediate Completion Times for initiating action to implement an alternative means of decay heat removal and to be in MODE 5. As such, the proposed change continues to drive the unit into a Mode where the CCW Technical Specification is not applicable but in a manner and time that takes into account the lack of RHR cooling capacity usually available to reach and maintain Mode 5 operation.

The BVPS RHR design is for a dedicated decay heat removal system. The BVPS RHR System does not support the ECCS System in Modes 1-4 as in a more typical Westinghouse design. In addition, other plant systems can safely remove decay heat in Mode 4 until adequate RHR heat removal capacity is restored. Therefore, the additional time that may be required to reach Mode 5 from Mode 4 in these circumstances does not introduce any undue risk or adversely affect the safe operation of the plant.

3. ISTS SR 3.7.7.1 and associated Bases are edited to delete references to "safety related" systems in order to clarify the BVPS CCW design by denoting a specific reference to the RHR system. This change is necessary due to the design of the BVPS CCW and RHR. The primary safety function performed by the CCW System at BVPS is to supply the RHR heat exchangers, with cooling water to cool the unit from RHR entry conditions to Cold Shutdown. The BVPS RHR system does not function as part of the Emergency Core Cooling System (ECCS). Therefore, the BVPS CCW system does not function to support components of the ECCS, as in other Westinghouse plant designs. The surveillance is edited to reflect this plant specific CCW design.

ITS 3.7.8 Service Water System

JUSTIFICATION FOR DEVIATION (JFD)

1. Brackets have been removed in the ISTS LCO and associated Bases for the inclusion of plant specific values or details. The ISTS frequency is consistent with the CTS frequency.

2. ISTS 3.7.8 Actions and associated Bases are revised to include a new Condition (Condition C) for two SWS trains inoperable with insufficient SWS flow to the CCW heat exchangers to support the required decay heat removal in Mode 4. The proposed change to the ISTS (and CTS) provides a more appropriate Action than the application of LCO 3.0.3 when two SWS trains are inoperable and can not supply the CCW system with the necessary cooling water to support a cooldown to reach and maintain the plant in Mode 5. The proposed Action Condition is similar to a Condition provided in the AFW System specification for three inoperable AFW trains that requires the restoration of at least one AFW train before reducing operating Modes.

   LCO 3.0.3, which would otherwise be applicable with two inoperable trains of SWS, simply requires that the plant be placed in Mode 5 within the specified time. However, the SWS System at BVPS functions to supply the CCW heat exchangers with cooling water which in turn provide RHR cooling to cool the unit from RHR entry conditions to Mode 5. Without the cooling capacity of the SWS, the ability of the plant to transition from Mode 4 to Mode 5 and to stay in Mode 5 may be adversely affected. The proposed new Condition for two SWS trains inoperable in Mode 4 with inadequate flow to the CCW heat exchangers provides more appropriate Actions for the specified plant condition than LCO 3.0.3.

   LCO 3.0.3 would remain applicable for transitioning from Modes 1 to 4 if two trains of SWS were inoperable. However, once in Mode 4, if the RHR cooling capability is adversely affected, the proposed new Condition would provide the appropriate Actions instead of LCO 3.0.3. If the required RHR cooling capacity to place the unit in Mode 5 is not affected, the proposed new Condition would not be applicable. Therefore, LCO 3.0.3 would remain applicable for the condition of two inoperable SWS trains and result in the unit being placed in Mode 5 within the time specified in LCO 3.0.3.

   The proposed change includes immediate Completion Times for initiating action to implement an alternative means of decay heat removal and to be in MODE 5. As such, the proposed change continues to drive the unit into a Mode where the SWS Technical Specification is not applicable but in a manner and time that takes into account the lack of RHR cooling capacity usually available to reach and maintain Mode 5 operation.

   The BVPS RHR design is for a dedicated decay heat removal system. The BVPS RHR System does not support the ECCS System in Modes 1-4 as in a more typical Westinghouse design. In addition, other plant systems can safely remove decay heat in Mode 4 until adequate RHR heat removal capacity is restored. Therefore, the additional time that may be required to reach Mode 5 from Mode 4 in these circumstances does not introduce any undue risk or adversely affect the safe operation of the plant.

ITS 3.7.9 Ultimate Heat Sink (UHS)

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS Actions and Surveillance Requirements are edited to insert BVPS specific values consistent with the CTS. ISTS Action A is deleted as BVPS does not use cooling towers in the ultimate heat sink system. Since the BVPS UHS is the Ohio River, the specific change eliminates references to cooling towers in the Actions and Surveillances.

2. ISTS Action Condition B is revised to Condition A and the BVPS specific values are incorporated into the revised Condition. In addition, this Condition is revised such that it works with the BVPS single value temperature limits for each unit. As revised, the proposed Action does not include the ISTS upper limit, but will prevent an immediate Unit shutdown requirement when the UHS temperature exceeds the single BVPS limit for each Unit. As such, the proposed Action will prevent unnecessary plant transients due to temporary temperature fluctuations in the UHS. As the Ohio River is constantly flowing, the temperature will vary over the course of a day. The proposed change still provides an Action that adequately limits operation when the UHS temperature limit is exceeded for an extended period. The proposed Action would require more frequent monitoring of the UHS temperature and ultimately require a Unit shutdown if the UHS temperature, averaged over the previous 24 hours, exceeds the limit. Therefore, the proposed Action would still limit continued operation above the temperature limit to a matter of hours (before the 24 hour average exceeds the limit). As such, the proposed Action would provide a reasonable time to evaluate a fluctuating trend of the UHS temperature while avoiding the potential for entering and exiting the shutdown Action due to temporary changes in river water temperature. For example, during a heat wave, the river temperature may briefly exceed the limit each day of the hot spell but be within the limit for the majority of the day. The proposed change would address this situation by using the 24 hour average temperature to determine when a shutdown must be initiated.

   ISTS Condition C is revised to reflect changes made to the other ISTS conditions.

ITS 3.7.10 Control Room Emergency Ventilation System (CREVS)

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS LCO, Applicability, Actions, and Surveillances are edited to insert BVPS specific information in addition to or in place of the ISTS wording. The ISTS is revised consistent with the corresponding CTS requirements and descriptions (including terminology, applicability, action, and surveillance requirements). This includes specific values used in the surveillances and the use of the term "required" when referring to the number of CREVS trains. BVPS has a total of three trains, but only two are required operable in the LCO.

   Additionally, the CTS surveillance requirements do not require that the CREVS be operated for 10 hours with heaters energized. Due to the mild environment of the control room, the BVPS CREVS does not require the extended (10 hours) heater operation to assure the moisture content of the charcoal filters is controlled. The BVPS CTS requirement for operating ESF filters for only 15 minutes was previously evaluated and approved by the NRC in Section 6.5.1.3 of the Unit 2 initial license SER, NUREG-1057 dated October 1985. The NRC determination of acceptability was based on the existing Unit 1 Technical Specifications.

2. The ISTS Action and Note regarding inoperable automatic transfer to the emergency mode of operation are revised consistent with the BVPS system design. The BVPS CREVS does not transfer from a "normal" mode of operation to an "emergency" mode of operation nor does the BVPS CREVS have a separate toxic gas mode of operation. The BVPS CREVS is a dedicated control room pressurization system. Therefore, the ISTS note clarifying which mode of operation the system must be placed in is not required for BVPS. The proposed BVPS specific Action text utilizes the BVPS terminology of "emergency pressurization mode of operation" to clearly identify the required mode of operation.

ITS 3.7.11 Control Room Emergency Air Cooling System (CREACS)

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS LCO title, Applicability, Actions, and Surveillances are revised to insert BVPS specific information in addition to or in place of the ISTS wording. The ISTS version of this Technical Specification is revised consistent with the corresponding CTS requirements and design of the BVPS Control Room Emergency Air Cooling System (CREACS). The BVPS system does not provide a complete "temperature control function". The BVPS system does not include heaters and only provides a cooling function for the control room. The ISTS text is revised to incorporate the BVPS NRC approved CTS wording and terminology necessary to make the Specification BVPS specific.

   The BVPS CREACS cooling and atmosphere purge functions are credited in the safety analyses in MODES 1, 2, 3, and 4 to support the Main Steam Line Break and Steam Generator Tube Rupture accidents. In addition, Unit 1 requires the control room atmosphere purge function to support the current fuel handling accident (FHA) analysis for fuel movement involving non-recently irradiated fuel assemblies. The manually initiated purge function is necessary to limit the dose to Unit 1 control room personnel after a FHA. The current Unit 2 FHA analysis (non-recently irradiated fuel movement) does not require the purge function to limit dose.

   The current FHA analyses (non-recently irradiated fuel) for both Units also do not require control room isolation to limit the dose to the control room personnel. Therefore, the heat removal capability of the BVPS CREACS is not an assumption of the current FHA analysis (i.e., involving non-recently irradiated fuel) for either Unit.

   Although the movement of recently irradiated fuel is not currently permitted (based on decay time restrictions) the CREACS cooling and atmosphere purge functions are required operable for both Units by ITS 3.7.11 during fuel movement involving recently irradiated fuel assemblies. This requirement is retained in the Technical Specifications to address the potential need for these functions in mitigating a FHA involving "recently" irradiated fuel assemblies. The retention of requirements for recently irradiated fuel movement is consistent with the ISTS.

ISTS 3.7.12 Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS)

ITS 3.7.12 Supplemental Leak Collection and Release System (SLCRS)

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS 3.7.12 ECCS PREACS Specification is replaced by the BVPS specific system Specification consistent with the corresponding BVPS design. ISTS 3.7.12, is used to markup the CTS requirements for the BVPS Supplemental Leak Collection and Release System (SLCRS). The BVPS SLCRS serves plant areas similar to those described in ISTS 3.7.12 as well as those described in ISTS 3.7.13, "Fuel Building Air Cleanup". However, the BVPS SLCRS is not credited in the current safety analyses for filtration/ cleanup of these areas. Therefore, extensive changes to the ISTS were made to implement the BVPS specific system requirements.

   The BVPS CTS LCO requirement for SLCRS only specifies that one train must be operable but that single train must also be in operation. The revised ISTS 3.7.12 reflects this CTS requirement. The BVPS SLCRS does not have an automatic actuation feature and must be placed in service when required by the Technical Specifications. As the system must be in operation, failures are readily detectable and one train is sufficient. The system must be in operation and aligned to the required area ventilation exhaust prior to entering the Mode of Applicability.

   The Applicability of ISTS 3.7.12 is revised to reflect the remaining SLCRS requirements (from CTS 3.9.12) applicable during fuel movement involving recently irradiated fuel assemblies in the spent fuel pool area and for Unit 1 only, when required operable for containment penetration requirements per ITS 3.9.3 for fuel movement involving recently irradiated fuel inside containment. The CTS requirements do not require SLRCS operable for fuel movement involving non-recently irradiated fuel. The BVPS SLCRS is not credited in the safety analysis to mitigate the consequences of a fuel handling involving non-recently irradiated fuel.

   The Actions and surveillance requirements of the ISTS 3.7.12 are replaced with the BVPS specific SLCRS Actions and surveillance requirements consistent with the CTS requirements as marked in CTS 3.7.8.1 and CTS 3.9.12. The Actions reflect the proposed Applicability for fuel movement involving recently irradiated fuel in the fuel storage pool (both units) and inside containment (Unit 1 only). A BVPS specific surveillance (SR 3.7.12.1) to verify the required SLCRS train is in operation is added to the ISTS 3.7.12 surveillances. This BVPS surveillance effectively replaces the ISTS monthly start verification required for standby systems. The BVPS SLCRS are not standby systems. The BVPS SLCRS fans are normally in service and the system is manually aligned to filter the fuel building exhaust or containment exhaust (for Unit 1) when the system is required by the Technical Specification. Other ISTS surveillances that are not applicable to the BVPS SLCRS design are deleted.

ISTS 3.7.13 Fuel Building Air Cleanup System (FBACS)

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS LCO for FBACS is deleted and is not used in the BVPS ITS. The BVPS design does not have a corresponding fuel building ventilation filtration system. The BVPS Supplemental Leak Collection and Release System (SLCRS) (ITS 3.7.12) performs the required filtration function for the fuel building. The BVPS fuel building ventilation system is only used for area cooling.

ISTS 3.7.14 Penetration Room Exhaust Air Cleanup System (PREACS)

JUSTIFICATION FOR DEVIATION (JFD)

1. This ISTS for the PREACS has been deleted and is not used in the BVPS ITS since the Supplemental Leak Collection and Release System (SLCRS), which services required areas for the filtration of airborne radiation following a DBA LOCA, has been deleted for MODES 1, 2, 3, and 4 (see JFD 1 for ITS 3.7.12).

ITS 3.7.15 Fuel Storage Pool Water Level

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS 3.7.15 Fuel Storage Pool Water Level Applicability and Actions are revised to be consistent with the CTS by the addition of "During movement of fuel assemblies over irradiated fuel assemblies within the fuel storage pool". This addition is necessary based on the BVPS fuel handling accident analysis. The fuel drop analysis determined that damage to a struck fuel assembly would result in fuel rod failure. The movement of any fuel assembly could result in a radiological release if that assembly was dropped and struck an irradiated fuel assembly. The release from a struck fuel assembly may require the specified water level in order to mitigate the radiological consequences. Therefore, consistent with the CTS requirements as previously approved by the NRC in a Safety Evaluation Report dated August 30, 2001, the ISTS Applicability and corresponding Action are revised to address this situation.

ITS 3.7.16 Fuel Storage Pool Boron Concentration

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS 3.7.16 Fuel Storage Pool Boron Concentration requirements are revised to be consistent with the corresponding CTS 3.9.14 (Unit 1) and CTS 3.9.15 (Unit 2) requirements and the different spent fuel pool safety analysis for each unit. The BVPS Unit 1 safety analysis is similar to the analysis described in the generic ISTS 3.7.16 Bases (i.e., the spent fuel pool boron concentration is only credited to maintain $k_{eff} \leq 0.95$ during abnormal (accident) conditions). Therefore, the provisions of ISTS 3.7.16 are applicable and appropriate for BVPS Unit 1. The BVPS Unit 2 safety analysis, however, is not consistent with the analysis described in the ISTS 3.7.16 bases. BVPS Unit 2 takes credit for the spent fuel pool boron concentration to maintain $k_{eff} \leq 0.95$ during normal (static) conditions as well as abnormal (i.e., accident) conditions. Therefore, the ISTS 3.7.16 requirements are revised for BVPS Unit 2 to be more consistent with the corresponding Unit 2 CTS requirements.

ISTS 3.7.17 Spent Fuel Pool Storage

ITS 3.7.14 Spent Fuel Pool Storage

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS 3.7.17 (ITS 3.7.14) Spent Fuel Pool Storage requirements are revised to be consistent with the corresponding CTS 3.9.14 LCO requirements. The CTS spent fuel storage requirements ensure that the spent fuel pool will remain subcritical during fuel storage. Specifically the ISTS is revised to incorporate changes that implement the CTS Unit 1 and Unit 2 specific three region tables. The CTS Tables contain the BVPS specific enrichment and burnup requirements and replace the figure and reference to Section 4.3.1.1 used in the ISTS. These changes are consistent with the CTS requirements and the applicable BVPS licensing basis.

ISTS 3.7.18 Secondary Specific Activity

ITS 3.7.13 Secondary Specific Activity

JUSTIFICATION FOR DEVIATION (JFD)

None

ENCLOSURE 2

CHANGES TO THE ISTS BASES

MARKUP TO SHOW BVPS PLANT SPECIFIC DIFFERENCES &

JUSTIFICATION FOR DEVIATION (JFD)

FROM THE STANDARD BASES

Introduction

This enclosure contains the markup of the Improved Standard Technical Specifications (ISTS) Bases to show the changes necessary to make the ISTS Bases document specific to BVPS Units 1 and 2. Changes to the ISTS Bases are identified with a number. The number is associated with a JFD that describes the reason for the change. The markups of the ISTS Bases are followed by a document containing the numbered JFDs for the changes made to the ISTS Bases. Not every change to the ISTS Bases is identified and explained by a JFD. Changes that simply insert current Technical Specification (CTS) information into bracketed (optional) ISTS text are not typically identified with a separate JFD. Bracketed ISTS text identifies specific text that is to be replaced with the corresponding CTS information. Therefore, such changes to the ISTS Bases are self-explanatory and represent the simple transference of CTS requirements to the ISTS. Other changes to the ISTS (i.e., less obvious changes) are described by a JFD.

As the BVPS Unit 1 & 2 Technical Specifications (TS) are being combined into a single set of TS, one markup of each ISTS Bases is provided for both Unit 1 and 2. Unit differences are identified in each ISTS Bases.

In addition, the Bases in this enclosure are marked (where applicable) to show the changes to the standard text resulting from the Industry/NRC TS Task Force (TSTF) process. The TSTF revisions to the standard are marked-up and identified with the applicable TSTF number (i.e., TSTF-03, TSTF-19, etc.). Each TSTF change has its own justification associated with it as part of the Industry/NRC process. The TSTF justifications are not repeated in the BVPS ISTS conversion documentation.

B 3.7 PLANT SYSTEMS

B 3.7.1 Main Steam Safety Valves (MSSVs)

BASES

and Atmospheric Dump Valves are

BACKGROUND

The primary purpose of the MSSVs is to provide overpressure protection for the secondary system. The MSSVs also provide protection against overpressurizing the reactor coolant pressure boundary (RCPB) by providing a heat sink for the removal of energy from the Reactor Coolant System (RCS) if the preferred heat sink, provided by the Condenser ~~and~~ Circulating Water System, ~~is~~ not available.

(Unit 1) and Section 10.3.2 (Unit 2)

[Five] MSSVs are located on each main steam header, outside containment, upstream of the main steam isolation valves, as described in ~~the~~ U FSAR, Section [10.3.1] (Ref. 1). ~~The MSSVs must have sufficient capacity to limit the secondary system pressure to ≤ 110% of the steam generator design pressure in order to meet the requirements of the ASME Code, Section III (Ref. 2).~~ The MSSV design includes staggered setpoints, according to ~~Table 3.7.1-2~~ Table 3.7.1-2a (Unit 1) and Table 3.7.1-2b (Unit 2) in the accompanying LCO, so that only the needed valves will actuate. Staggered setpoints reduce the potential for valve chattering that is du~~e to steam pressure insufficient to fully open all valves following a turbine~~ initiated reactor trip.

1 Insert 1

1 Insert 2

4

4

APPLICABLE SAFETY ANALYSES

The design basis for the MSSVs comes from Reference 2 and its purpose is to limit the secondary system pressure to ≤ 110% of design pressure for any anticipated operational occurrence (AOO) or accident considered in the Design Basis Accident (DBA) and transient analysis.

The events that challenge the relieving capacity of the MSSVs, and thus RCS pressure, are those characterized as decreased heat removal events, which are presented in ~~the~~ U FSAR, Section ~~[15.2]~~ 14.1 (Unit 1) and Section 15.2 (Unit 2) (Ref. 3). Of these, the full power turbine trip without steam dump is ~~typically~~ the limiting AOO. This event also terminates normal feedwater flow to the steam generators.

4

The safety analysis demonstrates that the transient response for turbine trip occurring from full power without a direct reactor trip presents no hazard to the integrity of the RCS or the Main Steam System. One turbine trip analysis is performed assuming primary system pressure control via operation of the pressurizer relief valves and spray. This analysis demonstrates that the DNB design basis is met. Another analysis is performed assuming no primary system pressure control, but crediting reactor trip on high pressurizer pressure and operation of the pressurizer safety valves. This analysis demonstrates that RCS integrity

BASES

APPLICABLE SAFETY ANALYSES (continued)

is maintained by showing that the maximum RCS pressure does not exceed 110% of the design pressure. All cases analyzed demonstrate that the MSSVs maintain Main Steam System integrity by limiting the maximum steam pressure to less than 110% of the steam generator design pressure.

In addition to the decreased heat removal events, reactivity insertion events may also challenge the relieving capacity of the MSSVs. The uncontrolled rod cluster control assembly (RCCA) bank withdrawal at power event is characterized by an increase in core power and steam generation rate until reactor trip occurs when either the Overtemperature ΔT or Power Range Neutron Flux-High setpoint is reached. Steam flow to the turbine will not increase from its initial value for this event. The increased heat transfer to the secondary side causes an increase in steam pressure and may result in opening of the MSSVs prior to reactor trip, assuming no credit for operation of the atmospheric or condenser steam dump valves. The FSAR Section ~~[15.4]~~ safety analysis of the RCCA bank withdrawal at power event for a range of initial core power levels demonstrates that the MSSVs are capable of preventing secondary side overpressurization for this AOO. 4

14.1 (Unit 1) and
Section 15.1 (Unit 2)

U

The FSAR safety analyses discussed above assume that all of the MSSVs for each steam generator are OPERABLE. If there are inoperable MSSV(s), it is necessary to limit the primary system power during steady-state operation and AOOs to a value that does not result in exceeding the combined steam flow capacity of the turbine (if available) and the remaining OPERABLE MSSVs. The required limitation on primary system power necessary to prevent secondary system overpressurization may be determined by system transient analyses or conservatively arrived at by a simple heat balance calculation. In some circumstances it is necessary to limit the primary side heat generation that can be achieved during an AOO by reducing the setpoint of the Power Range Neutron Flux-High reactor trip function. For example, if more than one MSSV on a single steam generator is inoperable, an uncontrolled RCCA bank withdrawal at power event occurring from a partial power level may result in an increase in reactor power that exceeds the combined steam flow capacity of the turbine and the remaining OPERABLE MSSVs. Thus, for multiple inoperable MSSVs on the same steam generator it is necessary to prevent this power increase by lowering the Power Range Neutron Flux-High setpoint to an
3 appropriate value. [When the Moderator Temperature Coefficient (MTC) is positive, the reactor power may increase above the initial value during an RCS heatup event (e.g., turbine trip). Thus, for any number of

BASES

conditions.

APPLICABLE SAFETY ANALYSES (continued)

inoperable MSSVs, it is necessary to reduce the trip setpoint if a positive MTC may exist at partial power ~~conditions, unless it is demonstrated by analysis that a specified reactor power reduction alone is sufficient to prevent overpressurization of the steam system.]~~ 1

The MSSVs are assumed to have two active and one passive failure modes. The active failure modes are spurious opening, and failure to reclose once opened. The passive failure mode is failure to open upon demand.

The MSSVs satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

The accident analysis requires that [five] MSSVs per steam generator be OPERABLE to provide overpressure protection for design basis ~~transients occurring at 102%~~ RTP. The LCO requires that [five] MSSVs per steam generator be OPERABLE in compliance with Reference 2, and the DBA analysis.

2 100.6

The OPERABILITY of the MSSVs is defined as the ability to open upon demand within the setpoint tolerances, to relieve steam generator overpressure, and reseat when pressure has been reduced. The OPERABILITY of the MSSVs is determined by periodic surveillance testing in accordance with the Inservice Testing Program.

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per steam generator

This LCO provides assurance that the MSSVs will perform their designed safety functions to mitigate the consequences of accidents that could result in a challenge to the RCPB, or Main Steam System integrity.

APPLICABILITY 4

In MODES 1, 2, and 3, [five] MSSVs are required to be OPERABLE to prevent Main Steam ~~System~~ overpressurization.

In MODES 4 and 5, there are no credible transients requiring the MSSVs. The steam generators are not normally used for heat removal in MODES 5 and 6, and thus cannot be overpressurized; there is no requirement for the MSSVs to be OPERABLE in these MODES.

ACTIONS are 4

The ACTIONS ~~Table is~~ modified by a Note indicating that separate Condition entry is allowed for each MSSV.

With one or more MSSVs inoperable, action must be taken so that the available MSSV relieving capacity meets Reference 2 requirements.

BASES

ACTIONS (continued)

Operation with less than all [five] MSSVs OPERABLE for each steam generator is permissible, if THERMAL POWER is limited to the relief capacity of the remaining MSSVs. This is accomplished by restricting THERMAL POWER so that the energy transfer to the most limiting steam generator is not greater than the available relief capacity in that steam generator.

A.1

3 In the case of only a single inoperable MSSV on one or more steam generators [when the Moderator Temperature Coefficient is not positive], a reactor power reduction alone is sufficient to limit primary side heat generation such that overpressurization of the secondary side is precluded for any RCS heatup event. Furthermore, for this case there is sufficient total steam flow capacity provided by the turbine and remaining OPERABLE MSSVs to preclude overpressurization in the event of an increased reactor power due to reactivity insertion, such as in the event of an uncontrolled RCCA bank withdrawal at power. Therefore, Required Action A.1 requires an appropriate reduction in reactor power within 4 hours.

The maximum THERMAL POWER corresponding to the heat removal capacity of the remaining OPERABLE MSSVs is determined via a conservative heat balance calculation a~~s described in the attachment to Reference 6~~ as discussed below, with an appropriate allowance for calorimetric power uncertainty. 4

is determined by

4 ~~- REVIEWER'S NOTE -~~

~~To determine~~ the maximum THERMAL POWER corresponding to the heat removal capacity of the remaining OPERABLE MSSVs is determined by the governing heat transfer relationship ~~is~~ from the equation $q = m\Delta h$, where q is the heat input from the primary side, m is the steam mass flow rate ~~mass flow rate of the steam~~, and Δh is the ~~increase in enthalpy that occurs in converting the secondary side water to steam. If it is conservatively assumed that the secondary side water is all saturated liquid (i.e., no subcooled feedwater), then the Δh is the~~ heat of vaporization ~~(h_{fg})~~ at the steam relief pressure assuming no subcooled feedwater. ~~The following equation is used to determine the maximum allowable power level for continued operation with inoperable MSSV(s):~~ 1

For each steam generator, at a specified pressure, the maximum allowable power level is determined as follows:

Maximum ~~NSSS Power~~ Allowable Power Level $\leq (100/Q)\ (w_s h_{fg} N) / K$

BASES

ACTIONS (continued)

where:

Q = Nominal NSSS power rating of the plant (including reactor coolant pump heat), MWt

K = Conversion factor, 947.82 (Btu/sec)/MWt

w_s = Minimum total steam flow rate capability of the OPERABLE MSSVs on any one steam generator at the highest OPERABLE MSSV opening pressure, including tolerance and accumulation, as appropriate, lbm/sec.

1 Insert 3

h_{fg} = Heat of vaporization at the highest MSSV opening pressure, including tolerance and accumulation as appropriate, Btu/lbm.

N = Number of ~~steam generators~~ loops in the plant. 1

4

For use in determining the %RTP in the Required Action ~~statement~~ A.1, the Maximum NSSS Power calculated above is reduced by [2]% RTP to account for calorimetric power uncertainty. 2

1 Insert 4

B.1 and B.2

In the case of multiple inoperable MSSVs on one or more steam generators, with a reactor power reduction alone there may be insufficient total steam flow capacity provided by the turbine and remaining OPERABLE MSSVs to preclude overpressurization in the event of an increased reactor power due to reactivity insertion, such as in the event of an uncontrolled RCCA bank withdrawal at power. [Furthermore, for a single inoperable MSSV on one or more steam generators when the Moderator Temperature Coefficient is positive the reactor power may increase as a result of an RCS heatup event such that flow capacity of the remaining OPERABLE MSSVs is insufficient.] The 4 hour Completion Time for Required Action B.1 is consistent with A.1. An additional 32 hours is allowed in Required Action B.2 to reduce the Power Range Neutron Flux-High reactor trip setpoints. The Completion Time of 36 hours is based on a reasonable time to correct the MSSV inoperability, the time required to perform the power reduction, ~~operating experience in resetting~~ to reset all channels of a protective function, and on the low probability of the occurrence of a transient that could result in steam generator overpressure during this period. 3 4

BASES

ACTIONS (continued)

discussed above

The maximum THERMAL POWER corresponding to the heat removal capacity of the remaining OPERABLE MSSVs is determined via a conservative heat balance calculation as ~~described in the attachment to Reference 6~~, with an appropriate allowance for Nuclear Instrumentation System trip channel uncertainties.

1

~~- REVIEWER'S NOTE -~~

4 calculated

1 Insert 5

To determine the Table 3.7.1-1 Maximum Allowable Power for Required Actions B.1 and B.2 (%RTP), the Maximum NSSS Power ~~calculated using the equation in the Reviewer's Note above~~ is reduced by [9]% RTP to account for Nuclear Instrumentation System trip channel uncertainties.

2

Required Action B.2 is modified by a Note, indicating that the Power Range Neutron Flux-High reactor trip setpoint reduction is only required in MODE 1. In MODES 2 and 3 the reactor protection system trips specified in LCO 3.3.1, "Reactor Trip System Instrumentation," provide sufficient protection.

The allowed Completion Times are reasonable based on operating experience to accomplish the Required Actions in an orderly manner without challenging unit systems.

C.1 and C.2

If the Required Actions are not completed within the associated Completion Time, or if one or more steam generators have ≥ [4] inoperable MSSVs, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4 within 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.1.1

and the

requirements.

This SR verifies the OPERABILITY of the MSSVs by the verification of each MSSV lift setpoint in accordance with the Inservice Testing Program. ~~The~~ ASME Code, Section XI (Ref. 4) ~~requires that safety and relief valve tests be performed in accordance with ANSI/ASME OM-1-1987 (Ref. 5). According to Reference 5, the following tests are required:~~

5

BASES

SURVEILLANCE REQUIREMENTS (continued)

5

a. Visual examination,

b. Seat tightness determination,

c. Setpoint pressure determination (lift setting),

d. Compliance with owner's seat tightness criteria, and

e. Verification of the balancing device integrity on balanced valves.

~~The ANSI/ASME Standard requires that all valves be tested every 5 years, and a minimum of 20% of the valves be tested every 24 months.~~

Table 3.7.1-2a (Unit 1) and Table 3.7.1-2b (Unit 2) specify the required

The ASME Code specifies the activities and frequencies necessary to satisfy the requirements. ~~Table 3.7.1-2 allows a~~ ± ~~[3]~~% setpoint tolerance for OPERABILITY; however, the valves are reset to ± 1% during the Surveillance to allow for drift. The lift settings~~, according to Table 3.7.1-2,~~ correspond to ambient conditions of the valve at nominal operating temperature and pressure. 2

This SR is modified by a Note that allows entry into and operation in MODE 3 prior to performing the SR. The MSSVs may be either bench tested or tested in situ at hot conditions using an assist device to simulate lift pressure. If the MSSVs are not tested at hot conditions, the lift setting pressure shall be corrected to ambient conditions of the valve at operating temperature and pressure.

REFERENCES U

1. FSAR, Section ~~[10.3.1]~~. (Unit 1) and Section 10.3.2 (Unit 2) 4

2. ASME, Boiler and Pressure Vessel Code, Section III, Article NC-7000, Class 2 Components.

3. FSAR, Section ~~[15.2]~~. 14.1 (Unit 1) and Section 15.2 (Unit 2) 4

4. ASME, Boiler and Pressure Vessel Code, Section XI.

5 ~~5. ANSI/ASME OM-1-1987.~~

~~6. NRC Information Notice 94-60, "Potential Overpressurization of the Main Steam System," August 22, 1994.~~ 4

INSERTS FOR ITS 3.7.1 BASES

Main Steam Safety Valves (MSSVs)

1. The specified valve lift settings and design relieving capacities are in accordance with the requirements of Section III of the ASME Boiler and Pressure Code, 1971 Edition (Unit 1 and Unit 2) and Winter 1972 Addenda (Unit 2). The total design relieving capacity for all valves on all of the steam lines is 12.8 x 10^6 lbs/hr (Unit 1) and 12.7 x 10^6 lbs/hr (Unit 2) which is approximately 98% (Unit 1) and 97% (Unit 2) of the total secondary steam flow of 13.1 x 10^6 lbs/hr at 100% RATED THERMAL POWER.

2. The above capacity (98% or 97%, as applicable, of rated flow) is sufficient capacity such that main steam pressure does not exceed 110% of the steam generator shell-side design pressure (the maximum pressure allowed by the ASME B&PV Code) for the worst-case loss-of-heat-sink event. This requirement is verified by analysis.

3. For example, if the maximum number of inoperable MSSVs on any one steam generator is one, then w_s should be a summation of the capacity of the OPERABLE MSSVs at the highest OPERABLE MSSV operating pressure, excluding the highest capacity MSSV. If the maximum number of inoperable MSSVs per steam generator is three, then w_s should be a summation of the capacity of the OPERABLE MSSVs at the highest OPERABLE MSSV operating pressure, excluding the three highest capacity MSSVs.

4. This is a conservative value that bounds the uncertainties associated with both the feedwater flow venturis and the Leading Edge Flow Meter.

5. An additional conservatism is employed by setting the values equal to the most conservative between the two units, this being the Unit 1 values.

B 3.7 PLANT SYSTEMS

B 3.7.2 Main Steam Isolation Valves (MSIVs)

Unit 1 is designed with main steam trip valves, main steam non-return check valves, and main steam trip bypass valves. The main steam trip valves perform similar functions as the Unit 2 MSIVs and will be herein referred to as MSIVs.

2

BASES

BACKGROUND

The MSIVs isolate steam flow from the secondary side of the steam generators following a high energy line break (HELB). MSIV closure terminates flow from the unaffected (intact) steam generators.

steam supply

One MSIV is located in each main steam line outside, but close to, containment. The MSIVs are downstream from the main steam safety valves (MSSVs) and auxiliary feedwater (AFW) pump turbine steam supply, to prevent MSSV and AFW isolation from the steam generators by MSIV closure. Closing the MSIVs isolates each steam generator from the others, and isolates the turbine, Steam Bypass System, and other auxiliary steam supplies from the steam generators.

a Containment Pressure - Intermediate High High, Steam Line Pressure - Negative Rate - High, or Steam Line Pressure – Low function. For Unit 1, the MSIVs fail closed on loss of control air pressure. For Unit 2, the

The MSIVs close on a main steam isolation signal generated by either ~~low steam generator pressure or high containment pressure. The~~ MSIVs fail closed on loss of control or actuation power.

2 Insert 1

Each MSIV has an MSIV bypass valve. Although these bypass valves are normally closed, they receive the same emergency closure signal as do their associated MSIVs. The MSIVs may also be actuated manually.

U

5 A description of the MSIVs is found in the FSAR, Section [10.3] (Ref. 1).

APPLICABLE SAFETY ANALYSES

U

~~The~~ design basis of the MSIVs is established by the containment analysis for the large ~~steam line break~~ (SLB) inside containment, discussed in the FSAR, ~~Section [6.2] (Ref. 2)~~. It is also affected by the accident analysis of the SLB events presented in the FSAR, Section ~~[15.1.5]~~ (Ref. 3). The design precludes the blowdown ~~of more than~~ one steam generator, assuming ~~a single active~~ component failure (e.g., the failure of one MSIV to close on demand).

5

Chapter 14 (Unit 1) and Section 6.2 (Unit 2)

14.2.5.1 (Unit 1) and Section 15.1.5 (Unit 2)

available pressure

The limiting case for the containment analysis is the SLB inside containment, with ~~a loss of~~ offsite power ~~following turbine trip~~, and failure of the ~~MSIV~~ on the affected steam generator to close. At lower powers, the steam generator inventory and ~~temperature~~ are at their maximum, maximizing the analyzed mass and energy release to the containment. Due to reverse flow and failure of the ~~MSIV~~ to close, the additional mass and energy in the steam headers downstream from the other MSIV contribute to the total release. With the most reactive rod cluster control assembly assumed stuck in the fully withdrawn position, there is an

2

main steam non-return check valve (Unit 1) or the MSIV (Unit 2)

s

BASES

APPLICABLE SAFETY ANALYSES (continued)

increased possibility that the core will become critical and return to power. The core is ultimately shut down by the boric acid injection delivered by the Emergency Core Cooling System.

The accident analysis compares several different SLB events against different acceptance criteria. The large SLB outside containment upstream of the MSIV is limiting for offsite dose, although a break in this short section of main steam header has a very low probability. The large SLB ~~inside containment~~ at hot zero power is the limiting case for a ~~post trip~~ return to power event. The analysis includes scenarios with offsite power available, and with a loss of offsite power following turbine trip. With offsite power available, the reactor coolant pumps continue to circulate coolant through the steam generators, maximizing the Reactor Coolant System cooldown. With a loss of offsite power, the response of mitigating systems is delayed. Significant single failures considered include failure of an MSIV to close. 2

The MSIVs serve only a safety function and remain open during power operation. These valves operate under the following situations:

a. An HELB inside containment. In order to maximize the mass and energy release into containment, the analysis assumes that the MSIV in the affected steam generator remains open. For this accident scenario, steam is discharged into containment from all steam generators until the remaining MSIVs close. After MSIV closure, steam is discharged into containment only from the affected steam generator and from the residual steam in the main steam header downstream of the closed MSIVs in the unaffected loops. Closure of the MSIVs isolates the break from the unaffected steam generators.

b. A break outside of containment and upstream from the MSIVs is not a containment pressurization concern. The uncontrolled blowdown of more than one steam generator must be prevented to limit the potential for uncontrolled RCS cooldown and positive reactivity addition. Closure of the MSIVs isolates the break and limits the blowdown to a single steam generator.

c. A break downstream of the MSIVs will be isolated by the closure of the MSIVs.

BASES

APPLICABLE SAFETY ANALYSES (continued)

d. Following a steam generator tube rupture, closure of the MSIVs isolates the ruptured steam generator from the intact steam generators to minimize radiological releases.

For Unit 2, the

e. ~~The~~ MSIVs are also utilized during other events such as a feedwater line break. This event is less limiting so far as MSIV OPERABILITY is concerned. 2

The MSIVs satisfy Criterion 3 ~~of 10 CFR 50.36(c)(2)(ii)~~.

LCO

three

This LCO requires that ~~[four]~~ MSIVs in the steam lines be OPERABLE. The MSIVs are considered OPERABLE when the isolation times are within limits, and they close on ~~an~~ isolation actuation signal. 1

a manual and automatic

This LCO provides assurance that the MSIVs will perform their design safety function to mitigate the consequences of accidents that could result in offsite exposures comparable to the ~~10 CFR 100 (Ref. 4) limits or the NRC staff approved licensing basis~~. 2

limits specified in Regulatory Guide 1.183 (Ref. 4).

APPLICABILITY

The MSIVs must be OPERABLE in MODE 1, and in MODES 2 and 3 except when closed and de-activated, when there is significant mass and energy in the RCS and steam generators. When the MSIVs are closed, they are already performing the safety function.

In MODE 4~~, normally most of the MSIVs are closed, and~~ the steam generator energy is low. 2

In MODE 5 or 6, the steam generators do not contain much energy because their temperature is below the boiling point of water; therefore, the MSIVs are not required for isolation of potential high energy secondary system pipe breaks in these MODES.

and the MSIVs are not required to support the safety analysis due to the low probability of a design basis accident

---

ACTIONS

A.1

1 With one MSIV inoperable in MODE 1, action must be taken to restore OPERABLE status within [8] hours. Some repairs to the MSIV can be made with the unit hot. The [8] hour Completion Time is reasonable, considering the low probability of an accident occurring during this time period that would require a closure of the MSIVs.

most

1 The [8] hour Completion Time is greater than that ~~normally~~ allowed for containment isolation valves because the MSIVs are valves that isolate a

---

BASES

ACTIONS (continued)

closed system penetrating containment. These valves differ from other containment isolation valves in that the closed system provides an additional means for containment isolation.

B.1

1 If the MSIV cannot be restored to OPERABLE status within {8} hours, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in MODE 2 within 6 hours and Condition C would be entered. The Completion Times are reasonable, based on operating experience, to reach MODE 2 and to close the MSIVs in an orderly manner and without challenging unit systems.

C.1 and C.2

Condition C is modified by a Note indicating that separate Condition entry is allowed for each MSIV.

Since the MSIVs are required to be OPERABLE in MODES 2 and 3, the inoperable MSIVs may either be restored to OPERABLE status or closed. When closed, the MSIVs are already in the position required by the assumptions in the safety analysis.

1 The {8} hour Completion Time is consistent with that allowed in Condition A.

For inoperable MSIVs that cannot be restored to OPERABLE status within the specified Completion Time, but are closed, the inoperable MSIVs must be verified on a periodic basis to be closed. This is necessary to ensure that the assumptions in the safety analysis remain valid. The 7 day Completion Time is reasonable, based on engineering judgment, in view of MSIV status indications available in the control room, and other administrative controls, to ensure that these valves are in the closed position.

D.1 and D.2

If the MSIVs cannot be restored to OPERABLE status or are not closed within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed at least in MODE 3 within 6 hours, and in MODE 4 within 12 hours. The allowed Completion Times are reasonable, based on

BASES

ACTIONS (continued)

operating experience, to reach the required unit conditions from MODE 2 conditions in an orderly manner and without challenging unit systems.

(signal generation plus MSIV closure time)

within the limit specified in the Licensing Requirements Manual (Ref. 5).

SURVEILLANCE REQUIREMENTS

SR 3.7.2.1

3

total response

This SR verifies that MSIV closure time is ~~≤ [4.6] seconds~~. The MSIV isolation time is assumed in the accident ~~and containment~~ analyses. ~~This Surveillance is normally performed upon returning the unit to operation following a refueling outage.~~ The MSIVs should not be tested at power~~, since even a part stroke exercise increases~~ the risk of a valve closure when the unit is generating power. As the MSIVs are not tested at power, they are exempt from the ASME Code, Section XI ~~(Ref. 5)~~, requirements during operation in MODE 1 or 2.

3

4

due to

5

typically

(Ref. 6)

The Frequency is in accordance with the Inservice Testing Program.

allowed to be

This test is conducted in MODE 3 with the unit at operating temperature and pressure. This SR is modified by a Note that allows entry into and operation in MODE 3 prior to performing the SR. ~~This allows a delay of testing until MODE 3, to establish conditions consistent with those under which the acceptance criterion was generated.~~

4

automatic and manual

SR 3.7.2.2

This SR verifies that each MSIV can close on an actual or simulated actuation signal. ~~This Surveillance is normally performed upon returning the plant to operation following a refueling outage.~~ The Frequency of MSIV testing is every [18] months. The [18] month Frequency for testing is based on the refueling cycle. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. Therefore, this Frequency is acceptable from a reliability standpoint.

4

1

REFERENCES

U

1. FSAR, Section [10.3].
2. FSAR, ~~Section [6.2]~~.
3. FSAR, Section ~~[15.1.5]~~.
4. ~~10 CFR 100.11~~.

Chapter 14 (Unit 1) and Section 6.2 (Unit 2).

14.2.5.1 (Unit 1) and Section 15.1.5 (Unit 2).

Regulatory Guide 1.183, July 2000

5

5

5

5. Licensing Requirements Manual (LRM) for BVPS Unit 1 and Unit 2.

BASES

REFERENCES (continued)

6 ~~5~~. ASME, Boiler and Pressure Vessel Code, Section XI. 5

INSERTS FOR ITS 3.7.2 BASES

Main Steam Isolation Valves (MSIVs)

1. Isolation of the main steam lines provides protection in the event of a steam line break (SLB) inside or outside containment. Rapid isolation of the steam lines will limit the steam break accident to the blowdown from one steam generator (SG), at most. For an SLB upstream of the MSIVs, inside or outside of containment, closure of the MSIVs limits the accident to the blowdown from only the affected SG. For an SLB downstream of the MSIVs, closure of the MSIVs terminates the accident as soon as the steam lines depressurize. For Unit 1, the main steam non-return check valves are designed to automatically prevent reverse flow of steam in the case of accidental pressure reduction in any steam generator or its piping. If a steam line breaks between a non-return valve and a steam generator, the affected steam generator continues to blowdown while the non-return valve in the line prevents significant blowdown from the other steam generators. For Unit 2, which does not have main steam non-return check valves, steam line isolation will also mitigate the effects of a feed line break and ensures a source of steam for the turbine driven AFW pump during a feed line break.

B 3.7 PLANT SYSTEMS

B 3.7.3 Main Feedwater Isolation Valves (MFIVs) and Main Feedwater Regulation Valves (MFRVs) [and Associated Bypass Valves]

BASES

BACKGROUND

1 The MFIVs isolate main feedwater (MFW) flow to the secondary side of the steam generators following a high energy line break (HELB). The safety related function of the MFRVs is to provide the second isolation of MFW flow to the secondary side of the steam generators following an HELB. Closure of the MFIVs ~~and associated bypass valves~~ or MFRVs and associated bypass valves terminates flow to the steam generators, terminating the event for feedwater line breaks (FWLBs) occurring upstream of the MFIVs or MFRVs. The consequences of events occurring in the main steam lines or in the MFW lines downstream from the MFIVs will be mitigated by their closure. Closure of the MFIVs ~~and associated bypass valves,~~ or MFRVs and associated bypass valves, effectively terminates the addition of feedwater to an affected steam generator, limiting the mass and energy release for steam line breaks (SLBs) or FWLBs inside containment, and reducing the cooldown effects for SLBs.

1 The MFIVs ~~and associated bypass valves, or MFRVs and associated bypass valves,~~ isolate the nonsafety related portions from the safety related portions of the system. In the event of a secondary side pipe rupture inside containment, the valves limit the quantity of high energy fluid that enters containment through the break, and provide a pressure boundary for the controlled addition of auxiliary feedwater (AFW) to the intact loops.

1 2 One MFIV ~~and associated bypass valve,~~ and one MFRV and its associated bypass valve, are located on each MFW line, outside ~~but close to~~ of containment. The MFIVs and MFRVs are located upstream of the AFW injection point so that AFW may be supplied to the steam generators following MFIV or MFRV closure. The piping volume from these valves to the steam generators must be accounted for in calculating mass and energy releases, and refilled prior to AFW reaching the steam generator following either an SLB or FWLB. Safety Injection

1 The MFIVs ~~and associated bypass valves,~~ and MFRVs and associated bypass valves, close on receipt of ~~a T_{avg} - Low coincident with reactor trip (P-4)~~ or steam generator water level - high high signal. The MFRVs will also close on receipt of a T_{avg} - Low coincident with reactor trip (P-4). They may also be actuated manually. In addition to the MFIVs ~~and associated bypass valves,~~ and the MFRVs and associated bypass valves, a check valve ~~inside~~ outside containment is available. The check valve ~~isolates the feedwater~~ 3 2

BASES 3

provides the first pressure boundary for the addition of AFW to the intact loop and prevents backflow in the feedwater line should a break occur upstream of the valve.

BACKGROUND (continued)

~~line, penetrating containment, and ensures that the consequences of events do not exceed the capacity of the containment heat removal systems.~~

U

10.3.5 (Unit 1) and Section 10.4.7 (Unit 2)

A description of the MFIVs and MFRVs is found in the FSAR, Section ~~[10.4.7]~~ (Ref. 1). 2

APPLICABLE SAFETY ANALYSES 1

The design basis of the MFIVs and MFRVs is established by the analyses for the large SLB. It is also influenced by the accident analysis for the large FWLB. Closure of the MFIVs ~~and associated bypass valves,~~ or MFRVs and associated bypass valves, ~~may also be~~ are relied on to terminate an SLB for core response analysis and excess feedwater event upon the receipt of a steam generator water level - high high signal ~~or a feedwater isolation signal on high steam generator level~~. 2

Failure of an MFIV, MFRV, or the associated bypass valves to close following an SLB or FWLB can result in additional mass ~~and energy~~ being delivered to the steam generators, contributing to cooldown. This failure also results in additional mass and energy releases following an SLB or FWLB event.

The MFIVs and MFRVs satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

This LCO ensures that the MFIVs, MFRVs, and thei~~r~~ associated bypass valves will isolate MFW flow to the steam generators, following an FWLB or main steam line break. ~~These valves will also isolate the nonsafety related portions from the safety related portions of the system.~~ 3

1 three

This LCO requires ~~that [four]~~ MFIVs ~~and associated bypass valves~~ and ~~[four]~~ MFRVs [and associated bypass valves] be OPERABLE. The MFIVs and MFRVs and the associated bypass valves are considered OPERABLE when isolation times are within limits and they close on an isolation actuation signal.

2

- high high

water

1

Failure to meet the LCO requirements can result in additional mass and energy being released to containment following an SLB or FWLB inside containment. ~~If~~ a feedwater isolation signal on ~~high~~ steam generator level is relied on to terminate an excess feedwater flow event, failure to meet the LCO may result in the introduction of water into the main steam lines.

BASES

APPLICABILITY

3

The MFIVs and MFRVs and the associated bypass valves must be OPERABLE whenever there is significant mass and energy in the Reactor Coolant System and steam generators. ~~This ensures that, in the event of an HELB, a single failure cannot result in the blowdown of more than one steam generator.~~ In MODES 1, 2, {and 3}, the MFIVs and MFRVs and the associated bypass valves are required to be OPERABLE to limit the amount of available fluid that could be added to containment in the case of a secondary system pipe break inside containment. When the valves are closed and de-activated or isolated by a closed manual valve, they are already performing their safety function.

3

In MODES 4, 5, and 6, steam generator energy is low. Therefore, the MFIVs, MFRVs, and the associated bypass valves are not required to be OPERABLE. ~~normally closed since MFW is not required.~~

ACTIONS

The ACTIONS Table is modified by a Note indicating that separate Condition entry is allowed for each valve.

A.1 and A.2

1

With one MFIV in one or more flow paths inoperable, action must be taken to restore the affected valves to OPERABLE status, or to close or isolate inoperable affected valves within {72} hours. When these valves are closed or isolated, they are performing their required safety function.

1

The {72} hour Completion Time takes into account the redundancy afforded by the remaining OPERABLE valves and the low probability of an event occurring during this time period that would require isolation of the MFW flow paths. The {72} hour Completion Time is reasonable, based on operating experience.

Inoperable MFIVs that are closed or isolated must be verified on a periodic basis that they are closed or isolated. This is necessary to ensure that the assumptions in the safety analysis remain valid. The 7 day Completion Time is reasonable, based on engineering judgment, in view of valve status indications available in the control room, and other administrative controls, to ensure that these valves are closed or isolated.

B.1 and B.2

1

With one MFRV in one or more flow paths inoperable, action must be taken to restore the affected valves to OPERABLE status, or to close or isolate inoperable affected valves within {72} hours. When these valves are closed or isolated, they are performing their required safety function.

BASES

ACTIONS (continued)

1 The {72} hour Completion Time takes into account the redundancy afforded by the remaining OPERABLE valves and the low probability of an event occurring during this time period that would require isolation of the MFW flow paths. The {72} hour Completion Time is reasonable, based on operating experience.

Inoperable MFRVs, that are closed or isolated, must be verified on a periodic basis that they are closed or isolated. This is necessary to ensure that the assumptions in the safety analysis remain valid. The 7 day Completion Time is reasonable, based on engineering judgment, in view of valve status indications available in the control room, and other administrative controls to ensure that the valves are closed or isolated.

<u>C.1 and C.2</u>

1 With one associated bypass valve in one or more flow paths inoperable, action must be taken to restore the affected valves to OPERABLE status, or to close or isolate inoperable affected valves within {72} hours. When these valves are closed or isolated, they are performing their required safety function.

1 The {72} hour Completion Time takes into account the redundancy afforded by the remaining OPERABLE valves and the low probability of an event occurring during this time period that would require isolation of the MFW flow paths. The {72} hour Completion Time is reasonable, based on operating experience.

Inoperable associated bypass valves that are closed or isolated must be verified on a periodic basis that they are closed or isolated. This is necessary to ensure that the assumptions in the safety analysis remain valid. The 7 day Completion Time is reasonable, based on engineering judgment, in view of valve status indications available in the control room, and other administrative controls, to ensure that these valves are closed or isolated.

<u>D.1</u>

in series

3 With two inoperable valves in the same flow path, there may be no redundant system to operate automatically and perform the required safety function. ~~Although~~ the containment can be isolated with the failure of two valves in parallel in the same flow ~~path, the double failure can be an indication of a common mode failure in the valves of this flow path, and as such, is treated the same as a loss of the isolation capability of~~

path.

BASES

ACTIONS (continued)

~~this flow path.~~ Under these conditions, affected valves in each flow path must be restored to OPERABLE status, or the affected flow path isolated within 8 hours. This action returns the system to the condition where at least one valve in each flow path is performing the required safety function. The 8 hour Completion Time is reasonable, based on operating experience, to complete the actions required to close the MFIV or MFRV, or otherwise isolate the affected flow path.

E.1 and E.2

If the MFIV(s) and MFRV(s) and the associated bypass valve(s) cannot be restored to OPERABLE status, or closed, or isolated within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours[, and in MODE 4 within 12 hours]. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.3.1

This SR verifies that the closure time (signal generation plus valve closure time) of each MFIV, MFRV, and [associated bypass valve] is within the limit(s) specified in the Licensing Requirements Manual (LRM) (Ref. 2). ~~≤ 7 seconds.~~ The ~~MFIV and MFRV isolation~~ total response times are assumed in the SLB or FWLB accident ~~and containment~~ analyses. ~~This Surveillance is normally performed upon returning the unit to operation following a refueling outage. These valves should not be tested at power since even a part stroke exercise increases the risk of a valve closure with the unit generating power. This is consistent with the ASME Code, Section XI (Ref. 2), quarterly stroke requirements during operation in MODES 1 and 2.~~ 3

4

The Frequency for this SR is in accordance with the Inservice Testing Program.

SR 3.7.3.2

This SR verifies that each MFIV, MFRV, and [associated bypass valve] can close on an actual or simulated actuation signal. ~~This Surveillance is normally performed upon returning the plant to operation following a refueling outage.~~

4

1 The Frequency for this SR is every [18] months. The [18] month Frequency for testing is based on the refueling cycle. Operating

BASES

SURVEILLANCE REQUIREMENTS (continued)

1 U experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. Therefore, this Frequency is acceptable from a reliability standpoint.

10.3.5 (Unit 1) and Section 10.4.7 (Unit 2).

REFERENCES

1. FSAR, Section ~~[10.4.7].~~

2. ~~ASME, Boiler and Pressure Vessel Code, Section XI.~~

Licensing Requirements Manual (LRM) for BVPS Unit 1 and Unit 2.

B 3.7 PLANT SYSTEMS

B 3.7.4 Atmospheric Dump Valves (ADVs)

BASES

BACKGROUND

1 Insert 1

~~The ADVs provide a method for cooling the unit to residual heat removal (RHR) entry conditions should the preferred heat sink via the Steam Bypass System to the condenser not be available, as discussed in the FSAR, Section [10.3] (Ref. 1). This is done in conjunction with the Auxiliary Feedwater System providing cooling water from the condensate storage tank (CST). The ADVs may also be required to meet the design cooldown rate during a normal cooldown when steam pressure drops too low for maintenance of a vacuum in the condenser to permit use of the Steam Dump System.~~

~~One ADV line for each of the [four] steam generators is provided. Each ADV line consists of one ADV and an associated block valve.~~

~~The ADVs are provided with upstream block valves to permit their being tested at power, and to provide an alternate means of isolation. The ADVs are equipped with pneumatic controllers to permit control of the cooldown rate.~~

~~The ADVs are usually provided with a pressurized gas supply of bottled nitrogen that, on a loss of pressure in the normal instrument air supply, automatically supplies nitrogen to operate the ADVs. The nitrogen supply is sized to provide the sufficient pressurized gas to operate the ADVs for the time required for Reactor Coolant System cooldown to RHR entry conditions.~~

~~A description of the ADVs is found in Reference 1. The ADVs are OPERABLE with only a DC power source available. In addition, handwheels are provided for local manual operation.~~

APPLICABLE SAFETY ANALYSES

1

~~The design basis of the ADVs is established by the capability to cool the unit to RHR entry conditions. The design rate of [75]°F per hour is applicable for two steam generators, each with one ADV. This rate is adequate to cool the unit to RHR entry conditions with only one steam generator and one ADV, utilizing the cooling water supply available in the CST.~~

In the accident analysis presented in ~~Reference 1~~ the UFSAR (Ref. 2), the ADVs ~~are assumed to~~ may be used by the operator to cool down the unit to RHR entry conditions for accidents accompanied by a loss of offsite power. ~~Prior to~~

BASES

APPLICABLE SAFETY ANALYSES (continued)

1

Insert 2

operator actions to cool down the unit, the ADVs and main steam safety valves (MSSVs) are assumed to operate automatically to relieve steam and maintain the steam generator pressure below the design value. For the recovery from a steam generator tube rupture (SGTR) event, the operator is also required to perform a limited cooldown to establish adequate subcooling as a necessary step to terminate the primary to secondary break flow into the ruptured steam generator. The time required to terminate the primary to secondary break flow for an SGTR is more critical than the time required to cool down to RHR conditions for this event and also for other accidents. Thus, the SGTR is the limiting event for the ADVs. The number of ADVs required to be OPERABLE to satisfy the SGTR accident analysis requirements depends upon the number of unit loops and consideration of any single failure assumptions regarding the failure of one ADV to open on demand.

The ADVs are equipped with block valves in the event an ADV spuriously fails to open or fails to close during use.

The ADVs satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

1

INSERT 3

[Three] ADV lines are required to be OPERABLE. One ADV line is required from each of [three] steam generators to ensure that at least one ADV line is available to conduct a unit cooldown following an SGTR, in which one steam generator becomes unavailable, accompanied by a single, active failure of a second ADV line on an unaffected steam generator. The block valves must be OPERABLE to isolate a failed open ADV line. A closed block valve does not render it or its ADV line inoperable if operator action time to open the block valve is supported in the accident analysis.

Failure to meet the LCO can result in the inability to cool the unit to RHR entry conditions following an event in which the condenser is unavailable for use with the Steam Bypass System.

An ADV is considered OPERABLE when it is capable of providing controlled relief of the main steam flow and capable of fully opening and closing on demand.

APPLICABILITY

In MODES 1, 2, and 3, and in MODE 4, when a steam generator is being relied upon for heat removal, the ADVs are required to be OPERABLE.

In MODE 5 or 6, an SGTR is not a credible event.

BASES

ACTIONS

TSTF-359

A.1

With one required ADV line inoperable, action must be taken to restore OPERABLE status within 7 days. The 7 day Completion Time allows for the redundant capability afforded by the remaining OPERABLE ADV lines, a nonsafety grade backup in the ~~Steam Bypass System~~, and MSSVs. ~~Required Action A.1 is modified by a Note indicating that LCO 3.0.4 does not apply.~~

1

condenser steam dump valves

B.1

3

In this condition, the unit utilizes RHR for cooling. Therefore, operation may continue with one or more ADV lines inoperable because the RCS depressurization function required to mitigate a SGTR event would be accomplished by the RHR system.

With two or more ADV lines inoperable, action must be taken to restore all but one ADV line to OPERABLE status. Since the block valve can be closed to isolate an ADV, some repairs may be possible with the unit at power. The 24 hour Completion Time is reasonable to repair inoperable ADV lines, based on the availability of the ~~Steam Bypass System~~ and MSSVs, and the low probability of an event occurring during this period that would require the ADV lines.

C.1 and C.2

If the ADV lines cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4, without reliance upon steam generator for heat removal, within [24] hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SR 3.7.4.1

To perform a controlled cooldown of the RCS, the ADVs must be able to be opened ~~either remotely or locally~~ and throttled through their full range. This SR ensures that the ADVs are tested through a full control cycle at least once per fuel cycle. Performance of inservice testing or use of an ADV during a unit cooldown may satisfy this requirement. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. The Frequency is acceptable from a reliability standpoint.

The requirement to stroke the valve through the full range of operation may be accomplished by remote manual control. In addition, this surveillance must also verify the capability to locally operate each ADV. The verification of local operation does not require that the ADV be stroked through the full range of travel (i.e., if the valve is stroked full open and closed by remote manual operation, the capability to operate the ADV locally may be verified by observing valve stem movement). The ADVs must be capable of both remote and local manual operation in order to be considered OPERABLE.

1

BASES

SURVEILLANCE REQUIREMENTS (continued)

maintenance or other testing that results in cycling these valves including the

[~~SR 3.7.4.2~~

The function of the block valve is to isolate a failed open ADV. Cycling the block valve ~~both~~ closed and open demonstrates its capability to perform this function. Performance of ~~inservice testing or~~ use of the block valve during unit cooldown may satisfy this requirement. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. The Frequency is acceptable from a reliability standpoint.]

1

REFERENCES U 1. FSAR, Section [10.3].

1

2. UFSAR Section 14 (Unit 1) and UFSAR Section 15 (Unit 2).

2

SR 3.7.4.3

The function of the individual SG isolation valves associated with the Unit 2 Residual Heat Release Valve is to isolate the Residual Heat Release Valve from a SG with a ruptured tube. Isolating the SG with a ruptured tube minimizes the resulting dose when the Residual Heat Release Valve is used for SGTR accident mitigation. Cycling these isolation valves closed and open demonstrates the capability to perform this function. Performance of maintenance or other testing that results in cycling these valves, including the use of the isolation valve during unit cooldown may satisfy this requirement. Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency. The Frequency is acceptable from a reliability standpoint.

The surveillance is modified by a Note that states the surveillance is only applicable to Unit 2. The Note is necessary because the corresponding Unit 1 Residual Heat Release Valve is not required OPERABLE by LCO 3.7.4. Only the Unit 2 Residual Heat Release Valve is required OPERABLE by LCO 3.7.4. This is because Unit 2 requires the additional relief capacity provided by this valve for accident mitigation and the Unit 2 Residual Heat Release Valve has individual SG isolation valves that allow it to be isolated from a faulted SG so it can be used for accident mitigation.

INSERTS FOR ITS 3.7.4 BASES

1. ***INSERT 1 BVPS Specific Background Section***

The ADV lines required OPERABLE include the three Atmospheric Relief Valves (one per steam generator (SG)) and the associated block (isolation) valves and for Unit 2 only, one Residual Heat Release Valve and its block valve and individual SG isolation valves. The Unit 2 Residual Heat Release Valve and all its associated isolation valves are counted as one of the required ADV lines for Unit 2. As discussed in the UFSAR, Section 10.3 (Ref. 1), the Atmospheric Relief Valves and the Residual Heat Release Valve provide a method of removing core decay heat and cooling the unit to Residual Heat Removal (RHR) System entry conditions should the preferred heat sink via the condenser steam dump valves not be available.

Each ADV line has a block valve. The block valves are normally open manual valves. The block valves can be used for isolating an ADV line if necessary. However, due to time constraints in the safety analysis, the ADV block valves must remain open for an ADV line to be considered OPERABLE. In addition to the block valve described above, the Unit 2 Residual Heat Release Valve has three normally open isolation valves (one for each SG). The individual SG isolation valves are used to isolate a faulted SG so the Unit 2 Residual Heat Release Valve can be used for accident mitigation. In order for the Unit 2 Residual Heat Release Valve ADV line to be OPERABLE, the individual SG isolation valves must be maintained open with the capability of being manually closed.

The Unit 1 ADVs are DC powered air operated valves utilizing a non-safety related air system. The Unit 1 ADVs can normally be operated from the Control Room. However, in order to meet the assumptions of the operational assessment used to evaluate single failure concerns, the Unit 1 ADVs must be capable of being operated locally as well as from the Control Room in order to be considered OPERABLE.

The Unit 2 ADVs have an electro-hydraulic operator that can be operated from the Control Room. Each Unit 2 Atmospheric Relief Valve is powered by the same Emergency AC Train power. The Unit 2 Residual Heat Release Valve is powered by the other Emergency AC Train. In order to meet the assumptions of the applicable safety analysis, the Unit 2 ADVs (including the Residual Heat Release Valve) must be capable of being operated locally as well as from the Control Room in order to be considered OPERABLE.

The ADVs have a non-safety related automatic pressure control capability. However, the only function of the ADVs required by the safety analyses (and this Technical Specification) is the ability to cool down the plant following a Design Basis Accident (DBA).

2. ***INSERT 2 BVPS Specific Safety Analysis Section***

The design bases of the ADVs are established by the capability to cool the unit to RHR System entry conditions. For the recovery from a design basis steam generator tube rupture (SGTR) accident, the operator is required to perform a limited cooldown to establish adequate subcooling as a necessary step to terminate the primary to secondary break flow into the faulted steam generator. The time required to terminate the primary to secondary break flow for the design basis SGTR accident is more critical than the time required to cool down to RHR System entry conditions for this event and for other Design

Basis Accidents (DBAs). Thus, the SGTR is the limiting event for the ADVs.

For Unit 1, three ADVs with associated flow paths and isolation valves are required OPERABLE. Due to the design of the Unit 1 Residual Heat Release Valve, it can not be isolated from a SG with a ruptured tube. Therefore, the Unit 1 Residual Heat Release Valve is not used to mitigate a SGTR due to the dose requirements of the accident analysis. The requirement for three OPERABLE ADV lines provides assurance that a single active failure of one ADV line or a single active failure of the instrument air supply will not prevent the mitigation of a SGTR accident.

The Unit 1 operational assessment used to evaluate the single failures described above also assumes that one ADV is lost to the faulted SG. In the case where the instrument air supply is available and an active failure of one of the remaining ADVs is assumed, the operational assessment assumes the remaining ADV is operated from the control room to successfully mitigate the SGTR accident. In the case where the active failure is a loss of instrument air, and ADV operation is delayed, the operational assessment assumes the two remaining ADVs are operated by local manual control to successfully mitigate the SGTR accident. Therefore, the Unit 1 ADVs must be capable of both remote and local manual operation to be considered OPERABLE. The Unit 1 operational assessment does not include a specific time to manually unblock an ADV. Therefore, the Unit 1 ADV block valves must remain open for the ADV lines to be considered OPERABLE.

For Unit 2, four ADVs with associated flow paths and isolation valves are required OPERABLE to satisfy the SGTR accident analysis assumptions of a single active failure and loss of offsite power. Requiring four Unit 2 ADVs OPERABLE assures that two ADVs will remain OPERABLE given the assumed SGTR accident conditions (i.e., one ADV lost to the faulted SG and one ADV lost to a single active failure).

The Unit 2 SGTR analysis requires that two ADVs remain OPERABLE to mitigate the accident within the assumed time frame. Furthermore, in order to assure the SGTR accident can be mitigated within the Unit 2 analysis requirements, the ADVs must be capable of both remote and local manual operation. In addition, the Unit 2 safety analysis does not include additional time to manually unisolate a blocked ADV. Therefore, an ADV line with a closed block valve is considered inoperable. The Unit 2 safety analysis does account for the time it takes to manually isolate the faulted SG from the Unit 2 Residual Heat Release Valve so that ADV line can be used to meet the accident analysis requirements. Therefore, the individual normally open SG isolation valves associated with the Unit 2 Residual Heat Release Valve must also be maintained open with the capability of being manually closed for the Unit 2 Residual Heat Release Valve ADV line to be OPERABLE.

3. ***INSERT 3 BVPS Specific LCO Section***

The LCO requires three Unit 1 ADV lines and four Unit 2 ADV lines to be OPERABLE. The ADV lines required OPERABLE include the three Atmospheric Relief Valves (one per steam generator (SG)) and the associated block (isolation) valves and for Unit 2 only, one Residual Heat Release Valve and its block valve and individual SG isolation valves. The Unit 2 Residual Heat Release Valve and all its associated isolation valves are counted as one ADV line for Unit 2. The number of ADV lines required OPERABLE is consistent with each Unit's design and the safety analyses requirements described above.

An OPERABLE ADV line is capable of providing controlled relief of the main steam flow and capable of fully opening and closing. In order to be OPERABLE, the ADVs (including the Unit 2 Residual Heat Release Valve) must be capable of remote manual and local manual operation. Also, the block valve associated with each ADV line must be open for the line to be considered OPERABLE. In addition to the above requirements, the three individual SG isolation valves associated with Unit 2 Residual Heat Release Valve must be open and capable of being manually closed for the Residual Heat Release Valve ADV line to be considered OPERABLE.

The block valves associated with each ADV line must be OPERABLE to isolate a failed open ADV line. In addition, the three individual SG isolation valves associated with the Unit 2 Residual Heat Release Valve ADV line must be OPERABLE to enable a faulted SG to be isolated from the Residual Heat Release Valve ADV line.

Failure to meet the LCO could result in the inability to cool and depressurize the unit under the limiting accident conditions and within the time limit assumed in the applicable safety analyses described above.

B 3.7 PLANT SYSTEMS

B 3.7.5 Auxiliary Feedwater (AFW) System

BASES

BACKGROUND

6

The AFW System automatically supplies feedwater to the steam generators to remove decay heat from the Reactor Coolant System upon the loss of normal feedwater supply. ~~The AFW pumps take suction through separate and independent suction lines from the condensate storage tank (CST) (LCO 3.7.6) and pump to the steam generator secondary side via separate and independent connections to the main feedwater (MFW) piping outside containment. The steam generators function as a heat sink for core decay heat. The heat load is dissipated by releasing steam to the atmosphere from the steam generators via the main steam safety valves (MSSVs) (LCO 3.7.1) or atmospheric dump valves (LCO 3.7.4). If the main condenser is available, steam may be released via the steam bypass valves and recirculated to the CST.~~

The AFW System design is such that it can perform its function following a total loss of normal feedwater and the single failure of an AFW pump. Any two of the three AFW pumps are capable of supplying the required feedwater flow assumed in the accident analyses.

6

each pump feeds all three

6 a minimum of

for

7 steam

Insert 2

The AFW System consists of [two] motor driven AFW pumps and one steam turbine driven pump configured into [three] trains. ~~Each motor driven pump provides [100]% of AFW flow capacity, and the turbine driven pump provides [200]% of the required capacity to the steam generators, as assumed in the accident analysis.~~ The pumps are equipped with independent recirculation lines to prevent pump operation against a closed system. Each motor driven AFW pump is powered from an independent Class 1E power supply and ~~feeds [two] steam generators, although each pump has the capability to be realigned from the control room to feed other~~ steam generators. The steam turbine driven AFW pump receives steam from two main steam lines upstream of ~~the main steam isolation~~ valves. Each of the steam feed lines will supply 100% of the requirements of the turbine driven AFW pump.

Insert 1 1

The AFW System is capable of supplying feedwater to the steam generators during normal unit startup, shutdown, and hot standby conditions. 2

6

~~The turbine driven AFW pump supplies a common header capable of feeding all steam generators with DC powered control valves actuated to the appropriate steam generator by the Engineered Safety Feature Actuation System (ESFAS). One pump at full flow is sufficient to remove decay heat and cool the unit to residual heat removal (RHR) entry conditions. Thus, the requirement for diversity in motive power sources for the AFW System is met.~~

BASES

Undervoltage – RCP bus (turbine driven AFW pump only).

BACKGROUND (continued)

The AFW System is designed to supply sufficient water to the steam generator(s) to remove decay heat with steam generator pressure at the setpoint of the MSSVs. Subsequently, the AFW System supplies sufficient water to cool the unit to RHR entry conditions, with steam released through the ADVs.

(motor driven AFW pumps only)

The AFW System actuates automatically on steam generator water level - low-low by the ESFAS (LCO 3.3.2). The system also actuates on ~~loss of offsite power,~~ safety injection, and trip of all MFW pumps. running 6

10.3.5.2.2 (Unit 1) and Section 10.4.9 (Unit 2)

U

The AFW System is discussed in the FSAR, Section ~~[10.4.9]~~ (Ref. 1). 7

APPLICABLE SAFETY ANALYSES

The AFW System mitigates the consequences of any event with loss of normal feedwater.

The design basis of the AFW System is to supply water to the steam generator to remove decay heat and other residual heat by delivering at least the minimum required flow rate to the steam generators at pressures corresponding to the lowest ~~steam generator safety valve~~ MSSV set pressure plus ~~3%~~ 1%. 7 6

the

~~In addition~~, the AFW System must supply enough makeup water to replace the steam generator secondary inventory lost as the unit cools to MODE 4 conditions. Sufficient AFW flow must also be available to account for flow losses such as pump recirculation and line breaks.

6 Insert 3

~~The limiting Design Basis Accidents (DBAs) and transients for the AFW System are as follows:~~

~~a. Feedwater Line Break (FWLB) and~~

~~b. Loss of MFW.~~

~~In addition, the minimum available AFW flow and system characteristics are serious considerations in the analysis of a small break loss of coolant accident (LOCA).~~

7

a feedwater line break (FWLB)

The AFW System design is such that it can perform its function following ~~an FWLB~~ between the MFW isolation valves and containment, combined with a loss of offsite power following turbine trip, and a single active failure of ~~the steam turbine driven~~ an AFW pump. ~~In such a case, the ESFAS logic may not detect the affected steam generator if the backflow check valve to the affected MFW header worked properly. One motor~~ 6

BASES

APPLICABLE SAFETY ANALYSES (continued)

6 ~~driven AFW pump would deliver to the broken MFW header at the pump runout flow until the problem was detected, and flow terminated by the operator. Sufficient flow would be delivered to the intact steam generator by the redundant AFW pump.~~

6 Insert 4

The ESFAS automatically actuates the AFW turbine driven pump and associated power operated valves and controls when required to ensure an adequate feedwater supply to the steam generators during loss of power. Power operated valves are provided for each AFW line to control the AFW flow to each steam generator.

The AFW System satisfies the requirements of Criterion 3 of 10 CFR 50.36(c)(2)(ii). 6

1 LCO

This LCO provides assurance that the AFW System will perform its design safety function to mitigate the consequences of accidents that could result in overpressurization of the reactor coolant pressure boundary. [Three] ~~independent~~ AFW pumps in [three] ~~diverse~~ trains are required to be OPERABLE to ensure the availability of ~~RHR~~ decay heat removal capability for all events accompanied by a loss of offsite power and a single failure. This is accomplished by powering two of the pumps from independent emergency buses. The third AFW pump is powered by a different means, a steam driven turbine supplied with steam from a source that is not isolated by closure of the MSIVs.

In addition, the LCO requires three feedwater injection headers to be OPERABLE. The common feedwater line injection headers must be OPERABLE to ensure the required AFW trains have the capability of providing flow to all three SGs.

The AFW System is configured into [three] trains. The AFW System is considered OPERABLE when the components and flow paths required to provide redundant AFW flow to the steam generators are OPERABLE. ~~This requires that the two motor driven AFW pumps be OPERABLE in [two] diverse paths, each supplying AFW to separate steam generators. The turbine driven AFW pump is required to be OPERABLE with redundant steam supplies from each of [two] main steam lines upstream of the MSIVs, and shall be capable of supplying AFW to any of the steam generators.~~

6 Insert 5

The piping, valves, instrumentation, and controls in the required flow paths also are required to be OPERABLE.

1 and the required feedwater injection header(s), are

The LCO is modified by a Note indicating that one AFW train, which includes a motor driven pump, ~~is required to be OPERABLE in MODE 4.~~ This is because of the reduced heat removal requirements and short period of time in MODE 4 during which the AFW is required and the insufficient steam available in MODE 4 to power the turbine driven AFW pump.

One motor driven AFW train and the feedwater injection header(s) required to support flow to the SG(s) being relied on for decay heat removal are sufficient in MODE 4. The other AFW trains and injection headers are not required OPERABLE in this MODE.

6

BASES

APPLICABILITY

In MODES 1, 2, and 3, the AFW System is required to be OPERABLE in the event that it is called upon to function when the MFW is lost. In addition, the AFW System is required to supply enough makeup water to replace the steam generator secondary inventory, lost as the unit cools to MODE 4 conditions.

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In MODE 4 the AFW System may be used for heat removal via the steam generators.

INSERT 8

In MODE 5 or 6, the steam generators are not normally used for heat removal, and the AFW System is not required.

ACTIONS

[A.1

for any reason

due to one inoperable steam supply in MODE 1, 2 or 3

If ~~one of the two steam supplies to~~ the turbine driven AFW train is inoperable, or if a turbine driven pump is inoperable while in MODE 3 immediately following refueling, action must be taken to restore the inoperable equipment to an OPERABLE status within 7 days. The 7 day Completion Time is reasonable, based on the following reasons: 4

and the turbine driven train is still capable of performing its specified function.

a. For the inoperability of ~~a steam supply to~~ the turbine driven AFW pump, the 7 day Completion Time is reasonable since there is a redundant steam supply line for the turbine driven pump. 4

b. For the inoperability of a turbine driven AFW pump while in MODE 3 immediately subsequent to a refueling, the 7 day Completion Time is reasonable due to the minimal decay heat levels in this situation.

due to one inoperable steam supply

c. For both the inoperability of ~~a steam supply line to~~ the turbine driven pump and an inoperable turbine driven AFW pump while in MODE 3 immediately following a refueling outage, the 7 day Completion Time is reasonable due to the availability of redundant OPERABLE motor driven AFW pumps, and due to the low probability of an event requiring the use of the turbine driven AFW pump. 4

The second Completion Time for Required Action A.1 establishes a limit on the maximum time allowed for any combination of Conditions to be inoperable during any continuous failure to meet this LCO.

The 10 day Completion Time provides a limitation time allowed in this specified Condition after discovery of failure to meet the LCO. This limit is considered reasonable for situations in which Conditions A and B are entered concurrently. The AND connector between 7 days and 10 days

BASES

ACTIONS (continued)

for an inoperable turbine-driven AFW pump in MODE 3

dictates that both Completion Times apply simultaneously, and the more restrictive must be met.

Condition A is modified by a Note which limits the applicability of the Condition to when the unit has not entered MODE 2 following a refueling. Condition A allows one AFW train to be inoperable for 7 days vice the 72 hour Completion Time in Condition B. This longer Completion Time is based on the reduced decay heat following refueling and prior to the reactor being critical. }

B.1 and B.2

2

required

Required Action B.1 is modified by a Note indicating that the Required Action is only applicable if both supply headers are OPERABLE.

realign OPERABLE AFW pumps to separate train supply headers within 2 hours (if both train supply headers are OPERABLE) and to restore the AFW train to

With one of the required AFW trains (pump or flow path) inoperable in MODE 1, 2, or 3 {for reasons other than Condition A}, action must be taken to ~~restore~~ OPERABLE status within 72 hours. This Condition includes the loss of two steam supply lines to the turbine driven AFW pump. The 72 hour Completion Time is reasonable, based on redundant capabilities afforded by the AFW System, time needed for repairs, and the low probability of a DBA occurring during this time period.

2

Required Action B.1 to realign the OPERABLE pumps to separate supply headers preserves train separation and enhances system reliability. The two hours allowed for this action is reasonable based on operating experience to perform the specified task.

The second Completion Time for Required Action B.~~1~~ establishes a limit on the maximum time allowed for any combination of Conditions to be inoperable during any continuous failure to meet this LCO.

The 10 day Completion Time provides a limitation time allowed in this specified Condition after discovery of failure to meet the LCO. This limit is considered reasonable for situations in which Conditions A and B are entered concurrently. The AND connector between 72 hours and 10 days dictates that both Completion Times apply simultaneously, and the more restrictive must be met.

4

Insert 6

C.1 and C.2

D.1 and D.2

, B.1, B.2, C.1, or C.2

- If two AFW trains are inoperable in MODE 1, 2, or 3 for reasons other than Condition C, or
- If one or two feedwater injection headers are inoperable in MODE 1, 2, or 3, or
- If three AFW trains are inoperable in MODE 1, 2 or 3, but the turbine-driven AFW pump is inoperable solely due to one inoperable steam supply header

When Required Action A.1 ~~{or B.1}~~ cannot be completed within the required Completion Time, or ~~if two AFW trains are inoperable in MODE 1, 2, or 3,~~ the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4 within {18} hours. 4 1

The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems. 4

Condition D is modified by a note that limits the applicability of the condition for three inoperable AFW trains to when the turbine-driven AFW train is inoperable solely due to one inoperable steam supply. In this condition, the status of the turbine-driven AFW train is adequate to support a reduction in operating MODE.

BASES

4 ACTIONS

In MODE 4, with one or two feedwater injection headers inoperable, operation is allowed to continue because the remaining OPERABLE injection header(s) provide a flow path to the SG(s) relied on for decay heat removal. Additionally, in Mode 4, the RHR loops may be used in lieu of or to supplement the SG(s) for decay heat removal consistent with the requirements of LCO 3.4.6, "RCS Loops - MODE 4."

If a motor-driven AFW pump is not available in MODE 4 and the SG(s) are relied on for decay heat removal then Condition F is applicable. However, in MODE 4, two RHR loops may be used for decay heat removal in lieu of the SG(s) consistent with the requirements of LCO 3.4.6, "RCS Loops - MODE 4."

In MODE 4 with two AFW trains inoperable, operation is allowed to continue because only one motor driven pump AFW train is required in accordance with the Note that modifies the LCO. ~~Although not required, the unit may continue to cool down and initiate RHR.~~

~~D.1~~ E.1 1

Condition E is modified by a note that limits the application of the condition for three inoperable AFW trains to when the turbine-driven AFW train is inoperable for reasons other than one inoperable steam supply. In this condition, the status of the turbine-driven AFW train is not adequate to support a reduction in operating MODE.

If all {three} AFW trains or if all three feedwater injection headers 1 are inoperable in MODE 1, 2, or 3, the unit is in a seriously degraded condition with no safety related means for conducting a cooldown, and only limited means for conducting a cooldown with nonsafety related equipment. In such a condition, the unit should not be subjected to a reduction in MODE that could increase the likelihood of the AFW system being required to support heat removal. 6 ~~perturbed by any action, including a power change that might result in a trip.~~ The seriousness of this condition requires that action be started immediately to restore one AFW train with the capability of providing flow to the steam generator(s) 1 to OPERABLE status.

Required Action ~~D.1~~ E.1 is modified by a Note indicating that all required MODE changes ~~or power reductions~~ are suspended until one AFW train is restored to OPERABLE status. In this case, LCO 3.0.3 is not applicable because it could force the unit into a less safe condition. 6

~~E.1~~ F.1

In MODE 4, either the reactor coolant pumps or the RHR loops can be used to provide forced circulation. This is addressed in LCO 3.4.6, "RCS Loops - MODE 4." With one required AFW train or with the required feedwater injection header(s) inoperable, action must be taken to immediately restore the inoperable train to OPERABLE status. The immediate Completion Time is consistent with LCO 3.4.6. 1

Insert 7 6

SURVEILLANCE REQUIREMENTS 6

SR 3.7.5.1

Verifying the correct alignment for manual, power operated, and automatic valves in the AFW System water and steam supply flow paths provides assurance that the proper flow paths will exist for AFW operation. Completing verification includes re-verifying these requirements by a second and independent operator. This SR does not apply to valves that are locked, sealed, or otherwise secured in position, since they are verified to be in the correct position prior to locking, sealing, or securing. This SR also does not apply to valves that cannot be inadvertently misaligned, such as check valves. This Surveillance does not require any testing or valve manipulation; rather, it involves verification that those valves capable of being mispositioned are in the correct position.

The SR is modified by a Note that states one or more AFW trains may be considered OPERABLE during alignment and operation for steam

BASES

SURVEILLANCE REQUIREMENTS (continued)

generator level control, if it is capable of being manually (i.e., remotely or locally, as appropriate) realigned to the AFW mode of operation, provided it is not otherwise inoperable. This exception allows the system to be out of its normal standby alignment and temporarily incapable of automatic initiation without declaring the train(s) inoperable. Since AFW may be used during startup, shutdown, hot standby operations, and hot shutdown operations for steam generator level control, and these manual operations are an accepted function of the AFW System, OPERABILITY (i.e., the intended safety function) continues to be maintained.]

The 31 day Frequency is based on engineering judgment, is consistent with the procedural controls governing valve operation, and ensures correct valve positions.

The term "required developed head" refers to the value that is assumed in the AFW safety analysis for developed head at a flow point. This value for required developed head at a flow point is defined as the Minimum Operating Point (MOP) in the Inservice Testing Program. Flow and differential head are normal test parameters

SR 3.7.5.2

Verifying that each AFW pump's developed head at the flow test point is greater than or equal to the required developed head ensures that AFW pump performance has not degraded during the cycle. ~~Flow and differential head are normal~~ tests of centrifugal pump performance required by Section XI of the ASME Code (Ref 2). Because it is undesirable to introduce cold AFW into the steam generators while they are operating, this testing is performed on recirculation flow. This test confirms one point on the pump design curve and is indicative of overall performance. Such inservice tests confirm component OPERABILITY, trend performance, and detect incipient failures by indicating abnormal performance. Performance of inservice testing ~~discussed~~ in the ASME Code, Section XI (Ref. 2) ~~(only required at 3 month intervals)~~ satisfies this requirement. 6

normally

7

as required

For Unit 1, The recirculation flow rate is assumed to be a fixed value since the recirculation line flow resistance remains constant. For Unit 2, the recirculation flow rate is adjusted to a specific value.

[This SR is modified by a Note indicating that the SR should be deferred until suitable test conditions are established. This deferral is required because there is insufficient steam pressure to perform the test.]

for testing the turbine driven AFW pump

6

SR 3.7.5.3

6

This SR verifies that AFW can be delivered to the appropriate steam generator in the event of any accident or transient that generates an ESFAS, by demonstrating that each automatic valve in the flow path actuates to its correct position on an actual or simulated actuation signal. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. The [18] month Frequency is based on the need to perform this

BASES

10

However, this does not preclude performance of this surveillance at power when it can be accomplished in a safe manner.

SURVEILLANCE REQUIREMENTS (continued)

Surveillance under the conditions that apply during a unit outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. The [18] month Frequency is acceptable based on operating experience and the design reliability of the equipment.

two Notes. Note 1

[The SR is modified by ~~a Note~~ ~~that~~ states one or more AFW trains may be considered OPERABLE during alignment and operation for steam generator level control, if it is capable of being manually (i.e., remotely or locally, as appropriate) realigned to the AFW mode of operation, provided it is not otherwise inoperable. This exception allows the system to be out of its normal standby alignment and temporarily incapable of automatic initiation without declaring the train(s) inoperable. Since AFW may be used during startup, shutdown, hot standby operations, and hot shutdown operations for steam generator level control, and these manual operations are an accepted function of the AFW System, OPERABILITY (i.e., the intended safety function) continues to be maintained.] 9 9

Note 2 indicates the SR is not required to be met in MODE 4 when the steam generator(s) are relied upon for heat removal. In MODE 4, the heat removal requirements are less such that more time is available for operator action to manually initiate AFW if necessary.

8

~~This SR is modified by a Note that states the SR is not required in MODE 4. In MODE 4, the required AFW train is already aligned and operating.~~

SR 3.7.5.4

This SR verifies ~~that~~ the AFW pumps will start in the event of any accident or transient that generates an ESFAS by demonstrating ~~that~~ each AFW pump starts automatically on an actual or simulated actuation ~~signal in MODES 1, 2, and 3. In MODE 4, the required pump is already operating and the autostart function~~ is not required. The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a unit outage and the potential for an unplanned transient ~~if the Surveillance were performed with the reactor at power~~. 7

pump's autostart feature

However, this does not preclude performance of this surveillance at power when it can be accomplished in a safe manner.

10

three Notes.

for testing the turbine driven AFW pump

This SR is modified by ~~[a] [two] Note[s]~~. [Note 1 indicates ~~that~~ the SR be deferred until suitable test conditions are established. This deferral is required because there is insufficient steam pressure to perform the test.] ~~[The~~ Note [2] states that one or more AFW trains may be considered OPERABLE during alignment and operation for steam generator level control, if it is capable of being manually (i.e., remotely or locally, as appropriate) realigned to the AFW mode of operation, provided it is not otherwise inoperable. This exception ~~allow~~ the system to be out of its normal standby alignment and temporarily incapable of automatic initiation without declaring the train(s) inoperable. Since AFW may be 6

7

allows

BASES

Note 3 indicates the SR is not required to be met in MODE 4 when steam generator(s) are relied upon for heat removal. In MODE 4, the heat removal requirements are less such that more time is available for operator action to manually initiate AFW if necessary.

REQUIREMENTS (continued)

used during startup, shutdown, hot standby operations, and hot shutdown operations for steam generator level control, and these manual operations are an accepted function of the AFW System. OPERABILITY (i.e., the intended safety function) continues to be maintained.]

9

[SR 3.7.5.5

cumulative

(WT-TK-10 (Unit 1) and 2FWE-TK210 (Unit 2))

This SR verifies ~~that~~ the AFW is properly aligned by verifying the flow paths from the CST to each steam generator prior to entering MODE 2 after more than 30 days in any combination of MODE 5 or 6 or defueled. OPERABILITY of AFW flow paths must be verified before sufficient core heat is generated that would require the operation of the AFW System during a subsequent shutdown. The Frequency is reasonable, based on engineering judgement and other administrative controls that ensure ~~that~~ flow paths remain OPERABLE. To further ensure AFW System alignment, flow path OPERABILITY is verified following extended outages to determine no misalignment of valves has occurred. This SR ensures ~~that~~ the flow path from the CST to the steam generators is properly aligned.] 7

5

~~REVIEWER'S NOTE~~
~~This SR is not required by those units that use AFW for normal startup and shutdown.~~

REFERENCES 7 U

1. FSAR, Section ~~[10.4.9]~~. 10.3.5.2.2 (Unit 1) and Section 10.4.9 (Unit 2)
2. ASME, Boiler and Pressure Vessel Code, Section XI.

INSERTS FOR ITS 3.7.5 BASES

Auxiliary Feedwater (AFW) System

1. For Unit 1, the turbine-driven AFW pump steam feed lines from each of the three main steam lines combine to form one supply header. The single header then splits into two parallel paths with one Train "A" operated and one Train "B" operated isolation valve on each pathway. The two parallel paths then combine into one header which supplies steam to the turbine driven AFW pump. For Unit 2, the turbine-driven AFW pump steam feed lines from each of the three main steam lines contain two in-line series solenoid operated isolation valves. Downstream of the series isolation valves, the three lines combine to form one main header. The main header then supplies the turbine driven AFW pump. Although the turbine-driven pump in each Unit is capable of receiving the required steam supply from any one of the three main steam lines, only two steam feed lines are required OPERABLE.

   The flow path from the demineralized water storage tank (WT-TK-10 (Unit 1) and 2FWE-TK210 (Unit 2)) to the steam generators consists of individual supply lines to each of the three AFW pumps. Each motor driven AFW pump is connected to its train related supply header. In addition, for Unit 1, each motor driven AFW pump has the ability to be aligned to the opposite train header. The turbine driven pump can also be aligned to either the Train "A" or "B" supply header.

   The Train "A" and "B" supply headers branch out to each steam generator feedwater line via three normally open remotely operated valves arranged in parallel flow paths. The individual Train A and B supply header flow paths are then combined into one common feedwater line injection header for each steam generator. The common feedwater injection headers each contain a check valve. Each common feedwater injection header supplies a separate steam generator via the normal feedwater header downstream of the feedwater isolation valves.

   The steam generators function as a heat sink for core decay heat. The heat load is dissipated by releasing steam to the atmosphere from the steam generators via the main steam safety valves (MSSVs) or atmospheric dump valves (ADVs). If the main condenser is available, steam may be released via the steam dump valves.

2. During a normal plant cooldown, one pump at full flow is sufficient to remove decay heat and cool the unit to residual heat removal (RHR) entry conditions. Thus, the requirement for diversity in motive power sources for the AFW System is met.

3. The limiting Design Basis Accident (DBA) for the AFW System are loss of normal feedwater and feedwater line break.

   For the loss of normal feedwater and feedwater line break, the analyses are performed assuming loss of offsite power coincident with reactor trip. The limiting single active failure is the failure of the turbine-driven AFW pump, which requires both remaining motor-driven AFW pumps to be OPERABLE.

4. Sufficient flow would be delivered to the two intact steam generators by the two remaining

AFW pumps. No pump runout occurs due to the cavitating venturis. Two motor driven pumps or one motor driven pump combined with the turbine driven pump can deliver the design bases flows to the intact steam generators during a FWLB. There are two distinct flows that must be delivered during a FWLB. They are prior to fault isolation (i.e., during the first 15 minutes) and subsequent to fault isolation via operator action. Any two of the three AFW pumps are capable of supplying the flows required prior and subsequent to fault isolation.

The AFW System design is such that it can perform its function following a total loss of normal feedwater. Any two of the three AFW pumps are capable of supplying the required flows to the three intact steam generators during this event.

With one feedwater injection header inoperable, an insufficient number of steam generators are available to meet the feedline break analysis. This analysis assumes AFW flow will be provided to the two remaining intact feedwater lines. Should a feedline break occur on one of the operable feedwater headers with one feedwater injection header already inoperable, the plant could no longer meet its safety analysis.

5. OPERABILITY of the three feedwater trains shall consist of:

   a. One motor driven AFW pump with a flow path from the CST to each feedwater line injection header via the train "A" supply header.

   b. One motor driven AFW pump with a flow path from the CST to each feedwater line injection header via the train "B" supply header.

   c. One turbine driven AFW pump capable of being powered from two steam supplies with a flow path from the CST to each feedwater line injection header via the designated train supply header. Only two out of the three steam supply lines to the turbine driven pump must be operable to provide the required redundancy.

6. With one of the required motor-driven AFW trains (pump or flow path) inoperable in MODE 1, 2 or 3, and the turbine driven AFW train inoperable due to one inoperable steam supply in MODE 1, 2 or 3, action must be taken to restore the affected equipment to OPERABLE status within 24 hours. In this condition, the AFW system may no longer be able to meet the required flow to the SGs assumed in the safety analysis (i.e., from two AFW pumps). Even assuming no further single active failures when in this Condition, the accident (a FLB or MSLB) could result in the loss of the remaining steam supply to the turbine driven AFW pump. Therefore, only a single OPERABLE AFW pump may be left to mitigate the accident.

   The 24-hour Completion Time is reasonable, based on the redundant OPERABLE steam supply to the turbine-driven AFW pump, the availability of the remaining OPERABLE motor driven AFW pump, and the low probability of an event occurring that would require the inoperable steam supply to be available for the turbine-driven AFW pump.

7. For the following AFW SRs, constant communications shall be established and maintained between the control room and the auxiliary feed pump room while any normal AFW pump discharge valve is closed during surveillance testing.

8. (From TSTF-359)

-REVIEWER'S NOTE-

The LCO 3.0.4.b Note prohibits application of the LCO 3.0.4.b exception when entering MODE 1 if the plant does not depend on AFW for startup. If the plant does depend on AFW for startup, the Note should state, "LCO 3.0.4.b is not applicable."

A Note prohibits the application of LCO 3.0.4.b to an inoperable AFW train~~{~~when entering MODE 1~~}~~. There is an increased risk associated with ~~{entering a MODE or other specified condition in the Applicability}~~ ~~{~~entering MODE 1~~}~~ with an AFW train inoperable and the provisions of LCO 3.0.4.b, which allow entry into a MODE or other specified condition in the Applicability with the LCO not met after performance of a risk assessment addressing inoperable systems and components, should not be applied in this circumstance.

B 3.7 PLANT SYSTEMS

B 3.7.6 Condensate Storage Tank (CST)

BASES

, which is commonly referred to as the Primary Plant Demineralized Water (PPDW) storage tank,

1

BACKGROUND

The CST provides a safety grade source of water to the steam generators for removing decay and sensible heat from the Reactor Coolant System (RCS). The CST provides a passive flow of water, by gravity, to the Auxiliary Feedwater (AFW) System (LCO 3.7.5). The steam produced is released to the atmosphere by the main steam safety valves or the atmospheric dump valves. The AFW pumps operate with ~~a continuous~~ recirculation to the CST to ensure a minimum pump flow is maintained.

~~When the main steam isolation valves are open, the preferred means of heat removal is to discharge steam to the condenser by the nonsafety grade path of the steam bypass valves. The condensed steam is returned to the CST by the condensate transfer pump. This has the advantage of conserving condensate while minimizing releases to the environment.~~

2

Because the CST is a principal component in removing residual heat from the RCS, it is designed to withstand earthquakes and other natural phenomena, including missiles that might be generated by natural phenomena. The CST is designed to Seismic Category I to ensure availability of the feedwater supply. Feedwater is also available from alternate sources.

1

A description of the CST is found in the U FSAR, Section ~~[9.2.6]~~ 10.3.5.2.2 (Unit 1) and Section 10.4.9 (Unit 2) (Ref. 1).

APPLICABLE SAFETY ANALYSES

2

Insert 1

~~The CST provides cooling water to remove decay heat and to cool down the unit following all events in the accident analysis as discussed in the FSAR, Chapters [6] and [15] (Refs. 2 and 3, respectively). For anticipated operational occurrences and accidents that do not affect the OPERABILITY of the steam generators, the analysis assumption is generally 30 minutes at MODE 3, steaming through the MSSVs, followed by a cooldown to residual heat removal (RHR) entry conditions at the design cooldown rate.~~

~~The limiting event for the condensate volume is the large feedwater line break coincident with a loss of offsite power. Single failures that also affect this event include the following:~~

~~a. Failure of the diesel generator powering the motor driven AFW pump to the unaffected steam generator (requiring additional steam to drive the remaining AFW pump turbine) and~~

BASES

APPLICABLE SAFETY ANALYSES (continued)

b. Failure of the steam driven AFW pump (requiring a longer time for cooldown using only one motor driven AFW pump).

These are not usually the limiting failures in terms of consequences for these events.

A nonlimiting event considered in CST inventory determinations is a break in either the main feedwater or AFW line near where the two join. This break has the potential for dumping condensate until terminated by operator action, since the Emergency Feedwater Actuation System would not detect a difference in pressure between the steam generators for this break location. This loss of condensate inventory is partially compensated for by the retention of steam generator inventory.

2 Criterion

The CST satisfies ~~Criteria 2 and~~ 3 of 10 CFR 50.36(c)(2)(ii).

LCO

To satisfy accident analysis assumptions, the CST must contain sufficient cooling water to remove decay heat for [30 minutes] following a reactor trip from 102% RTP, and then to cool down the RCS to RHR entry conditions, assuming a coincident loss of offsite power and the most adverse single failure. In doing this, it must retain sufficient water to ensure adequate net positive suction head for the AFW pumps during cooldown, as well as account for any losses from the steam driven AFW pump turbine, or before isolating AFW to a broken line.

2

CTS value

2 ≥ 130,000 gallons

maintaining the unit in MODE 3 for 9 hours with steam discharge to the atmosphere and with no reactor coolant pumps in operation following a LOOP and subsequent reactor trip from full power.

The CST level required is equivalent to a usable volume of ~~≥ [110,000 gallons]~~, which is based on ~~holding the unit in MODE 3 for [2] hours, followed by a cooldown to RHR entry conditions at [75]°F/hour. This basis is established in Reference 4 and exceeds the volume required by the accident analysis~~.

The OPERABILITY of the CST is determined by maintaining the tank level at or above the minimum required level.

APPLICABILITY

In MODES 1, 2, and 3, and in MODE 4, when steam generator is being relied upon for heat removal, the CST is required to be OPERABLE.

In MODE 5 or 6, the CST is not required because the AFW System is not required.

BASES

ACTIONS

A.1 and A.2

(i.e., River/Service Water Systems)

2

If the CST is not OPERABLE, the OPERABIL[...]
should be verified by administrative means within 4 hours and once every 12 hours thereafter. OPERABILITY of the backup ~~feed~~water supply must include verification that the flow paths from the backup water supply to the AFW pumps are OPERABLE~~, and that the backup supply has the required volume of water available~~. The CST must be restored to OPERABLE status within 7 days, because the backup supply may be performing this function in addition to its normal functions. The 4 hour Completion Time is reasonable, based on operating experience, to verify the OPERABILITY of the backup water supply. Additionally, verifying the backup water supply every 12 hours is adequate to ensure the backup water supply continues to be available. The 7 day Completion Time is reasonable, based on an OPERABLE backup water supply being available, and the low probability of an event occurring during this time period requiring the CST.

B.1 and B.2

If the CST cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4, without reliance on the steam generator for heat removal, within [24] hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.6.1

usable

This SR verifies ~~that~~ the CST contains the required volume of cooling water. ~~(The required CST volume may be single value or a function of RCS conditions.)~~ The 12 hour Frequency is based on operating experience and the need for operator awareness of unit evolutions that may affect the CST inventory between checks. Also, the 12 hour Frequency is considered adequate in view of other indications in the control room, including alarms, to alert the operator to abnormal deviations in the CST level.

1

REFERENCES

10.3.5.2.2 (Unit 1) and Section 10.4.9 (Unit 2)

U

1. FSAR, Section ~~[9.2.6]~~.

~~2. FSAR, Chapter [6].~~

1

BASES

REFERENCES (continued)

3. ~~FSAR, Chapter [15].~~

INSERTS FOR ITS 3.7.6 BASES

Condensate Storage Tank (CST)

1. The Auxiliary Feedwater Pumps are normally aligned to take suction from the CST. The CST provides cooling water to remove decay heat and to cool down the unit. Since the Engineered Safety Feature (ESF) design function requires that sufficient feedwater be available during transient and accident conditions to place the unit in a safe shutdown condition, the limiting event for the condensate volume is a loss of offsite power (LOOP) transient. In the event of a LOOP and subsequent reactor trip from full power, the CST inventory must be available to maintain the unit in MODE 3 for 9 hours with steam discharge to the atmosphere and with no reactor coolant pumps in operation. The minimum usable volume conservatively bounds the analysis value. The minimum usable volume may be appropriately increased to account for measurement uncertainties.

B 3.7 PLANT SYSTEMS

B 3.7.7 Component Cooling Water (CCW) System

BASES

2 , which is commonly referred to as the Primary Component Cooling Water System for Unit 2,

normal operation.

BACKGROUND

The CCW System provides a heat sink for the removal of process and operating heat from ~~safety related~~ components during ~~a Design Basis Accident (DBA) or transient. During normal operation, the CCW System also provides this function for various nonessential components, as well as the spent fuel storage pool.~~ The CCW System serves as a barrier to the release of radioactive byproducts between potentially radioactive systems and the Service Water System, and thus to the environment. 3

3 Insert 1

~~A typical CCW System is arranged as two independent, full capacity cooling loops, and has isolatable nonsafety related components. Each safety related train includes a full capacity pump, surge tank, heat exchanger, piping, valves, and instrumentation. Each safety related train is powered from a separate bus. An open surge tank in the system provides pump trip protective functions to ensure that sufficient net positive suction head is available. The pump in each train is automatically started on receipt of a safety injection signal, and all nonessential components are isolated.~~

~~Additional information on the design and operation of the system, along with a list of the components served, is presented in the FSAR, Section [9.2.2] (Ref. 1). The principal safety related function of the CCW System is the removal of decay heat from the reactor via the Residual Heat Removal (RHR) System. This may be during a normal or post accident cooldown and shutdown.~~

APPLICABLE SAFETY ANALYSES

3 Insert 2

~~The design basis of the CCW System is for one CCW train to remove the post loss of coolant accident (LOCA) heat load from the containment sump during the recirculation phase, with a maximum CCW temperature of [120]°F (Ref. 2). The Emergency Core Cooling System (ECCS) LOCA and containment OPERABILITY LOCA each model the maximum and minimum performance of the CCW System, respectively. The normal temperature of the CCW is [80]°F, and, during unit cooldown to MODE 5 (T_{cold} < [200]°F), a maximum temperature of 95°F is assumed. This prevents the containment sump fluid from increasing in temperature during the recirculation phase following a LOCA, and provides a gradual reduction in the temperature of this fluid as it is supplied to the Reactor Coolant System (RCS) by the ECCS pumps.~~

BASES

APPLICABLE SAFETY ANALYSES (continued)

~~The CCW System is designed to perform its function with a single failure of any active component, assuming a loss of offsite power.~~

~~The CCW System also functions to cool the unit from RHR entry conditions (T_{cold} < [350]°F), to MODE 5 (T_{cold} ≤ [200]°F), during normal and post accident operations. The time required to cool from [350]°F to [200]°F is a function of the number of CCW and RHR trains operating. One CCW train is sufficient to remove decay heat during subsequent operations with T_{cold} ≤ [200]°F. This assumes a maximum service water temperature of [95]°F occurring simultaneously with the maximum heat loads on the system.~~

~~The CCW System satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).~~

3

LCO

The CCW trains are independent of each other to the degree that each has separate controls and power supplies ~~and the operation of one does not depend on the other. In the event of a DBA, one CCW train is required to provide the minimum heat removal capability assumed in the safety analysis for the systems to which it supplies cooling water. To ensure this requirement is met~~ Should the need arise to cooldown the unit, two trains of CCW must be OPERABLE. At least one CCW train will operate assuming the worst case single active failure occurs coincident with a loss of offsite power.

3

A CCW train is considered OPERABLE when:

a. The pump and associated surge tank are OPERABLE and

b. The associated piping, valves, heat exchanger, and instrumentation and controls required to perform the ~~safety related~~ required function are OPERABLE.

~~The isolation of CCW from other components or systems not required for safety may render those components or systems inoperable but does not affect the OPERABILITY of the CCW System.~~

Each CCW train is considered OPERABLE if it is operating or if it can be placed in service manually.

3

APPLICABILITY

In MODES 1, 2, 3, and 4, the CCW System is a normally operating ~~system, which must be prepared to perform its post accident safety functions, primarily RCS heat removal,~~ system. In MODE 4, the CCW System must be prepared to perform its RCS heat removal function, which is achieved by cooling the RHR heat exchanger.

3

In MODE 5 or 6, the OPERABILITY requirements of the CCW System are determined by the systems it supports.

BASES

ACTIONS

2

As long as adequate CCW flow to support the required decay heat removal function of the RHR loop is available, an inoperable CCW train does not result in an inoperable RHR loop.

A.1

Required Action A.1 is modified by a Note indicating that the applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops - MODE 4," be entered if an inoperable CCW train results in an inoperable RHR loop. This is an exception to LCO 3.0.6 and ensures the proper actions are taken for these components.

it to — 2

If one CCW train is inoperable, action must be taken to restore OPERABLE status within 72 hours. In this Condition, the remaining OPERABLE CCW train is adequate to perform the heat removal function. The 72 hour Completion Time is reasonable~~,~~ based on the redundant capabilities afforded by the OPERABLE train~~, and the low probability of a DBA occurring during this period~~. — 3

B.1 and B.2

4

Insert 3

If the CCW train cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours and in MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

to the RHR heat exchangers — 3

SURVEILLANCE REQUIREMENTS

SR 3.7.7.1

This SR is modified by a Note indicating ~~that~~ the isolation of the CCW flow to individual components may render those components inoperable but does not affect the OPERABILITY of the CCW System.

Verifying the correct alignment for manual, power operated, and automatic valves in the CCW flow path provides assurance ~~that~~ the proper flow paths exist for CCW operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position, since these valves are verified to be in the correct position prior to locking, sealing, or securing. This SR also does not apply to valves that cannot be inadvertently misaligned, such as check valves. This Surveillance does not require any testing or valve manipulation; rather, it involves verification that those valves capable of being mispositioned are in the correct position.

BASES

SURVEILLANCE REQUIREMENTS (continued)

The 31 day Frequency is based on engineering judgment, is consistent with the procedural controls governing valve operation, and ensures correct valve positions.

1

SR 3.7.7.2

This SR verifies proper automatic operation of the CCW valves on an actual or simulated actuation signal. The CCW System is a normally operating system that cannot be fully actuated as part of routine testing during normal operation. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a unit outage and the potential for an unplanned transient if the Surveillance were 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 is acceptable from a reliability standpoint.

SR 3.7.7.3

This SR verifies proper automatic operation of the CCW pumps on an actual or simulated actuation signal. The CCW System is a normally operating system that cannot be fully actuated as part of routine testing during normal operation. The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a unit outage and the potential for an unplanned transient if the Surveillance were 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 is acceptable from a reliability standpoint.

REFERENCES

2 U 1. FSAR, Section ~~[9.2.2]~~. 9.4 (Unit 1) and Section 9.2.2.1 (Unit 2) 2

~~2. FSAR, Section [6.2].~~

INSERTS FOR ITS 3.7.7 BASES

Component Cooling Water (CCW) System

1. The CCW System consists of two 100% capacity, cooling water trains. Each train shares common piping headers and may be cross-tied during normal operation. The CCW System consists of three 100% capacity pumps, heat exchangers, and associated surge tank (Unit 1 utilizes one surge tank common for both trains). UFSAR, Section 9.4 (Unit 1) and Section 9.2.2.1 (Unit 2) (Ref. 1) lists the required flows for the various equipment cooled by the CCW System. The largest primary CCW heat load occurs during unit cooldown when the Residual Heat Removal (RHR) System is initially placed in operation. With the service water temperature at its maximum limit, two CCW pumps and two CCW heat exchangers can transfer the design heat loads from all components served. During most operating conditions, however, only one CCW pump is necessary to transfer the heat loads. One CCW pump motor is powered from one of the two emergency 4,160 V switchgear buses and a second CCW pump motor is powered from the other bus. The third CCW pump motor, which is not normally connected to either of the buses can be manually connected to either. Additional information on the design and operation of the CCW System, along with a list of the components served, is presented in Reference 1.

2. The CCW System serves no design basis accident (DBA) loss of coolant accident (LOCA) mitigation function and is not a system which functions to mitigate the failure of or presents a challenge to the integrity of a fission product barrier. The CCW System has redundant components to ensure performance of the cooling function in the event of a single failure. The principal function of the CCW System is the removal of decay heat from the reactor via the RHR System. The RHR System does not perform a DBA mitigation function. The CCW System is not required in short term accident scenarios to provide cooling water to mitigate the consequences of design basis accidents. The CCW System, however, is used to supply the RHR heat exchangers, in long term design basis accident scenarios, with cooling water to cool the unit from RHR entry conditions to Cold Shutdown. The time required for cooldown is a function of the number of CCW and RHR trains operating, the auxiliary CCW System heat loads (other than RHR), and the service water temperature. The CCW System has been identified in the probabilistic safety assessment as significant to public health and safety.

   The CCW System satisfies Criterion 4 of 10 CFR 50.36 (c) (2) (ii).

3. <u>C.1 and C.2</u>

Condition C applies to two inoperable CCW trains. Condition C is modified by a Note that states the Condition is only applicable in MODE 4 with inadequate CCW flow to the RHR heat exchangers to support the required decay heat removal needed to maintain the unit in MODE 5. In addition, the Actions are modified by a Note that states LCO 3.0.3 and all other LCO Actions requiring a MODE change from MODE 4 to MODE 5 are suspended until adequate CCW flow to the RHR heat exchangers is established to maintain the unit in MODE 5.

With two inoperable CCW trains, LCO 3.0.3 would be applicable in MODES 1-3 and result in the plant being placed in MODE 4. However, without adequate RHR decay heat removal capability, transitioning to MODE 5 from MODE 4 in accordance with LCO 3.0.3 may not be possible. In this case, Condition C would be applicable in MODE 4 and would replace LCO 3.0.3 for two inoperable CCW trains. Condition C provides more appropriate Actions than LCO 3.0.3 for reaching MODE 5 when the required RHR cooling capacity is not available. If adequate RHR decay heat removal capability is available to transition from MODE 4 to MODE 5, Condition C would not be applicable and the requirements of LCO 3.0.3 would be applied until the plant reached MODE 5.

With two CCW trains inoperable and inadequate CCW flow to the RHR heat exchangers to support the required decay heat removal function, action must be initiated immediately to implement alternative means to cool the unit. In addition, action must also be initiated immediately to place the unit in MODE 5 where the LCO does not apply. The allowed Completion Times are reasonable, considering the required decay heat removal capacity to maintain the unit in MODE 5 is not available and the other systems available in MODE 4 to safely remove decay heat until adequate cooling capacity is restored to place and maintain the unit in MODE 5.

B 3.7 PLANT SYSTEMS

B 3.7.8 Service Water System (SWS)

BASES

, which is commonly referred to as the Reactor Plant River Water System for Unit 1, 2

BACKGROUND

The SWS provides a heat sink for the removal of process and operating heat from safety related components during a Design Basis Accident (DBA) or transient. During normal operation, and a normal shutdown, the SWS also provides this function for various safety related and nonsafety related components. The safety related function is covered by this LCO.

3 Insert 1

The SWS consists of two separate, 100% capacity, safety related, cooling water trains. Each train consists of two 100% capacity pumps, one component cooling water (CCW) heat exchanger, piping, valving, instrumentation, and two cyclone separators. The pumps and valves are remote and manually aligned, except in the unlikely event of a loss of coolant accident (LOCA). The pumps aligned to the critical loops are automatically started upon receipt of a safety injection signal, and all essential valves are aligned to their post accident positions. The SWS also provides emergency makeup to the spent fuel pool and CCW System [and is the backup water supply to the Auxiliary Feedwater System].

2 U

9.9 (Unit 1) and Section 9.2.1 (Unit 2)

Additional information about the design and operation of the SWS, along with a list of the components served, is presented in the FSAR, Section ~~[9.2.1]~~ (Ref. 1). ~~The principal safety related function of the SWS is the removal of decay heat from the reactor via the CCW System.~~ 3

APPLICABLE SAFETY ANALYSES

3 Insert 2

The design basis of the SWS is for one SWS train, in conjunction with the CCW System and a 100% capacity containment cooling system, to remove core decay heat following a design basis LOCA as discussed in the FSAR, Section [6.2] (Ref. 2). This prevents the containment sump fluid from increasing in temperature during the recirculation phase following a LOCA and provides for a gradual reduction in the temperature of this fluid as it is supplied to the Reactor Coolant System by the ECCS pumps. The SWS is designed to perform its function with a single failure of any active component, assuming the loss of offsite power.

The SWS, in conjunction with the CCW System, also cools the unit from residual heat removal (RHR), as discussed in the FSAR, Section [5.4.7], (Ref. 3) entry conditions to MODE 5 during normal and post accident operations. The time required for this evolution is a function of the number of CCW and RHR System trains that are operating. One SWS train is sufficient to remove decay heat during subsequent operations in

APPLICABLE SAFETY ANALYSES (continued)

3

MODES 5 and 6. ~~This assumes a maximum SWS temperature of [95]°F occurring simultaneously with maximum heat loads on the system.~~

The SWS satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

Two SWS trains are required to be OPERABLE to provide the required redundancy to ensure ~~that~~ the system functions to remove post accident heat loads, assuming ~~that~~ the worst case single active failure occurs coincident with the loss of offsite power.

An SWS train is considered OPERABLE during MODES 1, 2, 3, and 4 when:

3

a. The pump is OPERABLE and

b. The associated piping, valves, ~~heat exchanger,~~ and instrumentation and controls required to perform the safety related function are OPERABLE.

APPLICABILITY

In MODES 1, 2, 3, and 4, the SWS is a normally operating system that is required to support the OPERABILITY of the equipment serviced by the SWS and required to be OPERABLE in these MODES.

In MODES 5 and 6, the OPERABILITY requirements of the SWS are determined by the systems it supports.

ACTIONS

A.1

it to

2

If one SWS train is inoperable, action must be taken to restore OPERABLE status within 72 hours. In this Condition, the remaining OPERABLE SWS train is adequate to perform the heat removal function. However, the overall reliability is reduced because a single failure in the OPERABLE SWS train could result in loss of SWS function. Required Action A.1 is modified by two Notes. The first Note indicates that the applicable Conditions and Required Actions of LCO 3.8.1, "AC Sources - Operating," should be entered if an inoperable SWS train results in an inoperable emergency diesel generator. The second Note indicates that the applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops - MODE 4," should be entered if an inoperable SWS train results in an inoperable decay heat removal train. This is an exception to LCO 3.0.6 and ensures the proper actions are taken for these components. The 72 hour Completion Time is based on the redundant

3

As long as adequate SWS flow to support the required heat removal function for the RHR system or the emergency diesel generator is available, an inoperable SWS train does not result in an inoperable emergency diesel generator or RHR loop.

BASES

ACTIONS (continued)

capabilities afforded by the OPERABLE train, and the low probability of a DBA occurring during this time period.

B.1 and B.2

If the SWS train cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours and in MODE 5 within 36 hours.

5

INSERT 3

The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.8.1

This SR is modified by a Note indicating that the isolation of the SWS components or systems may render those components inoperable, but does not affect the OPERABILITY of the SWS.

Verifying the correct alignment for manual, power operated, and automatic valves in the SWS flow path provides assurance that the proper flow paths exist for SWS operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position, since they are verified to be in the correct position prior to being locked, sealed, or secured. This SR does not require any testing or valve manipulation; rather, it involves verification that those valves capable of being mispositioned are in the correct position. This SR does not apply to valves that cannot be inadvertently misaligned, such as check valves.

The 31 day Frequency is based on engineering judgment, is consistent with the procedural controls governing valve operation, and ensures correct valve positions.

SR 3.7.8.2

This SR verifies proper automatic operation of the SWS valves on an actual or simulated actuation signal. The SWS is a normally operating system that cannot be fully actuated as part of normal testing. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls.

4

~~The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a unit outage and the~~

BASES

SURVEILLANCE REQUIREMENTS (continued)

4 ~~potential for an unplanned transient if the Surveillance were 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 is acceptable from a reliability standpoint. 2 1

SR 3.7.8.3

This SR verifies proper automatic operation of the SWS pumps on an actual or simulated actuation signal. The SWS is a normally operating system that cannot be fully actuated as part of normal testing during normal operation. ~~The [18] month Frequency is based on the need to perform this Surveillance under the conditions that apply during a unit outage and the potential for an unplanned transient if the Surveillance were 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 is acceptable from a reliability standpoint. 4 2 1

REFERENCES U

1. FSAR, Section ~~[9.2.1]~~. 9.9 (Unit 1) and Section 9.2.1 (Unit 2) 2
2. FSAR, Section ~~[6.2]~~. 9.3 (Unit 1) and Section 5.4.7 (Unit 2)
~~3. FSAR, Section [5.4.7].~~

INSERTS FOR ITS 3.7.8 BASES

Service Water System (SWS)

1. The SWS consists of two 100% capacity, safety related, cooling water trains. There are three 100% capacity main SWS pumps capable of taking suction from the Ohio River at the intake structure supplying the two trains. For Unit 1, one SWS pump is normally operated to supply the quantity of water needed for the essential cooling requirements for all operating conditions. For Unit 2, two SWS pumps are normally operated concurrently to supply the quantity of water needed for the essential cooling requirements for all operating conditions. One SWS pump motor is powered from one of the two emergency 4,160 V switchgear buses and a second SWS pump motor is powered from the other bus. The third SWS pump motor, which is not normally connected to either of the buses can be manually connected to either. The SWS provides cooling water to such loads as the diesel generator cooling system heat exchangers, the Recirculation Spray System heat exchangers, control room emergency cooling coils, charging pump lube oil coolers, and component cooling water heat exchangers. In addition, the SWS provides a source of emergency makeup water to the Auxiliary Feedwater System. Only one of three SWS pumps is needed to provide the cooling for the minimum number of components required for safe shutdown following a DBA. In the event of a DBA or transient, initiating a containment isolation phase B signal, the SWS is designed to supply sufficient cooling water to safely shutdown the unit, assuming any single active component failure coincident with a LOOP.

2. The design basis of the SWS is for one SWS train to provide cooling to safety related components, required for safe shutdown, following a DBA. These components are listed in Reference 1. The SWS is designed to perform its function with a single failure of any active component, assuming a loss of offsite power. The SWS, in conjunction with the CCW System, also cools the unit from residual heat removal (RHR) entry conditions to Cold Shutdown during normal and post accident operations (Reference 2). The time required for this evolution is a function of the number of CCW and RHR System trains that are operating.

3. C.1 and C.2

Condition C applies to two inoperable SWS trains. Condition C is modified by a Note that states the Condition is only applicable in MODE 4 with inadequate SWS flow to the CCW heat exchangers to support the required decay heat removal needed to maintain the unit in MODE 5. In addition, the Actions are modified by a Note that states LCO 3.0.3 and all other LCO Actions requiring a MODE change from MODE 4 to MODE 5 are suspended until adequate SWS flow to the CCW heat exchangers is established to maintain the unit in MODE 5.

With two inoperable SWS trains, LCO 3.0.3 would be applicable in MODES 1-3 and result in the plant being placed in MODE 4. However, without adequate RHR decay heat removal capability, transitioning to MODE 5 from MODE 4 in accordance with LCO 3.0.3 may not be possible. In this case, Condition C would be applicable in MODE 4 and would replace LCO 3.0.3 for two inoperable SWS trains. Condition C provides more appropriate

Actions than LCO 3.0.3 for reaching MODE 5 when the required RHR cooling capacity is not available. If adequate RHR decay heat removal capability is available to transition from MODE 4 to MODE 5, Condition C would not be applicable and the requirements of LCO 3.0.3 would be applied until the plant reached MODE 5.

With two SWS trains inoperable and inadequate SWS flow to the CCW heat exchangers to support the required decay heat removal function by the RHR System, action must be initiated immediately to implement alternative means to cool the unit. In addition, action must also be initiated immediately to place the unit in MODE 5 where the LCO does not apply. The allowed Completion Times are reasonable, considering the required decay heat removal capacity to maintain the unit in MODE 5 is not available and the other systems available in MODE 4 to safely remove decay heat until adequate cooling capacity is restored to place and maintain the unit in MODE 5.

B 3.7 PLANT SYSTEMS

B 3.7.9 Ultimate Heat Sink (UHS)

(SWS), which is commonly referred to as the Reactor Plant River Water System for Unit 1. SWS, as used throughout this Bases, applies to both the Unit 2 Service Water System and the Unit 1 Reactor Plant River Water System.

BASES

BACKGROUND

2

The UHS provides a heat sink for processing and operating heat from safety related components during a transient or accident, as well as during normal operation. This is done by utilizing the Service Water System (SWS) ~~and the Component Cooling Water (CCW) System.~~

The UHS for BVPS is the Ohio River as discussed in UFSAR, Section 9.9 (Unit 1) and Section 9.2.5 (Unit 2) (Ref. 1).

~~The UHS has been defined as that complex of water sources, including necessary retaining structures (e.g., a pond with its dam, or a river with its dam), and the canals or conduits connecting the sources with, but not including, the cooling water system intake structures as discussed in the FSAR, Section [9.2.5] (Ref. 1). If cooling towers or portions thereof are required to accomplish the UHS safety functions, they should meet the same requirements as the sink.~~ The two principal functions of the UHS are the dissipation of residual heat after reactor shutdown, and dissipation of residual heat after an accident.

~~A variety of complexes is used to meet the requirements for a UHS. A lake or an ocean may qualify as a single source. If the complex includes a water source contained by a structure, it is likely that a second source will be required.~~

~~The basic performance requirements are that a 30 day supply of water be available, and that the design basis temperatures of safety related equipment not be exceeded. Basins of cooling towers generally include less than a 30 day supply of water, typically 7 days or less. A 30 day supply would be dependent on other source(s) and makeup system(s) for replenishing the source in the cooling tower basin. For smaller basin sources, which may be as small as a 1 day supply, the systems for replenishing the basin and the backup source(s) become of sufficient importance that the makeup system itself may be required to meet the same design criteria as an Engineered Safety Feature (e.g., single failure considerations), and multiple makeup water sources may be required.~~

The UHS and the SWS have interfaces at the SWS intake structure and the outfall structure. The SWS inlet water temperature is unaffected by the SWS heat loads, because the outfall structure is located sufficiently downstream of the intake structures to prevent recirculation. Therefore, SWS temperatures (at the intake structure or inlet header piping) can be used to verify the required UHS temperature. The basic performance requirements are that a 30 day supply of water be available, and that the design basis temperatures of safety related equipment not be exceeded.

Additional information on the design and operation of the system, along with a list of components served, can be found in Reference 1.

2

BASES

APPLICABLE SAFETY ANALYSES

2

The UHS is the sink for heat removed from the reactor core following all accidents and anticipated operational occurrences in which the unit is cooled down and placed on residual heat removal (RHR) operation. ~~For units that use UHS as the normal heat sink for condenser cooling via the Circulating Water System, unit operation at full power is its maximum heat load. Its maximum post accident heat load occurs 20 minutes after a design basis loss of coolant accident (LOCA). Near this time, the unit switches from injection to recirculation and the containment cooling systems and RHR are required to remove the core decay heat.~~

2

The operating limits are based on conservative heat transfer analyses for the worst case LOCA. Reference 1 provides the details of the assumptions used in the analysis, which include worst expected meteorological conditions, conservative uncertainties when calculating *decay heat, and worst case single active failure (e.g., single failure of a* manmade structure). The UHS is designed in accordance with Regulatory Guide 1.27 (Ref. 2), which requires a 30 day supply of cooling water in the UHS.

as addressed in the UFSAR

The UHS satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

at the intake structure

2

LCO

3

Is capable of providing

The UHS is required to be OPERABLE and is considered OPERABLE if it ~~contains~~ a sufficient volume of water at or below the maximum temperature that would allow the SWS to operate for at least 30 days following the design basis LOCA without the loss of net positive suction head (NPSH), and without exceeding the maximum design temperature of the equipment served by the SWS. To meet this condition, the UHS temperature should not exceed ~~[90°F]~~ and the level should not fall below ~~[562~~ ft mean sea level~~]~~ during normal unit operation.

3

average

90 °F (Unit 1) and
89 °F (Unit 2)

CTS Values

654

CTS Value

APPLICABILITY

In MODES 1, 2, 3, and 4, the UHS is required to support the OPERABILITY of the equipment serviced by the UHS and required to be OPERABLE in these MODES.

In MODE 5 or 6, the OPERABILITY requirements of the UHS are determined by the systems it supports.

ACTIONS

1

~~[A.1~~

~~If one or more cooling towers have one fan inoperable (i.e., up to one fan per cooling tower inoperable), action must be taken to restore the inoperable cooling tower fan(s) to OPERABLE status within 7 days.~~

BASES

ACTIONS (continued)

1

The ~~7 day~~ Completion Time is reasonable based on the low ~~probability of~~ an accident occurring ~~during~~ the 7 days that ~~one cooling~~ tower fan is inoperable (in one or more cooling ~~towers~~), the number of available systems, and the ~~time required~~ to reasonably ~~complete the~~ Required Action.]

A

[B.1

is not met and Action must be taken to monitor the UHS temperature more frequently and evaluate the average temperature over the previous 24 hours.

- REVIEWER'S NOTE -
The [ ]°F is the maximum ~~allowed~~ UHS ~~temperature~~ value and is based on temperature limitations ~~of the equipment that~~ is relied upon for accident mitigation ~~and~~ safe shutdown of the unit.

the limit

With water temperature of the UHS > ~~[90]°F~~, the design basis assumption associated with initial UHS temperature ~~are bounded provided the temperature of the UHS averaged over the previous 24 hour period is ≤ [90]°F~~. With the water temperature of the UHS > ~~[90]°F~~, long term cooling capability of the ECCS loads and DGs may be affected. Therefore, to ensure long term cooling capability is provided to the ECCS loads when water temperature of the UHS is > ~~[90]°F~~, Required Action B.1 is provided to more frequently monitor the water temperature of the UHS and verify the temperature is ≤ ~~[90]°F~~ when averaged over the previous 24 hour period. The once per hour Completion ~~Time takes~~ into consideration UHS temperature ~~variations~~ and the increased monitoring frequency needed to ensure design basis assumptions and equipment limitations are not exceeded in this condition. If the water temperature of the UHS exceeds ~~[90]°F~~ when averaged over the previous 24 hour period ~~or the water temperature of the UHS exceeds [ ]°F~~, Condition ~~C~~ must be entered immediately.]

A

1

for an extended time

B

the limit

B

[~~C~~.1 and ~~C~~.2

1

If the Required Actions and Completion Times of Condition ~~[~~A ~~or B]~~ are not met, or the UHS is inoperable for reasons other than Condition A, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours and in MODE 5 within 36 hours.

The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.]

BASES

SURVEILLANCE REQUIREMENTS

CTS Value

654

SR 3.7.9.1

This SR verifies ~~that~~ adequate long term (30 day) cooling can be maintained. The specified level also ensures ~~that~~ sufficient NPSH is available to operate the SWS pumps. The [24] hour Frequency is based on operating experience related to trending of the parameter variations during the applicable MODES. This SR verifies ~~that~~ the UHS water level is ≥ ~~[562]~~ ft [mean sea level] ~~[~~ at the intake structure. 2

[SR 3.7.9.2

CTS Values

≤ 90 °F (Unit 1) and ≤ 89 °F (Unit 2). The UHS temperature can be determined from SWS temperature indicators at the intake structure or on inlet piping headers.

This SR verifies ~~that~~ the SWS is available to cool the required loads during ~~the CCW System to at least its maximum design temperature with the~~ maximum accident or normal design heat loads for 30 days following a Design Basis Accident. The 24 hour Frequency is based on operating experience related to trending of the parameter variations during the applicable MODES. This SR verifies ~~that~~ the average water temperature of the UHS is ~~≤ [90°F].]~~ 3

~~[SR 3.7.9.3~~

~~Operating each cooling tower fan for ≥ [15] minutes ensures that all fans are OPERABLE and that all associated controls are functioning properly. It also ensures that fan or motor failure, or excessive vibration, can be detected for corrective action. The 31 day Frequency is based on operating experience, the known reliability of the fan units, the redundancy available, and the low probability of significant degradation of the UHS cooling tower fans occurring between surveillances.]~~ 1

~~[SR 3.7.9.4~~

~~This SR verifies that each cooling tower fan starts and operates on an actual or simulated actuation signal. The [18] month Frequency is consistent with the typical refueling cycle. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint.]~~

REFERENCES

1. U FSAR, Section ~~[9.2.5]~~ 9.9 (Unit 1) and Section 9.2.5 (Unit 2). 3
2. Regulatory Guide 1.27 (Unit 2) and Safety Guide 27 (Unit 1).

Ventilation CREVS

B 3.7 PLANT SYSTEMS

B 3.7.10 Control Room Emergency ~~Filtration~~ System (~~CREFS~~)

BASES

BACKGROUND

1

Insert 1

The CREFS provides a protected environment from which operators can control the unit following an uncontrolled release of radioactivity[, chemicals, or toxic gas].

The CREFS consists of two independent, redundant trains that recirculate and filter the control room air. Each train consists of a prefilter or demister, a high efficiency particulate air (HEPA) filter, an activated charcoal adsorber section for removal of gaseous activity (principally iodines), and a fan. Ductwork, valves or dampers, and instrumentation also form part of the system, as well as demisters to remove water droplets from the air stream. A second bank of HEPA filters follows the adsorber section to collect carbon fines and provide backup in case of failure of the main HEPA filter bank.

The CREFS is an emergency system, parts of which may also operate during normal unit operations in the standby mode of operation. Upon receipt of the actuating signal(s), normal air supply to the control room is isolated, and the stream of ventilation air is recirculated through the system filter trains. The prefilters or demisters remove any large particles in the air, and any entrained water droplets present, to prevent excessive loading of the HEPA filters and charcoal adsorbers. Continuous operation of each train for at least 10 hours per month, with the heaters on, reduces moisture buildup on the HEPA filters and adsorbers. Both the demister and heater are important to the effectiveness of the charcoal adsorbers.

Actuation of the CREFS places the system in either of two separate states (emergency radiation state or toxic gas isolation state) of the emergency mode of operation, depending on the initiation signal. Actuation of the system to the emergency radiation state of the emergency mode of operation, closes the unfiltered outside air intake and unfiltered exhaust dampers, and aligns the system for recirculation of the control room air through the redundant trains of HEPA and the charcoal filters. The emergency radiation state also initiates pressurization and filtered ventilation of the air supply to the control room.

Outside air is filtered, diluted with building air from the electrical equipment and cable spreading rooms, and added to the air being recirculated from the control room. Pressurization of the control room prevents infiltration of unfiltered air from the surrounding areas of the

BASES

BACKGROUND (continued)

1

~~building. The actions taken in the toxic gas isolation state are the same, except that the signal switches control room ventilation to an isolation alignment to prevent outside air from entering the control room.~~

~~The air entering the control room is continuously monitored by radiation and toxic gas detectors. One detector output above the setpoint will cause actuation of the emergency radiation state or toxic gas isolation state, as required. The actions of the toxic gas isolation state are more restrictive, and will override the actions of the emergency radiation state.~~

~~A single train will pressurize the control room to about [0.125] inches water gauge. The CREFS operation in maintaining the control room habitable is discussed in the FSAR, Section [6.4] (Ref. 1).~~

~~Redundant supply and recirculation trains provide the required filtration should an excessive pressure drop develop across the other filter train. Normally open isolation dampers are arranged in series pairs so that the failure of one damper to shut will not result in a breach of isolation. The CREFS is designed in accordance with Seismic Category I requirements.~~

~~The CREFS is designed to maintain the control room environment for 30 days of continuous occupancy after a Design Basis Accident (DBA) without exceeding a 5 rem whole body dose or its equivalent to any part of the body.~~

APPLICABLE SAFETY ANALYSES

1

INSERT 2

~~The CREFS components are arranged in redundant, safety related ventilation trains. The location of components and ducting within the control room envelope ensures an adequate supply of filtered air to all areas requiring access. The CREFS provides airborne radiological protection for the control room operators, as demonstrated by the control room accident dose analyses for the most limiting design basis loss of coolant accident, fission product release presented in the FSAR, Chapter [15] (Ref. 2).~~

~~The analysis of toxic gas releases demonstrates that the toxicity limits are not exceeded in the control room following a toxic chemical release, as presented in Reference 1.~~

~~The worst case single active failure of a component of the CREFS, assuming a loss of offsite power, does not impair the ability of the system to perform its design function.~~

BASES

APPLICABLE SAFETY ANALYSES (continued)

~~The CREFS satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).~~

LCO 1

INSERT 3

~~Two independent and redundant CREFS trains are required to be OPERABLE to ensure that at least one is available assuming a single failure disables the other train. Total system failure could result in exceeding a dose of 5 rem to the control room operator in the event of a large radioactive release.~~

~~The CREFS is considered OPERABLE when the individual components necessary to limit operator exposure are OPERABLE in both trains. A CREFS train is OPERABLE when the associated:~~

~~a. Fan is OPERABLE,~~

~~b. HEPA filters and charcoal adsorbers are not excessively restricting flow, and are capable of performing their filtration functions, and~~

~~c. Heater, demister, ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.~~

~~In addition, the control room boundary must be maintained, including the integrity of the walls, floors, ceilings, ductwork, and access doors.~~

~~The LCO is modified by a Note allowing the control room boundary to be opened intermittently under administrative controls. For entry and exit through doors, the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for control room isolation is indicated.~~

APPLICABILITY 1

INSERT 4

~~In MODES 1, 2, 3, 4, [5, and 6,] and during movement of [recently] irradiated fuel assemblies, CREFS must be OPERABLE to control operator exposure during and following a DBA.~~

~~In [MODE 5 or 6], the CREFS is required to cope with the release from the rupture of an outside waste gas tank.~~

~~During movement of [recently] irradiated fuel assemblies, the CREFS must be OPERABLE to cope with the release from a fuel handling accident [involving handling recently irradiated fuel]. [The CREFS is only~~

BASES

APPLICABILITY (continued)

required to ~~be OPERABLE~~ during fuel handling ~~involving handling~~ recently irradiated fuel (i.e., ~~fuel that has occupied~~ part of a critical reactor core within ~~the previous~~ [ ] days), due to radioactive ~~decay.]~~

1

ACTIONS

INSERT 5

A.1

When one CREFS train is inoperable, action must be taken to restore OPERABLE status within 7 days. In this Condition, the remaining OPERABLE CREFS train is adequate to perform the control room protection function. However, the overall reliability is reduced because a single failure in the OPERABLE CREFS train could result in loss of CREFS function. The 7 day Completion Time is based on the low probability of a DBA occurring during this time period, and ability of the remaining train to provide the required capability.

B.1

REVIEWER'S NOTE -

Adoption of Condition B is dependent on a commitment from the licensee to have written procedures available describing compensatory measures to be taken in the event of an intentional or unintentional entry into Condition B.

If the control room boundary is inoperable in MODE 1, 2, 3, or 4, the CREFS trains cannot perform their intended functions. Actions must be taken to restore an OPERABLE control room boundary within 24 hours. During the period that the control room boundary is inoperable, appropriate compensatory measures (consistent with the intent of GDC 19) should be utilized to protect control room operators from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature and relative humidity, and physical security. Preplanned measures should be available to address these concerns for intentional and unintentional entry into the condition. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of compensatory measures. The 24 hour Completion time is a typically reasonable time to diagnose, plan and possibly repair, and test most problems with the control room boundary.

ACTIONS (continued)

1

C.1 and C.2

In MODE 1, 2, 3, or 4, if the inoperable CREFS train or control room boundary cannot be restored to OPERABLE status within the required Completion Time, the unit must be placed in a MODE that minimizes accident risk. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

D.1 and D.2

[In MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies, if the inoperable CREFS train cannot be restored to OPERABLE status within the required Completion Time, action must be taken to immediately place the OPERABLE CREFS train in the emergency mode. This action ensures that the remaining train is OPERABLE, that no failures preventing automatic actuation will occur, and that any active failure would be readily detected.

An alternative to Required Action D.1 is to immediately suspend activities that could result in a release of radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes risk. This does not preclude the movement of fuel to a safe position.

Required Action D.1 is modified by a Note indicating to place the system in the toxic gas protection mode if automatic transfer to toxic gas protection mode is inoperable.

E.1

[In MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies, with two CREFS trains inoperable, action must be taken immediately to suspend activities that could result in a release of radioactivity that might enter the control room. This places the unit in a condition that minimizes accident risk. This does not preclude the movement of fuel to a safe position.

F.1

If both CREFS trains are inoperable in MODE 1, 2, 3, or 4 for reasons other than an inoperable control room boundary (i.e., Condition B), the

BASES

ACTIONS (continued)

CREFS may ~~not be capable~~ of performing the intended ~~function~~ and the unit is in a condition outside the ~~accident analyses~~. Therefore, LCO 3.0.3 must be ~~entered immediately~~.

1

SURVEILLANCE REQUIREMENTS

INSERT 6

SR 3.7.10.1

Standby systems should be checked periodically to ensure that they function properly. As the environment and normal operating conditions on this system are not too severe, testing each train once every month provides an adequate check of this system. Monthly heater operations dry out any moisture accumulated in the charcoal from humidity in the ambient air. [Systems with heaters must be operated for ≥ 10 continuous hours with the heaters energized. Systems without heaters need only be operated for ≥ 15 minutes to demonstrate the function of the system.] The 31 day Frequency is based on the reliability of the equipment and the two train redundancy availability.

SR 3.7.10.2

This SR verifies that the required CREFS testing is performed in accordance with the [Ventilation Filter Testing Program (VFTP)]. The [VFTP] includes testing the performance of the HEPA filter, charcoal adsorber efficiency, minimum flow rate, and the physical properties of the activated charcoal. Specific test Frequencies and additional information are discussed in detail in the [VFTP].

SR 3.7.10.3

This SR verifies that each CREFS train starts and operates on an actual or simulated actuation signal. The Frequency of [18] months is specified in Regulatory Guide 1.52 (Ref. 3).

SR 3.7.10.4

This SR verifies the integrity of the control room enclosure, and the assumed inleakage rates of the potentially contaminated air. The control room positive pressure, with respect to potentially contaminated adjacent areas, is periodically tested to verify proper functioning of the CREFS. During the emergency mode of operation, the CREFS is designed to pressurize the control room ≥ [0.125] inches water gauge positive pressure with respect to adjacent areas in order to prevent unfiltered inleakage. The CREFS is designed to maintain this positive pressure with one train at a makeup flow rate of [3000] cfm. The

BASES

SURVEILLANCE REQUIREMENTS (continued)

Frequency of [18] ~~months on a STAGGERED TEST BASIS~~ is consistent with the ~~guidance provided in~~ NUREG-0800 ~~(Ref. 4).~~

1

REFERENCES

INSERT 7

1. FSAR, Section [6.4].
2. FSAR, Chapter [15].
3. Regulatory Guide 1.52, Rev. [2].
4. NUREG-0800, Section 6.4, Rev. 2, July 1981.

INSERT 1 - BVPS SPECIFIC BACKGROUND SECTION

The Control Room Emergency Ventilation System (CREVS) provides a protected environment from which operators can control the unit following an uncontrolled release of radioactivity.

BVPS has a common control room pressure envelope for Unit 1 and Unit 2. The CREVS consists of pressurization fan subsystems and the control room isolation subsystems. There are three CREVS pressurization fan subsystems, one (Unit 1) and two (Unit 2). The pressurization fan subsystems draw in filtered outside into the control room.

The CREVS control room isolation subsystems isolate the Unit 1 and Unit 2 normal air intake and exhaust penetration flow paths by closing at least one of the two series isolation dampers in each of the four penetration flow paths. Closure of both units' intake and exhaust isolation dampers may be initiated by an isolation signal from either unit. However, the operation of the intake and exhaust dampers at each unit is dependent upon the availability of that unit's power sources. The isolation subsystem of a CREVS train consists of all 4 isolation dampers in that train (2 per unit). Both the Unit 1 and Unit 2 isolation dampers associated with a train are required OPERABLE for an OPERABLE CREVS train. The isolation subsystem is OPERABLE for a Unit when the associated Unit 1 and Unit 2 dampers are capable of closing on that unit's required isolation signals or the damper(s) are secured closed.

The CREVS pressurization fan subsystem located on the Unit 1 side of the combined control room consists of one manually started pressurization fan and filter subsystem that provides filtered air to pressurize the control room. The Unit 1 pressurization fan subsystem filter consists of a prefilter, an activated charcoal adsorber section for removal of gaseous activity (principally iodines), a high efficiency particulate air (HEPA) filter, and one of the two 100% capacity Unit 1 fans. Only one of the two Unit 1 fans is required for an OPERABLE CREVS Train.

The CREVS pressurization fan subsystems located on the Unit 2 side of the Control Room consists of two automatically started redundant train related subsystems that draw in outside air through filters to provide filtered air to pressurize the control room. Each pressurization fan subsystem filter consists of a moisture separator, a HEPA filter, an activated charcoal adsorber, a second HEPA filter, and a fan. A second bank of HEPA filters follows the adsorber section to collect carbon fines and provide backup in case of failure of the main HEPA filter.

For both units, ductwork, heaters, valves or dampers, and instrumentation also form part of the system.

Unit 1 can credit any two of the three available CREVS pressurization fan subsystems to meet the LCO requirement for two OPERABLE CREVS trains. However, Unit 2 can only credit the Unit 2 specific pressurization fan subsystems to meet the LCO requirement for two OPERABLE CREVS trains.

The CREVS is an emergency system, parts of which may also operate during normal unit operations in the standby mode of operation. Upon receipt of a CREVS actuating signal(s), normal unfiltered outside air supply and exhaust dampers to the control room are closed and (for Unit 2 only) a pressurization fan subsystem is initiated and the emergency air supply damper in the operating CREVS train is opened to bring in outside air through filters to pressurize the control room envelope. The Unit 1 pressurization fan subsystem is manually placed in service if required. The air continues to be recirculated within the control room envelope by the Control Room Emergency Air Cooling System (CREACS) (LCO 3.7.11) both during normal operation and during CREVS operation.

Pressurization of the control room minimizes infiltration of unfiltered air from surrounding areas of the control room. A single CREVS train will pressurize the control room to maintain a positive pressure relative to the outside atmosphere. The CREVS operation in maintaining the control room habitable is discussed in UFSAR, Section 9.13 (Unit 1) and Section 9.4 (Unit 2) (Ref. 1).

Redundant CREVS trains are required OPERABLE to ensure the pressurization and filtration function can be accomplished should one train fail. Normally open isolation dampers are arranged in series pairs so that the failure of one damper to shut will not result in a breach of isolation. The CREVS is designed in accordance with Seismic Category I requirements.

The control room boundary is the combination of walls, floor, roof, ducting, isolation dampers, doors, penetrations and equipment that physically form the control room envelope. The control room envelope includes the "control room" (i.e., the space that operators inhabit to control the plant for normal and accident conditions) as well as other adjacent areas. The control room is protected for normal operation, natural events, and accident conditions.

The CREVS, in conjunction with control room design provisions, is designed to maintain the control room environment for 30 days of continuous occupancy after a Design Basis Accident (DBA) without exceeding 5 rem total effective dose equivalent (TEDE). This limitation is consistent with the requirements of General Design Criteria 19 of Appendix "A", 10 CFR 50 and 10 CFR 50.67.

The CREVS is automatically actuated by a Containment Isolation Phase B (CIB) signal or a control room area high radiation signal. In addition, the CREVS can be actuated manually. The OPERABILITY requirements for the CREVS instrumentation are specified in LCO 3.3.7, "CREVS Actuation Instrumentation."

The CREVS does not have automatic detection and isolation for toxic gas. If toxic gas were identified to be onsite, the control room would be manually isolated by closing all supply and exhaust dampers and verifying that CREVS is not in operation. These actions would minimize air intake into the control room envelope.

INSERT 2 - BVPS SPECIFIC APPLICABLE SAFETY ANALYSES SECTION

The CREVS components are arranged in redundant, safety related ventilation trains. The location of most components and ducting within the control room envelope helps to minimize air in leakage and ensures an adequate supply of filtered air to all areas requiring access. The CREVS provides airborne radiological protection for the control room operators, as demonstrated by the control room habitability analyses for the most limiting design basis accidents: loss of coolant accident (LOCA), control rod ejection accident (CREA), and main

INSERTS FOR ITS 3.7.10 BASES

Control Room Emergency Ventilation System (CREVS)

steam line break (MSLB) accident, presented in the UFSAR, Chapter 14 (Unit 1) and Chapter 15 (Unit 2) (Ref.2). Control room isolation and operation of CREVS was not credited in other design basis accidents.

The worst case single active failure of a component of the CREVS, assuming a loss of offsite power, does not impair the ability of the system to perform its design function.

The LOCA accident analysis assumes an automatic isolation of the control room normal ventilation system following a CIB signal and subsequent manual initiation of a CREVS pressurization fan subsystem for filtered makeup and pressurization of the control room. Although the CIB signal will automatically start one of the two Unit 2 CREVS pressurization fan subsystems, a 30-minute delay to allow for manual initiation of a CREVS pressurization fan subsystem is specifically assumed in the analysis to permit the use of the Unit 1 CREVS pressurization fan subsystem which requires manual operator action to place in service (Ref. 3). The CREA and the MSLB accident analyses assume manual initiation of the emergency pressurization mode of operation of control room ventilation (i.e., control room ventilation isolation, filtered makeup and pressurization), within 30 minutes after the accident.

Although the control room dose calculations for the limiting DBAs (i.e., LOCA, CREA, and MSLB) assume that the control room is pressurized in 30 minutes of the accident by manually actuating a pressurization fan subsystem, the specification conservatively requires automatic actuation of a Unit 2 CREVS pressurization fan subsystem.

The current safety analyses do not assume the control room area radiation monitors provide a CREVS actuation signal for any design basis accident. However, requirements for the automatic initiation of CREVS (both isolation and pressurization fan subsystems) on high radiation are retained in the Technical Specifications in case this automatic function is required to support the assumptions of a fuel handling accident analysis for the movement of recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous 100 hours) or the movement of fuel over recently irradiated fuel consistent with the guidance of NUREG-1431 (Ref. 4).

An automatic start time delay is included in the initiation circuitry of the Unit 2 CREVS pressurization fan subsystems. The basis for this time delay includes the following considerations:

1. The delay times prevent loading of the pressurization fans onto the emergency busses until after the Emergency Diesel Generator load sequencing is completed.
2. The pressurization fan delay times are staggered to ensure only one fan will be operating.
3. A pressurization fan is started early to minimize dose to the operators.
4. The delay times are selected such that sufficient time will be available for the manual initiation of a pressurization fan subsystem within 30 minutes after an accident should a pressurization fan fail to start.

INSERTS FOR ITS 3.7.10 BASES

Control Room Emergency Ventilation System (CREVS)

An evaluation of all toxic gas hazards from onsite, offsite, and transportation sources has determined that the probability of a toxic chemical spill resulting in unacceptable exposures was less than NRC design basis criteria and, hence, is not included in the plant design basis as described in BVPS Unit 2 UFSAR, Section 2.2.3.1.2 and 6.4.4.2 (Ref. 5). Technical Specification Amendment No. 233 (Unit 1) and No. 115 (Unit 2) (Ref. 6) removed the control room chlorine detection system. In addition, Amendment No. 257 (Unit 1) / No. 139 (Unit 2) (Ref.7) which removed the bottled air pressurization system, confirmed that the ability to manually isolate the control room and the availability of self-contained breathing apparatus are sufficient to address any credible toxic gas or smoke events.

The CREVS satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

INSERT 3 - BVPS SPECIFIC LCO SECTION

Two CREVS trains including the associated train related inlet and exhaust isolation dampers are required to be OPERABLE to ensure that at least one train is available assuming a single failure disables the other train. A combination of two out of three CREVS pressurization fan subsystems from either Unit 1 or Unit 2 satisfies the LCO requirement for Unit 1. Only the Unit 2 CREVS pressurization fan subsystems may be used to satisfy the LCO requirement for Unit 2.

The OPERABILITY of CREVS ensures that the control room will remain habitable with respect to potential radiation hazards for operations personnel during and following all credible accident conditions. The OPERABILITY of this system in conjunction with control room design provisions is based on limiting the radiation exposure to personnel occupying the control room to 5 rem TEDE. This limitation is consistent with the requirements of General Design Criteria 19 of Appendix "A", 10 CFR 50 and 10 CFR 50.67. Total system failure could result in exceeding these dose limits in the event of a large radioactive release.

The CREVS is considered OPERABLE when the individual components necessary to limit operator exposure are OPERABLE in both trains. A CREVS train is OPERABLE when the associated:

a. Fan is OPERABLE (including required automatic start capability for Unit 2 fans),

b. HEPA filters and charcoal adsorbers are not excessively restricting flow, and are capable of performing their filtration functions, and

c. Heater, prefilter (Unit 1), moisture separator (Unit 2), ductwork, valves, and dampers are OPERABLE (i.e., capable of supporting pressurization of the control room when a CREVS train is actuated). This includes:

   1) In MODES 1, 2, 3, and 4, the series normal air intake and exhaust isolation dampers for both units must be OPERABLE and capable of automatic closure on a CIB actuation signal. The series normal air intake and exhaust isolation dampers for both units may also be considered OPERABLE when secured in a closed position with power removed.

2) During fuel assembly movement involving recently irradiated fuel assemblies, the series normal air intake and exhaust isolation dampers for both units must be OPERABLE and capable of automatic initiation by a Control Room High Radiation signal. The series air intake and exhaust isolation dampers for both units may also be considered OPERABLE when secured in a closed position with power removed.

LCO 3.3.7, "CREVS Actuation Instrumentation" contains the OPERABILITY, ACTION, and Surveillance requirements for the CREVS actuating instrumentation.

In addition, the control room boundary must be maintained, including the integrity of the walls, floors, ceilings, ductwork, and access doors in order to maintain the capability of the CREVS to pressurize the control room.

The LCO is modified by a Note allowing the control room boundary to be opened intermittently under administrative controls. For entry and exit through doors, the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings (hatches, access panels, floor plugs, etc.), these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening and restore the control room boundary to the design condition when a need for control room isolation is indicated. If the above conditions for utilizing the LCO Note cannot be met, then Action B should be entered.

INSERT 4 - BVPS SPECIFIC APPLICABILITY SECTION

In MODES 1, 2, 3, 4, and during the movement of recently irradiated fuel assemblies (i.e., fuel that has occupied part of a critical reactor core within the previous 100 hours) and the movement of fuel assemblies over recently irradiated fuel assemblies, CREVS is required to be OPERABLE to control operator exposure during and following a DBA.

In MODES 5 and 6, when no fuel movement involving recently irradiated fuel is taking place, there are no requirements for CREVS OPERABILITY consistent with the safety analyses assumptions applicable in these MODES. A FHA involving non-recently irradiated fuel will result in radiation exposure, to personnel occupying the control room, that is within the guideline values specified in 10 CFR 50.67 without any reliance on the requirements of this Specification to limit personnel exposure.

This LCO is applicable during movement of recently irradiated fuel assemblies (i.e., fuel that has occupied part of a critical reactor core within the previous 100 hours) and during movement of fuel assemblies over recently irradiated fuel assemblies. During fuel movement involving recently irradiated fuel there is a potential for a limiting FHA for which the requirements of this Specification may be necessary to limit radiation exposure to personnel occupying the control room to within the requirements of 10 CFR 50.67. Although the movement of recently irradiated fuel is not currently permitted, these requirements are retained in the Technical Specifications in case the CREVS is necessary to support the assumptions of a safety analysis for fuel movement involving recently irradiated fuel, consistent with the guidance of Reference 4.

INSERT 5 - BVPS SPECIFIC ACTIONS SECTION

A.1

When one required CREVS train is inoperable for reasons other than an inoperable control room boundary (this action includes one or more of the associated train related series isolation dampers inoperable), action must be taken to restore it to OPERABLE status within 7 days. In this Condition, the remaining OPERABLE CREVS train (including the associated train of isolation dampers) is adequate to perform the control room radiation protection function. However, the overall reliability is reduced because a single failure in the OPERABLE CREVS train could result in loss of CREVS function. The 7-day Completion Time is based on the low probability of a DBA occurring during this time, and the ability of the remaining train to provide the required safety function.

B.1

If the control room boundary is inoperable, the required CREVS trains may not be able to perform their intended functions. Action must be taken to restore the control room boundary to OPERABLE status. The CREVS functions to pressurize the control room boundary with filtered air to limit the radiological exposure of control room personnel to within the required limits. During the period that the control room boundary is inoperable, appropriate compensatory measures (consistent with the intent of GDC 19) should be utilized to protect control room personnel from potential radiological exposure in excess of the required limits. Preplanned measures should be available to address an inoperable control room boundary for intentional and unintentional entry into this Action.

Depending on the location and size of the failure which caused the control room boundary to be inoperable, the use of compensatory measures such as temporary closures and readily available respirators may be employed to support control room habitability requirements. Administrative controls should ensure adequate compensatory measures are maintained and that control room personnel are aware of the required measures.

The 24 hour Completion time is reasonable based on the low probability of a DBA occurring during this time period, and the required use of compensatory measures. The 24 hour Completion time is a reasonable time to diagnose, plan and possibly repair, and test most problems with the control room boundary.

C.1 and C.2

In MODE 1, 2, 3, or 4, if the inoperable CREVS train or control room boundary cannot be restored to OPERABLE status within the required Completion Time the unit must be placed in a MODE that minimizes accident risk. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

D.1 and D.2

During fuel movement involving recently irradiated fuel assemblies, if an inoperable CREVS train cannot be restored to OPERABLE status within the required Completion Time, the OPERABLE CREVS train must immediately be placed in the emergency pressurization mode of operation. This action requires the control room ventilation isolation dampers to be closed and the control room to be pressurized by the operating CREVS train. This action ensures that the remaining train is OPERABLE, that no failures preventing automatic actuation will occur, and that any active failure would be readily detected.

An alternative action is to immediately suspend activities that could result in a release of radioactivity that might require isolation of the control room. This involves suspending movement of recently irradiated fuel assemblies and suspending movement of fuel assemblies over recently irradiated fuel assemblies. This places the unit in a condition that minimizes risk. This does not preclude the movement of fuel to a safe position.

E.1

During fuel movement involving recently irradiated fuel assemblies, if two required CREVS trains are inoperable, action must be taken immediately to suspend activities that could result in a release of radioactivity that might require the CREVS function. Two inoperable trains also include the conditions of one or more inoperable series isolation dampers in both trains or one or more inoperable series isolation dampers in one train and the opposite CREVS train inoperable. This Action involves suspending movement of recently irradiated fuel assemblies and suspending movement of fuel assemblies over recently irradiated fuel assemblies. This places the unit in a condition that minimizes accident risk. This Action does not preclude the movement of fuel to a safe position.

F.1

If both CREVS trains are inoperable in MODES 1, 2, 3, or 4 for reasons other than an inoperable control room boundary (i.e., Condition B) the CREVS may not be capable of performing the intended function and the unit is in a condition outside the accident analyses. Two inoperable trains also include the conditions of one or more inoperable series isolation dampers in both trains or one or more inoperable series isolation dampers in one train and the opposite CREVS train inoperable. In this condition, Specification 3.0.3 must be entered immediately.

INSERT 6 - BVPS SPECIFIC SURVEILLANCE SECTION

SR 3.7.10.1

Standby systems should be checked periodically to ensure that they function properly. As the environment and normal operating conditions on this system are not severe, testing each train once every month provides an adequate check of this system. The CREVS fan and filter flow path is operated for ≥ 15 minutes by initiating flow through the HEPA filter and charcoal adsorber train with heaters operating to ensure that they function properly. This Surveillance does not require that the control room be isolated in order to verify fan and filter flow path functionality. The 31-day Frequency is based on the reliability of the equipment and train redundancy availability.

SR 3.7.10.2

This SR verifies that the required CREVS testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The VFTP includes testing the performance of the HEPA filter, charcoal adsorber efficiency, minimum flow rate, and the physical properties of the activated charcoal. Specific test Frequencies and additional information are discussed in detail in the VFTP.

SR 3.7.10.3

This SR verifies that each CREVS train operates as required on an actual or simulated Containment Isolation Phase B actuation signal (only required in MODES 1-4) and Control Room High Radiation actuation signal (only required for fuel movement involving recently irradiated fuel). The actuation testing includes verification that each train of series air intake and exhaust isolation dampers for both units close to isolate the control room from the outside atmosphere. In addition, for Unit 2, the automatic start (following a time delay) of each CREVS pressurization fan subsystem supplying air to pressurize the control room through the HEPA filters and charcoal adsorber banks is verified. For Unit 1, an automatic start of the CREVS pressurization fan subsystem is not required since the Unit 1 subsystem is placed in service by manual operator action.

LCO 3.3.7, "CREVS Actuation Instrumentation" contains the OPERABILITY requirements including the Applicability, ACTION, and Surveillance requirements for the CREVS actuating instrumentation.

The frequency of 18 months is consistent with the testing frequencies specified in Regulatory Guide 1.52 (Ref. 8).

SR 3.7.10.4

This Surveillance Requirement verifies the capability of the CREVS to pressurize the control room to ≥ 1/8 inch Water Gauge relative to the outside atmosphere. The capability to pressurize the control room to a positive pressure is periodically tested to confirm the capability of the CREVS to perform its intended safety function. The CREVS is designed to pressurize the control room to a positive pressure with respect to the outside atmosphere in order to minimize unfiltered inleakage. The CREVS is designed to maintain this positive pressure with one train operating at a makeup flow rate of 800 to 1000 cfm.

For Unit 1 the requirement to verify each CREVS train 18 months on a staggered basis results in performing the required test with one of the two 100% capacity fans and one train of isolation dampers every 18 months such that both trains of isolation dampers are tested every 36 months. For Unit 2 staggered testing results in performing the required test with one CREVS train every 18 months such that both Unit 2 CREVS trains are tested every 36 months.

The frequency of 18 months on a STAGGERED TEST BASIS is consistent with the guidance provided in NUREG-0800 (Ref. 9).

INSERT 7 - BVPS SPECIFIC REFERENCE SECTION

1. UFSAR, Section 9.13 (Unit 1) and Section 9.4 (Unit 2).
2. UFSAR, Section 14 (Unit 1) and Chapter 15 (Unit 2).
3. Unit 1 UFSAR Table 11.3-7 and Unit 2 UFSAR Table 15.0-13.
4. NUREG-1431, Rev. 2, Standard Technical Specifications for Westinghouse Plants.
5. Unit 2 UFSAR, Sections 2.2.3.1.2 and 6.4.4.2.
6. Amendment No. 233 (Unit 1) and Amendment No. 115 (Unit 2), Dated 9/7/00.
7. Amendment No. 257 (Unit 1) and Amendment No. 139 (Unit 2), Dated 9/10/03.
8. Regulatory Guide 1.52, Rev. 2.
9. NUREG-0800, Section 6.4, Rev. 2, July 1981.

B 3.7 PLANT SYSTEMS

Cooling

B 3.7.11 Control Room Emergency Air ~~Temperature Control~~ System (~~CREATCS~~) CREACS

BASES

BACKGROUND

INSERT 1

1

The CREATCS provides temperature control for the control room following isolation of the control room.

The CREATCS consists of two independent and redundant trains that provide cooling and heating of recirculated control room air. Each train consists of heating coils, cooling coils, instrumentation, and controls to provide for control room temperature control. The CREATCS is a subsystem providing air temperature control for the control room.

The CREATCS is an emergency system, parts of which may also operate during normal unit operations. A single train will provide the required temperature control to maintain the control room between [70]°F and [85]°F. The CREATCS operation in maintaining the control room temperature is discussed in the FSAR, Section [6.4] (. 1).

APPLICABLE SAFETY ANALYSES

1

INSERT 2

The design basis of the CREATCS is to maintain the control room temperature for 30 days of continuous occupancy.

The CREATCS components are arranged in redundant, safety related trains. During emergency operation, the CREATCS maintains the temperature between [70]°F and [85]°F. A single active failure of a component of the CREATCS, with a loss of offsite power, does not impair the ability of the system to perform its design function. Redundant detectors and controls are provided for control room temperature control. The CREATCS is designed in accordance with Seismic Category I requirements. The CREATCS is capable of removing sensible and latent heat loads from the control room, which include consideration of equipment heat loads and personnel occupancy requirements, to ensure equipment OPERABILITY.

The CREATCS satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

1

INSERT 3

Two independent and redundant trains of the CREATCS are required to be OPERABLE to ensure that at least one is available, assuming a single failure disabling the other train. Total system failure could result in the equipment operating temperature exceeding limits in the event of an accident.

BASES

LCO (continued)

1

The CREATCS is considered to be OPERABLE when the individual components necessary to maintain the control room temperature are OPERABLE in both trains. These components include the heating and cooling coils and associated temperature control instrumentation. In addition, the CREATCS must be operable to the extent that air circulation can be maintained.

APPLICABILITY

1

INSERT 4

In MODES 1, 2, 3, 4, [5, and 6,] and during movement of [recently] irradiated fuel assemblies, the CREATCS must be OPERABLE to ensure that the control room temperature will not exceed equipment operational requirements following isolation of the control room. [The CREATCS is only required to be OPERABLE during fuel handling involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [ ] days), due to radioactive decay.]

[In MODE 5 or 6,] CREATCS may not be required for those facilities that do not require automatic control room isolation.

ACTIONS

A.1

≤ 120° F when the control room is isolated and provide the required control room atmosphere purge function.

2

CREACS

With ~~one CREATCS~~ train inoperable, action must be taken to restore OPERABLE status within 30 days. In this Condition, the remaining OPERABLE ~~CREATCS~~ train is adequate to maintain the control room temperature ~~within limits.~~ However, the overall reliability is reduced because a single failure ~~in the OPERABLE CREATCS~~ train could result in loss of ~~CREATCS~~ function. The 30 day Completion Time is based on the low probability of an event requiring control room isolation, the consideration that the remaining train can provide the required protection, and that alternate safety or nonsafety related ~~cooling~~ means are available.

or purge

2

of cooling the control room air and of purging the control room atmosphere

B.1 and B.2

CREACS

In MODE 1, 2, 3, or 4, if the inoperable ~~CREATCS~~ train cannot be restored to OPERABLE status within the required Completion Time, the unit must be placed in a MODE that minimizes the risk. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

BASES

1

Condition C is modified by two Notes indicating the applicability of this Condition to each unit. Note 1 states that the Condition is only applicable to Unit 1 during movement of irradiated fuel assemblies and fuel assemblies over irradiated fuel assemblies. Note 2 states that this Condition is only applicable to Unit 2 during movement of recently irradiated fuel assemblies and fuel assemblies over recently irradiated fuel assemblies.

ACTIONS (continued)

This action requires that the OPERABLE CREACS ventilation fan be in service and circulating control room air, and if the heat removal function is required by the LCO, with river/service water being supplied to the emergency cooling coils.

C.1 and C.2

CREACS

2

~~[In MODE 5 or 6, or] during movement of [recently] irradiated fuel,~~ if the inoperable ~~CREATCS~~ train cannot be restored to OPERABLE status within the required Completion Time, the OPERABLE ~~CREATCS~~ train must be placed in operation immediately. This action ensures ~~that~~ the remaining train is OPERABLE~~, that no failures preventing automatic actuation will occur,~~ and ~~that~~ active failures will be readily detected.

1

This involves suspending movement of irradiated fuel assemblies and suspending movement of fuel assemblies over irradiated fuel assemblies.

An alternative to Required Action C.1 is to immediately suspend activities that present a potential for releasing radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes accident risk. This does not preclude the movement of fuel to a safe position.

or a purge of the control room atmosphere.

1

Condition D is modified by two Notes indicating the applicability of this Condition to each Unit. Note 1 states that the Condition is only applicable to Unit 1 during movement of irradiated fuel assemblies and fuel assemblies over irradiated fuel assemblies. Note 2 states that this Condition is only applicable to Unit 2 during movement of recently irradiated fuel assemblies and fuel assemblies over recently irradiated fuel assemblies.

D.1

CREACS

~~[In MODE 5 or 6, or] during movement of [recently] irradiated fuel assemblies,~~ with two ~~CREATCS~~ trains inoperable, action must be taken immediately to suspend activities that could result in a release of radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes risk. This does not preclude the movement of fuel to a safe position.

1

This involves suspending movement of irradiated fuel assemblies and suspending movement of fuel assemblies over irradiated fuel assemblies.

E.1

If both ~~CREATCS~~ trains are inoperable in MODE 1, 2, 3, or 4, the control room ~~CREATCS~~ may not be capable of performing its intended function. Therefore, LCO 3.0.3 must be entered immediately.

CREACS

2

SURVEILLANCE REQUIREMENTS

SR 3.7.11.1

required

to maintain

INSERT 5

This SR verifies ~~that~~ the heat removal capability of the system is sufficient to remove the heat load ~~assumed in the [safety analyses] in~~ the control room. ~~This SR consists of a combination of testing and calculations.~~ The [18] month Frequency is appropriate since significant degradation of the ~~CREATCS~~ is slow and is not expected over this time period.

temperature within the equipment design limit (< 120°F).

CREACS

2

REFERENCES

U

1. FSAR, Section ~~[6.4]~~.

9.13 (Unit 1) and Section 9.4 (Unit 2)

1

2. UFSAR, Table 11.3-7 (Unit 1) and Table 15.0-13 (Unit 2).

3. NUREG-1431, Rev. 2, Standard Technical Specifications for Westinghouse Plants.

Control Room Emergency Air Cooling System (CREACS)

INSERT 1 BVPS SPECIFIC BACKGROUND

The Control Room Emergency Air Cooling System (CREACS) provides 1) a control room heat removal function following isolation of the control room, and 2) control room atmosphere purge capability for the combined units' main control room. The heat removal function ensures that the control equipment qualification is maintained following isolation of the control room. The purge function is necessary to limit the dose received by control room personnel following certain design basis accidents (DBAs). Each unit has its own CREACS. Each unit's CREACS consists of a single ventilation air intake and two independent and redundant trains consisting of river/service water emergency cooling coils, ventilation ducts, fans and fan controls. However, the CREACS trains share common ventilation ductwork and normal air inlet and exhaust flow paths. The CREACS heat removal function is discussed in the UFSAR, Section 9.13 (Unit 1) and Section 9.4 (Unit 2) (Ref. 1). The CREACS control room atmosphere purge function is discussed in the UFSAR, Table 11.3-7 (Unit 1) and Table 15.0-13 (Unit 2) (Ref. 2).

The CREACS is an emergency system, parts of which operate during normal unit operations. A single train of CREACS on each unit is capable of maintaining its side of the combined control room at ≤ the equipment design limit of 120°F. A single train of CREACS from either unit is capable of providing adequate control room atmosphere purge capability to meet either unit's DBA requirements.

INSERT 2 BVPS SPECIFIC APPLICABLE SAFETY ANALYSIS

The design basis of the CREACS heat removal function is to provide emergency air cooling for the control room to maintain the temperature within the equipment design limit for a mild environment (120°F) following certain DBAs when the control room is isolated. The CREACS also provides an atmosphere purge function for the control room following certain DBAs. Only manual actuation is credited for both CREACS functions at each unit.

The CREACS components are arranged in redundant, safety related trains. A single active failure of a component of the CREACS, with a loss of offsite power, does not impair the ability of the system to perform its design function. The CREACS is designed in accordance with Seismic Category I requirements.

During normal and emergency control room operation, the control room air cooling is usually maintained by the non-safety related air conditioning equipment which is integral to the control room ventilation systems. During emergency operation when the control room is isolated, the safety related CREACS is manually initiated to provide air cooling to maintain the temperature ≤ 120°F when the normal non-safety related air conditioning becomes unavailable. The CREACS is capable of removing sensible and latent heat loads from the control room, which include consideration of equipment heat loads to ensure equipment OPERABILITY. The CREACS heat removal function is only required following post-DBA isolation of the control room (when control room isolation is required to meet radiological dose analysis requirements) and the normal non-safety-related air conditioning equipment is unavailable.

The heat removal function of CREACS is credited in design basis accidents for MODES 1, 2, 3, and 4 (e.g., the LOCA, the Main Steam Line Break and Control Rod Ejection DBAs for both units require control room isolation). Since neither unit requires control room isolation (and hence the control room heat function of CREACS) to meet its Fuel Handling Accident (FHA) DBA nor requires control room isolation following any other DBA in MODES 5 and 6 (e.g., Waste Gas Tank Rupture DBA), the heat removal function of CREACS is not required in MODES 5 and 6 or during fuel movement involving non-recently irradiated fuel.

The design basis of the CREACS control room ventilation purge function ensures the capability to manually purge the air from the control room for selected design basis accidents to ensure acceptable dose consequences to the control room personnel following a DBA.

For Both Unit 1 and Unit 2, the main steam line break (MSLB) and steam generator tube rupture (SGTR) accident analyses credit a manually initiated 30 minute control room ventilation purge at a flow rate of ≥ 16,200 cfm after the accident sequence is complete and the environmental release has been terminated. Also for Unit 1 only, the FHA analysis for fuel movement involving non-recently irradiated fuel credits a manually initiated 30 minute control room ventilation purge at a flow rate of ≥ 16,200 cfm after the accident sequence is complete and the environmental release has been terminated. The dose consequence analyses assume that for the MSLB, the SGTR, and the Unit 1 FHA, control room purge is initiated at T=24 hours, T=8 hours and T=2 hours after accident initiation, respectively.

Only Unit 1 requires the purge function of CREACS during fuel movement involving non-recently irradiated fuel. Therefore, the purge function of CREACS is required for Unit 1 during fuel movement involving non-recently irradiated fuel. Thus, the control room ventilation purge functions of CREACS are credited in design basis accidents for MODES 1, 2, 3, and 4 at both units, and for fuel movement involving non-recently irradiated fuel assemblies at Unit 1.

This LCO is also applicable for both units during movement of recently irradiated fuel assemblies (i.e., fuel that has occupied part of a critical reactor core within the previous 100 hours) and during movement of fuel assemblies over recently irradiated fuel assemblies. The requirement for recently irradiated fuel assemblies is included because there is a potential for a limiting FHA for which the requirements of this Specification may be necessary to limit radiation exposure to personnel occupying the control room to within the requirements of 10 CFR 50.67. Although the movement of recently irradiated fuel is not currently permitted for either unit, the requirements for both the temperature control and purge functions are retained in the Technical Specifications in case the CREACS functions are necessary to support the assumptions of a safety analysis for fuel movement involving recently irradiated fuel, consistent with the guidance of NUREG-1431 (Ref. 3).

The CREACS satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

INSERT 3 BVPS SPECIFIC LCO

The Unit 1 fuel handling accident analysis does not require control room isolation to limit the dose to control room personnel to within the required limits. Therefore, a Note modifying the LCO requirement is included to clarify that the Unit 1 CREACS heat removal function is not required OPERABLE to support fuel movement involving non-recently irradiated fuel. Only the purge function of the Unit 1 CREACS is required to support fuel movement involving non-recently irradiated fuel as only the purge function is required in the Unit 1 accident analysis to limit dose. The Note is only applicable to Unit 1 because operation of the Unit 2 CREACS is not required by the Unit 2 fuel handling accident analysis for fuel movement involving non-recently irradiated fuel. Therefore, operation of the Unit 2 CREACS is not required to limit the dose to control room personnel from a fuel handling accident involving non-recently irradiated fuel.

Two trains of the CREACS are required to be OPERABLE to ensure that at least one is available, assuming a single failure disabling the other train. Total system failure of the heat removal function could result in the equipment operating temperature exceeding limits in the event of an accident. Total system failure of the control room atmosphere purge function could result in exceeding a dose of 5 rem TEDE to the control room operator in the event of a large radioactive release following a MSLB, SGTR, or a Unit 1 FHA.

With regard to the control room atmospheric purge function only, the LCO requirement for two OPERABLE CREACS trains may be met by crediting OPERABLE Unit 1 train(s) for Unit 2 and crediting OPERABLE Unit 2 train(s) for Unit 1. The control room atmospheric purge flow requirements for each unit are the same and the control room envelope is common. Therefore, the purge flow assumed in the DBA analysis may be accomplished by the manual initiation of a CREACS train from either unit.

The CREACS is considered to be OPERABLE when the individual components necessary to maintain the control room temperature ≤ 120°F (when the control room is isolated) and to provide the control room ventilation purge function at the required flow rate are OPERABLE in two trains. These components include the river/service water emergency cooling coils, necessary ductwork and associated dampers, fans, and associated fan controls. The capability to manually operate the components of the CREACS is all that is required for OPERABILITY. In addition, the CREACS must be operable to the extent that air circulation necessary for the required temperature control can be maintained.

INSERT 4 BVPS SPECIFIC APPLICABILITY

CREACS must be OPERABLE in MODES 1, 2, 3, 4 at either unit and during fuel movement involving recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous 100 hours) at either unit. The CREACS ensures that control room temperatures will not exceed equipment operational requirements and that the control room ventilation is capable of purging the control room atmosphere after a DBA to maintain dose within the limit.

For Unit 1 only, during movement of non-recently irradiated fuel assemblies and during movement of fuel assemblies over non-recently irradiated fuel assemblies, the ventilation purge function of CREACS must be OPERABLE. The Unit 1 temperature control function of CREACS is not required OPERABLE during fuel movement involving non-recently irradiated fuel because the Unit 1 FHA analysis does not require control room isolation to limit dose.

CREACS is not required in MODES 5 or 6 at either unit during no fuel movement nor is it required during fuel movement involving non-recently irradiated fuel movement at Unit 2.

INSERTS FOR ITS 3.7.11 BASES

Control Room Emergency Air Cooling System (CREACS)

INSERT 5 BVPS SPECIFIC SURVEILLANCE REQUIREMENT TEXT

The verification of the CREACS heat removal capability consists of a combination of river/service water flow measurement, fan performance, and mechanical cleaning and inspections of the river/service water cooling coils.

This SR also verifies the control room atmosphere purge capability of the system is sufficient to remove air from the control room for the design basis accidents that require a control room purge to limit dose. The control room purge capability is verified by assuring each train of CREACS can be aligned to purge the control room atmosphere and can achieve the required purge flow rate of ≥ 16,200 cfm. This part of the SR may be accomplished by measuring fan performance during normal system alignment to verify the fan's capability to purge the control room at the required flow rate. The ability of the required dampers to be aligned for a control room purge can be verified by observing partial movement of the dampers. Realignment of the CREACS to the purge mode of operation and measuring the actual purge flow rate is not required to satisfy this SR.

Supplemental Leak Collection and Release System (SLCRS)

B 3.7 PLANT SYSTEMS

B 3.7.12 ~~Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS)~~

BASES

BACKGROUND

~~The ECCS PREACS filters air from the area of the active ECCS components during the recirculation phase of a loss of coolant accident (LOCA). The ECCS PREACS, in conjunction with other normally operating systems, also provides environmental control of temperature and humidity in the ECCS pump room area and the lower reaches of the auxiliary building.~~

1

Insert 1

filter exhaust

~~The ECCS PREACS consists of two independent and redundant trains. Each~~ train consists of a heater, a ~~prefilter or~~ demister, a high efficiency particulate air (HEPA) filter, an activated charcoal adsorber section for removal of gaseous activity (principally iodines), and a fan. Ductwork, valves or dampers, and instrumentation also form part of the system, as ~~well as demisters functioning to reduce the relative humidity of the air stream.~~ For Unit 2 only, A second bank of HEPA filters follows the adsorber section to collect carbon fines and ~~provide~~ provides a backup in case the main HEPA filter bank fails. The downstream HEPA filter is not credited in the accident analysis, but serves to collect charcoal fines, and to back up the upstream HEPA filter should it develop a leak. ~~The system initiates filtered ventilation of the pump room following receipt of a safety injection (SI) signal.~~

SLCRS is discussed in References 2 and 3. The SLCRS

~~The ECCS PREACS is a standby system, aligned to bypass the system HEPA filters and charcoal adsorbers. During emergency operations, the ECCS PREACS dampers are realigned, and fans are started to begin filtration. Upon receipt of the actuating Engineered Safety Feature Actuation System signal(s), normal air discharges from the ECCS pump room isolate, and the stream of ventilation air discharges through the system filter trains. The prefilters remove any large particles in the air, and any entrained water droplets present, to prevent excessive loading of the HEPA filters and charcoal adsorbers.~~

1

The ~~ECCS PREACS is discussed in the FSAR, Sections [6.5.1], [9.4.5], and [15.6.5] (Refs. 1, 2, and 3, respectively) since it~~ may be used for normal, as well as post accident, atmospheric cleanup functions. During normal operation, the SLCRS provides ventilation to the areas it serves. ~~The primary purpose of the heaters is to maintain the relative humidity at an acceptable level, consistent with iodine removal efficiencies per Regulatory Guide 1.52 (Ref. 4).~~

BASES

APPLICABLE SAFETY ANALYSES

Insert 2

1

The design basis of the ECCS PREACS is established by the large break LOCA. The system evaluation assumes a passive failure of the ECCS outside containment, such as an SI pump seal failure, during the recirculation mode. In such a case, the system limits radioactive release to within the 10 CFR 100 (Ref. 5) limits, or the NRC staff approved licensing basis (e.g., a specified fraction of Reference 5 limits). The analysis of the effects and consequences of a large break LOCA is presented in Reference 3. The ECCS PREACS also actuates following a small break LOCA, in those cases where the ECCS goes into the recirculation mode of long term cooling, to clean up releases of smaller leaks, such as from valve stem packing.

Two types of system failures are considered in the accident analysis: complete loss of function, and excessive LEAKAGE. Either type of failure may result in a lower efficiency of removal for any gaseous and particulate activity released to the ECCS pump rooms following a LOCA.

The SLCRS ~~ECCS PREACS~~ satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

Insert 3

1

Two independent and redundant trains of the ECCS PREACS are required to be OPERABLE to ensure that at least one is available, assuming that a single failure disables the other train coincident with loss of offsite power. Total system failure could result in the atmospheric release from the ECCS pump room exceeding 10 CFR 100 limits in the event of a Design Basis Accident (DBA).

ECCS PREACS is considered OPERABLE when the individual components necessary to maintain the ECCS pump room filtration are OPERABLE in both trains.

A SLCRS ~~An ECCS PREACS~~ train is considered OPERABLE when its associated:

a. Fan is OPERABLE,

b. HEPA filter and charcoal adsorbers are not excessively restricting flow, and are capable of performing their filtration functions, and

c. Heater (Unit 2 only), demister (Unit 2 only), ductwork, valves, and dampers are OPERABLE and air flow ~~circulation~~ can be maintained.

The SLCRS is considered in operation whenever the required area(s) exhaust flow is discharging through at least one train of the SLCRS HEPA filters and charcoal adsorbers.

The LCO is modified by a Note allowing the fuel building ~~ECCS pump room~~ boundary to be opened intermittently under administrative controls. For entry and exit through doors, the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these

1

BASES

fuel building isolation is required to support SLCRS operation.

LCO (continued)

controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when ~~a need for ECCS pump room isolation is indicated.~~

APPLICABILITY

1 Insert 4

~~In MODES 1, 2, 3, and 4, the ECCS PREACS is required to be OPERABLE consistent with the OPERABILITY requirements of the ECCS.~~

~~In MODE 5 or 6, the ECCS PREACS is not required to be OPERABLE since the ECCS is not required to be OPERABLE.~~

ACTIONS

A.1

1 Insert 5

~~With one ECCS PREACS train inoperable, action must be taken to restore OPERABLE status within 7 days. During this time, the remaining OPERABLE train is adequate to perform the ECCS PREACS function.~~

~~The 7 day Completion Time is appropriate because the risk contribution is less than that for the ECCS (72 hour Completion Time), and this system is not a direct support system for the ECCS. The 7 day Completion Time is based on the low probability of a DBA occurring during this time period, and ability of the remaining train to provide the required capability.~~

~~Concurrent failure of two ECCS PREACS trains would result in the loss of functional capability; therefore, LCO 3.0.3 must be entered immediately.~~

B.1 and B.2

1 Insert 6

~~- REVIEWER'S NOTE -~~
~~Adoption of Condition B is dependent on a commitment from the licensee to have written procedures available describing compensatory measures to be taken in the event of an intentional or unintentional entry into Condition B.~~

~~If the ECCS pump room boundary is inoperable, the ECCS PREACS trains cannot perform their intended functions. Actions must be taken to restore an OPERABLE ECCS pump room boundary within 24 hours. During the period that the ECCS pump room boundary is inoperable, appropriate compensatory measures [consistent with the intent, as~~

~~ACTIONS (continued)~~

1

applicable, of GDC 19, 60, 64 and 10 CFR Part 100] should be utilized to protect plant personnel from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature and relative humidity, and physical security. Preplanned measures should be available to address these concerns for intentional and unintentional entry into the condition. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of compensatory measures. The 24 hour Completion Time is a typically reasonable time to diagnose, plan and possibly repair, and test most problems with the ECCS pump room boundary.

C.1 and C.2

If the ECCS PREACS train or ECCS pump room boundary cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.12.1

1

Insert 7

Standby systems should be checked periodically to ensure that they function properly. As the environment and normal operating conditions on this system are not severe, testing each train once a month provides an adequate check on this system. Monthly heater operations dry out any moisture that may have accumulated in the charcoal from humidity in the ambient air. [Systems with heaters must be operated ≥ 10 continuous hours with the heaters energized. Systems without heaters need only be operated for ≥ 15 minutes to demonstrate the function of the system.] The 31 day Frequency is based on the known reliability of equipment and the two train redundancy available.

SR 3.7.12.2

SLCRS

This SR verifies that the required ~~ECCS PREACS~~ testing is performed in accordance with the {Ventilation Filter Testing Program (VFTP)}. The {VFTP} includes testing HEPA filter performance, charcoal adsorbers efficiency, minimum system flow rate, and the physical properties of the activated charcoal (general use and following specific operations).

BASES

SURVEILLANCE REQUIREMENTS (continued)

1 Specific test Frequencies and additional information are discussed in detail in the [VFTP].

Insert 8

~~SR 3.7.12.3~~

~~This SR verifies that each ECCS PREACS train starts and operates on an actual or simulated actuation signal. The [18] month Frequency is consistent with that specified in Reference 4.~~

~~SR 3.7.12.4~~

~~This SR verifies the integrity of the ECCS pump room enclosure. The ability of the ECCS pump room to maintain a negative pressure, with respect to potentially uncontaminated adjacent areas, is periodically tested to verify proper functioning of the ECCS PREACS. During the [post accident] mode of operation, the ECCS PREACS is designed to maintain a slight negative pressure in the ECCS pump room, with respect to adjacent areas, to prevent unfiltered LEAKAGE. The ECCS PREACS is designed to maintain a # [-0.125] inches water gauge relative to atmospheric pressure at a flow rate of [3000] cfm from the ECCS pump room. The Frequency of [18] months is consistent with the guidance provided in NUREG-0800, Section 6.5.1 (Ref. 6).~~

~~This test is conducted with the tests for filter penetration; thus, an [18] month Frequency on a STAGGERED TEST BASIS is consistent with that specified in Reference 4.~~

~~[SR 3.7.12.5~~

~~Operating the ECCS PREACS bypass damper is necessary to ensure that the system functions properly. The OPERABILITY of the ECCS PREACS bypass damper is verified if it can be specified in Reference 4.]~~

1 REFERENCES

2 ~~1.~~ U FSAR, Section ~~[6.5.1]~~ 6.6 (Unit 1) and Section 6.5.3.2 (Unit 2).

3 ~~2.~~ U FSAR, Section ~~[9.4.5]~~ 9.13.2 (Unit 1) and Section 9.4 (Unit 2).

4 ~~3.~~ U FSAR, Section ~~[15.6.5]~~ 14.2.1 (Unit 1) and Section 15.7.4 (Unit 2).

6 ~~4.~~ Regulatory Guide 1.52 (Rev. 2).

1 ~~5.~~ 10 CFR ~~100.11~~ 50.67.

1

BASES

REFERENCES (continued)

5 ~~6~~. NUREG-0800, Section 15.0.1, Rev 0 ~~6.4, Rev. 2, July 1981~~.

7. NUREG-1431, Rev. 2, Standard Technical Specifications for Westinghouse Plants.

BVPS SPECIFIC INSERTS FOR ITS 3.7.12 BASES

Supplemental Leak Collection and Release System (SLCRS)

1. SLCRS filters airborne radioactivity from the containment building (Unit 1 only) and the fuel building (both Units) following a fuel handling accident involving recently irradiated fuel. This ensures that, prior to release to the environment, the exhaust from these areas in the event of a fuel handling accident is limited to radioactive releases within 10 CFR 50.67 (Ref. 1) limits. For Unit 1, the SLCRS train consists of a prefilter, an activated charcoal adsorber section for removal of gaseous activity (principally iodines), a high efficiency particulate air (HEPA) filter, and a filter exhaust fan. Ductwork, valves or dampers, and instrumentation also form part of the system. For Unit 2, the SLCRS

2. During fuel handling operations, the postulated event that results in the most severe radiological consequences is a fuel handling accident (Ref. 4). The limiting fuel handling accident analyzed in Reference 4, includes dropping a single irradiated fuel assembly and handling tool (conservatively estimated at 2500 pounds) directly onto another irradiated fuel assembly resulting in both assemblies being damaged. The analysis assumes a 100-hour decay time prior to moving irradiated fuel.

   The applicable limits for offsite and control room dose from a fuel handling accident are specified in 10 CFR 50.67. Standard Review Plan, Section 15.0.1, Rev 0 (Ref. 5) provides an additional offsite dose criteria of 6.3 rem total effective dose equivalent (TEDE) for fuel handling accidents.

   The water level requirements of LCO 3.7.15, "Fuel Storage Pool Water Level", in conjunction with a minimum decay time of 100 hours prior to irradiated fuel movement, ensure the resulting offsite and control room dose from the limiting fuel handling accident is within the limits required by 10 CFR 50.67 and within the acceptance criteria of Reference 4 without the need for containment and fuel building closure or filtration. Therefore, the SLCRS requirements contained in LCO 3.7.12 are only applicable during refueling operations involving recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous 100 hours). Current requirements based on the decay time of the fuel prevent the movement of recently irradiated fuel. However, the requirements for SLCRS are retained in the Technical Specifications in case these requirements are necessary to support fuel movement involving recently irradiated fuel consistent with the guidance of NUREG-1431 (Ref. 7).

3. This LCO limits the consequences of a fuel handling accident involving recently irradiated fuel in the containment (Unit 1 only) and the fuel storage pool (both units) by limiting the potential escape paths for fission product radioactivity. One train of the SLCRS exhausting from the fuel building and/or for Unit 1, the containment is required to be OPERABLE and in operation during fuel movement involving recently irradiated fuel with the required area exhaust flow discharging through the SLCRS HEPA filters and charcoal adsorbers. This ensures that air, prior to release to the environment, is being filtered during fuel movement within the fuel storage pool and/or, for Unit 1 only, during fuel movement within the containment when required in accordance with LCO 3.9.3.c.3.

System failure could result in the atmospheric release from SLCRS exceeding 10 CFR 50.67 limits in the event of a fuel handling accident involving recently irradiated fuel. The SLCRS is considered OPERABLE when individual components ensure the radioactivity released in the areas of the containment (Unit 1 only) and the fuel building is filtered through the SLCRS and that fuel building doors are closed.

4. When required in accordance with LCO 3.9.3.c.3 (for Unit 1), one train of SLCRS is required to be OPERABLE and in operation to alleviate the consequences of a fuel handling accident inside containment. This Applicability applies only to Unit 1 in accordance with the provisions of LCO 3.9.3, "Containment Penetrations" when the Containment Purge and Exhaust System penetrations are open coincident with fuel movement involving recently irradiated fuel assemblies (i.e., fuel that has occupied part of a critical reactor core within the previous 100 hours) within containment.

   During movement of recently irradiated fuel assemblies (i.e., fuel that has occupied part of a critical reactor core within the previous 100 hours) within the fuel storage pool or during movement of fuel assemblies over recently irradiated fuel assemblies within the fuel storage pool, one train of SLCRS is required to be OPERABLE and in operation to alleviate the consequences of a potential fuel handling accident.

   Since SLCRS is not credited in any existing DBA analysis applicable in MODES 1, 2, 3, 4, 5, and 6 the SLCRS is not required to be OPERABLE in these MODES (except as required to support fuel movement involving recently irradiated fuel assemblies described above). ..

5. A Note modifies Condition A since this Condition is only applicable to Unit 1. Only Unit 1 relies on SLCRS to filter the exhaust from the containment building to mitigate a fuel handling accident involving the movement of recently irradiated fuel.

   This Condition is only applicable when a Unit 1 SLCRS train is required OPERABLE and in operation in accordance with the provision of the Containment Penetrations LCO requirement 3.9.3.c.3. If the required SLCRS train is inoperable or not in operation, the requirements of LCO 3.9.3 are not met. Immediate action must be taken to place the unit in a condition in which LCO 3.9.3 does not apply. The applicable Conditions and Required Actions of LCO 3.9.3, "Containment Penetrations" must be entered immediately. The Required Actions of LCO 3.9.3 provide the appropriate precautions, for this condition, to preclude a fuel handling accident involving recently irradiated fuel inside containment for which the SLCRS train is required.

6. A Note indicating that LCO 3.0.3 does not apply modifies Required Action B.1 and B.2.

   With SLCRS inoperable or not in operation the requirements of the LCO cannot be met during fuel movement involving recently irradiated fuel within the fuel storage pool. Immediate action must be taken to place the unit in a condition in which the LCO does not apply. Immediate action must be taken to suspend movement of recently irradiated fuel assemblies and the movement of fuel assemblies over recently irradiated fuel assemblies in the fuel storage pool. This will preclude a fuel handling accident involving recently irradiated fuel. The requirements of this action do not preclude the movement of fuel assemblies to a safe position.

If fuel movement involving recently irradiated fuel takes place in MODES 1, 2, 3, or 4, LCO 3.0.3 is applicable. However, fuel movement is independent of reactor operation. Therefore, a plant shutdown in accordance with LCO 3.0.3 is not required if this Required Action is not met.

7. SR 3.7.12.1

This SR requires verification every 12 hours that the required portion (fuel building exhaust or containment exhaust (Unit 1)) of the SLCRS train is in operation with the required area exhaust flow discharging through the SLCRS HEPA filters and charcoal adsorbers. Verification includes operation of fans, alignment of dampers, and discharge flow paths from the fuel building or containment (Unit 1 only). The Frequency of 12 hours is sufficient considering other indications and alarms available to the operator in the control room to monitor SLCRS performance.

8. SR 3.7.12.3

This SR verifies the integrity of the fuel building enclosure. The ability of the fuel building to maintain negative pressure with respect to potentially uncontaminated adjacent areas is periodically tested to verify proper function of the SLCRS. During fuel movement involving recently irradiated fuel assemblies in the fuel storage pool, the SLCRS must be OPERABLE and in operation. To ensure performance during a fuel handling accident the fuel pool storage area must be maintained at a negative pressure relative to atmospheric pressure during system operation. The Frequency of 18 months is consistent with the Frequencies specified in Regulatory Guide 1.52 (Ref. 6).

A Note that states this surveillance is only required to be met during fuel movement involving recently irradiated fuel assemblies within the fuel storage pool modifies this SR. This note is necessary as the Unit 1 SLCRS is also required in accordance with LCO 3.9.3.c.3 during fuel movement involving recently irradiated fuel inside containment. As SR 3.7.12.3 has nothing to do with fuel movement inside containment, it is not required in order to confirm the OPERABILITY of a Unit 1 SLCRS train for compliance with LCO 3.9.3.c.3.

B 3.7 PLANT SYSTEMS

B 3.7.13 Fuel Building Air Cleanup System (FBACS)

BASES

BACKGROUND	The FBACS filters airborne radioactive particulates from the area of the fuel pool following a fuel handling accident or loss of coolant accident (LOCA). The FBACS, in conjunction with other normally operating systems, also provides environmental control of temperature and humidity in the fuel pool area. The FBACS consists of two independent and redundant trains. Each train consists of a heater, a prefilter or demister, a high efficiency particulate air (HEPA) filter, an activated charcoal adsorber section for removal of gaseous activity (principally iodines), and a fan. Ductwork, valves or dampers, and instrumentation also form part of the system, as well as demisters, functioning to reduce the relative humidity of the airstream. A second bank of HEPA filters follows the adsorber section to collect carbon fines and provide backup in case the main HEPA filter bank fails. The downstream HEPA filter is not credited in the analysis, but serves to collect charcoal fines, and to back up the upstream HEPA filter should it develop a leak. The system initiates filtered ventilation of the fuel handling building following receipt of a high radiation signal. The FBACS is a standby system, parts of which may also be operated during normal plant operations. Upon receipt of the actuating signal, normal air discharges from the building, the fuel handling building is isolated, and the stream of ventilation air discharges through the system filter trains. The prefilters or demisters remove any large particles in the air, and any entrained water droplets present, to prevent excessive loading of the HEPA filters and charcoal adsorbers. The FBACS is discussed in the FSAR, Sections [6.5.1], [9.4.5], and [15.7.4] (Refs. 1, 2, and 3, respectively) because it may be used for normal, as well as post accident, atmospheric cleanup functions.
APPLICABLE SAFETY ANALYSES	The ~~FBACS~~ design basis is established by the consequences of the limiting Design Basis Accident (DBA), which is a fuel handling accident [involving handling recently irradiated fuel]. The analysis of the fuel handling accident, given in Reference 3, assumes that all fuel rods in an assembly are damaged. The analysis of the LOCA assumes that radioactive materials leaked from the Emergency Core Cooling System (ECCS) are filtered and adsorbed by the FBACS. The DBA analysis of the fuel handling accident assumes that only one train of the FBACS is

APPLICABLE SAFETY ANALYSES (continued)

functional due to a single failure that disables the other train. The accident analysis accounts for the reduction in airborne radioactive material provided by the one remaining train of this filtration system. The amount of fission products available for release from the fuel handling building is determined for a fuel handling accident and for a LOCA. [Due to radioactive decay, FBACS is only required to isolate during fuel *handling accidents involving handling recently irradiated fuel* (i.e., fuel that has occupied part of a critical reactor core within the previous [ ] days).] These assumptions and the analysis follow the guidance provided in Regulatory Guide 1.25 (Ref. 4).

The FBACS satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

Two independent and redundant trains of the FBACS are required to be OPERABLE to ensure that at least one train is available, assuming a single failure that disables the other train, coincident with a loss of offsite power. Total system failure could result in the atmospheric release from the fuel handling building exceeding the 10 CFR 100 (Ref. 5) limits in the event of a fuel handling accident [involving handling recently irradiated fuel].

The FBACS is considered OPERABLE when the individual components necessary to control exposure in the fuel handling building are OPERABLE in both trains. An FBACS train is considered OPERABLE when its associated:

a. Fan is OPERABLE,

b. HEPA filter and charcoal adsorber are not excessively restricting flow, and are capable of performing their filtration function, and

c. Heater, demister, ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.

The LCO is modified by a Note allowing the fuel building boundary to be opened intermittently under administrative controls. For entry and exit through doors the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for fuel building isolation is indicated.

1

BASES

APPLICABILITY

In MODE 1, 2, 3, or 4, the FBACS is required to be OPERABLE to provide fission product removal associated with ECCS leaks due to a LOCA and leakage from containment and annulus.

In MODE 5 or 6, the FBACS is not required to be OPERABLE since the ECCS is not required to be OPERABLE.

During movement of [recently] irradiated fuel in the fuel handling area, the FBACS is required to be OPERABLE to alleviate the consequences of a fuel handling accident.

ACTIONS

LCO 3.0.3 is not applicable while in MODE 5 or 6. However, since irradiated fuel assembly movement can occur in MODE 1, 2, 3, or 4, the ACTIONS have been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODE 5 or 6, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, 3, or 4, the fuel movement is independent of reactor operations. Entering LCO 3.0.3, while in MODE 1, 2, 3, or 4 would require the unit to be shutdown unnecessarily.

A.1

With one FBACS train inoperable, action must be taken to restore OPERABLE status within 7 days. During this period, the remaining OPERABLE train is adequate to perform the FBACS function. The 7 day Completion Time is based on the risk from an event occurring requiring the inoperable FBACS train, and the remaining FBACS train providing the required protection.

B.1

- REVIEWER'S NOTE -
Adoption of Condition B is dependent on a commitment from the licensee to have guidance available describing compensatory measures to be taken in the event of an intentional and unintentional entry into Condition B.

If the fuel building boundary is inoperable in MODE 1, 2, 3, or 4, the FBACS trains cannot perform their intended functions. Actions must be taken to restore an OPERABLE fuel building boundary within 24 hours. During the period that the fuel building boundary is inoperable, appropriate compensatory measures [consistent with the intent, as applicable, of GDC 19, 60, 61, 63, 64 and 10 CFR Part 100] should be

ACTIONS (continued)

utilized to protect plant personnel from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature and relative humidity, and physical security. Preplanned measures should be available to address these concerns for intentional and unintentional entry into the condition. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of compensatory measures. The 24 hour Completion Time is a typically reasonable time to diagnose, plan and possibly repair, and test most problems with the fuel building boundary.

[C.1 and C.2

In MODE 1, 2, 3, or 4, when Required Action A.1 or B.1 cannot be completed within the associated Completion Time, or when both FBACS trains are inoperable for reasons other than an inoperable fuel building boundary (i.e., Condition B), the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in MODE 3 within 6 hours and in MODE 5 within 36 hours. The Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.]

D.1 and D.2

When Required Action A.1 cannot be completed within the required Completion Time, during movement of [recently] irradiated fuel assemblies in the fuel building, the OPERABLE FBACS train must be started immediately or [recently] irradiated fuel movement suspended. This action ensures that the remaining train is OPERABLE, that no undetected failures preventing system operation will occur, and that any active failure will be readily detected.

If the system is not placed in operation, this action requires suspension of [recently] irradiated fuel movement, which precludes a fuel handling accident [involving handling recently irradiated fuel]. This does not preclude the movement of fuel assemblies to a safe position.

E.1

When two trains of the FBACS are inoperable during movement of [recently] irradiated fuel assemblies in the fuel building, action must be taken to place the unit in a condition in which the LCO does not apply. Action must be taken immediately to suspend movement of

1

BASES

ACTIONS (continued)

[recently] irradiated fuel assemblies in the fuel building. This does not preclude the movement of fuel to a safe position.

SURVEILLANCE REQUIREMENTS

SR 3.7.13.1

Standby systems should be checked periodically to ensure that they function properly. As the environmental and normal operating conditions on this system are not severe, testing each train once every month provides an adequate check on this system.

Monthly heater operation dries out any moisture accumulated in the charcoal from humidity in the ambient air. [Systems with heaters must be operated for ≥ 10 continuous hours with the heaters energized. Systems without heaters need only be operated for ≥ 15 minutes to demonstrate the function of the system.] The 31 day Frequency is based on the known reliability of the equipment and the two train redundancy available.

SR 3.7.13.2

This SR verifies that the required FBACS 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 3.7.13.3

This SR verifies that each FBACS train starts and operates on an actual or simulated actuation signal. The [18] month Frequency is consistent with Reference 6.]

SR 3.7.13.4

This SR verifies the integrity of the fuel building enclosure. The ability of the fuel building to maintain negative pressure with respect to potentially uncontaminated adjacent areas is periodically tested to verify proper function of the FBACS. During the [post accident] mode of operation, the FBACS is designed to maintain a slight negative pressure in the fuel building, to prevent unfiltered LEAKAGE. The FBACS is designed to maintain a ≤ [-0.125] inches water gauge with respect to atmospheric pressure at a flow rate of [20,000] cfm to the fuel building. The

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BASES

SURVEILLANCE REQUIREMENTS (continued)

Frequency of [18] months is consistent with the guidance provided in NUREG-0800, Section 6.5.1 (Ref. 7).

An [18] month Frequency (on a STAGGERED TEST BASIS) is consistent with Reference 6.

[SR 3.7.13.5

Operating the FBACS filter bypass damper is necessary to ensure that the system functions properly. The OPERABILITY of the FBACS filter bypass damper is verified if it can be closed. An [18] month Frequency is consistent with Reference 6.]

REFERENCES

1. FSAR, Section [6.5.1].
2. FSAR, Section [9.4.5].
3. FSAR, Section [15.7.4].
4. Regulatory Guide 1.25.
5. 10 CFR 100.
6. Regulatory Guide 1.52, Rev. [2].
7. NUREG-0800, Section 6.5.1, Rev. 2, July 1981.

1

B 3.7 PLANT SYSTEMS

B 3.7.14 Penetration Room Exhaust Air Cleanup System (PREACS)

BASES

BACKGROUND

The PREACS filters air from the penetration area between containment and the auxiliary building.

The PREACS consists of two independent and redundant trains. Each train consists of a heater, a prefilter or demister, a high efficiency particulate air (HEPA) filter, an activated charcoal adsorber section for removal of gaseous activity (principally iodines), and a fan. Ductwork, valves or dampers, and instrumentation, as well as demisters, functioning to reduce the relative humidity of the air stream, also form part of the system. A second bank of HEPA filters, which follows the adsorber section, collects carbon fines and provides backup in case of failure of the main HEPA filter bank. The downstream HEPA filter, although not credited in the accident analysis, collects charcoal fines and serves as a backup should the upstream HEPA filter develop a leak. The system initiates filtered ventilation following receipt of a safety injection signal.

The PREACS is a standby system, parts of which may also operate during normal unit operations. During emergency operations, the PREACS dampers are realigned and fans are started to initiate filtration. Upon receipt of the actuating signal(s), normal air discharges from the penetration room, the penetration room is isolated, and the stream of ventilation air discharges through the system filter trains. The prefilters remove any large particles in the air, as well as any entrained water droplets, to prevent excessive loading of the HEPA filters and charcoal adsorbers.

The PREACS is discussed in the FSAR, Sections [6.5.1], [9.4.5], and [15.6.5] (Refs. 1, 2, and 3, respectively) since it may be used for normal, as well as post accident, atmospheric cleanup functions. Heaters may be included for moisture removal on systems operating in high humidity conditions. The primary purpose of the heaters is to maintain the relative humidity at an acceptable level consistent with iodine removal efficiencies per Regulatory Guide 1.52 (Ref. 4).

APPLICABLE SAFETY ANALYSES

The PREACS design basis is established by the large break loss of coolant accident (LOCA). The system evaluation assumes a passive failure outside containment, such as valve packing leakage during a Design Basis Accident (DBA). In such a case, the system restricts the radioactive release to within the 10 CFR 100 (Ref. 4) limits, or the NRC

1

BASES

APPLICABLE SAFETY ANALYSES (continued)

staff approved licensing basis (e.g., a specified fraction of 10 CFR 100 limits). The analysis of the effects and consequences of a large break LOCA are presented in Reference 3.

Two types of system failures are considered in the accident analysis: a complete loss of function, and excessive LEAKAGE. Either type of failure may result in less efficient removal of any gaseous or particulate material released to the penetration room following a LOCA.

The PREACS satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

Two independent and redundant trains of the PREACS are required to be OPERABLE to ensure that at least one train is available, assuming there is a single failure disabling the other train coincident with a loss of offsite power.

The PREACS is considered OPERABLE when the individual components necessary to control radioactive releases are OPERABLE in both trains. A PREACS train is considered OPERABLE when its associated:

a. Fan is OPERABLE,

b. HEPA filter and charcoal adsorber are not excessively restricting flow, and are capable of performing their filtration functions, and

c. Heater, demister, ductwork, valves, and dampers are OPERABLE and air circulation can be maintained.

The LCO is modified by a Note allowing the penetration room boundary to be opened intermittently under administrative controls. For entry and exit through doors, the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for penetration room isolation is indicated.

APPLICABILITY

In MODES 1, 2, 3, and 4, the PREACS is required to be OPERABLE, consistent with the OPERABILITY requirements of the Emergency Core Cooling System (ECCS).

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BASES

APPLICABILITY (continued)

In MODE 5 or 6, the PREACS is not required to be OPERABLE since the ECCS is not required to be OPERABLE.

ACTIONS

A.1

With one PREACS train inoperable, the action must be taken to restore OPERABLE status within 7 days. During this period, the remaining OPERABLE train is adequate to perform the PREACS function. The 7 day Completion Time is appropriate because the risk contribution of the PREACS is less than that of the ECCS (72 hour Completion Time), and this system is not a direct support system for the ECCS. The 7 day Completion Time is based on the low probability of a DBA occurring during this period, and the remaining train providing the required capability.

B.1

Adoption of Condition B is dependent on a commitment from the licensee to have guidance available describing compensatory measures to be taken in the event of an intentional and unintentional entry into Condition B.

If the penetration room boundary is inoperable, the PREACS trains cannot perform their intended functions. Actions must be taken to restore an OPERABLE penetration room boundary within 24 hours. During the period that the penetration room boundary is inoperable, appropriate compensatory measures [consistent with the intent, as applicable, of GDC 19, 60, 64 and 10 CFR Part 100] should be utilized to protect plant personnel from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature and relative humidity, and physical security. Preplanned measures should be available to address these concerns for intentional and unintentional entry into the condition. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of compensatory measures. The 24 hour Completion Time is a typically reasonable time to diagnose, plan and possibly repair, and test most problems with the penetration room boundary.

1

ACTIONS (continued)

C.1 and C.2

If the inoperable train or penetration room boundary cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 within 36 hours. The Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.14.1

Standby systems should be checked periodically to ensure that they function properly. As the environmental and normal operating conditions on this system are not severe, testing each train once every month provides an adequate check on this system. Monthly heater operation dries out any moisture that may have accumulated in the charcoal as a result of humidity in the ambient air. [Systems with heaters must be operated for ∃ 10 continuous hours with the heaters energized. Systems without heaters need only be operated for ∃ 15 minutes to demonstrate the function of the system.] The 31 day Frequency is based on the known reliability of equipment and the two train redundancy available.

SR 3.7.14.2

This SR verifies that the required PREACS 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 3.7.14.3

This SR verifies that each PREACS starts and operates on an actual or simulated actuation signal. The [18] month Frequency is consistent with that specified in Reference 5.]

SURVEILLANCE REQUIREMENTS (continued)

[SR 3.7.14.4

This SR verifies the integrity of the penetration room enclosure. The ability of the penetration room to maintain a negative pressure, with respect to potentially uncontaminated adjacent areas, is periodically tested to verify proper function of PREACS. During the [post accident] mode of operation, the PREACS is designed to maintain a # [-0.125] inches water gauge relative to atmospheric pressure at a flow rate of [3000] cfm in the penetration room, with respect to adjacent areas, to prevent unfiltered LEAKAGE. The Frequency of [18] months is consistent with the guidance provided in NUREG-0800 (Ref. 6).

The minimum system flow rate maintains a slight negative pressure in the penetration room area, and provides sufficient air velocity to transport particulate contaminants, assuming only one filter train is operating. The number of filter elements is selected to limit the flow rate through any individual element to about [3000] cfm. This may vary based on filter housing geometry. The maximum limit ensures that the flow through, and pressure drop across, each filter element are not excessive.

The number and depth of the adsorber elements ensure that, at the maximum flow rate, the residence time of the air stream in the charcoal bed achieves the desired adsorption rate. At least a [0.125] second residence time is necessary for an assumed [99]% efficiency.

The filters have a certain pressure drop at the design flow rate when clean. The magnitude of the pressure drop indicates acceptable performance, and is based on manufacturers' recommendations for the filter and adsorber elements at the design flow rate. An increase in pressure drop or a decrease in flow indicates that the filter is being loaded or that there are other problems with the system.

This test is conducted along with the tests for filter penetration; thus, the [18] month Frequency is consistent with that specified in Reference 5.]

[SR 3.7.14.5

It is necessary to operate the PREACS filter bypass damper to ensure that the system functions properly. The OPERABILITY of the PREACS filter bypass damper is verified if it can be closed. An [18] month Frequency is consistent with that specified in Reference 5.]

1

BASES

REFERENCES

1. FSAR, Section [6.5.1].
2. FSAR, Section [9.4.5].
3. FSAR, Section [15.6.5].
4. 10 CFR 100.
5. Regulatory Guide 1.52, Rev. [2].
6. NUREG-0800, Section 6.5.1, Rev. 2, July 1981.

B 3.7 PLANT SYSTEMS

B 3.7.15 Fuel Storage Pool Water Level

BASES

BACKGROUND

The minimum water level in the fuel storage pool meets the assumptions of iodine decontamination factors following a fuel handling accident. The specified water level shields and minimizes the general area dose when the storage racks are filled to their maximum capacity. The water also provides shielding during the movement of spent ~~fuel.~~

U

9.12 (Unit 1) and Section 9.1.2 (Unit 2)

A general description of the fuel storage ~~pool~~ design is given in the FSAR, Section ~~[9.1.2]~~ (Ref. 1). A description of the Spent Fuel Pool Cooling and Cleanup System is given in the FSAR, Section ~~[9.1.3]~~ (Ref. 2). The assumptions of the fuel handling accident are given in the FSAR, Section ~~[15.7.4]~~ (Ref. 3).

2

14.2.1 (Unit 1) and Section 15.7.4 (Unit 2)

9.5 (Unit 1) and Section 9.1.3 (Unit 2)

1.183

offsite and control room doses are

APPLICABLE SAFETY ANALYSES

are within

The minimum water level in the fuel storage pool meets the assumptions ~~of the~~ fuel handling accident described in Regulatory Guide ~~1.25~~ (Ref. 4). The resultant ~~2 hour thyroid~~ dose ~~per person at the exclusion area boundary is a small fraction of the~~ 10 CFR ~~100~~ (Ref. 5) limits.

2

and Reference 4

total effective dose equivalent

3

According to Reference ~~4~~, there is 23 ft of water ~~between the~~ top of the damaged fuel bundle and the fuel pool surface during a fuel ~~handling~~ accident. With 23 ft of water, the ~~assumptions~~ of Reference 4 can be used directly. In practice, this LCO preserves this ~~assumption~~ for the bulk of the fuel in the storage racks. In the case of a single bundle dropped and lying horizontally on top of the spent fuel racks, however, there may be < 23 ft of water above the top of the fuel bundle and the surface, indicated by the width of the bundle. To offset this small nonconservatism, the analysis assumes ~~that all fuel rods fail, although analysis shows that only the first few rows fail from a hypothetical maximum drop.~~

50.67

decontamination factors

3

that the maximum number of postulated fuel rods fail. This number of failed fuel rods is based on the worse case postulated fuel drop height occurring in the containment building. The postulated fuel drop height in the fuel building is significantly less than the postulated fuel drop height in the containment building.

The fuel storage pool water level satisfies Criteria 2 and 3 of 10 CFR 50.36(c)(2)(ii).

LCO

The fuel storage pool water level is required to be ≥ 23 ft over the top of irradiated fuel assemblies seated in the storage racks. The specified water level preserves the assumptions of the fuel handling accident analysis (Ref. 3). As such, it is the minimum required for fuel ~~storage and~~ movement within the fuel storage pool.

4

The FHA in the storage pool is described in Reference 3. With a minimum water level of 23 feet and a minimum decay time of 100 hours prior to fuel handling, the analyses demonstrate that the offsite and control room doses are maintained within the limits established in References 4 and 5.

BASES

and during movement of fuel assemblies over irradiated fuel assemblies in the fuel storage pool

APPLICABILITY 1

This LCO applies during movement of irradiated fuel assemblies in the fuel storage pool, since the potential for a release of fission products exists.

ACTIONS

A.2

When the fuel storage pool water level is lower than the required level, the movement of non-irradiated fuel assemblies over irradiated fuel assemblies in the fuel storage pool is immediately suspended to a safe position. This action effectively precludes the occurrence of a fuel handling accident. This does not preclude movement of a fuel assembly to a safe position.

A.1

Condition A

~~Required Action A.1~~ is modified by a Note indicating that LCO 3.0.3 does not apply.

When the initial conditions for prevention of an accident cannot be met, steps should be taken to preclude the accident from occurring. When the fuel storage pool water level is lower than the required level, the movement of irradiated fuel assemblies in the fuel storage pool is immediately suspended to a safe position. This action effectively precludes the occurrence of a fuel handling accident. This does not preclude movement of a fuel assembly to a safe position. 1

If moving irradiated fuel assemblies while in MODE 5 or 6, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODES 1, 2, 3, and 4, the fuel movement is independent of reactor operations. Therefore, inability to suspend movement of irradiated fuel assemblies is not sufficient reason to require a reactor shutdown.

SURVEILLANCE REQUIREMENTS

SR 3.7.15.1

, which is

A stable volume in the pool is maintained by controlling

This SR verifies sufficient fuel storage pool water is available in the event of a fuel handling accident. The water level in the fuel storage pool must be checked periodically. The 7 day Frequency is appropriate because the volume in the pool is normally stable. ~~Water level changes are controlled~~ by plant procedures ~~and are~~ acceptable based on operating experience. 2

In addition to the verifying the storage pool level every 7 days,

with the transfer tube open.

cavity

~~During~~ refueling operations, the level in the fuel storage pool is ~~in~~ equilibrium with the refueling ~~canal~~, and the level in the refueling ~~canal~~ is checked daily in accordance with SR 3.9.6.1.

REFERENCES

U

1. FSAR, Section ~~[9.1.2]~~ 9.12 (Unit 1) and Section 9.1.2 (Unit 2)
2. FSAR, Section ~~[9.1.3]~~ 9.5 (Unit 1) and Section 9.1.3 (Unit 2)
3. FSAR, Section ~~[15.7.4]~~. 14.2.1 (Unit 1) and Section 15.7.4 (Unit 2)
4. Regulatory Guide ~~1.25, [Rev. 0]~~ 1.183, July 2000.

2

BASES

REFERENCES (continued)

5. 10 CFR ~~100.11~~ 50.67 2

B 3.7 PLANT SYSTEMS

B 3.7.16 [Fuel Storage Pool Boron Concentration]

BASES

BACKGROUND

1 Insert 1

In the Maximum Density Rack (MDR) [(Refs. 1 and 2)] design, the spent fuel storage pool is divided into two separate and distinct regions which, for the purpose of criticality considerations, are considered as separate pools. [Region 1], with [336] storage positions, is designed to accommodate new fuel with a maximum enrichment of [4.65] wt% U-235, or spent fuel regardless of the discharge fuel burnup. [Region 2], with [2670] storage positions, is designed to accommodate fuel of various initial enrichments which have accumulated minimum burnups within the acceptable domain according to Figure [3.7.17-1], in the accompanying LCO. Fuel assemblies not meeting the criteria of Figure [3.7.17-1] shall be stored in accordance with paragraph 4.3.1.1 in Section 4.3, Fuel Storage.

The water in the spent fuel storage pool normally contains soluble boron, which results in large subcriticality margins under actual operating conditions. However, the NRC guidelines, based upon the accident condition in which all soluble poison is assumed to have been lost, specify that the limiting k_{eff} of 0.95 be evaluated in the absence of soluble boron. Hence, the design of both regions is based on the use of unborated water, which maintains each region in a subcritical condition during normal operation with the regions fully loaded. The double contingency principle discussed in ANSI N-16.1-1975 and the April 1978 NRC letter (Ref. 3) allows credit for soluble boron under other abnormal or accident conditions, since only a single accident need be considered at one time. For example, the most severe accident scenario is associated with the movement of fuel from [Region 1 to Region 2], and accidental misloading of a fuel assembly in [Region 2]. This could potentially increase the criticality of [Region 2]. To mitigate these postulated criticality related accidents, boron is dissolved in the pool water. Safe operation of the MDR with no movement of assemblies may therefore be achieved by controlling the location of each assembly in accordance with LCO 3.7.17, "Spent Fuel Assembly Storage." Prior to movement of an assembly, it is necessary to perform SR 3.7.16.1.

APPLICABLE SAFETY ANALYSES

1 Insert 2

Most accident conditions do not result in an increase in the activity of either of the two regions. Examples of these accident conditions are the loss of cooling (reactivity increase with decreasing water density) and the dropping of a fuel assembly on the top of the rack. However, accidents can be postulated that could increase the reactivity. This increase in

BASES

APPLICABLE SAFETY ANALYSES (continued)

~~reactivity is unacceptable with unborated water in the storage pool. Thus, for these accident occurrences, the presence of soluble boron in the storage pool prevents criticality in both regions. The postulated accidents are basically of two types. A fuel assembly could be incorrectly transferred from [Region 1 to Region 2] (e.g., an unirradiated fuel assembly or an insufficiently depleted fuel assembly). The second type of postulated accidents is associated with a fuel assembly which is dropped adjacent to the fully loaded [Region 2] storage rack. This could have a small positive reactivity effect on [Region 2]. However, the negative reactivity effect of the soluble boron compensates for the increased reactivity caused by either one of the two postulated accident scenarios. The accident analyses is provided in the FSAR, Section [15.7.4] (Ref. 4).~~

accidents as discussed in the UFSAR (Ref. 7). In addition, for Unit 2, soluble boron is credited to maintain $k_{eff} \le 0.95$ during normal operating conditions whenever fuel is stored in the spent fuel pool.

The concentration of dissolved boron in the fuel storage pool satisfies Criterion 2 of 10 CFR 50.36(c)(2)(ii).

CTS Values

≥ 1050 ppm (Unit 1) and
≥ 2000 ppm (Unit 2)

LCO 1

The fuel storage pool boron concentration is required to be ~~≥ [2300] ppm~~. The specified concentration of dissolved boron in the fuel storage pool preserves the assumptions used in the analyses of the potential ~~critical~~ criticality ~~accident scenarios as described in Reference 4~~. ~~This concentration of dissolved boron is the minimum required concentration for fuel assembly storage and movement within the fuel storage pool.~~

For Unit 1

to Unit 1

APPLICABILITY

~~T~~This LCO applies whenever fuel assemblies are stored in the spent fuel storage pool, until a complete spent fuel storage pool verification has been performed following the last movement of fuel assemblies in the spent fuel storage pool. This LCO does not apply following the verification, since the verification would confirm that there are no misloaded fuel assemblies. With no further fuel assembly movements in progress, there is no potential for a misloaded fuel assembly or a dropped fuel assembly.

1

For Unit 2 this LCO applies whenever fuel assemblies are stored in the spent fuel storage pool to ensure k_{eff} is maintained ≤ 0.95 during normal operating as well as for potential criticality accident scenarios.

ACTIONS

A.1, A.2.1, and A.2.2

The Required Actions are modified by a Note indicating that LCO 3.0.3 does not apply.

In addition, Required Action A.2.2 is modified by a Note that states Required Action A.2.2 is only applicable to Unit 1. The Action is restricted to Unit 1 because Unit 1 does not credit soluble boron during normal (non-accident) conditions to ensure k_{eff} is maintained ≤ 0.95.

When the concentration of boron in the fuel storage pool is less than required, immediate action must be taken to preclude the occurrence of an accident or to mitigate the consequences of an accident in progress. This is most efficiently achieved by immediately suspending the

BASES 1

for Unit 1 only,

Action is also initiated to restore the boron concentration

ACTIONS (continued)

For Unit 1 the surveillance must be performed within the specified Frequency prior to initiating fuel movement and must continue to be performed at the specified Frequency until fuel movement is finished and a verification is complete that assures fuel assemblies are stored in accordance with LCO 3.7.14.

For Unit 2 the surveillance must be performed within the specified Frequency whenever fuel assemblies are stored in the spent fuel storage pool.

movement of fuel assemblies. ~~The concentration of boron is restored~~ simultaneously with suspending movement of fuel assemblies. Alternatively, beginning a verification of the fuel storage pool fuel locations, to ensure proper locations of the fuel, can be performed. However, prior to resuming movement of fuel assemblies, the concentration of boron must be restored. This does not preclude movement of a fuel assembly to a safe position.

The Required Actions are modified by a Note that takes exception to LCO 3.0.3.

If the LCO is not met while moving irradiated fuel assemblies in MODE 5 or 6, LCO 3.0.3 would not be applicable. If moving irradiated fuel assemblies while in MODE 1, 2, 3, or 4, the fuel movement is independent of reactor operation. Therefore, inability to suspend movement of fuel assemblies is not sufficient reason to require a reactor shutdown.

SURVEILLANCE REQUIREMENTS

SR 3.7.16.1

This SR verifies that the concentration of boron in the fuel storage pool is within the required limit. As long as this SR is met, the analyzed accidents are fully addressed. The 7 day Frequency is appropriate because no major replenishment of pool water is expected to take place over such a short period of time.

REFERENCES

Insert 3

1

~~[1. Callaway FSAR, Appendix 9.1A, "The Maximum Density Rack (MDR) Design Concept."~~

~~2. Description and Evaluation for Proposed Changes to Facility Operating Licenses DPR-39 and DPR-48 (Zion Power Station).]~~

~~3. Double contingency principle of ANSI N16.1-1975, as specified in the April 14, 1978 NRC letter (Section 1.2) and implied in the proposed revision to Regulatory Guide 1.13 (Section 1.4, Appendix A).~~

~~4. FSAR, Section [15.7.4].~~

INSERTS FOR ITS 3.7.16 BASES

Fuel Storage Pool Boron Concentration

INSERT 1: BVPS Specific Background Section

The spent fuel storage racks contain storage locations for 1627 fuel assemblies (Unit 1) and 1088 fuel assemblies (Unit 2). The racks are designed to store Westinghouse 17X17 fuel assemblies with nominal enrichment up to 5.0 weight percent. The spent fuel storage racks are divided into three regions with different fuel burnup-enrichment limits associated with each region. Fuel assemblies may be stored in any location provided the fuel burnup-enrichment combinations are within the limits specified for the associated storage rack region in LCO 3.7.14, "Spent Fuel Assembly Storage."

For Unit 1, the spent fuel storage racks are constructed, in part, from a boron carbide and aluminum-composite material with the trade name "Boral." The Boral material provides a neutron absorbing function that helps to maintain the stored fuel in a subcritical condition. Therefore, soluble boron is not required in the Unit 1 spent fuel pool to maintain the spent fuel rack multiplication factor, k_{eff}, ≤ 0.95 when the fuel assemblies are stored in the correct fuel pool location in accordance with LCO 3.7.14 and no fuel movement is in progress (i.e., the pool is in a static condition). The fact that soluble boron concentration is not required to maintain the Unit 1 spent fuel rack multiplication factor, k_{eff}, ≤ 0.95 is confirmed in Holtec Report HI-92791(Ref. 1). However, a boron concentration is maintained in the Unit 1 spent fuel pool to provide negative reactivity for postulated accident conditions (i.e., a misplaced fuel assembly resulting from fuel movement) consistent with the guidelines of ANSI 16.1-1975 (Ref. 2) and the April 1978 NRC letter (Ref. 3). The required Unit 1 spent fuel pool boron concentration for a reactivity excursion due to accident conditions is 1050 ppm.

Safe operation of the Unit 1 spent fuel pool with no movement of assemblies may therefore be achieved (without reliance on soluble boron) by controlling the location of each stored fuel assembly in accordance with LCO 3.7.14. However, prior to fuel movement and during movement of fuel assemblies it is necessary to perform SR 3.7.16.1 to assure the required boron concentration is available until fuel movement is finished and a verification is complete that assures fuel assemblies are stored in accordance with LCO 3.7.14.

For Unit 2, spent fuel racks have been analyzed in accordance with the methodology contained in WCAP-14416-NP-A (Ref. 4), as supplemented by Westinghouse Electric Company letter, FENOC-00-110 (Ref. 5). This methodology ensures the spent fuel rack multiplication factor, k_{eff} is ≤ 0.95, as recommended by the April 1978 NRC letter (Ref. 3) and ANSI/ANS-57.2-1983 (Ref. 6). The codes, methods, and techniques contained in the methodology are used to satisfy this k_{eff} criterion.

The Unit 2 spent fuel storage racks are analyzed utilizing credit for checkerboard configurations, burnup, and soluble boron, to ensure k_{eff} is maintained ≤ 0.95, including uncertainties, tolerances, and accident conditions.

The soluble boron concentration required to maintain k_{eff} ≤ 0.95 in the Unit 2 spent fuel pool under normal conditions is 450 ppm. A spent fuel pool boron concentration of 2000 ppm ensures no credible boron dilution event will result in k_{eff} exceeding 0.95. Safe operation of the Unit 2 spent fuel pool requires the specified fuel pool boron concentration be maintained at all times when fuel assemblies are stored in the spent fuel pool. Therefore, for Unit 2, SR 3.7.16.1 is applicable whenever fuel assemblies are stored in the spent fuel pool.

During refueling, the water volume in the spent fuel pool, the transfer canal, the refueling canal, the refueling cavity, and the reactor vessel form a single mass. As a result, the soluble boron concentration is relatively the same in each of these volumes.

INSERT 2: BVPS Specific Safety Analysis Section

The most limiting reactivity excursion event evaluated in the spent fuel pool criticality analyses (for both Unit 1 and 2) is a misplaced new fuel assembly with the highest permissible U-235 enrichment (5.0 weight percent).

For Unit 1, the amount of soluble boron required to maintain the spent fuel rack multiplication factor, k_{eff}, ≤ 0.95 with the worst case misplaced new fuel assembly is approximately 400 ppm. The ≥ 1050 ppm boron concentration specified in the Unit 1 LCO conservatively assures k_{eff} is maintained within the limit for the worst case misplaced assembly accident. The Unit 1 boron concentration requirement of 1050 ppm includes a conservative margin of 600 ppm with a 50 ppm allowance for uncertainties.

For Unit 2, the amount of soluble boron required to maintain the spent fuel storage rack multiplication factor, k_{eff}, ≤ 0.95 with the worst case misplaced new fuel assembly is ≥ 1400 ppm. The ≥ 2000 ppm limit specified in the Unit 2 LCO conservatively assures k_{eff} is maintained within the limit for the worst case misplaced fuel assembly accident. In addition, the ≥ 2000 ppm limit specified in the Unit 2 LCO ensures no credible boron dilution event will reduce the boron concentration below the 450 ppm required during normal non-accident conditions to maintain k_{eff} ≤ 0.95.

INSERT 3: BVPS Specific Reference Section

1. Holtec Report HI-92791, Rev. 6, "Spent Fuel Pool Modification For Increased Storage Capacity, Beaver Valley Power Station Unit 1," April 1992 as supplemented by Letter to the NRC (License Change Request No. 202, Supplement 1, Spent Fuel Pool Rerack) dated June 28, 1993.
2. ANSI 16.1-1975 (ANS-8.1), Nuclear Criticality Safety In Operations With Fissionable Materials Outside Reactors.
3. NRC Letter to All Power Reactor Licensees from B. K. Grimes, "OT Position for Review and Acceptance of Spent Fuel Storage and Handling Applications," April 14, 1978.
4. WCAP-14416-NP-A, Westinghouse Spent Fuel Rack Criticality Analysis Methodology," Revision 1, November 1996.
5. Westinghouse Electric Company Letter, FENOC-00-110, "NSAL-00-015, "Axial Burnup Shape Reactivity Bias," November 2000.
6. ANSI/ANS-57.2-1983, "Design Requirements for Light Water Reactor Spent Fuel Storage Facilities at Nuclear Power Stations."
7. UFSAR Sections 3.3.2.7 and 9.12.2.2 (Unit 1) and UFSAR Sections 4.3.2.6 and 9.1.2 (Unit 2).

B 3.7 PLANT SYSTEMS

B 3.7.~~17~~ 14 [Spent Fuel Pool Storage]

BASES

BACKGROUND

Insert 1

1

~~In the Maximum Density Rack (MDR) [(Refs. 1 and 2)] design, the spent fuel storage pool is divided into two separate and distinct regions which, for the purpose of criticality considerations, are considered as separate pools. [Region 1], with [336] storage positions, is designed to accommodate new fuel with a maximum enrichment of [4.65] wt% U-235, or spent fuel regardless of the discharge fuel burnup. [Region 2], with [2670] storage positions, is designed to accommodate fuel of various initial enrichments which have accumulated minimum burnups within the acceptable domain according to Figure 3.7.17-1, in the accompanying LCO. Fuel assemblies not meeting the criteria of Figure [3.7.17-1] shall be stored in accordance with paragraph 4.3.1.1 in Section 4.3, Fuel Storage.~~

~~The water in the spent fuel storage pool normally contains soluble boron, which results in large subcriticality margins under actual operating conditions. However, the NRC guidelines, based upon the accident condition in which all soluble poison is assumed to have been lost, specify that the limiting k_{eff} of 0.95 be evaluated in the absence of soluble boron. Hence, the design of both regions is based on the use of unborated water, which maintains each region in a subcritical condition during normal operation with the regions fully loaded. The double contingency principle discussed in ANSI N-16.1-1975 and the April 1978 NRC letter (Ref. 3) allows credit for soluble boron under other abnormal or accident conditions, since only a single accident need be considered at one time. For example, the most severe accident scenario is associated with the movement of fuel from [Region 1 to Region 2], and accidental misloading of a fuel assembly in [Region 2]. This could potentially increase the criticality of [Region 2]. To mitigate these postulated criticality related accidents, boron is dissolved in the pool water. Safe operation of the MDR with no movement of assemblies may therefore be achieved by controlling the location of each assembly in accordance with the accompanying LCO. Prior to movement of an assembly, it is necessary to perform SR 3.7.16.1.~~

7

APPLICABLE SAFETY ANALYSES

The hypothetical accidents can only take place during or as a result of the movement of an assembly (Ref. ~~4~~). For these accident occurrences, the presence of soluble boron in the spent fuel storage pool (controlled by LCO 3.7.16, "Fuel Storage Pool Boron Concentration") prevents criticality in both regions. By closely controlling the movement of each assembly

BASES

For Unit 1, during

without reliance on soluble boron.

APPLICABLE SAFETY ANALYSES (continued)

1

and by checking the location of each assembly after movement, the time period for potential accidents may be limited to a small fraction of the total operating time. ~~During~~ the remaining time period with no potential for accidents, the operation may be under the auspices of the accompanying LCO.

INSERT 2

The configuration of fuel assemblies in the fuel storage pool satisfies Criterion 2 of 10 CFR 50.36(c)(2)(ii).

For Unit 1, the

Table 3.7.14-1A

LCO

~~The~~ restrictions on the placement of fuel assemblies within the spent fuel pool, in accordance with ~~Figure 3.7.17-1~~, in the accompanying LCO, ensures the k_{eff} of the spent fuel storage pool will always remain < 0.95, assuming the pool to be flooded with unborated water. ~~Fuel assemblies not meeting the criteria of Figure [3.7.17-1] shall be stored in accordance with Specification 4.3.1.1 in Section 4.3.~~

≤

1

INSERT 3

APPLICABILITY

This LCO applies whenever any fuel assembly is stored in ~~[Region 2] of~~ the fuel storage pool.

spent

1

Table 3.7.14-1A (Unit 1) and Table 3.7.14-1B (Unit 2).

ACTIONS

A.1

Required Action A.1 is modified by a Note indicating that LCO 3.0.3 does not apply.

When the configuration of fuel assemblies stored in ~~[Region 2]~~ the spent fuel storage pool is not in accordance with ~~Figure 3.7.17-1, or paragraph 4.3.1.1~~, the immediate action is to initiate action to make the necessary fuel assembly movement(s) to bring the configuration into compliance with ~~Figure 3.7.17-1 or Specification 4.3.1.1~~.

1

The Required Actions are modified by a Note that takes exception to LCO 3.0.3.

If unable to move irradiated fuel assemblies while in MODE 5 or 6, LCO 3.0.3 would not be applicable. If unable to move irradiated fuel assemblies while in MODE 1, 2, 3, or 4, the action is independent of reactor operation. Therefore, inability to move fuel assemblies is not sufficient reason to require a reactor shutdown.

14

Table 3.7.14-1A (Unit 1) and Table 3.7.14-1B (Unit 2).

SURVEILLANCE REQUIREMENTS

SR 3.7.~~17~~.1

1

This SR verifies by administrative means that the initial enrichment and burnup of the fuel assembly is in accordance with ~~Figure [3.7.17-1]~~ in the accompanying LCO. ~~For fuel assemblies in the unacceptable range of~~

Verification by administrative means may be accomplished through fuel receipt records for new fuel or burnup analysis as necessary in accordance with refueling procedures. The Frequency of prior to storing a fuel assembly ensures that fuel assemblies are stored within the configurations analyzed in the spent fuel criticality analysis.

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~Figure 3.7.17-1, performance of this SR will ensure compliance with Specification 4.3.1.1.~~

REFERENCES

~~[1. Callaway FSAR, Appendix 9.1A, "The Maximum Density Rack (MDR) Design Concept."~~

~~2. Description and Evaluation for Proposed Changes to Facility Operating Licenses DPR-39 and DPR-48 (Zion Power Station).]~~

~~3. Double contingency principle of ANSI N16.1-1975, as specified in the April 14, 1978 NRC letter (Section 1.2) and implied in the proposed revision to Regulatory Guide 1.13 (Section 1.4, Appendix A).~~

~~4. FSAR, Section [15.7.4].~~

1

1. Holtec Report HI-92791, Rev. 6, "Spent Fuel Pool Modification For Increased Storage Capacity, Beaver Valley Power Station Unit 1," April, 1992 as supplemented by Letter to the NRC (License Change Request No. 202, Supplement 1, Spent Fuel Pool Rerack) dated June 28, 1993.
2. ANSI 16.1-1975 (ANS-8.1), Nuclear Criticality Safety In Operations With Fissionable Materials Outside Reactors.
3. NRC Letter to All Power Reactor Licensees from B. K. Grimes, "OT Position for Review and Acceptance of Spent Fuel Storage and Handling Applications", April 14, 1978.
4. WCAP-14416-NP-A, Westinghouse Spent Fuel Rack Criticality Analysis Methodology", Revision 1, November 1996.
5. Westinghouse Electric Company Letter, FENOC-00-110, "NSAL-00-015, "Axial Burnup Shape Reactivity Bias," November 2000.
6. ANSI/ANS-57.2-1983, "Design Requirements for Light Water Reactor Spent Fuel Storage Facilities at Nuclear Power Stations."
7. UFSAR Section 14 (Unit 1) and UFSAR Section 15 (Unit 2).

INSERTS FOR ITS 3.7.14 BASES

Spent Fuel Pool Storage

INSERT 1: BVPS Specific Background Section

The spent fuel storage racks contain storage locations for 1627 fuel assemblies (Unit 1) and 1088 fuel assemblies (Unit 2). The racks are designed to store Westinghouse 17X17 fuel assemblies with nominal enrichment up to 5.0 weight percent. The spent fuel storage racks are divided into three regions with different fuel burnup-enrichment limits associated with each region. Fuel assemblies may be stored in any location provided the fuel burnup-enrichment combinations are within the limits specified for the associated storage rack region in the accompanying LCO.

For Unit 1, the spent fuel storage racks are constructed, in part, from a boron carbide and aluminum-composite material with the trade name "Boral." The Boral material provides a neutron absorbing function to maintain the stored fuel in a subcritical condition. Therefore, soluble boron is not required in the Unit 1 spent fuel pool to maintain the spent fuel rack multiplication factor, k_{eff}, ≤ 0.95 when the fuel assemblies are stored in the correct fuel pool location in accordance with the accompanying LCO and no fuel movement is in progress (i.e., the pool is in a static condition). The fact that soluble boron concentration is not required to maintain the Unit 1 spent fuel rack multiplication factor, k_{eff}, ≤ 0.95 is confirmed in Holtec Report HI-92791(Ref. 1). However, a boron concentration is maintained in the Unit 1 spent fuel pool to provide negative reactivity for postulated accident conditions (i.e., a misplaced fuel assembly resulting from fuel movement) consistent with the guidelines of ANSI 16.1-1975 (Ref. 2) and the April 1978 NRC letter (Ref. 3). The required Unit 1 spent fuel pool boron concentration for a reactivity excursion due to accident conditions is 1050 ppm.

Safe operation of the Unit 1spent fuel pool with no movement of assemblies may therefore be achieved (without reliance on soluble boron) by controlling the location of each stored fuel assembly in accordance with the accompanying LCO.

For Unit 2, spent fuel racks have been analyzed in accordance with the methodology contained in WCAP-14416-NP-A (Ref. 4), as supplemented by Westinghouse Electric Company letter, FENOC-00-110 (Ref. 5). This methodology ensures the spent fuel rack multiplication factor, k_{eff} is ≤ 0.95, as recommended by the April 1978 NRC letter (Ref. 2) and ANSI/ANS-57.2-1983 (Ref. 6). The codes, methods, and techniques contained in the methodology are used to satisfy this k_{eff} criterion.

The Unit 2 spent fuel storage racks are analyzed utilizing credit for checkerboard configurations, burnup, and soluble boron, to ensure k_{eff} is maintained ≤ 0.95, including uncertainties, tolerances, and accident conditions. The Unit 2 spent fuel pool k_{eff} can only be maintained < 1.0 without crediting soluble boron.

Therefore, the safe operation of the Unit 2 spent fuel pool with no movement of assemblies necessitates both the storage requirements of the accompanying LCO as well as the fuel pool boron concentration requirements of LCO 3.7.16 be met.

INSERT 2: BVPS Specific Unit 2 Safety Analysis Section

For Unit 2, however, when no potential for an accident exists, safe operation of the spent fuel storage pool must include the boron concentration within the limit specified in LCO 3.7.14 as well as the fuel being stored in accordance with the accompanying LCO. The boron concentration specified in LCO 3.7.14 as well as the storage location requirements of the accompanying LCO are necessary to meet the requirement to maintain $k_{eff} \leq 0.95$ in the Unit 2 spent fuel pool under normal (i.e., static) conditions. Operation within the storage location requirements of the accompanying LCO with no soluble boron in the Unit 2 spent fuel pool *would only maintain* $k_{eff} \leq 1.0$.

INSERT 3: BVPS Specific Unit 2 LCO Section

For Unit 2, operation within the storage location requirements specified in Table 3.7.14-1B of the accompanying LCO with no soluble boron in the spent fuel storage pool would only maintain $k_{eff} \leq 1.0$. Therefore, Unit 2 must also maintain the spent fuel storage pool boron concentration within the limit specified in LCO 3.7.14 as well as the storage location requirements of the accompanying LCO in order to meet the requirement to maintain $k_{eff} \leq 0.95$.

B 3.7 PLANT SYSTEMS

B 3.7.~~18~~ 13 Secondary Specific Activity

BASES

BACKGROUND

Activity in the secondary coolant results from steam generator tube outleakage from the Reactor Coolant System (RCS). Under steady state conditions, the activity is primarily iodines with relatively short half lives and, thus, indicates current conditions. During transients, I-131 spikes have been observed as well as increased releases of some noble gases. Other fission product isotopes, as well as activated corrosion products in lesser amounts, may also be found in the secondary coolant.

3

150 gallons per day per steam generator

A limit on secondary coolant specific activity during power operation minimizes releases to the environment because of normal operation, anticipated operational occurrences, and accidents.

0.35 μ Ci/gm DOSE EQUIVALENT I-131

CTS Value

This limit is lower than the activity value that might be expected from a ~~1 gpm tube leak~~ (LCO 3.4.13, "RCS Operational LEAKAGE") of primary coolant at the limit of ~~[1.0] μ Ci/gm~~ (LCO 3.4.16, "RCS Specific Activity"). The steam line failure is assumed to result in the release of the ~~noble gas~~ and iodine activity contained in the steam generator inventory, the feedwater, and the reactor coolant LEAKAGE. ~~Most of the iodine isotopes have short half lives (i.e., < 20 hours).~~

primary and secondary coolant specific activity

2

~~With the specified activity limit, the resultant 2 hour thyroid dose to a person at the exclusion area boundary (EAB) would be about 0.58 rem if the main steam safety valves (MSSVs) open for 2 hours following a trip from full power.~~

within will 50.67

s

Operating ~~a unit~~ at the allowable limits ~~could~~ result in ~~a 2 hour EAB exposure of a small fraction of~~ the 10 CFR ~~100~~ (Ref. 1) limits~~, or the limits established as the NRC staff approved licensing basis.~~

14 (Unit 1) and Chapter 15 (Unit 2)

total effective dose equivalent (TEDE) limits, as supplemented by Regulatory Guide 1.183 (Ref. 3).

1

APPLICABLE SAFETY ANALYSES

U

The accident analysis of the main steam line break (MSLB), as discussed in the FSAR, Chapter ~~[15]~~ (Ref. 2) assumes the initial secondary coolant specific activity to have a radioactive isotope concentration of ~~[0.10]~~ μ Ci/gm DOSE EQUIVALENT I-131. This assumption is used in the *analysis for determining the radiological consequences of the postulated* accident. The accident analysis, based on this and other assumptions, shows that the radiological consequences of an MSLB do not exceed a ~~small fraction of the unit EAB~~ limits (Ref. 1) ~~for whole body and thyroid dose rates.~~ 2

the 10 CFR 50.67

TEDE limits, as supplemented by Regulatory Guide 1.183 (Ref. 3).

BASES

APPLICABLE SAFETY ANALYSES (continued)

The MSLB accident analysis assumes a total release of iodine activity in the steam generator connected to the failed steam line. In addition, a portion of the iodine activity in the remaining steam generators is also released via the steaming process due to assumption of loss of offsite power.

With the loss of offsite power, the remaining steam generators are ~~available~~ utilized for core decay heat ~~dissipation~~ removal by venting steam to the atmosphere through the MSSVs and steam generator atmospheric dump valves (ADVs). The Auxiliary Feedwater System supplies the necessary makeup to the steam generators. Venting continues until the reactor coolant temperature and pressure have decreased sufficiently for the Residual Heat Removal System to complete the cooldown. 2

In the evaluation of the radiological consequences of this accident, the activity released from the steam generator connected to the failed steam line is assumed to be released directly to the environment. The unaffected steam generator is assumed to discharge steam and any entrained activity through the MSSVs and ADVs during the event. Since no credit is taken in the analysis for activity plateout or retention, the resultant radiological consequences represent a conservative estimate of the potential integrated dose due to the postulated steam line failure.

Secondary specific activity limits satisfy Criterion 2 of 10 CFR 50.36(c)(2)(ii).

LCO

As indicated in the Applicable Safety Analyses, the specific activity of the secondary coolant is required to be ≤ [0.10] μCi/gm DOSE EQUIVALENT I-131 to limit the radiological consequences of a Design Basis Accident (DBA) ~~to a small fraction of~~ within the required limits (Ref. 1 and Ref. 3). 2

Monitoring the specific activity of the secondary coolant ensures that when secondary specific activity limits are exceeded, appropriate actions are taken in a timely manner to place the unit in an operational MODE that would minimize the radiological consequences of a DBA.

APPLICABILITY

In MODES 1, 2, 3, and 4, the limits on secondary specific activity apply due to the potential for secondary steam releases to the atmosphere.

In MODES 5 and 6, the ~~steam generators are not being used for heat removal. Both the RCS and steam generators are depressurized, and~~ primary to secondary LEAKAGE is minimal. Therefore, monitoring of secondary specific activity is not required. 2

BASES

ACTIONS

A.1 and A.2

DOSE EQUIVALENT I-131 exceeding the allowable value in the secondary coolant, is an indication of a problem in the RCS and contributes to increased post accident doses. If the secondary specific activity cannot be restored to within limits within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.~~18~~ 13.1

This SR verifies that the secondary specific activity is within the limits of the accident analysis. A gamma isotopic analysis of the secondary coolant, which determines DOSE EQUIVALENT I-131, confirms the validity of the safety analysis assumptions as to the source terms in post accident releases. It also serves to identify and trend any unusual isotopic concentrations that might indicate changes in reactor coolant activity or LEAKAGE. The 31 day Frequency is based on the detection of increasing trends of the level of DOSE EQUIVALENT I-131, and allows for appropriate action to be taken to maintain levels below the LCO limit.

REFERENCES

1. 10 CFR ~~100.11~~ 50.67.
2. U FSAR, Chapter ~~[15]~~ 14 (Unit 1) and Chapter 15 (Unit 2). 1
3. Regulatory Guide 1.183, July 2000.

3.7 PLANT SYSTEMS BASES

JUSTIFICATIONS FOR DEVIATION

ITS 3.7.1 Main Steam Safety Valves (MSSVs)

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS Bases text is edited to insert BVPS specific information in addition to or in place of the standard bases wording. The Bases description is revised consistent with the corresponding CTS Bases description or design basis of the plant. This incorporates clarifications previously utilized in the CTS Bases for the MSSVs and may reflect BVPS specific terminology or specific details regarding the background and safety analyses.
2. BVPS Plant specific value or reference inserted consistent with the BVPS ITS.
3. Editorial changes were made in the ISTS LCO and associated Bases for the removal of the Reviewer's Note and associated bracketed requirements consistent with the ISTS Writers' Guide. The Reviewer's Note provides an option for the construction of Actions depending on the Unit's licensing basis for operating at partial power with a positive moderator temperature coefficient. These Actions have been retained since the BVPS current licensing basis contains this allowance.
4. The ISTS Bases text is edited to include editorial enhancements. Changes have been made (additions, deletions, or changes to the NUREG-1431) to reflect the plant specific nomenclature, number, or reference description.
5. The repetition of ASME Code testing requirements in the Surveillance Bases for the MSSVs is deleted. The ISTS Bases contains the testing detail and frequencies that are specified in the ASME Code. The repetition of these requirements in the bases does not add anything to the surveillance requirements and this detail may change in future versions of the ANSI/ASME OM that may be adopted by the Inservice Testing Program. The elimination of this detail and the specific ANSI/ASME OM being used for the Inservice Testing will avoid unnecessary changes to the ITS Bases in the future when a later standard is adopted. Adequate regulatory controls (10 CFR50.55a) for changes to the ISI/IST plan exist outside the TS. Therefore, inclusion of these details in the TS Bases is not required to assure the safe operation of the plant or control of changes to the ISI/IST plan requirements.

ITS 3.7.2 Main Steam Isolation Valves (MSIVs) Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. Brackets have been removed in the ISTS LCO and associated Bases for the inclusion of plant specific values or details.
2. The ISTS Bases text is edited to insert BVPS specific information in addition to or in place of the standard bases wording. The Bases description is revised consistent with the corresponding CTS Bases description or design and licensing basis of the plant. This incorporates clarifications previously utilized in the CTS Bases for the MSIVs and may reflect BVPS specific terminology or specific details regarding the background and safety analyses.
3. The ISTS LCO and associated Bases is edited to delete the specific response times for MSIV isolation and to add a specific reference that the isolation time of each MSIV is "within limits." The response times are being relocated to the Licensing Requirements Manual (see DOC LA.1) consistent with other BVPS response times (such as the ESFAS and RPS response times).
4. The ISTS Bases text is edited to delete references to the specific time when the MSIV surveillances are performed. The ISTS allows these tests to be performed in MODE 3. The wording in the ISTS Bases could be interpreted to require the performance of these tests in MODE 3. Since the MSIV surveillances at BVPS can be performed in other shutdown MODES (for Unit 1) the Bases text has been edited to allow MSIV testing in MODE 3 but not to imply MSIV testing in other shutdown MODES is precluded.
5. The ISTS Bases text is edited to include editorial enhancements. Changes have been made (additions, deletions, or changes to the NUREG-1431) to reflect the plant specific nomenclature, number, or reference description.

ITS 3.7.3 Main Feedwater Isolation Values (MFIVs) and Main Feedwater Regulating Valves (MFRVs) and Associated Bypass Valves Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. Brackets have been removed in the ISTS LCO and associated Bases for the inclusion of plant specific values or details. Since no BVPS TS currently exist, ISTS Completion Times and SR Frequencies were used.
2. The ISTS Bases text is edited to include editorial enhancements. Changes have been made (additions, deletions, or changes to the NUREG-1431) to reflect the plant specific nomenclature, number, or reference description.
3. The ISTS Bases text is edited to eliminate details not applicable to the BVPS design. The text is also edited to insert BVPS specific information in addition to or in place of the standard bases wording. The Bases description is revised consistent with the corresponding design basis of the plant pertaining to the feedwater isolation valves. The changes may reflect BVPS specific terminology or specific details regarding the safety analyses.
4. The ISTS Bases text is edited to delete details related to the specific time when the MFIV, MFRV, and associated bypass valve surveillances are performed. There are no SR Notes that alter the "met" or "performed" requirements for this SR. The BVPS FRV bypass valves may be tested at power. Therefore, the performance of this surveillance is mixed with some valves tested during shutdown conditions and some valves tested at power.

ITS 3.7.4 Atmospheric Dump Valves (ADVs) Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS Bases text is edited to eliminate details not applicable to the BVPS design. The text is also edited to insert BVPS specific information in addition to or in place of the standard bases wording. The Bases description is revised consistent with the corresponding design basis of the plant and plant specific safety analysis pertaining to the ADVs. The changes also reflect BVPS specific terminology.
2. The ISTS bases text is revised to reflect changes made to the corresponding Specification. Changes to the Specification are discussed in the JFDs associated with the Specification. See the appropriate Specification JFD for these Bases changes.
3. The ISTS Bases text for Required Actions C.1 and C.2 is revised by the addition of text to better describe the acceptability of the Actions and the reason why continued operation in this condition is acceptable.

ITS 3.7.5 Auxiliary Feedwater (AFW) System Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS LCO and associated Bases are edited to insert BVPS specific information in addition to or in place of the ISTS wording. The ISTS LCO and Bases is revised consistent with the corresponding CTS and CTS Bases descriptions or design basis of the plant. The specific change incorporates the requirements and associated Actions of the feedwater injection headers. These requirements and associated Actions are necessary since two Operable feedwater injection headers are insufficient to meet the feedline break analysis.
2. The ISTS LCO and associated Bases are edited to insert BVPS specific information in addition to or in place of the ISTS wording. The ISTS LCO and Bases is revised consistent with the corresponding CTS and CTS Bases descriptions or design basis of the plant. The specific change incorporates the requirements of realigning Operable AFW pumps to separate train supply headers. There are a total of two supply headers; one supply header associated with each of the motor driven AFW pumps. The turbine driven AFW pump has the capability of being aligned to either of the two supply headers. When a motor driven AFW pump becomes inoperable, the other two pumps may be aligned with the same supply header. Therefore, an Action is necessary to realign the Operable AFW pumps to separate supply headers.
3. The ISTS LCO and associated Bases are edited to insert BVPS specific information in addition to or in place of the ISTS wording. The ISTS LCO and Bases is revised consistent with the corresponding CTS and CTS Bases descriptions or design basis of the plant. The specific change incorporates the requirements to be in MODE 4 in 12 hours with two AFW trains or two feedwater injection headers inoperable. Twelve hours is sufficient at BVPS to reach MODE 4 from full power conditions in an orderly manner and without challenging plant systems.
4. The ISTS LCO and associated Bases are edited to reflect TSTF-412, Rev. 0. The TSTF, as incorporated herein, clarifies the OPERABILITY of the turbine driven AFW pump whenever one of two required steam supply is inoperable. ISTS 3.7.5 currently requires an entry into Condition A for an inoperable steam supply. Assuming that a motor driven AFW pump became inoperable during the Completion Time of Condition A, Condition B would be entered for an inoperable motor driven AFW train and Condition C would be entered for two inoperable AFW trains. The affected turbine driven AFW train remains capable of performing its specified function, but with a lack of redundancy with respect to its steam supplies. A turbine driven AFW pump with a single OPERABLE steam supply is capable of performing its safety function in the absence of a single failure. The ITS ACTIONS in many Specifications recognize that loss of single failure protection is a less degraded condition than inoperability and provide longer Completion Times for those situations. The proposed Condition C is based on the ability of the AFW system to mitigate the most limiting design basis event excluding a single failure.

5. Editorial changes were made in the ISTS Bases for the removal of the Reviewer's Note consistent with the ISTS Writers' Guide. The Reviewer's Note provides for eliminating the SR if the AFW is not used for normal startup and shutdown. This SR has been retained since the BVPS current licensing basis provides for the use of the AFW during normal startup and shutdown.

6. The ISTS Bases text is edited to insert BVPS specific information in addition to or in place of the standard bases wording. The Bases description is revised consistent with the corresponding CTS Bases description, applicable safety analysis, or design basis of the plant. This incorporates clarifications previously utilized in the CTS Bases for the AFW design and may reflect BVPS specific terminology or specific details regarding the background and safety analyses.

7. The ISTS Bases text is edited to include editorial enhancements. Changes have been made (additions, deletions, or changes to the NUREG-1431) to reflect the plant specific nomenclature, number, or reference description.

8. The ISTS Bases text is edited to eliminate information inconsistent with the LCO as a result of the incorporation of TSTF-245. TSTF-245 deleted a Note in SR 3.7.5.3 that stated "Not applicable in MODE 4 when steam generator is relied upon for heat removal." The associated Bases statement describing this Note was not deleted.

9. The ISTS LCO and associated Bases are edited to insert a SR Note exempting the Applicability of SR 3.7.5.3 and SR 3.7.5.4. These SRs verify the automatic actuation of AFW pumps and valves. The Note states that the SR is "Not required to be met in MODE 4 when steam generator(s) is relied upon for heat removal." These Notes are consistent with the CTS which provides an exception to the Mode 4 Applicability. The exception is based on the reduced pressure and temperature limits of Mode 4 and the additional time available to manual initiate AFW if required.

10. The ISTS surveillance bases discussion regarding "the need to perform the surveillance under conditions that apply during a plant outage and the potential for an unplanned transient if the surveillance were performed with the reactor at power" is revised to clarify the intent of the ISTS. The purpose of the ISTS bases discussion is to assure the surveillance is performed consistent with safe plant operation. However, the ISTS bases text could be interpreted to require all performances of the surveillance be conducted during shutdown conditions. The proposed change to the ISTS bases text is consistent with the NRC conclusions regarding shutdown restrictions on TS surveillances stated in Generic Letter 91-04. In Generic Letter 91-04, the NRC stated, "This restriction [performance only during shutdown] ensures that a surveillance would only be performed when it is consistent with safe plant operation." The Generic Letter further stated that "The staff concludes that the TS need not restrict surveillances as only being performed during shutdown. Nevertheless, safety dictates that when refueling interval surveillances are performed during power operation, licensees give proper regard for their effect on the safe operation of the plant." As such, the proposed change to the ISTS bases incorporates a clarification to the bases that reflects the NRC guidance stated in Generic letter 91-04.

ITS 3.7.6 Condensate Storage Tank (CST) Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS Bases text is edited to include editorial enhancements. Changes have been made (additions, deletions, or changes to the NUREG-1431) to reflect the plant specific nomenclature, number, or reference description.
2. The ISTS Bases text is edited to eliminate details not applicable to the BVPS design. The text is also edited to insert BVPS specific information in addition to or in place of the standard bases wording. The Bases description is revised consistent with the corresponding design basis of the plant pertaining to the CST. The changes may reflect BVPS specific terminology or specific details regarding the safety analyses.

ITS 3.7.7 Component Cooling Water (CCW) System Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. ISTS SR 3.7.7.2 and SR 3.7.7.3 and associated Bases are edited to delete the surveillance requirements. The purpose of the ISTS SR 3.7.7.2 requirement is to verify automatic operation of the CCW valves on an actual or simulated actuation signal. The purpose of the ISTS SR 3.7.7.3 requirement is to verify the automatic operation of the CCW pumps on an actual or simulated signal. These SRs ensure the operability of the CCW Systems for responding to design basis accident (DBA) loss of coolant accident (LOCA). The ISTS assumes the CCW System removes the post LOCA heat loads from the containment. The CCW System at BVPS serves no DBA LOCA mitigation function and is not a system which functions to mitigate the failure of or presents a challenge to the integrity of a fission product barrier. The CCW System is redundant to ensure performance of the cooling function in the event of a single failure. The principal function of the CCW System is the removal of decay heat from the reactor via the RHR System. The RHR System does not perform a DBA LOCA mitigation function at BVPS.
2. The ISTS Bases text is edited to include editorial enhancements. Changes have been made (additions, deletions, or changes to the NUREG-1431) to reflect the plant specific nomenclature, number, design, or reference description.
3. The ISTS Bases text is edited to eliminate details not applicable to the BVPS design. The text is also edited to insert BVPS specific information in addition to or in place of the standard bases wording. The Bases description is revised consistent with the corresponding design basis of the plant pertaining to the CCW System. The ISTS assumes the CCW System removes the design basis post LOCA heat loads from the containment. The CCW System at BVPS serves no DBA LOCA mitigation function and is not a system which functions to mitigate the failure of or presents a challenge to the integrity of a fission product barrier. The BVPS CCW system has no required (i.e., engineered safety feature (ESF)) automatic features and may be operated manually to perform its required functions. *The CCW System is redundant to ensure performance of the cooling function in the event of* a single failure. The principal function of the CCW System is the removal of decay heat from the reactor via the RHR System. The RHR System does not perform a DBA LOCA mitigation function at BVPS. The changes may reflect BVPS specific terminology or specific details regarding the safety analyses.
4. Changes to the ISTS Bases are made consistent with the changes proposed to the LCO, Action or Surveillances of ISTS 3.7.7. These changes are discussed in the changes to the specification.

ITS 3.7.8 Service Water System (SWS) Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. Brackets have been removed in the ISTS LCO and associated Bases for the inclusion of plant specific values or details.
2. The ISTS Bases text is edited to include editorial enhancements. Changes have been made (additions, deletions, or changes to the NUREG-1431) to reflect the plant specific nomenclature, number, or reference description.
3. The ISTS Bases text is edited to eliminate details not applicable to the BVPS design. The text is also edited to insert BVPS specific information in addition to or in place of the standard bases wording. The Bases description is revised consistent with the corresponding design basis of the plant pertaining to the SWS. The changes may reflect BVPS specific terminology or specific details regarding the safety analyses.
4. The ISTS Bases text is edited to eliminate details not applicable to the BVPS SWS testing. The Bases description is revised consistent with the corresponding design basis of the plant to reflect that SWS tests are normally performed online.
5. Changes to the ISTS Bases are made consistent with the changes proposed to the LCO, Action or Surveillances of ISTS 3.7.8. These changes are discussed in the changes to the specification.

ITS 3.7.9 Ultimate Heat Sink (UHS) Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS Actions, Surveillance Requirements Bases discussions are edited to insert BVPS specific information in addition to or in place of the ISTS wording and to incorporate changes made to the corresponding ITS. The ISTS Bases is revised consistent with the corresponding changes made to the ITS and to incorporate CTS Bases descriptions or to incorporate specific design basis of the plant. Since the BVPS UHS is the Ohio River, the specific change eliminates any reference specific to cooling towers as described in the ISTS.
2. The ISTS Bases text is edited to eliminate details not applicable to the BVPS design. The text is also edited to insert BVPS specific information in addition to or in place of the standard bases wording. The Bases description is revised consistent with the corresponding design basis of the plant pertaining to the UHS. The changes may reflect BVPS specific terminology or specific details regarding the safety analyses. This includes changes to reflect the BVPS Component Cooling Water System that does not serve safety related equipment and is not used for accident mitigation.
3. The ISTS Bases text is edited to include editorial enhancements. Changes have been made (additions, deletions, or changes to the NUREG-1431) to reflect the plant specific nomenclature, number, or reference description.

ITS 3.7.10 Control Room Emergency Ventilation System (CREVS) Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS Bases are edited to insert BVPS specific information in place of the ISTS wording. Much of the ISTS wording is retained but due to the large number of changes, replacement inserts are used for each Bases section. The use of the replacement inserts presents a more clear and understandable revision of the ISTS bases. The proposed replacement text is consistent with the corresponding expanded CTS Bases descriptions or design basis of the plant. The expanded CTS bases were originally derived from the ISTS bases. The proposed changes to the ISTS bases encompass changes that reflect the following BVPS specifics:

    - The BVPS Control Room Emergency Ventilation System is assumed in the Fuel Handling Accident for movement of recently irradiated fuel assemblies,
    - BVPS does not credit the Control Room Emergency Ventilation System for toxic gas protection,
    - Changes have been made (additions, deletions, or changes to the ISTS) to reflect the plant specific nomenclature, number, or reference description,
    - The BVPS Control Room Emergency Ventilation System (CREVS) operates with an automatic heater system,
    - The BVPS CREVS actuates on a Containment Isolation Phase B and a Control Room High Radiation signal,
    - The Control Room High Radiation function is only required during movement of recently irradiated fuel assemblies or during movement of fuel assemblies over recently irradiated fuel assemblies,
    - The BVPS specific surveillance requirements are retained, and
    - The ISTS Bases text is also edited to include editorial enhancements from the CTS bases,

    These changes make the ISTS bases more consistent with the current BVPS CREVS bases.

ITS 3.7.11 Control Room Emergency Air Cooling System (CREACS) Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS LCO title, Applicability, Actions, and associated discussions are edited to insert BVPS specific information in addition to or in place of the ISTS wording. The ISTS Bases is revised consistent with the corresponding CTS Bases descriptions or design basis of the plant. The BVPS Control Room Emergency Air Cooling System (CREACS) control room temperature and control room atmosphere purge functions are credited in MODES 1, 2, 3, and 4 to support the Main Steam Line Break analysis and the Steam Generator Tube Rupture analysis. The CREACS control room cooling and control room atmosphere purge functions are also credited for fuel movement involving "recently" irradiated fuel assemblies to support potential future Fuel Handling Accident (FHA) analyses for both Units and for fuel movement involving irradiated fuel assemblies to support the current FHA analysis for Unit 1.
2. The ISTS bases text is revised to reflect changes made to the corresponding LCO, applicability, Action, and surveillance requirements. These changes are discussed as deviations from the standard technical specification requirements in Enclosure 1 of the conversion documentation.

ISTS 3.7.12 Emergency Core Cooling System (ECCS) Pump Room Exhaust Air Cleanup System (PREACS) Bases
ITS 3.7.12 Supplemental Leak Collection and Release System (SLCRS)

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS 3.7.12 ECCS PREACS Specification is replaced the BVPS specific system consistent with the corresponding BVPS design. ISTS 3.7.12 bases is used as a template to markup the specifics for the BVPS Supplemental Leak Collection and Release System (SLCRS). The BVPS SLCRS performs cleanup functions similar to those described in ISTS 3.7.12 bases. However, extensive changes to the ISTS bases are required to implement the BVPS specific system requirements.

   The BVPS CTS LCO requirement for SLCRS only specifies that one train must be operable but that single train must also be in operation. The revised ISTS 3.7.12 reflects this CTS requirement. The BVPS SLCRS does not have an automatic actuation feature and must be placed in service when required by the Technical Specifications. As the system must be in operation, failures are readily detectable and one train is sufficient. The system must be in operation and aligned to the required area ventilation exhaust prior to entering the Mode of Applicability.

   The Applicability of ISTS 3.7.12 is revised to reflect the remaining SLCRS requirements applicable during fuel movement involving recently irradiated fuel assemblies in the spent fuel pool area and for Unit 1 only, when required operable for containment penetration requirements per ITS 3.9.3 for fuel movement involving recently irradiated fuel inside containment. The CTS requirements do not require SLRCS operable for fuel movement involving non-recently irradiated fuel. The BVPS SLCRS is not credited in the safety analysis to mitigate the consequences of a fuel handling involving non-recently irradiated fuel.

   The Actions and surveillance requirements of the ISTS 3.7.12 are replaced with the BVPS specific SLCRS Actions and surveillance requirements consistent with the CTS requirements as marked in CTS 3.7.8.1 and CTS 3.9.12. The Actions reflect the proposed Applicability for fuel movement involving recently irradiated fuel in the fuel storage pool (both units) and inside containment (Unit 1 only). A BVPS specific surveillance (SR 3.7.12.1) to verify the required SLCRS train is in operation is added to the ISTS 3.7.12 surveillances. This BVPS surveillance effectively replaces the ISTS monthly start verification required for standby systems. The BVPS SLCRS are not standby systems. The BVPS SLCRS fans are normally in service and the system is manually aligned to filter the fuel building exhaust or containment exhaust (for Unit 1) when the system is required by the Technical Specification. Other ISTS surveillances that are not applicable to the BVPS SLCRS design are deleted.

   The ISTS Bases text is edited to include editorial enhancements. Changes have been made (additions, deletions) to reflect the plant specific nomenclature, number, or reference description.

ISTS 3.7.13 Fuel Building Air Cleanup System (FBACS) Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. This ISTS for the FBVS has been deleted and is not used in the BVPS ITS since the Supplemental Leak Collection and Release System (SLCRS) LCO, which services required areas for the filtration of airborne radiation following a DBA LOCA, has been deleted for MODES 1, 2, 3, and 4. The remaining filtration requirements applicable during movement of recently irradiated fuel assemblies in the spent fuel pool area have been incorporated into the SLCRS (ITS 3.7.12). The FBVS requirements were included into ITS LCO 3.7.12 since the SLCRS provides the means for filtering and ventilating the airborne radiation following a fuel handling accident in the spent fuel area or the containment.

ISTS 3.7.14 Penetration Room Exhaust Air Cleanup System (PREACS) Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. This ISTS for the PREACS has been deleted and is not used in the BVPS ITS since the Supplemental Leak Collection and Release System (SLCRS), which services required areas for the filtration of airborne radiation following a DBA LOCA, has been deleted for MODES 1, 2, 3, and 4.

ISTS 3.7.15 Fuel Storage Pool Water Level Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS Applicability, Actions and associated Bases are revised to be consistent with the CTS by the addition of "During movement of fuel assemblies over irradiated fuel assemblies within the fuel storage pool". This addition is necessary based on the BVPS fuel handling accident analysis. The fuel drop analysis determined that damage to a struck fuel assembly would result in fuel rod failure. The movement of any fuel assembly could result in a radiological release if that assembly was dropped and struck an irradiated fuel assembly. The release from a struck fuel assembly may require the specified water level in order to mitigate the radiological consequences. Therefore, consistent with the CTS requirements as previously approved by the NRC in a Safety Evaluation Report dated August 30, 2001, the ISTS Applicability and corresponding Action are revised to address this situation.
2. The ISTS Bases text is edited to include editorial enhancements. Changes have been made (additions, deletions, or changes to the NUREG-1431) to reflect the plant specific nomenclature, number, practices, or reference description.
3. The ISTS Bases text is edited to eliminate details not applicable to the BVPS design. The text is also edited to insert BVPS specific information in addition to or in place of the standard bases wording. The Bases description is revised consistent with the corresponding design basis of the plant pertaining to the fuel storage pool water level. The changes may reflect BVPS specific terminology or specific details regarding the safety analyses.
4. The LCO bases description is revised consistent with the specific Applicability of the TS. The TS is only applicable during fuel movement. Therefore, references to fuel storage are deleted.

ISTS 3.7.16 Fuel Storage Pool Boron Concentration Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS 3.7.16 Fuel Storage Pool Boron Concentration requirements are revised to be consistent with the corresponding CTS 3.9.14 (Unit 1) and CTS 3.9.15 (Unit 2) requirements and the different spent fuel pool safety analysis for each unit. The BVPS Unit 1 safety analysis is similar to the analysis described in the generic ISTS 3.7.16 Bases (i.e., the spent fuel pool boron concentration is only credited to maintain $k_{eff} \leq 0.95$ during abnormal (accident) conditions). Therefore, the provisions of ISTS 3.7.16 are applicable and appropriate for BVPS Unit 1. The BVPS Unit 2 safety analysis, however, is not consistent with the analysis described in the ISTS 3.7.16 bases. BVPS Unit 2 takes credit for the spent fuel pool boron concentration to maintain $k_{eff} \leq 0.95$ during normal (static) conditions as well as abnormal (i.e., accident) conditions. Therefore, the ISTS 3.7.16 requirements are revised for BVPS Unit 2 to be more consistent with the corresponding Unit 2 CTS requirements.

   Additional text is added where necessary to describe the unit differences and clarify the technical specification requirements.

ISTS 3.7.17 Spent Fuel Pool Storage Bases
ITS 3.7.14 Spent Fuel Pool Storage Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS 3.7.17 (ITS 3.7.14) Spent Fuel Pool Storage requirements are revised to be consistent with the corresponding Unit 1 and 2 CTS 3.9.14 LCO requirements.

   The BVPS Unit 1 safety analysis is similar to the analysis described in the generic ISTS 3.7.17 Bases (i.e., the spent fuel pool boron concentration is only credited to maintain $k_{eff} \leq$ 0.95 during abnormal (accident) conditions). Therefore, the provisions of ISTS 3.7.17 are applicable and appropriate for BVPS Unit 1. The BVPS Unit 2 safety analysis, however, is not consistent with the analysis described in the ISTS 3.7.17 bases. BVPS Unit 2 takes credit for the spent fuel pool boron concentration to maintain $k_{eff} \leq 0.95$ during normal (static) conditions as well as abnormal (i.e., accident) conditions. Therefore, the ISTS 3.7.17 requirements are revised for BVPS Unit 2 to be more consistent with the corresponding Unit 2 CTS requirements.

   Additional text is added where necessary to describe the unit differences and clarify the technical specification requirements.

ISTS 3.7.18 Secondary Specific Activity Bases
ITS 3.7.13 Secondary Specific Activity Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS Bases text is edited to include editorial enhancements. Changes have been made (additions, deletions, or changes to the NUREG-1431) to reflect the plant specific nomenclature, number, or reference description.
2. The ISTS Bases text is edited to eliminate details not applicable to the BVPS design. The text is also edited to insert BVPS specific information in addition to or in place of the standard bases wording. The Bases description is revised consistent with the corresponding design and licensing basis of the plant pertaining to the specific activity. The changes may reflect BVPS specific terminology or specific details regarding the safety analyses.
3. The ISTS Bases text is revised to be more consistent with the BVPS specific analyses. The BVPS specific limit of "150 gallons per day" is much less than the generic standard limit of "1 gpm". The limit is consistent with the limit denoted in LCO 3.4.13, "RCS Operational LEAKAGE".

ENCLOSURE 3

CHANGES TO THE CTS

CURRENT TECHNICAL SPECIFICATION (CTS) MARKUP & DISCUSSION OF CHANGES (DOCs)

Introduction

This enclosure contains the markup of the current BVPS Unit 2 Technical Specifications (TS), and where necessary to show a change to a BVPS Unit 1 TS that is not addressed by the associated Unit 2 markup and DOCs, a BVPS Unit 1 TS page is included. If a Unit 1 page is included it will be marked to show the change to the Unit 1 specific difference, and will not typically contain markups that repeat the applicable changes already addressed in the corresponding Unit 2 markup. Therefore, unless otherwise stated, each DOC applies to both Units 1 and 2 even though the change may only be marked on the Unit 2 TS.

The CTS is marked-up to show the changes necessary to convert to the Improved Standard Technical Specifications (ISTS) in NUREG-1431, Revision 2. The marked-up CTS result in the BVPS specific Improved Technical Specifications (ITS) contained in Enclosure 1.

In order to facilitate the review of the changes to the CTS, the marked-up CTS are presented in their original numerical order, not ISTS numerical order. The new ITS number is marked at the top of the first page of each CTS and the disposition of each CTS and ISTS is summarized in the Table included at the beginning of Enclosure 1 for each TS Section.

The marked-up TS are followed by the applicable DOCs. Each technical change and more complex administrative change marked on the TS has a unique alpha-numeric designator that corresponds to a specific DOC. Due to the large number of format, editorial and presentation differences between the CTS and the new standard TS, not all of these changes are identified in the marked-up CTS pages. The single generic A.1 administrative change DOC designated on the first page of each marked-up CTS addresses all the marked and unmarked editorial, format, and presentation changes necessary to convert that entire CTS to the corresponding new standard TS. Only the more complex (less obvious) administrative type changes made to the CTS are identified with individual administrative DOCs (i.e., A.2, A.3, etc.).

The DOCs are grouped by the category of the change (i.e., less restrictive, more restrictive, administrative, etc). Each category of change is also associated with a No Significant Hazards Consideration (NSHC) for that change in Enclosure 4.

Certain categories of change also have a sub-category or change type associated with the DOC. The sub-category or change type is used to further group the CTS changes in more specific sub-categories that utilize a common NSHC or DOC.

Each CTS change marked as "Less Restrictive", with no subcategory identified in the associated DOC to reference a generic NSHC, will have a "Specific" NSHC included in Enclosure 4. A description of the categories and types of changes follows.

ENCLOSURE 3 (continued)

Categories and Types of Changes to the CTS

I. The major categories utilized to group changes to the CTS are as follows:

A - Administrative

L - Less Restrictive

M - More Restrictive

LA - Removed Detail (Sections of Tech Spec text removed from CTS)

R - Relocated (Entire Tech Spec requirement removed from CTS)

II. The subcategories of Less Restrictive "L" changes are as follows: (1)

1. Relaxation of LCO Requirements
2. Relaxation of Applicability
3. Relaxation of Completion Time
4. Relaxation of Required Action
5. Deletion of Surveillance Requirement
6. Relaxation of Surveillance Requirement Acceptance Criteria
7. Relaxation of Surveillance Frequency
8. Deletion of Reporting Requirement

III. The types of Removed Detail "LA" changes are as follows: (2)

1. Removing Details of System Design and System Description, Including Design Limits
2. Removing Descriptions of System Operation
3. Removing Procedural Details for Meeting Tech Spec Requirements and Related Reporting Requirements
4. Removing Administrative Requirements Redundant to Regulations
5. Removing Performance Requirements for Indication-Only Instruments and Alarms

(1) Each subcategory of Less Restrictive change is associated with a corresponding NSHC in Enclosure 4.

(2) The types of Removed Detail changes all share a common "LA" NSHC in Enclosure 4.

3/4.7 PLANT SYSTEMS

ITS 3.7.1

Draft Page from Unit 2 LAR # 173
(Unit 1 LAR # 302)

~~3/4.7.1 TURBINE CYCLE~~

MAIN STEAM SAFETY VALVES (MSSVs)

A1

LIMITING CONDITION FOR OPERATION

~~3.7.1.1~~ Five MSSVs per steam generator shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3.

ACTION: ACTIONS NOTE

GENERAL NOTE

Separate ACTION entry is allowed for each MSSV.

COND A ~~a.~~ With one or more steam generators with one MSSV inoperable and the Moderator Temperature Coefficient (MTC) zero or negative at all power levels, within 4 hours reduce THERMAL POWER to less than or equal to 57% RTP; otherwise, be in HOT STANDBY within the next 6 hours, and in HOT SHUTDOWN within the next 6 hours.

COND C

~~b.~~ With one or more steam generators with two or more MSSVs inoperable, or with one or more steam generators with one MSSV inoperable and the MTC positive at any power level, within 4 hours reduce THERMAL POWER to less than or equal to the Maximum Allowable % RTP specified in Table 3.7-1 for the number of OPERABLE MSSVs, and reduce the Power Range Neutron Flux-High reactor trip setpoint to less than or equal to the Maximum Allowable % RTP specified in Table 3.7-1 for the number of OPERABLE MSSVs within the next 32 hours~~(1)~~; otherwise, be in HOT STANDBY within the next 6 hours, and in HOT SHUTDOWN within the next 6 hours.

COND B

COND C ~~c.~~ With one or more steam generators with four or more MSSVs inoperable, within 6 hours be in HOT STANDBY and in HOT SHUTDOWN within the next 6 hours.

SURVEILLANCE REQUIREMENTS

SR 3.7.1.1 ~~4.7.1.1~~ Verify~~(2)~~ each required MSSV lift setpoint per Table 3.7-2 in accordance with the Inservice Testing Program. Following testing, lift settings shall be within ± 1 percent.

~~(1)~~ Required to be performed only in MODE 1. → COND B.2 NOTE

~~(2)~~ Required to be performed only in MODES 1 and 2. → SR 3.7.1.1 NOTE

ITS 3.7.1

Draft Page from Unit 2 LAR # 173
(Unit 1 LAR # 302)

3.7.1-1

TABLE ~~3.7-1~~

OPERABLE Main Steam Safety Valves versus
Maximum Allowable Power

NUMBER OF OPERABLE MSSVs PER STEAM GENERATOR	MAXIMUM ALLOWABLE POWER (% RTP)
4	≤ 50
3	≤ 34
2	≤ 19

ITS 3.7.1

Draft Page from Unit 2 LAR # 173
(Unit 1 LAR # 302)

3.7.1-2b

TABLE ~~3.7-2~~

Unit 2 Main Steam Safety Valve Lift Settings

~~STEAM LINE SAFETY VALVES PER LOOP~~

	VALVE NUMBER	LIFT SETTING~~*~~	LIFT SETTING TOLERANCES	~~ORIFICE DIAMETER~~
a.	2MSS-SV101A, B & C	1075 psig	+1%/-3%	~~4.515 in.~~
b.	2MSS-SV102A, B & C	1085 psig	±3%	~~4.515 in.~~
c.	2MSS-SV103A, B & C	1095 psig	±3%	~~4.515 in.~~
d.	2MSS-SV104A, B & C	1110 psig	±3%	~~4.515 in.~~
e.	2MSS-SV105A, B & C	1125 psig	±3%	~~4.515 in.~~

L1

LA1

* The lift setting pressure shall correspond to ambient conditions of the valve at nominal operating temperature and pressure.

Bases for SR 3.7.1.1

Unit 1 Page

ITS 3.7.1

3.7.1-2a

Draft Page from Unit 1 LAR # 302
(Unit 2 LAR # 173)

Unit 1 Main Steam Safety Valve Lift Settings

TABLE ~~3.7-2~~

~~STEAM LINE SAFETY VALVES PER LOOP~~

	VALVE NUMBER	LIFT SETTING~~***~~	LIFT SETTING TOLERANCES	~~ORIFICE DIAMETER~~
a.	SV-MS101A, B & C	1075 psig	+1%/-3%	~~4.250 in.~~
b.	SV-MS102A, B & C	1085 psig	±3%	~~4.515 in.~~
c.	SV-MS103A, B & C	1095 psig	±3%	~~4.515 in.~~
d.	SV-MS104A, B & C	1110 psig	±3%	~~4.515 in.~~
e.	SV-MS105A, B & C	1125 psig	±3%	~~4.515 in.~~

L1

LA1

*** The Lift Setting pressure shall correspond to ambient conditions of the valve at nominal operating temperature and pressure.

Bases for SR 3.7.1.1

AUXILIARY FEEDWATER SYSTEM A1

LIMITING CONDITION FOR OPERATION A4 and three feedwater injection headers

~~3.7.1.2~~ Three Auxiliary Feedwater (AFW) trains shall be OPERABLE ~~and consist of the following:~~ ~~(1)~~

LA1 Bases

a. One motor driven AFW pump with a flow path from TK-210 to each feedwater injection header via the train "A" supply header.

b. One motor driven AFW pump with a flow path from TK-210 to each feedwater injection header via the train "B" supply header.

c. One turbine driven AFW pump capable of being powered from two steam supplies[8] with a flow path from TK-210 to each feedwater injection header via the designated train supply header.

~~d.~~ One feedwater injection header to each steam generator. A4

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when steam generator(s) is relied upon for heat removal.

ACTION:

-----------------------------~~GENERAL~~ NOTE-----------------------------
Specification 3.0.4.b is not applicable when entering MODE 1.
----

due to one inoperable steam supply in MODE 1, 2 or 3

COND A COND D ~~a.~~ ~~With one of the two steam supplies to the~~ turbine driven AFW pump inoperable, restore two steam supplies to OPERABLE status within 7 days and within 10 days from discovery of failure to meet the LCO or be in HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following ~~6~~ 12 hours. L3

COND D ~~b.~~ With one feedwater injection header inoperable in MODE 1, 2, or 3, be in HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following ~~6~~ hours.

LCO NOTE — and the required feedwater injection header(s), are A4 LA2 Bases LA4

~~(1)~~ Only one AFW train (capable of providing flow to the steam generator(s) relied upon for heat removal), which includes a motor driven pump, ~~is~~ required to be OPERABLE in MODE 4.

~~(8)~~ With one steam supply inoperable, follow ACTION statement a. Bases

ITS 3.7.5

PLANT SYSTEMS

LIMITING CONDITION FOR OPERATION

ACTION (Continued) COND C Insert 2 L5

COND B

~~c.~~ With one AFW train inoperable in MODE 1, 2, or 3 for reasons other than one of the two steam supplies or one feedwater injection header inoperable, realign the two AFW pumps to separate train supply headers within 2 hours if both train supply headers are operable, and restore the AFW train to OPERABLE status within 72 hours and within 10 days from discovery of failure to meet the LCO or be in HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following ~~6~~ ~~(2)~~ hours.

COND D

M1 INSERT 3

or one or two feedwater injection headers

COND D ~~d.~~ With two AFW trains inoperable in MODE 1, 2, or 3, be in HOT STANDBY within 6 hours and in HOT SHUTDOWN within the following ~~6~~ hours. 12

or three feedwater injection headers A4

COND E L3 ~~e.~~ With three AFW trains inoperable in MODE 1, 2, or 3, immediately initiate action to restore one AFW train to OPERABLE status. ~~(3)~~

or required feedwater injection header

COND F ~~f.~~ With the required AFW train inoperable in MODE 4, immediately initiate action to restore one AFW train to OPERABLE status.

M1 Insert 4

with the capability of providing flow to the steam generator. A4

LA3 Bases

SURVEILLANCE REQUIREMENTS

---------------- GENERAL NOTE ----------------

Establish and maintain constant communications between the control room and the auxiliary feed pump room while any normal AFW pump discharge valve is closed during surveillance testing.

Note: Only applicable if MODE 2 has not been entered following refueling.

L6 114

~~(2)~~ This time period may be extended for up to ~~90~~ hours for the turbine driven AFW pump provided that the plant has not entered MODE 2 following a refueling outage.

~~(3)~~ LCO 3.0.3 and all other LCO ACTION statements requiring MODE changes are suspended until one AFW train is restored to OPERABLE status.

COND. A Actions & NOTE & COND. D Actions L6

Required Action E.1 NOTE

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

~~4.7.1.2.1~~ SR 3.7.5.1 L1 Add Insert 1 Verify each AFW manual, power operated, and automatic valve in each water flow path, and in both steam supply flow paths to the steam turbine driven AFW pump, that is not locked, sealed, or otherwise secured in position, is in the correct position at least once per 31 days.~~(4)~~

~~4.7.1.2.2~~ L4 ~~Verify operability of each Service Water Auxiliary Supply valve by cycling each manual Service Water to Auxiliary Feedwater System valve through one complete cycle at least once per 31 days.~~

~~4.7.1.2.3~~ SR 3.7.5.2 Verify, at the frequency specified in the Inservice Testing Program, ~~on a STAGGERED TEST BASIS~~ that the developed head of each AFW pump at the flow test point is greater than or equal to the required developed head as specified in the Inservice Testing Program. L2 ~~The provisions of Specification 4.0.4 are not applicable for entry into MODE 3 for the steam turbine driven pump testing.(5)~~ A3

~~4.7.1.2.4~~ SR 3.7.5.3 Verify each AFW automatic valve that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal at least once per 18 months.~~(6)~~

~~4.7.1.2.5~~ SR 3.7.5.4 Verify each AFW pump starts automatically on an actual or simulated actuation signal at least once per 18 months.~~(5)(6)~~

~~4.7.1.2.6~~ LA5 CST L4 ~~Cycle each power operated (excluding automatic) valve in the flow path that is not testable during plant operation, through at least one complete cycle at least once per 18 months during shutdown.~~

~~4.7.1.2.7~~ SR 3.7.5.5 Verify AFW flow from TK-210 to the Steam Generators with the AFW valves in their normal alignment.~~(7)~~ Bases

~~(4)~~ LA6 Reverify these requirements by a second and independent operator.

~~(5)~~ SR 3.7.5.2, SR 3.7.5.4 Notes Not required to be performed for the turbine driven AFW pump until 24 hours after establishing the minimum required secondary side steam pressure of greater than 600 psig. Insert 1 A2

~~(6)~~ SR 3.7.5.5 ~~Not applicable in MODE 4 when steam generator(s) is relied upon for heat removal.~~

~~(7)~~ This surveillance is required to be performed prior to entry into MODE 2 whenever the plant has been in MODES 5 or 6 or defueled for greater than 30 ~~continuous~~ cumulative days.

SR 3.7.5.1, SR 3.7.5.3, and SR 3.7.5.4 Notes A5 M2

INSERTS FOR CTS 3.7.1.2 MARKUP

1. --

- NOTE -

AFW train(s) may be considered OPERABLE during alignment and operation for steam generator level control, if it is capable of being manually realigned to the AFW mode of operation.

----

2. CONDITION C

C.	Turbine driven AFW train inoperable due to one inoperable steam supply in MODE 1, 2 or 3. <u>AND</u> One motor driven AFW train inoperable in MODE 1, 2 or 3.	C.1 <u>OR</u> C.2	Restore the steam supply to the turbine driven train to OPERABLE status. Restore the motor driven AFW train to OPERABLE status.	24 hours 24 hours

3. <u>New ITS Condition D Action</u>

   <u>OR</u>

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

   This Condition is only applicable when the turbine-driven AFW train is inoperable solely due to one inoperable steam supply.

   Three AFW trains inoperable in MODE 1, 2, or 3.

4. <u>ISTS Condition E Note modifying three inoperable AFW trains</u>

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

   This Condition is only applicable when the turbine-driven AFW train is inoperable for reasons other than one inoperable steam supply.

Draft Page from Unit 2 LAR # 173
(Unit 1 LAR # 302)

A1

PLANT SYSTEMS ITS 3.7.6

~~PRIMARY PLANT DEMINERALIZED WATER (PPDW)~~ Condensate Storage Tank (CST)

LIMITING CONDITION FOR OPERATION SR 3.7.6.1 CST

~~3.7.1.3~~ The ~~primary plant demineralized water storage tank~~ shall be OPERABLE with a minimum usable volume of 130,000 gallons. LCO & SR Bases LA1

APPLICABILITY: MODES 1, 2 and 3. MODE 4 when steam generator is relied upon for heat removal

COND A ACTION: CST

With the ~~PPDW storage tank~~ water volume not within the limit, within 4 hours ~~either:~~ and once per 12 hours thereafter M2 M1

A2 ~~a. Restore the water volume to within the limit or be in HOT SHUTDOWN within the next 12 hours, or~~ Verify by administrative means Bases

L1 ~~b. Demonstrate~~ the OPERABILITY of the service water system ~~as a backup supply~~ to the auxiliary feedwater pumps and restore the ~~PPDW storage tank~~ water volume to within its limit within 7 days or be in MODE 3 within 6 hours and HOT SHUTDOWN without reliance on steam generator for heat removal within the next ~~12~~ 24 hours. LA1

COND B CST L2 M3 M1

SURVEILLANCE REQUIREMENTS

SR 3.7.6.1 ~~4.7.1.3~~ The ~~PPDW storage tank~~ shall be demonstrated OPERABLE at least once per 12 hours by verifying the water level.

Based on UNIT 1 LAR # 302
Unit 1 page is not included
LAR 302 makes Unit 1& 2 the same.

PLANT SYSTEMS ITS 3.7.13

Secondary Specific ACTIVITY

A1

LIMITING CONDITION FOR OPERATION

~~3.7.1.4~~ The specific activity of the secondary coolant system shall be ≤ 0.10 μCi/gram DOSE EQUIVALENT I-131.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION: COND A

With the specific-activity of the secondary coolant system not within limit ~~> 0.10 μCi/gram DOSE EQUIVALENT I-131,~~ be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the next 30 hours.

SURVEILLANCE REQUIREMENTS

SR 3.7.13.1 ~~4.7.1.4~~ Verify the specific activity of the secondary coolant system ~~shall be determined to be within the limit~~ is ≤ 0.10 μ Ci/gm DOSE EQUIVALENT I-131 (Unit 2) every 31 days. ~~by performance of the sampling and analysis program of Table 4.7-2~~.

L1

M1

ITS 3.7.13

~~TABLE 4.7-2~~

L1

~~SECONDARY COOLANT SYSTEM SPECIFIC ACTIVITY~~
~~SAMPLE AND ANALYSIS PROGRAM~~

TYPE OF MEASUREMENT AND ANALYSIS	MINIMUM FREQUENCY
1. Gross Activity Determination	3 times per 7 days with a maximum time of 72 hours between samples
2. Isotopic Analysis for DOSE EQUIVALENT I-131 Concentration	~~a)~~ 1 per 31 days, ~~when- ever the gross activity determination indicates iodine concentrations greater than 10% of the allowable limit.~~ ~~b) 1 per 6 months, when- ever the gross activity determination indicates iodine concentrations below 10% of the allow- able limit.~~

SR 3.7.13.1

M1

PLANT SYSTEMS

MAIN STEAM LINE ISOLATION VALVES

A1

LIMITING CONDITION FOR OPERATION

Three s

~~3.7.1.5~~ ~~Each~~ main steam line isolation valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2 and 3.

MODES

except when all MSIVs are closed and deactivated

L1

ACTION:

MODES 1 - With one main steam line isolation valve inoperable ~~but open~~, POWER OPERATION may continue provided the inoperable valve is restored to OPERABLE status within ~~4~~ hours;

COND A M1 8

M1 MODE 2

COND B 6

Otherwise, be in ~~HOT SHUTDOWN~~ within the next ~~12~~ hours.

or more L2 Insert 1 (COND C NOTE)

MODES 2 and 3 - With one main steam line isolation valve inoperable, subsequent operation in MODES 2 or 3 may proceed after:

COND C

A2

a. ~~The inoperable isolation valve is restored to OPERABLE status, or~~

closed within 8 hours and verified closed once per 7 days

M2

b. The isolation valve is ~~maintained~~ closed;

COND D 6

Otherwise, be in ~~HOT SHUTDOWN~~ within the next ~~12~~ hours.

and in MODE 4 in 12 hours

M2 MODE 3

SURVEILLANCE REQUIREMENTS

Insert 2 (SR 3.7.2.1 NOTE) L3

SR 3.7.2.1

~~4.7.1.5~~ Each main steam line isolation valve shall be demonstrated OPERABLE by verifying full closure within ~~5 seconds~~ when tested pursuant to Specification 4.0.5.

Insert 3 (SR 3.7.2.2) M3

limits

(Unit 2)

LA1

5 seconds (Unit 1)

Unit 1 CTS value

LRM

INSERTS FOR CTS 3.7.1.5 MARKUP

1. COND C NOTE

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

   ---

2. SR 3.7.2.1 NOTE

   - NOTE -
   Only required to be performed in MODES 1 and 2.

   ---

3. SR 3.7.2.2

SR 3.7.2.2	- NOTE - Only required to be performed in MODES 1 and 2. Verify each MSIV actuates to the isolation position on an actual or simulated actuation signal.	18 months

A1

3/4.7.2 (This Specification number is not used.)

ITS 3.7.7

PLANT SYSTEMS

3/4.7.3 ~~PRIMARY~~ COMPONENT COOLING WATER SYSTEM

A1

LIMITING CONDITION FOR OPERATION A2

~~3.7.3.1~~ ~~At least~~ two ~~primary~~ component cooling water ~~subsystems~~ shall be OPERABLE.

- NOTE -
Enter applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops - MODE 4," for residual heat removal loops made inoperable by CCW.

APPLICABILITY: MODES 1, 2, 3 and 4.

COND A

ACTION: M1

With one less than two ~~primary~~ component cooling water ~~subsystems~~ OPERABLE, restore ~~at least~~ two ~~subsystems~~ to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

COND B

COND C Insert 1 L3 A2 trains

SURVEILLANCE REQUIREMENTS

~~4.7.3.1~~ At least two ~~primary~~ component cooling water ~~subsystems~~ shall be demonstrated OPERABLE.

~~a.~~ ~~Verify that each pump develops the required differential pressure and flow rate when tested in accordance with the requirements of Section 4.0.5.~~ A4

SR 3.7.7.1 ~~b.~~ At least once per 31 days by verifying that each valve (manual, power operated or automatic) servicing ~~safety related equipment~~ that is not locked, sealed, or otherwise secured in position, is in its correct position.

~~c.~~ ~~At least once per 18 months during shutdown, by cycling each power operated valve servicing safety related equipment that is not testable during plant operation, through at least one complete cycle of full travel.~~

- NOTE -
Isolation of CCW flow to individual components does not render the CCW System inoperable.

L1 L2 the RHR system, L4

PLANT SYSTEMS Unit 1 Page ITS 3.7.7

3/4.7.3 COMPONENT COOLING WATER SYSTEM (U1) A1

LIMITING CONDITION FOR OPERATION A2

~~3.7.3.1~~ ~~At least~~ two component cooling water ~~subsystems~~ shall be OPERABLE.

- NOTE -
Enter applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops - MODE 4," for residual heat removal loops made inoperable by CCW.

COND A

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION: M1

With ~~less than two component cooling water subsystems OPERABLE~~, restore ~~at least~~ two ~~subsystems~~ to OPERABLE status within 72 hours or be in at least ~~HOT~~ STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

one CCW train inoperable A3

COND B COND C Insert 1 L3 A2 trains

SURVEILLANCE REQUIREMENTS

4.7.3.1 At least two component cooling water subsystems shall be demonstrated OPERABLE.

a. Verify that each pump develops the required differential pressure and flow rate when tested in accordance with the requirements of Section 4.0.5.

b. At least once per 31 days by verifying that each valve (manual, power operated or automatic) servicing safety related equipment not locked, sealed, or otherwise secured in position, is in its correct position.

c. At least once per 18 months during shutdown, by cycling each power operated valve servicing safety related equipment that is not testable during plant operation, through at least one complete cycle of full travel.

Requirements discussed corresponding Unit 2 TS

INSERT FOR CTS 3.7.3.1 MARKUP

1.

NOTE Only applicable in MODE 4 with inadequate CCW flow to the RHR heat exchangers to support the required decay heat removal needed to maintain the Unit in MODE 5. C. Two CCW trains inoperable.	NOTE LCO 3.0.3 and all other LCO Actions requiring a MODE change From MODE 4 to MODE 5 are suspended until adequate CCW flow to the RHR heat exchangers is established to maintain the unit in MODE 5. **C.1 Initiate action to implement an alternative means of decay heat removal.** **AND** **C.2 Initiate actions to be in MODE 5.**	 Immediately Immediately

PLANT SYSTEMS

3/4.7.4 SERVICE WATER SYSTEM (SWS)

ITS 3.7.8

A1

LIMITING CONDITION FOR OPERATION A2

~~3.7.4.1~~ ~~At least~~ two service water ~~subsystems supplying safety related equipment~~ shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

COND A

ACTION: M1

With one less than two SWS ~~subsystems~~ OPERABLE, restore ~~at least~~ two ~~subsystems to~~ OPERABLE status within 72 hours or be in at least HOT STANDBY within the ~~next 6~~ hours and in COLD SHUTDOWN within the following 30 hours.

trains A2

COND B

COND C INSERT 2 L3

SURVEILLANCE REQUIREMENTS

~~4.7.4.1~~ At least two SWS ~~subsystems~~ shall be demonstrated OPERABLE:

A3

~~a.~~ ~~Verify that each pump develops the required differential pressure and flow rate when tested in accordance with the requirements of Section 4.0.5.~~

SR 3.7.8.1

~~b.~~ At least once per 31 days by verifying that each valve (manual, power operated or automatic servicing safety related equipment that is not locked, sealed, or otherwise secured in position, is in its correct position.

~~c.~~ ~~At least once per 18 months during shutdown, by cycling each power operated valve servicing safety related equipment that is not testable during plant operation, through at least one complete cycle of full travel.~~

L2 M2

SR 3.7.8.2

SR 3.7.8.3

Insert 1

- NOTES -

1. Enter applicable Conditions and Required Actions of LCO 3.8.1, "AC Sources - Operating," for emergency diesel generator made inoperable by SWS.

2. Enter applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops - MODE 4," for residual heat removal loops made inoperable by SWS

- NOTE -

Isolation of SWS flow to individual components does not render the SWS inoperable.

L1

SERVICE SWS

PLANT SYSTEMS

3/4.7.4 ~~REACTOR PLANT RIVER~~ WATER SYSTEM ~~(RPRWS)~~ (U1) A1

LIMITING CONDITION FOR OPERATION A2

service

~~3.7.4.1~~ ~~At least~~ two ~~reactor plant river~~ water ~~subsystems supplying safety related equipment~~ shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

COND A

ACTION: M1

one SWS train inoperable A4

With ~~less than two RPRWS subsystems OPERABLE~~, restore ~~at least~~ two ~~subsystems to~~ OPERABLE status within 72 hours or be in at least HOT STANDBY within the ~~next 6 hours~~ and in COLD SHUTDOWN within the following 30 hours.

trains A2

COND B

SURVEILLANCE REQUIREMENTS

SWS

~~4.7.4.1~~ At least two ~~RPRWS~~ ~~subsystems~~ shall be demonstrated OPERABLE:

~~a.~~ A3 ~~Verify that each pump develops the required differential pressure and flow rate when tested in accordance with the requirements of Section 4.0.5.~~

SR 3.7.8.1

~~b.~~ At least once per 31 days by verifying that each valve (manual, power operated or automatic servicing safety related equipment not locked, sealed, or otherwise secured in position is in its correct position; and

~~c.~~ ~~At least once per 18 months during shutdown, by cycling each power-operated valve servicing safety related equipment that is not testable during plant operation, through at least one complete cycle of full travel.~~

L2

M2

SR 3.7.8.2

SR 3.7.8.3

Insert 1

- NOTES -

1. Enter applicable Conditions and Required Actions of LCO 3.8.1, "AC Sources - Operating," for emergency diesel generator made inoperable by SWS.

2. Enter applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops - MODE 4," for residual heat removal loops made inoperable by SWS

- NOTE -

Isolation of SWS flow to individual components does not render the SWS inoperable.

L1

INSERTS FOR CTS 3.7.4.1 MARKUP

1. SR 3.7.8.2 & SR 3.7.8.3

SR 3.7.8.2	Verify each SWS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	[18] months
SR 3.7.8.3	Verify each SWS pump starts automatically on an actual or simulated actuation signal.	[18] months

2. New Condition C

NOTE Only applicable in MODE 4 with inadequate SWS flow to the Component Cooling Water (CCW) heat exchangers to support the required decay heat removal needed to maintain the Unit in MODE 5.	NOTE LCO 3.0.3 and all other LCO Actions requiring a MODE change from MODE 4 to MODE 5 are suspended until adequate SWS flow to the CCW heat exchangers is established to maintain the unit in MODE 5.	
C. Two SWS trains inoperable.	**C.1 Initiate action to implement an alternative means of decay heat removal.**	**Immediately**
	AND	
	C.2 Initiate actions to be in MODE 5.	**Immediately**

PLANT SYSTEMS

ITS 3.7.9

3/4.7.5 ULTIMATE HEAT SINK ~~- OHIO RIVER~~ A1

LIMITING CONDITION FOR OPERATION

~~3.7.5.1~~ The ultimate heat sink shall be OPERABLE with:

SR 3.7.9.1 ~~a.~~ A ~~minimum water level at or above~~ elevation 654 Mean Sea Level, at the intake structure, ~~and~~

Bases

LA1

SR 3.7.9.2 ~~b.~~ An average water temperature of ≤ 89°F.

(Unit 2)

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

COND B

Unit 1 CTS value retained

≤ 90°F (Unit 1)

~~With the requirements of the above specification not satisfied,~~ be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.

Required Action and associated Completion Time of Condition A not met or UHS inoperable for reasons other than Condition A.,

SURVEILLANCE REQUIREMENTS

~~4.7.5.1~~ The ultimate heat sink shall be determined OPERABLE at least once per 24 hours by verifying the average water temperature and water level to be within their limits.

SR 3.7.9.1

SR 3.7.9.2

L.1

Cond A.
With the water temperature of the UHS > 90°F (Unit 1), > 89°F (Unit 2).
Verify water the temperature of the UHS is ≤ 90°F (Unit 1), ≤ 89°F (Unit 2) when averaged over the previous 24 hour period once per hour.

ITS 3.7.11

A1

UNIT 2 DRAFT PAGE FROM LAR 195

3.7.11

~~3/4.7.6~~ CONTROL ROOM EMERGENCY AIR COOLING SYSTEM (CREACS)

LIMITING CONDITION FOR OPERATION

~~3.7.6~~ Two CREACS trains shall be OPERABLE~~*~~.

APPLICABILITY: MODES 1, 2, 3 and 4, and

Unit 2 Specific Applicability

During movement of recently irradiated fuel assemblies, and
During movement of fuel assemblies over recently irradiated fuel assemblies.

ACTION:

MODES 1, 2, 3 and 4:

~~a.1~~ Cond A & B — With one CREACS train inoperable, restore the CREACS train to OPERABLE status within 30 days or be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

~~a.2~~ Cond E — With two CREACS trains inoperable, enter Specification 3.0.3 immediately.

During movement of recently irradiated fuel assemblies and during movement of fuel assemblies over recently irradiated fuel assemblies:

~~b.1~~ Cond A & C — With one CREACS train inoperable, restore the CREACS train to OPERABLE status within 30 days or immediately place the OPERABLE CREACS train in operation or immediately suspend movement of ~~recently~~ irradiated fuel assemblies and movement of fuel assemblies over ~~recently~~ irradiated fuel assemblies.

~~b.2~~ Cond D — With two CREACS trains inoperable, immediately suspend movement of ~~recently~~ irradiated fuel assemblies and movement of fuel assemblies over ~~recently~~ irradiated fuel assemblies.

A3

Unit 2 specific Note in Cond C and D for movement of recently irradiated fuel only.

SR 3.7.11.1

SURVEILLANCE REQUIREMENTS

~~4.7.6.1~~ CREACS shall be demonstrated OPERABLE at least once per 18 months by verifying each CREACS train has the capability to remove the required heat load and purge the control room atmosphere at the assumed flow rate.

A2

~~* Emergency backup power for only one CREACS train is required in MODES 5, 6 and with no fuel assemblies in the reactor pressure vessel.~~

3.7.11

ITS 3.7.11

UNIT 1 DRAFT PAGE FROM LAR 325

PLANT SYSTEMS

~~3/4.7.6~~ CONTROL ROOM EMERGENCY AIR COOLING SYSTEM (CREACS)

A1

LIMITING CONDITION FOR OPERATION

~~3.7.6~~ Two CREACS trains shall be OPERABLE~~*~~.

Unit 1 Specific LCO Note

- General Note -
The heat removal function of CREACS is not required OPERABLE to support fuel movement involving non-recently irradiated fuel.

APPLICABILITY: MODES 1, 2, 3 and 4, and

Unit 1 Specific Applicability

During movement of irradiated fuel assemblies, and

During movement of fuel assemblies over irradiated fuel assemblies.

ACTION:

A3

Unit 1 specific Note in Cond C and D for movement of irradiated fuel.

MODES 1, 2, 3 and 4:

Cond A & B

~~a.1~~ With one CREACS train inoperable, restore the CREACS train to OPERABLE status within 30 days or be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

Cond E

~~a.2~~ With two CREACs trains inoperable, enter Specification 3.0.3 immediately.

During movement of irradiated fuel assemblies and during movement of fuel assemblies over irradiated fuel assemblies:

Cond A & C

~~b.1~~ With one CREACS train inoperable, restore the CREACS train to OPERABLE status within 30 days or immediately place the OPERABLE CREACS train in operation or immediately suspend movement of irradiated fuel assemblies and movement of fuel assemblies over irradiated fuel assemblies.

Cond D

~~b.2~~ With two CREACS trains inoperable, immediately suspend movement of irradiated fuel assemblies and movement of fuel assemblies over irradiated fuel assemblies.

SURVEILLANCE REQUIREMENTS

SR 3.7.11.1

~~4.7.6.1~~ CREACS shall be demonstrated OPERABLE at least once per 18 months by verifying each CREACS train has the capability to remove the required heat load and purge the control room atmosphere at the required flow rate.

A2

~~* Emergency backup power for only one CREACS train is required in MODES 5, 6 and with no fuel assemblies in the reactor pressure vessel.~~

Note: For Unit 1, the verification of the heat removal function of the CREACS is not required to support the movement of non-recently irradiated fuel.

A4

UNIT 2 DRAFT PAGE FROM LAR 195

~~3/4.7.7~~ 3.7.10 CONTROL ROOM EMERGENCY VENTILATION SYSTEM (CREVS)

LIMITING CONDITION FOR OPERATION

~~3.7.7~~ 3.7.10 Two CREVS trains shall be OPERABLE*.

- General Note -

The control room boundary may be opened intermittently under administrative control.

APPLICABILITY: MODES 1, 2, 3 and 4, and

During movement of recently irradiated fuel assemblies, and

During movement of fuel assemblies over recently irradiated fuel assemblies.

ACTION:

MODES 1, 2, 3 and 4:

~~a.1~~ Cond A & C — With one required CREVS train inoperable, restore the CREVS train to OPERABLE status within 7 days or be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

~~a.2~~ Cond B & C — With two required CREVS trains inoperable due to an *inoperable control room boundary, restore the control room* boundary to OPERABLE status within 24 hours or be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

~~a.3~~ Cond F — With two required CREVS trains inoperable for reasons other than described in ACTION a.2, enter Specification 3.0.3 immediately.

During movement of recently irradiated fuel assemblies and during movement of fuel assemblies over recently irradiated fuel assemblies:

~~b.1~~ Cond A & D — With one required CREVS train inoperable, restore the CREVS train to OPERABLE within 7 days, or immediately place OPERABLE CREVS train in emergency pressurization mode of operation, or immediately suspend movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies.

A.2

~~* Emergency backup power for only one CREVS train is required in MODES 5, 6 and with no fuel assemblies in the reactor pressure vessel.~~

LIMITING CONDITION FOR OPERATION (continued)

ACTION (Continued)

~~b.2~~ With two required CREVS trains inoperable, immediately suspend movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies.

Cond E

SURVEILLANCE REQUIREMENTS

~~4.7.7.1~~ The CREVS shall be demonstrated OPERABLE:

~~a. Deleted.~~

SR 3.7.10.1

~~b.~~ At least once per 31 days by verifying that each CREVS train operates for ≥ 15 minutes with the heaters in operation.

c. At least once per 18 months or (1) after each complete or partial replacement of a HEPA filter or charcoal adsorber bank, or (2) after any structural maintenance on the HEPA filter or charcoal adsorber housings by:

1. Verifying that the charcoal adsorbers remove ≥ 99.95% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating each CREVS train at a flow rate of 800 to 1000 cfm.

2. Verifying that the HEPA filter banks remove ≥ 99.95% of the DOP when they are tested in-place in accordance with ANSI N510-1980 while operating each CREVS train at a flow rate of 800 to 1000 cfm.

3. Verifying a system flow rate of 800 to 1000 cfm during operation of each CREVS train.

d. At least once per 18 months or (1) after 720 hours of system operation, or (2) following painting, fire or chemical release in the vicinity of control room outside air intakes while the system is operating, within 31 days after removal, subjecting the carbon contained in at least one test canister or at least two carbon samples removed from one of the charcoal adsorbers to a laboratory carbon sample analysis and verifying a removal efficiency of ≥ 99% for radioactive methyl iodide at an air flow velocity of 0.7 ft/sec with an inlet methyl iodide concentration of 1.75 mg/m^3, ≥ 70% relative humidity, and 30°C; other test conditions including test parameter tolerances shall be in accordance with ASTM D3803-1989. The carbon samples not obtained from test canisters shall be prepared by either:

A.3

NOTE: The CREVS filtration requirements are moved to the Ventilation Filter Testing Program (VFTP) in the Administrative Controls Section (5.0) of the Tech Specs consistent with the location of these requirements in the ISTS. Any changes to this information will be discussed and documented in Section 5.0 of the Tech Specs.

SURVEILLANCE REQUIREMENTS (Continued)

SR 3.7.10.2 Perform required CREVS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).

a) ~~Emptying one entire bed from a removed adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed, or~~

b) ~~Emptying a longitudinal sample from an adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed.~~

A.3

~~e.~~ At least once per 18 months by:

1. ~~Verifying that the pressure drop for the combined HEPA filters and charcoal adsorber banks is less than 5.6 inches Water Gauge while operating each CREVS train at a flow rate of 800 to 1000 cfm.~~

SR 3.7.10.3

~~2.~~ Verify~~ing~~ each CREVS train actuates on an actual or simulated actuation signal.

~~3. Deleted~~

~~4. Deleted~~

~~5.~~ ~~Verifying that the heaters dissipate at least 3.87 kw and not exceeding 5.50 kw when tested in accordance with ANSI N510-1980.~~

SR 3.7.10.4

~~f.~~ ~~By~~ Verify~~ing~~ ~~at least once~~ every ~~36~~ 18 months, on a STAGGERED TEST BASIS, that each CREVS train, can maintain the control room at a positive pressure of ≥ 1/8 inch Water Gauge relative to the outside atmosphere during operation at a flow rate of 800-1000 cfm.

A.3

A.5

NOTE: The CREVS filtration requirements are moved to the Ventilation Filter Testing Program (VFTP) in the Administrative Controls Section (5.0) of the Tech Specs consistent with the location of these requirements in the ISTS. Any changes to this information will be discussed and documented in Section 5.0 of the Tech Specs.

3/4.7.7 CONTROL ROOM EMERGENCY VENTILATION SYSTEMS (CREVS)

LIMITING CONDITION FOR OPERATION

3.7.7 Two CREVS trains shall be OPERABLE*:

- General Note -

The control room boundary may be opened intermittently under administrative control.

APPLICABILITY: MODES 1, 2, 3 and 4, and

During movement of recently irradiated fuel assemblies, and

During movement of fuel assemblies over recently irradiated fuel assemblies.

ACTION:

MODES 1, 2, 3 and 4:

a.1 With one required CREVS train inoperable, restore the CREVS

Changes to these Unit 1 requirements are discussed corresponding Unit 2 TS markup

following 30 hours.

a.2 With two required CREVS trains inoperable due to an inoperable control room boundary, restore the control room boundary to OPERABLE status within 24 hours or be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

a.3 With two required CREVS trains inoperable for reasons other than described in ACTION a.2, enter Specification 3.0.3 immediately.

During movement of recently irradiated fuel assemblies and during movement of fuel assemblies over recently irradiated fuel assemblies:

b.1 With one required CREVS train inoperable, restore the CREVS train to OPERABLE within 7 days, or immediately place OPERABLE CREVS train in emergency pressurization mode of operation, or immediately suspend movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies.

---

* Emergency power for only one CREVS train is required in MODES 5, 6 and with no fuel assemblies in the reactor pressure vessel.

PLANT SYSTEMS

~~LIMITING CONDITION FOR OPERATION (continued)~~

~~ACTION (Continued)~~

~~b.2 With two required CREVS trains inoperable, immediately suspend movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel~~

Changes to these Unit 1 requirements are discussed corresponding Unit 2 TS markup

~~SURVEILLANCE REQUIREMENTS~~

~~4.7.7.1 The CREVS shall be demonstrated OPERABLE:~~

~~a. Deleted.~~

each .

A6

SR 3.7.10.1

~~b.~~ At least once per 31 days by verifying that ~~the~~ CREVS train operates for ≥ 15 minutes with the heaters in operation.

~~c. At least once per 18 months or after every 720 hours of system operation or (1) after each complete or partial replacement of a HEPA filter or charcoal adsorber bank, or (2) after any structural maintenance on the HEPA filter or charcoal adsorber housing or (3) following painting, fire or chemical release in any ventilation zone communicating with the system by:~~

~~1. Verifying that the filtration system satisfies the in-place penetration and by-pass leakage testing acceptance criteria of less than 0.05% when tested in accordance with ANSI N510-1980 while operating the CREVS at a flow rate of 800 - 1000 cfm.~~

~~2. Within 31 days after removal, subjecting the carbon contained in at least one test canister or at least two carbon samples removed from one of the charcoal adsorbers to a laboratory carbon sample analysis and verifying a removal efficiency of ≥ 99% for radioactive methyl iodine at an air flow velocity of .68 ft/sec with an inlet methyl iodide concentration of 1.75 mg/m³, ≥ 70% relative humidity, and 30°C; other test conditions including test parameter tolerances shall be in accordance with ASTM D3803-1989. The carbon samples not obtained from test canisters shall be prepared by either:~~

~~a) Emptying one entire bed from a removed adsorber tray, mixing the adsorbent thoroughly, and obtaining a sample volume equivalent to at least two inches in diameter and with a length equal to the thickness of the bed, or~~

A.3

NOTE: The CREVS filtration requirements are moved to the Ventilation Filter Testing Program (VFTP) in the Administrative Controls Section (5.0) of the Tech Specs consistent with the location of these requirements in the ISTS. Any changes to this information will be discussed and documented in Section 5.0 of the Tech Specs.

ITS 3.7.10

SURVEILLANCE REQUIREMENTS (continued)

b) Removing a longitudinal sample from an adsorber tray using a slotted-tube sampler, mixing the adsorbent thoroughly, and obtaining a sample volume equivalent to at least two inches in diameter and with length equal to the thickness of the bed.

3. Verifying a system flow rate of 800 - 1000 cfm during operation of the CREVS train.

d. At least once per 18 months by:

1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is < 6 inches Water Gauge while operating the CREVS train at a flow rate of 800 - 1000 cfm.

2. Verify each CREVS train actuates on an actual or simulated actuation signal.

~~3. Deleted~~

4. Verifying that the heaters dissipate at least 3.87 kw and not exceeding 5.50 kw when tested in accordance with ANSI N510-1980.

Changes to these Unit 1 requirements are discussed corresponding Unit 2 TS markup

e. By verifying at least once every 36 months, on a STAGGERED TEST BASIS, that each CREVS train, can maintain the control room at a positive pressure of ≥ 1/8 inch Water Gauge relative to the outside atmosphere during operation at a flow rate of 800-1000 cfm.

4.7.7.2 The BV-2 CREVS, when utilized to meet BV-1 Technical Specification 3.7.7, shall be demonstrated OPERABLE in accordance with BV-2 Technical Specification 4.7.7.1.

A.3

A4

NOTE: The CREVS filtration requirements are moved to the Ventilation Filter Testing Program (VFTP) in the Administrative Controls Section (5.0) of the Tech Specs consistent with the location of these requirements in the ISTS. Any changes to this information will be discussed and documented in Section 5.0 of the Tech Specs.

PLANT SYSTEMS

3/4.7.8 SUPPLEMENTAL LEAK COLLECTION AND RELEASE SYSTEM (SLCRS)

R1

LIMITING CONDITION FOR OPERATION

3.7.8.1 Two SLCRS exhaust air filter trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With one SLCRS exhaust air filter train inoperable, restore the inoperable train to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.8.1 Each SLCRS exhaust air filter train shall be demonstrated OPERABLE:

a. At least once per 31 days by initiating, from the control room, flow through the "standby" HEPA filter and charcoal adsorber train and verifying that the train operates for at least 15 minutes with the heater controls operational.

b. At least once per 18 months or (1) after each complete or partial replacement of a HEPA filter or charcoal adsorber bank, or (2) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (3) following painting, fire or chemical release in any ventilation zone communicating with the system by:

   1. Verifying that the charcoal adsorbers remove ≥ 99.95% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating the ventilation system at a flow rate of 57,000 cfm ± 10%.

   2. Verifying that the HEPA filter banks remove ≥ 99.95% of the DOP when they are tested in-place in accordance with ANSI N510-1980 while operating the ventilation system at a flow rate of 57,000 cfm ± 10%.

   3. Within 31 days after removal, subjecting the carbon contained in at least one test canister or at least two carbon samples removed from one of the charcoal adsorbers to a laboratory carbon sample analysis and

LRM

verifying a removal efficiency of ≥ 99% for radioactive methyl iodide at an air flow velocity of 0.7 ft/sec with an inlet methyl iodide concentration of 1.75 mg/m^3, ≥ 70% relative humidity, and 30°C; other test conditions including test parameter tolerances shall be in accordance with ASTM D3803-1989. The carbon samples not obtained from test canisters shall be taken with a slotted tube sampler in accordance with ANSI N509-1980.

4. Verifying a system flow rate of 57,000 cfm ± 10% during system operation.

c. At least once per 18 months by:

1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6.8 inches Water Gauge while operating the ventilation system at a flow rate of 57,000 cfm ± 10%.

2. Verifying that the exhaust from the contiguous area is diverted through the SLCRS filter train on a Containment Isolation - Phase "A" signal in less than 5 minutes.

d. Verifying that the air flow distribution to each HEPA filter and charcoal adsorber is within ± 20% of the averaged flow per unit after initial installation and after any maintenance affecting the flow distribution.

e. At least once per 4 months of system operation, perform the surveillance requirement of 4.7.8.1.b.3.

R1

UNIT 1 PAGE

R1

3/4.7.8 SUPPLEMENTAL LEAK COLLECTION AND RELEASE SYSTEM (SLCRS)

LIMITING CONDITION FOR OPERATION

3.7.8.1 Two SLCRS exhaust air filter trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With one SLCRS exhaust air filter train inoperable, restore the inoperable train to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.8.1 Each SLCRS exhaust air filter train shall be demonstrated OPERABLE:

a. At least once per 31 days on a STAGGERED TEST BASIS by:

   1. Initiating, from the control room, flow through the HEPA filter and charcoal adsorber train and verifying that the train operates for at least 15 minutes.

b. At least once per 18 months or after every 720 hours of system operation or (1) after each complete or partial replacement of a HEPA filter or charcoal adsorber bank, or (2) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (3) following painting, fire or chemical release in any ventilation zone communicating with the system by:

   1. Verifying that the charcoal adsorbers remove $\geq$ 99% of a halogenated hydrocarbon refrigerant test gas when they are testing in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 36,000 cfm $\pm$ 10%.

LRM

SURVEILLANCE REQUIREMENTS (Continued)

2. Verifying that the HEPA filter banks remove ≥ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 36,000 cfm ± 10%.

3. Subjecting the carbon contained in at least one test canister or at least two carbon samples removed from one of the charcoal adsorbers to a laboratory carbon sample analysis and verifying a removal efficiency of ≥ 90% for radioactive methyl iodide at an air flow velocity of 0.9 ft/sec with an inlet methyl iodide concentration of 1.75 mg/m^3, ≥ 95% relative humidity, and 30°C; other test conditions including test parameter tolerances shall be in accordance with ASTM D3803-1989. The carbon samples not obtained from test canisters shall be prepared by either:

   a) Emptying one entire bed from a removed adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed, or

   b) Emptying a longitudinal sample from an adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed.

4. Verifying a system flow rate of 36,000 cfm ± 10% during system operation.

c. At least once per 18 months by:

1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is < 6 inches Water Gauge while operating the ventilation system at a flow rate of 36,000 cfm ± 10%.

2. Verifying that the SLCRS flow is diverted through the filter train on a Containment Isolation - Phase "A" signal.

SURVEILLANCE REQUIREMENTS (Continued)

d. Verifying that the air flow distribution to each HEPA filter and charcoal adsorber is within ± 20% of the averaged flow per unit after initial installation and after any maintenance affecting the flow distribution.

STORAGE POOL WATER LEVEL

ITS 3.7.15

A1

3.7.15

LIMITING CONDITION FOR OPERATION

~~3.9.11~~ As a minimum, 23 feet of water shall be maintained over the top of irradiated fuel assemblies seated in the storage racks.

APPLICABILITY: During movement of irradiated fuel assemblies within the fuel storage pool, and

During movement of fuel assemblies over irradiated fuel assemblies within the fuel storage pool.

COND A

ACTION:

M1

Immediately

With the requirement of the specification not satisfied, suspend all movement of irradiated fuel assemblies within the fuel storage pool and movement of fuel assemblies over irradiated fuel assemblies within the fuel storage pool. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

~~4.9.11 The water level in the fuel storage pool shall be determined to be at least its minimum required depth at least once per 7 days.~~

SR 3.7.15.1 Verify the fuel storage pool water level is ≥ 23 ft above the top of the irradiated fuel assemblies seated in the storage racks at least once per 7 days.

ITS 3.7.12

Supplemental Leak Collection and Release System (SLCRS)

~~FUEL BUILDING VENTILATION SYSTEM - FUEL MOVEMENT~~ A1

Bases

LA1

3.7.12

LIMITING CONDITION FOR OPERATION

One

~~3.9.12~~ The fuel building portion of the Supplemental Leak Collection and Release System (SLCRS) shall be OPERABLE and operating with fuel building exhaust flow discharging through at least one train of the SLCRS HEPA filters and charcoal adsorbers.

APPLICABILITY: During movement of recently irradiated fuel assemblies within the fuel storage pool, and

During movement of fuel assemblies over recently irradiated fuel assemblies within the fuel storage pool.

COND B

ACTION:

With the requirement of the above specification not satisfied, suspend all operations involving movement of recently irradiated fuel assemblies within the fuel storage pool and movement of fuel assemblies over recently irradiated fuel assemblies within the fuel storage pool. The provisions of Specification 3.0.3 are not applicable.

COND B Note

Bases

SURVEILLANCE REQUIREMENTS

SR 3.7.12.1

LA1

~~4.9.12.1~~ ~~The~~ fuel building portion of ~~the SLCRS shall be verified to be operating~~ with fuel building exhaust flow discharging through at least one train of SLCRS HEPA filters and charcoal adsorbers ~~and that all fuel building doors are closed~~~~(1)~~ at least once per 12 hours.

L2

~~4.9.12.2 The fuel building portion of the SCLRS shall be demonstrated OPERABLE by testing the SLCRS per Specification 4.7.8 with the exception to item 4.7.8.1.c.2.~~

LCO Note:
The fuel building boundary may be opened intermittently under administrative control.

SR 3.7.12.2 Perform required SLCRS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).

L1

~~(1)~~ ~~The fuel building doors may be opened for entry and exit.~~

A2

M1 Insert 1 SR 3.7.12.3

Supplemental Leak Collection and Release System (SLCRS)

ITS 3.7.12

Unit 1 Page

A1

~~FUEL BUILDING VENTILATION SYSTEM - FUEL MOVEMENT~~ (U1)

~~LIMITING CONDITION FOR OPERATION~~

~~3.9.12 The fuel building portion of the Supplemental Leak Collection and Release System (SLCRS) shall be OPERABLE and operating with fuel building exhaust flow discharging through at least one train of the SLCRS HEPA filters and charcoal adsorbers.~~

APPLICABILITY: During movement of recently irradiated fuel assemblies within the fuel storage pool, and

During movement of fuel assemblies over recently irradiated fuel assemblies within the fuel storage pool.

When required OPERABLE in accordance with LCO 3.9.3.c.3

A3

A3

INSERT 2

ACTION:

~~With the requirement of the above specification not satisfied, suspend all operations involving movement of recently irradiated fuel assemblies within the fuel storage pool and movement of fuel assemblies over recently irradiated fuel assemblies within the fuel storage pool. The provisions of Specification 3.0.3 are not applicable.~~

SURVEILLANCE REQUIREMENTS

~~4.9.12.1 The fuel building portion of SLCRS shall be verified to be operating with fuel building exhaust flow discharging through at least one train of the SLCRS HEPA filters and charcoal adsorbers and that all fuel building doors are closed[1] at least once per 12 hours.~~

~~4.9.12.2 The fuel building portion of SLCRS shall be demonstrated OPERABLE:~~

~~a.~~ At least once per 18 months by:

INSERT 3

A4

SR 3.7.12.3

~~1.~~ Verifying that the ventilation system maintains the spent fuel storage pool area at a negative pressure of ≥ 1/8 inches Water Gauge relative to the outside atmosphere during system operation.

~~b. Testing the SLCRS per Specification 4.7.8.1 with the exception to item 4.7.8.1.c.2.~~

~~(1) The fuel building doors may be opened for entry and exit.~~

Changes to these Unit 1 requirements are addressed in the corresponding Unit 2 markup and DOCs.

INSERT FOR CTS 3.9.12 SLCRS MARKUP

1. **BVPS Specific Surveillance for Fuel Building Integrity Added to Unit 2**

SR 3.7.12.3	- NOTE - Only required to be met during movement of recently irradiated fuel assemblies within the fuel storage pool and *during movement of fuel assemblies over recently irradiated* fuel assemblies within the fuel storage pool. Verify the required SLCRS train can maintain the fuel storage pool area at a negative pressure of ≥ 0.125 (Unit 1), ≥ 0.05 (Unit 2) inches water gauge relative to atmospheric pressure during system operation.	18 months

2. **UNIT 1 Specific Action A**

Note: Only Applicable to Unit 1.
Requirements of LCO not met when required in accordance with LCO 3.9.3.c.3. Enter applicable Conditions and Required Actions of LCO 3.9.3, "Containment Penetrations."
Immediately

3. **ITS SR 3.7.12.3 Note**

NOTE: Only required to be met during movement of recently irradiated fuel assemblies within the fuel storage pool and during movement of fuel assemblies over recently irradiated fuel assemblies within the fuel storage pool.

~~3/4.9.14~~ SPENT FUEL POOL STORAGE

ITS 3.7.14

A1

LIMITING CONDITION FOR OPERATION

~~3.9.14~~ The combination of initial enrichment and burnup of each fuel assembly stored in the spent fuel storage pool shall ~~comply with~~ be within the limits specified in Table ~~3.9-1~~ 3.7.14-1B.

APPLICABILITY: Whenever any fuel assembly is stored in the spent fuel storage pool.

ACTION: With the above requirements not satisfied:

COND A ~~a.~~ Immediately initiate action to move the non-complying fuel assembly to a location that complies with Table ~~3.9-1~~ 3.7.14-1B.

COND A NOTE ~~b.~~ The provisions of Specifications 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

SR 3.7.14.1

~~4.9.14~~ Verify, by administrative means, the initial enrichment and burnup ~~complies~~ of the fuel assembly is in accordance with Table ~~3.9-1~~ 3.7.14-1B prior to storing ~~a~~ the fuel assembly in the spent fuel storage pool.

3.7.14-1B

INITIAL

A5

Table ~~3.9-1~~

FUEL ASSEMBLY MINIMUM BURNUP VS. U-235 ~~NOMINAL~~ ENRICHMENT
FOR STORAGE IN SPENT FUEL RACK REGIONS 1,2,3

Nominal Enrichment (w/o U-235)	Region 3 4-out-of-4 Burnup (MWD/MTU)	Region 2 3-out-of-4 Checkerboard Burnup (MWD/MTU)	Region 1 2-out-of-4 Checkerboard Burnup (MWD/MTU)
1.9	0	0	0
2.0	1615	0	0
2.2	4629	0	0
2.4	7295	0	0
2.6	9677	0	0
2.8	11877	1798	0
3.0	13995	3556	0
3.2	16112	5268	0
3.4	18235	6940	0
3.6	20349	8581	0
3.8	22443	10198	0
4.0	24503	11800	0
4.2	26519	13394	0
4.4	28492	14979	0
4.6	30428	16552	0
4.8	32329	18110	0
5.0	34201	19650	0

Note 1: Linear interpolation yields conservative results.

 A1

ITS 3.7.14 | Unit 1 Page

~~3/4.9.14~~ SPENT FUEL STORAGE POOL (U1)

LIMITING CONDITION FOR OPERATION

The combination of initial enrichment and burnup of each fuel assembly stored in the spent fuel storage pool shall be within the limits specified in Table 3.7.14-1A.

~~3.9.14 Fuel is to be stored in the spent fuel storage pool with:~~

a. The boron concentration in the spent fuel pool maintained greater than or equal to 1050 ppm when moving fuel in the spent fuel pool; and

All LCO requirements moved to ITS Table 3.7.14-1A

~~b.~~ Fuel assembly storage in Region 1 restricted to fuel with an enrichment less than or equal to 5.0 w/o U-235; and

~~c.~~ Fuel assembly storage in Region 2 restricted to fuel which has been qualified in accordance with Table ~~3.9-1~~ 3.7.14-1A; and

~~d.~~ Fuel assembly storage in Region 3 restricted to fuel which has been qualified in accordance with Table ~~3.9-2~~ 3.7.14-1A.

APPLICABILITY: During storage of fuel in the spent fuel pool.

ACTION: Requirements discussed in LCO 3.7.16

COND A

~~a.~~ ~~Suspend all actions involving movement of fuel in the spent fuel pool if it is determined a fuel assembly has been placed in the incorrect Region until such time as the correct storage location is determined. Move the assembly to its correct location before resumption of any other fuel movement.~~

Immediately initiate action to move the non-complying fuel assembly to a location that complies with the limits specified in (A3)

b. Suspend all actions involving the movement of fuel in the spent fuel pool if it is determined the pool boron concentration is less than 1050 ppm, until such time as the boron concentration is increased to 1050 ppm or greater.

COND A NOTE

~~c.~~ The provisions of Specifications 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

SR 3.7.14.1

~~4.9.14.1~~ Prior to ~~placing fuel or moving fuel in~~ storing the spent fuel pool, verify by administrative means (Bases) through fuel receipt records for new fuel, or by burnup analysis and comparison with Table 3.9-1 or Table 3.9-2 for spent fuel, that fuel assemblies to be ~~placed into or moved~~ stored in the spent fuel pool are within the above enrichment/burnup limits.

Bases — LA1

4.9.14.2 Verify the spent fuel pool boron concentration is ≥ 1050 ppm:

a. Within 8 hours prior to and at least once per 24 hours during movement of fuel in the spent fuel pool, and

b. At least once per 31 days.

Unit 1 Page

A4 3.7.14 -1A

TABLE ~~3.9-1~~

Add Region 1 Column to Table 3.7.14 -1A

BEAVER VALLEY FUEL ASSEMBLY MINIMUM BURNUP VS. INITIAL U235
ENRICHMENT FOR STORAGE IN REGION 2 SPENT FUEL RACKS

A4 (w/o U-235)

Nominal

~~Initial~~ U235 Enrichment	Assembly Discharge Burnup (MWD/MTU)
2.0	2585
2.5	9551
3.0	15784
3.5	21643
4.0	27260
4.5	33710
5.0	40000

NOTE: The data in the above table may be either interpreted linearly or may be calculated by the conservative equation below. This equation provides a linear fit to the design burnup limits.

Minimum burnup, MWD/MTU = 12100 * E% - 20500
Where E = Enrichment (E ≤ 5%)

Unit 1 Page

A4

3.7.14-1A

TABLE ~~3.9-2~~

BEAVER VALLEY FUEL ASSEMBLY MINIMUM BURNUP VS. INITIAL U-235 ENRICHMENT FOR STORAGE IN REGION 3 SPENT FUEL RACKS

Nominal ~~Initial~~ U-235 Enrichment (w/o U-235)	Assembly Discharge Burnup (MWD/MTU)
2.348	0
2.5	1,605
3.0	6,980
3.5	11,682
4.0	16,239
4.5	20,672
5.0	25,000

NOTE: The data in the above table may be either interpreted linearly or may be calculated by the conservative equation below. This equation provides a best fit to the analysis burnup limits.

Minimum burnup, MWD/MTU = $- 480 * (E\%)^2 + 12{,}900 * E\% - 27{,}400$
Where E = Enrichment ($E \leq 5\%$)

~~3/4.9.15~~ FUEL STORAGE POOL BORON CONCENTRATION

A1 ITS 3.7.16

LIMITING CONDITION FOR OPERATION

~~3.9.15~~ The fuel storage pool boron concentration shall be greater than or equal to 2000 ppm.

APPLICABILITY: When fuel assemblies are stored in the fuel storage pool.

ACTION: With fuel storage pool boron concentration not within limits,

COND A ~~a.~~ Immediately suspend all operations involving the movement of fuel assemblies in the fuel storage pool and initiate action to restore the fuel storage pool boron concentration to within the limit.

COND A NOTE ~~b.~~ The provisions of Specifications 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

~~4.9.15~~ Verify the fuel storage pool boron concentration is within the limit at least once per 7 days.

SR 3.7.16.1

FUEL STORAGE POOL BORON CONCENTRATION

REFUELING OPERATIONS

~~3/4.9.14 SPENT FUEL STORAGE POOL~~ (U1) A1 ITS 3.7.16 Unit 1

LIMITING CONDITION FOR OPERATION

3.7.16 ~~3.9.14 Fuel is to be stored in the spent fuel storage pool with:~~ M2

~~a.~~ The boron concentration in the spent fuel pool maintained greater than or equal to 1050 ppm ~~when moving fuel in the spent fuel pool; and~~

~~b. Fuel assembly storage in Region 1 restricted to fuel with an enrichment less than or equal to 5.0 w/o U-235; and~~

~~c. Fuel assembly storage in Region 2 restricted to fuel which has been qualified in accordance with Table 3.9-1; and~~

~~d. Fuel assembly storage in Region 3 restricted to fuel which has been qualified in accordance with Table 3.9-2.~~

APPLICABILITY: ~~During storage of fuel in the spent fuel pool.~~ M2 Applicability Insert

ACTION:

~~a. Suspend all actions involving movement of fuel in the spent fuel pool if it is determined a fuel assembly has been placed in the incorrect Region until such time as the correct storage location is determined. Move the assembly to its correct location before resumption of any other fuel movement.~~

COND A ~~b.~~ Suspend all actions involving the movement of fuel in the spent fuel pool if it is determined the pool boron concentration is less than 1050 ppm, ~~until such time as the boron concentration is increased to 1050 ppm or greater.~~

ACTION INSERT M2

~~c.~~ The provisions of Specifications 3.0.3 are not applicable. COND A NOTE

M1 and immediately initiate action to restore fuel storage pool boron concentration to within limit.

SURVEILLANCE REQUIREMENTS

~~4.9.14.1 Prior to placing fuel or moving fuel in the spent fuel pool, verify through fuel receipt records for new fuel, or by burnup analysis and comparison with Table 3.9-1 or Table 3.9-2 for spent fuel, that fuel assemblies to be placed into or moved in the spent fuel pool are within the above enrichment/burnup limits.~~

~~4.9.14.2~~ Verify the spent fuel pool boron concentration is ~~≥ 1050 ppm:~~ within the limit

L1 ~~a. Within 8 hours prior to and at least once per 24 hours during movement of fuel in the spent fuel pool, and~~

SR 3.7.16.1 ~~b.~~ At least once per ~~31~~ 7 days. L1

Changes to these requirements are discussed in ITS 3.7.14

INSERTS FOR UNIT 1 CTS 3/4.9.14 SPENT FUEL STORAGE POOL

APPLICABILITY INSERT

and a fuel storage pool verification has not been performed since the last movement of fuel assemblies in the fuel storage pool.

ACTION INSERT

OR

Initiate action to perform a fuel storage pool verification immediately.

Insert proposed Specification 3.7.3 from Enclosure 1

M1

3.7 PLANT SYSTEMS

3.7.3 Main Feedwater Isolation Valves (MFIVs) and Main Feedwater Regulation Valves (MFRVs) and Associated Bypass Valves

LCO 3.7.3 Three MFIVs, three MFRVs, and associated bypass valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3 except when MFIV, MFRV, or associated bypass valve is either closed and de-activated or isolated by a closed manual valve.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more MFIVs inoperable.	A.1 Close or isolate MFIV.	72 hours
	AND	
	A.2 Verify MFIV is closed or isolated.	Once per 7 days
B. One or more MFRVs inoperable.	B.1 Close or isolate MFRV.	72 hours
	AND	
	B.2 Verify MFRV is closed or isolated.	Once per 7 days
C. One or more MFRV bypass valves inoperable.	C.1 Close or isolate bypass valve.	72 hours
	AND	
	C.2 Verify bypass valve is closed or isolated.	Once per 7 days

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Two valves in the same flow path inoperable.	D.1 Isolate affected flow path.	8 hours
E. Required Action and associated Completion Time not met.	E.1 Be in MODE 3. <u>AND</u> E.2 Be in MODE 4.	6 hours 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.3.1	Verify the isolation time of each MFIV, MFRV, and associated bypass valve is within limits.	In accordance with the Inservice Testing Program
SR 3.7.3.2	Verify each MFIV, MFRV, and associated bypass valve actuates to the isolation position on an actual or simulated actuation signal.	18 months

Insert proposed Specification 3.7.4 from Enclosure 1

M1

3.7 PLANT SYSTEMS

3.7.4 Atmospheric Dump Valves (ADVs)

LCO 3.7.4 For Unit 1, three ADV lines shall be OPERABLE
For Unit 2, four ADV lines shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when steam generator is relied upon for heat removal.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required ADV line inoperable.	A.1 Restore required ADV line to OPERABLE status.	7 days
B. Two or more required ADV lines inoperable.	B.1 Restore all but one ADV line to OPERABLE status.	24 hours
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3. AND	6 hours
	C.2 Be in MODE 4 without reliance upon steam generator for heat removal.	24 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.4.1	Verify one complete cycle of each ADV.	18 months
SR 3.7.4.2	Verify one complete cycle of each ADV block valve.	18 months
SR 3.7.4.3	-NOTE- Only applicable to Unit 2 Verify one complete cycle of each individual SG isolation valve associated with the Unit 2 Residual Heat Release Valve ADV line.	18 months

3.7 Plant Systems

DISCUSSION OF CHANGES

CTS 3.7.1.1 MAIN STEAM SAFETY VALVES (MSSVs)
ITS 3.7.1 Main Steam Safety Valves
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

L.1 *(Category 1 – Relaxation of LCO Requirements)* CTS LCO 3.7.1.1, Table 3.7-2 lists the orifice size for the main steam safety valves. ITS 3.7.1 does not contain this information. This changes the CTS by eliminating the diameter of the MSSVs from the Technical Specifications. This change is being made so the BVPS ITS is consistent as possible with NUREG-1431.

The purpose of CTS 3.7.1.1 is to ensure the MSSVs are capable of relieving main steam system pressure. This change is acceptable because the orifice diameter is part of the valve design. Design details are generally specified by design documents and are not necessary to be retained in the ISTS. The LCO requirements continue to ensure the MSSVs will perform their designed safety functions to mitigate the consequences of accidents that could result in a challenge to the reactor coolant pressure boundary, or main steam system integrity. ITS 3.7.1 retains the lift settings of the MSSVs, which controls the MSSV opening sequences in an overpressure event and ensures the main steam system is not overpressurized. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

More Restrictive Changes (M)

None.

Removed Detail Changes (LA)

LA.1 *(Type 3 – Removing Procedural Details for Meeting TS Requirements)* CTS 3.7.1.1, Table 3.7-2 , is modified by a footnote that states, "The lift setting pressure shall correspond to ambient conditions of the valve at nominal operating temperature and pressure." ITS 3.7.1 does not contain details on setting the lift pressure. This change is being made so the BVPS ITS is consistent as possible with NUREG-1431. This changes the CTS by moving the details on setting the lift pressure to the Bases.

The removal of these details for performing surveillance requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The ITS still retains the lift settings and the definition of OPERABLE states the components must be capable of performing their safety function. This clarifies the MSSVs must be adjusted to lift at the specified settings while under the operating conditions assumed in the safety analysis. As such the details for meeting the surveillances are described in the ITS Bases. Also, this change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Bases Control Program specified in the Administrative Controls section of the TS. The Bases control Program assures changes to the Bases are evaluated and prior NRC review and approval is obtained when required by 10 CFR 50.59. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

CTS 3.7.1.2 AUXILIARY FEEDWATER SYSTEM
ITS 3.7.5 Auxiliary Feedwater (AFW) System
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

L.1 *(Category 6 – Relaxation of Surveillance Requirement Acceptance Criteria)* CTS 4.7.1.2.1 requires the verification of each AFW manual, power operated, and automatic valve in each water flow path, and in both steam supply flow paths to the steam turbine driven AFW pump, that is not locked, sealed, or otherwise secured in position, is in the correct position at least once per 31 days. ITS SR 3.7.5.1 requires the identical verification of AFW valves except the requirement provides an allowance that AFW train(s) may be considered OPERABLE during alignment and operation for steam generator level control, if it is capable of being manually realigned to the AFW mode of operation. This change is being made so the BVPS ITS is consistent as possible with NUREG-1431. This changes the CTS by adding to the existing requirement a specific operability allowance for meeting the Surveillance Requirement. The exception allows the system to be out of its normal standby alignment and temporarily incapable of automatic initiation without declaring the affected AFW train(s) inoperable.

The purpose of the CTS is to ensure operability of the AFW trains. This change is acceptable because OPERABILITY of the intended safety function continues to be maintained. As stated in approved TSTF-245, Rev. 1, the addition of the Note prevents unnecessary Action entry and train inoperability while in MODE 4 during alignment and operation for steam generator level control. The addition of the Note provides specific clarification of the intended flexibility of AFW train operability in MODE 4 similar to existing Notes used in ITS SR 3.7.5.4 and SR 3.7.5.5. The change does not affect the AFW pumps methods of testing or the capability of the pumps to perform their intended safety function as assumed in the safety analyses. This change is designated as less restrictive because of the addition of an exception to the testing requirements being met for a specific condition.

L.2 *(Category 7 – Relaxation of Surveillance Frequency)* CTS 4.7.1.2.3 requires the testing of the AFW pumps on a STAGGERED TEST BASIS (STB) at a Frequency in accordance with the Inservice Testing (IST) program. ITS SR 3.7.5.2 requires the AFW pumps tested in accordance with the IST program. This changes the CTS requirements by eliminating the need to specify testing on a STB for the AFW pumps.

The purpose of CTS 4.7.1.2.3 is to demonstrate the AFW pumps are OPERABLE. The intent of the CTS requirement is to have the AFW pumps tested at a specified Frequency (identified by the IST program) on a STB to ensure only one pump is being tested at any time. The Frequency specified by the IST program is not being modified by this change. The change to eliminate the need to specify testing of the AFW pumps on a STB is acceptable because the IST program and the TS continue to ensure the pumps are sufficiently tested to demonstrate AFW operability. The

AFW pump testing will continue on a specified IST Frequency but not necessarily on an equally staggered basis. Planned maintenance and testing will typically ensure the AFW pumps are not tested at the same time. The change does not affect the method of AFW pump testing or the capability of the pumps to perform their safety function as assumed in the safety analyses. This change is designated as less restrictive because specific details of testing on a STB have been eliminated.

L.3 *(Category 3 – Relaxation of Completion Time)* CTS 3.7.1.2, Action c and Action d. states the plant must be in HOT SHUTDOWN "within the following 6 hours." This is a total shutdown Completion Time of 12 hours whenever two AFW trains are inoperable or the requirements stated in Action c cannot be met. ITS 3.7.5 Condition D states the plant must be in MODE 4 within 18 hours. This changes the time to be in MODE 4 from 12 hours to 18 hours. The CTS has been revised to incorporate and extend the Completion Time by an additional 6 hours to be in MODE 4. This change is being made so the BVPS ITS is consistent as possible with NUREG-1431.

The purpose of CTS 3.7.1.2 Action c and Action d is to place the unit in a condition where the LCO does not apply. ITS 3.7.5, Condition D, requires placing the unit in MODE 4. In MODE 4, only one of the three AFW trains are required OPERABLE. This change is acceptable because the Completion Time is reasonable, based upon operating experience, to reach the required unit conditions from full power conditions without challenging unit systems. This change is designated as less restrictive because additional time is allowed to restore parameters to within the LCO limits prior to exiting the Mode of Applicability than was allowed in the CTS.

L.4 *(Category 5 - Deletion of Surveillance Requirement)* CTS surveillance 4.7.1.2.2 requires cycling each manual Service Water to Auxiliary Feedwater System valve through at least one complete cycle at least once per 31 days. In addition, CTS surveillance 4.7.1.2.6 requires cycling each power operated (excluding automatic) valve in the AFW flowpath through at least one complete cycle at least once per 18 months during shutdown. The corresponding ITS 3.7.5 does not contain a similar surveillance requirement for either 4.7.1.2.2 or 4.7.1.2.6. The CTS is revised to conform to the ISTS. This changes the CTS by deleting surveillance requirements 4.7.1.2.2 and 4.7.1.2.6.

The purpose of a TS surveillance is to confirm the associated system is capable of performing its intended safety function (i.e., the system is operable). The proposed change is acceptable because the CTS surveillances being deleted are not required to confirm the capability of the AFW system to perform its required safety function. The affected CTS surveillances verify the capability of the non-automatic power-operated and manual valves to be cycled. However, the remaining AFW surveillances assure non-automatic power operated and manual valves are pre-positioned and verified in the required position to support the AFW system operation. ITS SR 3.7.5.1 requires each manual, power operated, and automatic valve in the flow path that is not locked sealed or otherwise secured in position is in the correct position (note that this surveillance includes the position of non-automatic power operated valves). ITS 3.7.5.3 verifies that each automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal. Similar surveillances adequately address the required Service Water valve positions and actuations in ITS 3.7.8. In addition, ASME code class valves will continue to be tested in accordance with the Inservice Testing Program. Compliance with the provisions of the Inservice Testing Program is not optional and is required by the TS (ITS Section 5.0) and Federal regulations (10 CFR 50.55a(f). The required Program specifies industry standard valve test requirements that are adequate to assure valve operability. Together, the remaining ITS surveillances and the Inservice Testing Program provide adequate assurance the required AFW flow path is available and that AFW and Service Water valve operability is maintained. Therefore, the capability of the AFW system to perform its safety function is assured by the remaining surveillances and the Inservice Testing Program. As such, CTS surveillance requirements 4.7.1.2.2 and 4.7.1.2.6 are not required to ensure the AFW system is capable of performing its required safety function and have been eliminated from the TS consistent with the ISTS. The proposed change is designated less restrictive because a surveillance required by the CTS will not be required in the ITS.

L.5 *(Category 4 – Relaxation of Required Action)* CTS 3.7.1.2 Action d requires the plant to be in MODE 3 within 6 hours and in MODE 4 within the following 6 hours whenever two AFW trains are inoperable in MODE 1, 2, or 3. ITS 3.7.5, as modified by TSTF-412 Rev. 0, allows one motor driven AFW train and one required steam supply to the turbine driven AFW train to be inoperable for up to 24 hours before requiring a plant shutdown to MODE 4. The CTS is changed by adding an additional relaxation to allow an out-of-service time of 24 hours for an inoperable AFW motor driven train coincident with an inoperable required steam supply to the AFW turbine driven train in MODE 1, 2, or 3. This change makes the CTS consistent with the ISTS as modified by TSTF-412.

The purpose of CTS Action d is to place the unit in a condition where the LCO does not apply. This change is acceptable since the change clarifies the OPERABILITY of the turbine driven AFW pump whenever one required steam supply is inoperable. Typically, whenever two trains are inoperable the system or component is not capable of performing its specified function. The affected turbine driven AFW train, however, remains capable of performing its specified safety function, but with a lack of redundancy with respect to its steam supplies. A turbine driven AFW pump with a single OPERABLE steam supply is capable of performing its safety function in the absence of a single failure or a faulted steam generator associated with the steam supply. The ITS ACTIONS recognize that loss of single failure protection is a less degraded condition than the inoperability of a system and provides longer Completion Times for those situations. Proposed Condition C is based on the ability of the AFW system to mitigate the most limiting design basis event excluding a single failure. This change is designated as less restrictive because the ITS Action allows more time before requiring a reduction in Modes for this condition than the CTS.

L.6 *(Category 3 – Relaxation of Completion Time)* CTS 3.7.1.2, Action c and Footnote (2) allows an extended Completion Time 90 hours versus 6 hours to shutdown from Mode 3 to Mode 4 whenever the turbine driven AFW pump is inoperable in Mode 3 prior to entering Mode 2 following a refueling outage. The extended time of 90 hours provided by CTS footnote (2) is intended to be additional time for restoration of the turbine-driven pump in Mode 3 prior to requiring the plant to be placed in Mode 4. Therefore, the CTS Action c cumulative time is considered to be a total of 162 hours (72+90) from entry into CTS Action c until entry into Mode 4 is required. The corresponding ITS 3.7.5 Condition A allows 7 days (168 hours) restoration time and ITS Condition D allows an additional 18 hours to transition from Mode 3 to Mode 4 whenever the turbine driven AFW pump is inoperable in Mode 3 prior to entering Mode 2 following a refueling outage. As such, the ITS cumulative time from entry into Condition A until entry into Mode 4 is required (by Condition D) is a total of 186 hours (168+18). Therefore, the ITS provides an additional 24 hours (186-162) beyond the time allowed in the CTS. The CTS has been revised to incorporate and extend the 90 hours provided in footnote (2) for restoring an inoperable turbine-driven AFW pump by an additional 24 hours for a total of 114 hours (90+24).

The actual format and presentation of the allowed Completion times is also revised to be consistent with the ISTS. This results in the Completion Times being included in ITS 3.7.5 Condition A (for the 7 day restoration time) and ITS Condition D (for the 18 hours to place the plant in Mode 4). This DOC is only intended to address the fact that the CTS time is being extended. The format changes associated with adopting the presentation of ISTS Action Conditions for these times are addressed by DOC A.1. This change is being made so the BVPS ITS is consistent with the corresponding requirements of the ISTS.

The purpose of CTS 3.7.1.2 Action c and Footnote (2) is to provide additional time to complete any necessary repairs and testing of the turbine driven AFW pump prior to initiating a plant cool down to Mode 4. Corresponding ITS 3.7.5, Condition A, provides additional time for repairs and testing prior to requiring entry into Mode 4 and presents the allowed time in a substantially different format than the CTS.

The additional time provided by the ISTS reduces the number of unnecessary MODE changes and requests for enforcement discretion by providing added flexibility in Mode 3 to repair and test the turbine driven AFW pump following a refueling outage. This change is acceptable based upon the redundant capabilities afforded by the AFW system, the time needed to perform repairs and testing of the turbine driven pump, the reduced decay heat load following a refueling outage, and the low probability of a DBA occurring during this period that would require the operation of the turbine driven pump. This change is designated as less restrictive because additional time is allowed in the ITS to restore equipment to within the LCO limits prior to exiting the Mode of Applicability than was allowed in the CTS.

More Restrictive Changes (M)

M.1 CTS 3.7.1.2 Action d currently applies to two inoperable AFW trains and requires that the affected unit be placed in a Mode where the two inoperable AFW trains are no longer required operable. The mode reductions required by the CTS Action are acceptable because of the availability of the remaining operable AFW train. If three AFW trains are inoperable, the CTS Action e precludes any Mode transitions that may place the plant in a condition that could increase the likelihood that the AFW would be required to support decay heat removal and requires that one AFW train be restored to operable status prior to initiating a plant transient. The corresponding ISTS Action Condition D for two inoperable AFW trains also contains a provision for three inoperable AFW trains and requires a plant shutdown to Mode 4 be made. The provision of the ISTS Action D for three inoperable AFW trains in MODE 1, 2 or 3 applies only to a turbine-driven AFW pump that is inoperable solely due to one required steam supply line being inoperable. Conversely, the ISTS Action E for three inoperable AFW trains (applicable when the turbine-driven AFW pump is inoperable for reasons other than a single inoperable steam supply line) continues to require the restoration of one AFW train prior to placing the plant in Mode 4. The corresponding CTS Actions are revised to incorporate this provision of the ISTS Actions. This changes the CTS by requiring a plant shutdown to Mode 4 when three AFW trains are inoperable if the turbine-driven pump is inoperable solely due to a single required steam supply being inoperable.

The purpose of CTS Action d is to assure the plant is placed in a safe condition when two AFW trains are inoperable. The Mode reductions required by the CTS are acceptable under these circumstances because the remaining operable AFW train is capable of providing the safety-related cooling function if necessary, during a shutdown transient. If all three AFW trains are inoperable, the CTS requires that at least one AFW train be restored to operable status prior to initiating a shutdown transient. The proposed change would require a plant shutdown transient when three AFW trains are inoperable provided that the turbine-driven AFW is inoperable solely due to a single inoperable steam supply line. In this condition, the turbine-driven AFW pump remains capable of providing its full capacity safety related cooling function using the remaining operable steam supply line. Therefore, the ISTS Action D requirement to place the plant in Mode 4 when three AFW trains are inoperable is acceptable because the AFW system remains capable of performing its safety function to support the removal of decay heat if necessary. As such, the plant can safely be placed in a Mode where the RHR pumps can supply the required decay heat removal function and the inoperable AFW pumps are no longer required to provide the safety related decay heat removal function. This change is designated as more restrictive because it requires a plant shutdown that was not previously required by the CTS.

M.2 CTS surveillance 4.7.1.2.7 is revised by CTS Note 7 that states: "This surveillance is required to be performed prior to entry into MODE 2 whenever the plant has been in MODES 5 or 6 for greater than 30 continuous days." The corresponding ISTS surveillance contains a similar frequency for performance with the exception that the ISTS specifies that the surveillance is applicable after the plant has been in a "defueled" condition as well as in Modes 5 and 6. The CTS is revised to conform to the ISTS. This changes the CTS by expanding the operating conditions for which the cumulative time is tracked by CTS surveillance 4.7.1.2.7. As such, the proposed change requires the time spent in a defueled condition be accounted for as well as the time spent in Modes 5 and 6 for determining when surveillance 4.7.1.2.7 must be performed.

The purpose of CTS surveillance 4.7.1.2.7 (and the corresponding ISTS surveillance) is to verify the normal AFW flow Path to the steam generators. Both the ISTS and CTS surveillances require this surveillance to be performed based on how long the plant has been outside the applicable Modes for the AFW (i.e., in a condition where AFW was not required operable and may have been misaligned from its normal standby condition). However, the ISTS surveillance includes the time spent in a defueled condition as well as in Modes 5 and 6. The proposed change is acceptable because it continues to assure the required surveillance is performed after each specified shutdown period where the AFW system may have been misaligned. The ISTS simply recognizes that the definition of an operating Mode (i.e., 5 or 6) includes fuel in the reactor vessel. With no fuel in the vessel, the plant is not in a defined Mode of operation. Therefore, the ISTS includes the operating condition of "defueled" to ensure all time during shutdown conditions is accounted for. Therefore, the proposed change provides additional assurance that the verification of the AFW flow path to the steam generators is verified in a timely manner after each shutdown of a total of more than 30 days. As the proposed change increases the operating conditions for which the time must be accounted, the change is designated administrative.

Removed Detail Changes (LA)

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.7.1.2 requires three AFW trains be OPERABLE. The CTS LCO contains a list of AFW pumps and flow paths with a description of what constitutes an OPERABLE train. The corresponding ITS 3.7.5 requires three AFW trains be OPERABLE. The ITS does not contain a list or description of all the train flow paths (or what constitutes an operable train) that may be used to meet the LCO. This change is being made so the BVPS ITS is consistent as possible with NUREG-1431. This change includes the movement of the unique Unit 1 and Unit 2 water storage tank equipment designators (WT-TK-10) for Unit 1 and (2FWE-TK210) for Unit 2 to the bases. This changes the CTS by moving the details of what constitutes an OPERABLE train to the Bases.

The removal of these details, which are related to system design, from the TS is acceptable because this type of information is not necessary to be included in the TS to provide adequate protection of public health and safety. The TS retain the requirement that three AFW trains must be OPERABLE. The retained requirement provides adequate assurance the plant will continue to be operated in a safe manner. The descriptive details regarding train operability are contained in the ITS Bases. As such, this change is also considered acceptable because the removed information will be adequately controlled in the TS Bases. Changes to the TS Bases are controlled by the Bases Control Program. The Bases Control Program is specified in the Administrative Controls section of the TS. The Bases control program ensures changes to the bases are evaluated and prior NRC review and approval are obtained when required by 10 CFR 50.59. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the TS.

LA.2 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* Note (1) of CTS 3.7.1.2 states only one AFW train, capable of providing flow to the steam generator(s) relied upon for heat removal, is required to be OPERABLE in MODE 4. The corresponding ITS 3.7.5 states that only one AFW train is required to be OPERABLE in MODE 4. The ITS does not contain the operability description "capable of providing flow to the steam generator(s) relied upon for heat removal" in the LCO Note. This change is being made so the BVPS

ITS is consistent as possible with NUREG-1431. This changes the CTS by moving the details of what constitutes an OPERABLE train to the Bases.

The removal of these details, which are related to system design, from the TS is acceptable because this type of information is not necessary to be included in the TS LCO to provide adequate protection of public health and safety. The TS retain the requirement that one AFW train must be OPERABLE in MODE 4. In addition, the TS retain the Applicability of MODE 4 when steam generator is relied upon for heat removal. The retained requirements provide adequate assurance the plant will continue to be operated in a safe manner. The descriptive details regarding train operability are contained in the ITS Bases. As such, this change is also considered acceptable because the removed information will be adequately controlled in the TS Bases. Changes to the TS Bases are controlled by the Bases Control Program. The Bases Control Program is specified in the Administrative Controls section of the TS. The Bases control program ensures changes to the bases are evaluated and prior NRC review and approval are obtained when required by 10 CFR 50.59. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the TS.

LA.3 *(Type 3 - Removing Procedural Details for Meeting TS Requirements)* General Note of CTS 3.7.1.2 for the Surveillance Requirements requires the operator to establish and maintain constant communications between the control room and the auxiliary feed pump room while any normal AFW pump discharge valve is closed during surveillance testing. The ITS does not contain such a requirement. This change is being made so the BVPS ITS is consistent as possible with NUREG-1431. This changes the CTS by moving the General Note for establishing and maintaining constant communications between the control room and the auxiliary feed pump room while any normal AFW pump discharge valve is closed during surveillance testing to the Bases.

The removal of this detail from the TS for performing Surveillance Requirements is acceptable because this type of information is not necessary to be included in the TS in order to provide adequate protection of the public health and safety. The TS retains the requirement that three AFW trains shall be OPERABLE. As described in the ITS Bases, verification of train operability includes verification of pump flow and flow rates, and valve positioning, cycling, and actuation. As such the details for meeting the surveillances are described in the ITS Bases. Also, this change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Bases Control Program specified in the Administrative Controls section of the TS. The Bases Control Program assures changes to the Bases are evaluated and prior NRC review and approval is obtained when required by 10 CFR 50.59. This change is designated as a less restrictive removal of detail change because procedural details for meeting requirements are being removed from the TS.

LA.4 *(Type 3 - Removing Procedural Details for Meeting TS Requirements)* Note (8) of CTS 3.7.1.2 specifies ACTION statement (a) must be followed when one steam supply is inoperable. Condition A of ITS 3.7.5 specifies a condition must be entered with one steam supply inoperable. This change is being made so the BVPS ITS is consistent as possible with NUREG-1431. This changes the CTS by moving the Note for following ACTION statement (a) to the Bases.

The purpose of the CTS was to provide a clarification of the requirement to enter ACTION statement (a) rather than entering ACTION statement (c). The removal of this detail from the TS is acceptable because this type of information is not necessary to be included in the TS in order to provide adequate protection of the public health and safety. The TS retains the requirement that three AFW trains shall be OPERABLE. As described in the ITS Bases, the condition of one steam supply inoperable does not constitute one AFW train being inoperable, thus Condition C would not be entered. As such the details for meeting the Actions are described in the ITS Bases. Also, this change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Bases Control Program specified in the Administrative Controls section of the TS. The Bases control Program assures changes to the Bases are evaluated and prior NRC review and approval is obtained when required by 10 CFR 50.59. This change is designated as a less restrictive removal of detail change because procedural details for meeting requirements are being removed from the TS.

LA.5 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 4.7.1.2.7 requires the verification of AFW flow from WT-TK 10 (Unit 1) and TK-210 (Unit 2) to the steam generators with the AFW valves in their normal alignment. ITS SR 3.7.5.5 requires the verification of AFW flow from the CST to each steam generator. The ITS does not contain a list or description of the CST or the AFW valves that would satisfy the corresponding surveillance. This change is being made so that the BVPS ITS is consistent as possible with NUREG-1431. This changes the CTS by moving specific details regarding performance of the SR to the Bases.

The removal of these details, which are related to system design, from the TS is acceptable because this type of information is not necessary to be included in the TS to provide adequate protection of public health and safety. The TS retain the requirement that three AFW trains must be OPERABLE and thus the SR must be met. The retained SR requirement provides adequate assurance that the plant will continue to be operated in a safe manner. The descriptive details regarding performance of the SR are contained in the ITS Bases. As such, this change is also considered acceptable because the removed information will be adequately controlled in the TS Bases. Changes to the TS Bases are controlled by the Bases Control Program. The Bases Control Program is specified in the Administrative Controls section of the TS. The Bases Control Program ensures changes to the bases are evaluated and prior NRC review and approval are obtained when required by 10 CFR 50.59. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the TS.

LA.6 *(Type 3 - Removing Procedural Details for Meeting TS Requirements)* Note (4) of SR 4.7.1.2.1 requires the re-verification of requirements by a second and independent operator. ITS SR 3.7.5.1 does not contain such a requirement. This change is being made so the BVPS ITS is consistent as possible with

NUREG-1431. This changes the CTS by moving the Note for the re-verification of requirements by a second and independent operator to the Bases.

The removal of this detail from the TS for performing re-verification of the Surveillance Requirement is acceptable because this type of information is not necessary to be included in the TS in order to provide adequate protection of the public health and safety. The TS retains the requirement that three AFW trains shall be OPERABLE. As described in the ITS Bases, verification of train operability includes verification of pump flow and flow rates, and valve positioning, cycling, and actuation. As such the details for meeting the surveillances are described in the ITS Bases. Also, this change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Bases Control Program specified in the Administrative Controls section of the TS. The Bases Control Program assures changes to the Bases are evaluated and prior NRC review and approval is obtained when required by 10 CFR 50.59. This change is designated as a less restrictive removal of detail change because procedural details for meeting requirements are being removed from the TS.

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 Note (6) of CTS 4.7.1.2.4 and 4.7.1.2.5 specifies an allowance that the surveillance requirements are not applicable in MODE 4 when steam generator(s) is relied upon for heat removal. The CTS Note provides an exception for the requirement that all AFW valves be maintained in the required positions when the associated steam generator is being used for heat removal. The CTS Note effectively allows the water level of the affected steam generator to be maintained. The corresponding Notes of ITS SR 3.7.5.1, SR 3.7.5.3, and SR 3.7.5.4 provide a similar allowance that AFW train(s) may be considered OPERABLE during alignment and operation for steam generator level control, if it is capable of being manually realigned to the AFW mode of operation. The ITS Note provides an exception that is applicable when the associated steam generator is being used for heat removal and the water level must be maintained. The CTS Note is replaced by the ISTS Note. This change is being made so the BVPS ITS is consistent as possible with NUREG-1431. This changes the CTS by revising the existing requirement with a similar requirement that is more specific to the operational details for meeting the Surveillance Requirement.

As stated in approved TSTF-245, Rev. 1, the purpose of the CTS Note (also reflected in the pre-Revision 2 ISTS) was to prevent unnecessary Action entry while in MODE 4 and using the AFW for cooling. This change is acceptable because OPERABILITY of the intended safety function (ability to feed the steam generators) continues to be maintained. The revised note only provides a more specific clarification of the intended flexibility of AFW train operability in MODE 4. The intent of the CTS Note (6) is consistent with the ISTS Note. The ISTS note provides the same operating flexibility as the CTS Note and replacing the CTS note with the ISTS Note does not introduce a technical change to the CTS. This change is designated as administrative because they do not result in technical changes to the CTS requirements.

A.3 CTS 4.7.1.2.3 states that "the provision of Specification 4.0.4 is not applicable for entry into MODE 3 for the steam turbine driven pump testing." ITS SR 3.7.5.2 contains a similar note in the affected surveillance requirement that states the surveillance is "not required to be performed for the turbine driven AFW pump until 24 hours after ≥ 600 psig in the steam generator." The CTS is revised by the deletion of the exception to Specification 4.0.4 leaving the specific steam generator pressure requirement in the surveillance. This change is being made so the BVPS ITS is consistent as possible with NUREG-1431. This changes the CTS by replacing the exception to Specification 4.0.4 with an exception that is more specific to the operational details for meeting the Surveillance Requirement.

CTS Specification 4.0.4 requires all surveillances be performed and met prior to entering the applicable Mode of a TS. The purpose of the CTS requirement exempting Specification 4.0.4 for entry into Modes 3 for the steam turbine driven pump testing is to defer testing until suitable test conditions are established since there is insufficient steam pressure to perform the test. In the ISTS, the general rules of Technical Specification usage are different than the CTS. In the ISTS, the specific steam generator pressure exception included in the surveillance as a Note provides the minimum test conditions necessary to perform the test and replaces the need for a generic exception to Specification 4.0.4. The ISTS does not use generic exceptions to Specification 4.0.4. The intent of the ISTS note is technically the same as the CTS 4.0.4 exception and allows the surveillance to be performed in the same manner as in the CTS. Therefore, the proposed change is made to conform to the presentation and format of the ISTS and does not change the technical intent of the CTS requirements. As such the proposed change is acceptable. The proposed change is designated administrative as no technical change is being made to the CTS requirements.

A.4 CTS 3.7.1.2 requires three AFW trains to be OPERABLE with one feedwater injection header to each steam generator. The Actions associated with the CTS LCO do not explicitly state all conditions for inoperable injection headers. These conditions were interpreted within the CTS as part of an associated AFW train and were explicitly clarified by the CTS Bases. ITS 3.7.5 requires three AFW trains and three feedwater injection headers to be OPERABLE. The Actions associated with the ITS LCO explicitly states all conditions for inoperable injection headers. This changes the CTS by adding Actions associated with inoperable feedwater injection headers.

The purpose of the CTS is to ensure appropriate Actions are taken when a feedwater injection header becomes inoperable. The CTS does not explicitly state Actions for all conditions of inoperable feedwater injection headers. The CTS currently clarifies the specific Actions in the Bases. This change is acceptable since the intent of the CTS Action is to also provide required actions and completion times for inoperable feedwater injection headers. The CTS indirectly refers to the common injection headers by requirements addressing the capability to provide flow to the SGs. The change to the CTS wording (more directly specifying the feedwater injection headers) is intended to eliminate a potential misinterpretation and misapplication of the requirements for an inoperable feedwater injection header. The changes described above are considered clarifications and enhancements that do not introduce technical changes to the intent of the CTS or affect plant design, and are made to conform with the presentation and format of this information in the ISTS. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.5 CTS surveillance 4.7.1.2.7 is revised by CTS Note 7 that states: "This surveillance is required to be performed prior to entry into MODE 2 whenever the plant has been in MODES 5 or 6 for greater than 30 continuous days." The corresponding ISTS surveillance contains a similar frequency for performance with the exception that the ISTS specifies "greater than 30 "cumulative" days instead of continuous days. The CTS is revised to conform to the ISTS. This changes the CTS by replacing the continuous with cumulative in the frequency for CTS surveillance 4.7.1.2.7.

The purpose of CTS surveillance 4.7.1.2.7 (and the corresponding ISTS surveillance) is to verify the normal AFW flow Path to the steam generators. Both the ISTS and CTS surveillances require this surveillance to be performed based on how long the plant has been outside the applicable Modes for the AFW (i.e., in a condition where AFW was not required and may have been misaligned from its normal standby condition). The proposed change is acceptable because it continues to assure the required surveillance is performed after each specifed shutdown period. However, the ISTS use of the term "cumulative" provides a clarification consistent with the intent of the CTS requirement that the specified time is made up of the total time spent in the listed shutdown Modes of operation. The CTS term "continuous" could be interpreted to be applied separately to Mode 5 and Mode 6, such that the plant could spend 20 days in Mode 6 and 20 days in Mode 5 without exceeding 30 continuous days in either Mode. The proposed change eliminates this potential misinterpretation of the CTS requirement. However, the proposed change provides a clarification of the CTS requirement and is not a technical change to the intent of the CTS. As such, the proposed change is designated administrative.

CTS 3.7.1.3 PRIMARY PLANT DEMINERALIZED WATER (PPDW)
ITS 3.7.6 Condensate Storage Tank (CST)
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

L.1 *(Category 4 – Relaxation of Required Action)* CTS 3.7.1.3 Action b allows 4 hours to demonstrate Operability of the reactor plant river water system (Unit 1) or the service water system (Unit 2) as a backup water supply to the auxiliary feedwater pumps whenever the primary plant demineralized water (PPDW) storage tank is inoperable. ITS 3.7.6 Required Action A.1 requires the verification by administrative means the Operability of the backup water supply. This changes the CTS by replacing the word "demonstrate" with "verify by administrative means" in the Required Action. Eliminating the requirement to "demonstrate" and replacing the requirement with "verify by administrative means" prevents a potential misinterpretation of the requirement of what constitutes "demonstration" of Operability. This change is being made so the BVPS ITS is consistent as possible with NUREG-1431.

The purpose of the CTS Action b is to ensure the backup water supply system is Operable and capable of providing the required volume of water supply and flow path to the AFW pumps. This change is acceptable since the term "administrative means," as used in the ISTS, is used when the actual performance of testing or other surveillance requirement is not necessary and operability can be confirmed by checking previously performed surveillances, current valve position status, or other administrative controls used to document equipment or component status. The reactor plant river water system (Unit 1) and the service water system (Unit 2) TS Mode of Applicabilities include the Modes the CST is required to be Operable. The CTS requirement to "demonstrate" the Operability of the backup water supply takes credit for an Operable Service Water System (as required by CTS 3.7.4) and SR 4.7.1.2.2. The ITS Required Action to verify the backup water supply system Operability by administrative means (meaning the applicable system LCO requirements are verified to be met including surveillances and valve lineups) accomplishes the same function as the CTS requirement without specifying redundant backup water supply system testing be demonstrasted. This change is designated as less restrictive because the scope of the CTS Action is reduced and more narrowly defined.

L.2 *(Category 3 – Relaxation of Completion Time)* CTS 3.7.1.3, Action b. states that if demonstration of the Operability of the backup water supply is not satisfied and if the PPDW storage tank is not restored to Operable status within 7 days, the plant must be in HOT SHUTDOWN within the next 12 hours. ITS 3.7.6 Condition B states that if verification of the Operability of the backup water supply is not satisfied or an inoperable CST is not restored to OPERABLE status within 7 days, the plant must be in MODE 3 within 6 hours and MODE 4 without reliance on the steam generators for heat removal within 24 hours. This changes the time to be in MODE 4 without reliance on the steam generators for heat removal from 12 hours to 24 hours. The CTS has been revised to incorporate and extend the Completion Time by an additional 12 hours to be in MODE 4. This change is being made so the BVPS ITS are consistent as possible with NUREG-1431. The addition of the condition to be in MODE 4 without reliance on the steam generators for heat removal is discussed in DOC M.1. The addition of the MODE 3 Completion Time is discussed in DOC M.2.

The purpose of CTS 3.7.1.3 Action b is to place the unit in a condition outside of the Mode of Applicability. ITS 3.7.3, Condition B, places the unit in a condition outside of the Mode of Applicability in which it does not rely on the steam generators for heat removal when the CST is inoperable. This change is acceptable because the Completion Time is consistent with safe operation under the specified Condition, considering the Operable status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the allowed Completion Time. Allowing 24 hours to be in MODE 4 without reliance on the steam generators for heat removal is consistent with other Specifications and recognizes that additional time is required from the time MODE 4 is entered until the steam generators are not relied upon for heat removal. This change is designated as less restrictive because additional time is allowed to restore parameters to within the LCO limits than was allowed in the CTS.

More Restrictive Changes (M)

M.1 CTS 3.7.1.3 specifies requirements for the PPDW storage tank that are applicable in MODES 1, 2, and 3. ITS 3.7.6 specifies requirements are applicable in MODES 1, 2, 3, and MODE 4 when a steam generator is relied upon for heat removal. The CTS has been revised to incorporate the additional Mode of Applicability for "MODE 4 when a steam generator is relied upon for heat removal." Consistent with this change in the Mode of Applicability, the phrase "Be in MODE 4, without reliance on steam generator for heat removal" is added as specified in ITS 3.7.6 Required Action B.2. This changes the CTS requirements by requiring the CST to be Operable in MODE 4 when a steam generator is relied upon for heat removal. This change is being made so the BVPS ITS is consistent as possible with NUREG-1431.

The purpose of the CTS is to provide a safety grade source of water to the steam generators via the AFW system for removing decay heat and sensible heat from the RCS. These changes are acceptable because the required steam generators must have a sufficient source of makeup water to be considered Operable for heat removal. The change revises the Mode of Applicability for the CST consistent with the Mode of Applicability for the AFW system (ITS 3.7.5). The change is designated more restrictive because the CST is now required to be Operable in MODE 4.

M.2 CTS 3.7.1.3 Action b allows 4 hours to demonstrate Operability of the reactor plant river water system (Unit 1) or the service water system (Unit 2) as a backup water supply to the auxiliary feedwater pumps whenever the primary plant demineralized water (PPDW) storage tank is inoperable. ITS 3.7.6 Required Action A.1 allows 4 hours to verify by administrative means the Operability of the backup water supply and requires a verification of the backup water supply be performed every 12 hours thereafter whenever the CST is inoperable. This changes the CTS by requiring the plant to perform verifications every 12 hours of the backup water supply Operability. The verifications follow the initial 4 hour verification and continues through the 7 days the CST is allowed to be inoperable. The CTS has been revised to incorporate the additional Completion Time for the backup water supply Operability verification. This change is being made so the BVPS ITS is consistent as possible with NUREG-1431. The revision replacing the word "demonstrate" with "verify by administrative means" in the Required Action is discussed in DOC L.2.

The purpose of the CTS 3.7.1.3 Action b is to ensure the backup water supply systems are Operable and capable of providing the required volume of water supply and flow to the AFW pumps. This change to add a periodic verification of the Operability of the backup water supply is acceptable because the verification continues to ensure the backup water supply is available over the possible 7 day out of service of the CST. The change is designated as a more restrictive change because the CTS currently does not require a periodic verification of the backup water supply after the initial verification (within 4 hours) is satisfied.

M.3 CTS 3.7.1.3 Action b states that if demonstration of the Operability of the backup water supply is not satisfied and if the PPDW storage tank is not restored to Operable status within 7 days, the plant must be in HOT SHUTDOWN within the next 12 hours. ITS 3.7.6 Condition B states that if verification of the Operability of the backup water supply is not satisfied or an inoperable CST is not restored to OPERABLE status within 7 days, the plant must be in MODE 3 within 6 hours and MODE 4 without reliance on the steam generators for heat removal within 24 hours. This changes the CTS to require the plant to be in MODE 3 within six hours prior to satisfying the MODE 4 requirement. The CTS has been revised to incorporate the additional MODE step requirement. This change is being made so the BVPS ITS is consistent as possible with NUREG-1431. The change in the time to reach MODE 4 is discussed in DOC L.1.

The purpose of CTS 3.7.1.3 Action b is to place the unit in a condition outside of the Mode of Applicability within a specified completion time. This change to add a intermediate MODE step requirement is acceptable because operating experience has shown that six hours is sufficient to move the plant from full power conditions to MODE 3 without challenging plant systems. The change is designated as a more restrictive change because the CTS currently does not require the plant be placed in MODE 3 within six hours.

Removed Detail Changes (LA)

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.7.1.3 LCO defines the required water volume as "usable" and Action b states the reactor plant river water system (Unit 1) or the service water system (Unit 2) performs a function as a backup supply to the AFW pumps. The corresponding ITS 3.7.6 LCO simply requires the tank to be operable without describing the bases of the specified volume and ITS Required Action A.1 specifies the backup water supply to be Operable when the CST is inoperable without describing the backup system in detail. The CTS is revised to be more consistent with the ITS. This changes the CTS by relocating specific design details (i.e., the specifics regarding the required water volume and the AFW system backup water supply) to the Bases. The location of these details in the Bases is consistent with the format and presentation conventions of the ISTS. The net effect of this change is to simplify the LCO and Actions consistent with the ISTS.

The proposed change is acceptable because the operability requirements for the CST are not changed. The proposed change only moves the system design details to the TS Bases which is necessary to conform to the ISTS presentation and format. The removal of these details, which are related to system design, from the TS, is acceptable because this type of information is not necessary to be included in the TS to provide adequate protection of public health and safety. The ITS still retains the requirement for the required water volume and for the backup water supply to be Operable when the CST is inoperable. The proposed change only moves descriptive detail to the ITS Bases. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the TS Bases Control Program specified in the Administrative Controls Section of the TS. This program provides for the evaluation of changes to ensure the Bases are properly controlled and prior NRC review and approval is requested when required. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the TS.

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 CTS 3.7.1.3 Action a provides an option to restore within 4 hours the water volume if the primary plant demineralized water (PPDW) storage tank is not within limit or be in HOT SHUTDOWN within the next 12 hours. The corresponding ISTS Action does not include the action to "restore." The CTS Action a is revised consistent with the ISTS. This changes the CTS by eliminating the presentation of the restore Action. The revised CTS Action contains only the alternative to the restore Action (CTS 3.7.1.3 Action b).

As the action to restore equipment or components to operable status is always an option when the LCO is not met, the elimination of this Action from the CTS does not introduce a technical change. The elimination of the restore Action is made to conform to the format and presentation of this information in the ISTS. Therefore, this change is considered administrative.

CTS 3.7.1.4 ACTIVITY
ITS 3.7.13 Secondary Specific Activity
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

L.1 *(Category 5 – Deletion of Surveillance Requirement)* CTS Table 4.7-2 contains the sampling and analysis program associated with CTS 3.7.1.4 and referenced in CTS surveillance 4.7.1.4. Item #1 on Table 4.7-2 requires that the gross activity determination be completed at least 3 times per 7 days with a maximum time of 72 hours between samples. The corresponding ISTS 3.7.18 (ITS 3.7.13) requirements do not specify any sampling to be performed to determine the gross activity of the secondary coolant. The CTS is revised by the deletion of item #1 on Table 4.7-2. This changes the CTS by deleting the requirement for gross activity determination. By the deletion of this requirement, the need for Table 4.7-2 is also eliminated. Therefore, this change includes the deletion of CTS Table 4.7-2 as well.

The purpose of CTS Table 4.7-2, Item #1, is to determine the secondary coolant for gross activity in order to determine the sampling Frequency for secondary coolant DOSE EQUIVALENT I-131. The value for secondary coolant DOSE EQUIVALENT I-131 is the parameter of concern used in the accident analyses for dose determination. Table 4.7-2 item #2 provides requirements based on the gross activity determined in item #1 that sets the sample Frequency for determining DOSE EQUIVALENT I-131. The sample frequency for DOSE EQUIVALENT I-131 can be extended to once per 6 months from once per 31 days based on the results of the gross activity determined by Table 4.7-2, item #1.

The proposed change eliminates the surveillance requirement to determine gross activity. This change is acceptable because the deleted Surveillance Requirement is not necessary to verify that the values used to meet the LCO (DOSE EQUIVALENT I-131) are consistent with the safety analysis. The required values specified in the LCO continue to be verified in a manner and at a frequency necessary to give confidence that the plant is operated in a safe manner consistent with the assumptions in the applicable safety analysis. ISTS SR 3.7.18.1 (ITS SR 3.7.13.1) conservatively requires the DOSE EQUIVALENT I-131 be determined every 31 days without the allowance for an extension of this frequency based on gross activity.

The elimination of the gross activity surveillance also eliminates the need for the sampling and analysis program specified on Table 4.7-2 (as identified in CTS surveillance 4.7.1.4. The proposed change results in a set frequency for determining DOSE EQUIVALENT I-131 and eliminates the reference to the sampling and analysis program specified of Table 4.7-2 in CTS surveillance 4.7.1.4.

The proposed change continues to provide assurance the parameter of concern (DOSE EQUIVALENT I-131) continues to be verified in a timely manner. Therefore, the proposed change does not adversely affect the determination that DOSE

EQUIVALENT I-131 remains within the required limit. This change is designated as less restrictive because surveillances which are required in the CTS will not be required in the ITS.

More Restrictive Changes (M)

M.1 CTS Table 4.7-2 Item #2 allows the sampling frequency for the DOSE EQUIVALENT I-131 to be extended to once per 6 months whenever the gross activity determination indicates the iodine concentrations are below 10% of the allowable limits. ISTS SR 3.7.18.1 (ITS SR 3.7.13.1) does not provide for this extended time frame for determining the DOSE EQUIVALENT I-131 and requires verification of specific activity of the secondary coolant every 31 days whenever the unit is in MODES 1, 2, 3, and 4. The CTS surveillance is revised to conform to the ISTS fixed surveillance frequency of 31 days for determining DOSE EQUIVALENT I-131. This changes the CTS by revising the specified frequency for determining DOSE EQUIVALENT I-131 to 31 days instead of referencing the program specified on CTS Table 4.7-2. The proposed change also eliminates the need for CTS Table 4.7-2.

This change is acceptable because the 31-day Frequency is adequate to detect trends in the level of DOSE EQUIVALENT I-131 and allows for appropriate action to be taken to maintain levels below the LCO limit. As such, the proposed change does not adversely affect the safe operation of the plant and continues to provide adequate assurance the plant is operated consistent with the assumptions of the safety analysis. This change is designated as more restrictive because it requires the DOSE EQUIVALENT I-131 concentration to be determined every 31 days whenever the unit is in MODES 1, 2, 3, and 4 without allowing a Frequency extension to once every 6 months based on the gross activity determination.

Removed Detail Changes (LA)

None

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452

Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

CTS 3.7.1.5 MAIN STEAM LINE ISOLATION VALVES
ITS 3.7.2 Main Steam Isolation Valves (MSIVs)
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

L.1 *(Category 2 – Relaxation of Applicability)* CTS 3.7.1.5 is applicable in MODES 1, 2, and 3. ITS LCO 3.7.2 is applicable in MODE 1, and in MODES 2 and 3 except when all MSIVs are closed and deactivated. This changes the CTS by making the specification not applicable in MODES 2 and 3 when all MSIVs are closed and deactivated. This change is being made so the BVPS ITS is consistent as possible with NUREG-1431.

The purpose of the CTS 3.7.2 Applicability is to specify when the MSIVs are required to be operable to perform their safety function consistent with the safety analysis. The change to the Applicability is acceptable because the LCO continues to provide assurance that the MSIVs will perform their design safety function to mitigate the consequences of accidents that could result in offsite exposures comparable to the 10 CFR 50.67 limits. In addition, the LCO also requires the MSIVs to be within the isolation time limits and maintain the capability to close on an isolation actuation signal. When the valves are in the closed position, they are in their assumed accident position. Therefore, the revision to exempt the Applicability to "when all MSIVs are closed and deactivated" is acceptable. This change is designated as less restrictive because the LCO requirements are applicable in fewer operating conditions than in the CTS.

L.2 *(Category 4 – Relaxation of Required Action)* CTS 3.7.1.5 Action for MODES 2 and 3 allows only one MSIV to be inoperable. If more than one MSIV is inoperable; LCO 3.0.3 entry is required. ITS 3.7.2 Action C allows one or more MSIVs to be inoperable in MODES 2 and 3, and contains a Note stating, "Separate Condition entry is allowed for each MSIV." This changes the CTS by allowing more than one MSIV to be inoperable and in the closed position in MODES 2 and 3.

The purpose of CTS 3.7.1.5 Action for MODES 2 and 3 is to provide appropriate requirements and compensatory actions for an inoperable MSIV. This change is acceptable because the Condition C of LCO 3.7.2 is used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The inoperable MSIVs may either be restored to OPERABLE status or closed. When closed, the MSIVs are in the position of performing their intended safety function. Therefore, the Condition provides assurance each inoperable valve is repaired or placed in its safety function position (closed). Moreover, this change is acceptable since it provides a reasonable time for repair of the MSIV or requires the MSIV to be closed, includes a periodic verification that the MSIV remains closed, and considering the low probability of a DBA occurring during the time allowed to repair each MSIV. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.3 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* LCO 3.7.1.5 requires the MSIVs be OPERABLE in MODES 1, 2, and 3. CTS 4.0.4 requires MSIVs to be tested prior to entry into the MODES of Applicability. ITS SR 3.7.2.1 contains a Note stating the testing of the MSIVs is only required to be performed in MODES 1 and 2. This allowance permits entry into MODE 3 for the purpose of performing the required testing. This changes the CTS by allowing the plant the option to enter MODE 3 prior to the performance of the required testing.

The purpose of ITS SR 3.7.2.1 NOTE is to allow the option to delay performance of the MSIV testing until MODE 3 conditions have been entered. This change is acceptable because testing the valve in Mode 3 provides additional assurance the valve will function correctly at normal operating temperatures and pressures. Although this testing can be accomplished at lower Modes, the proposed change provides the option to test the valves at conditions closer to normal operating conditions if necessary. This change is designated as less restrictive because less stringent Surveillance Requirements (additional test options) are being applied in the ITS than were applied in the CTS.

More Restrictive Changes (M)

M.1 CTS 3.7.1.5 Action for MODE 1 requires that when one MSIV is inoperable, the valve is to be restored to OPERABLE status within 4 hours or the unit is to be in HOT SHUTDOWN (MODE 4) within the next 12 hours. ITS Action A allows 8 hours to restore an inoperable MSIV to OPERABLE status when in MODE 1, and an additional 6 hours to be in MODE 2. The total CTS Completion Time from MSIV inoperability to exiting MODE 1 is 16 hours. The total ITS Completion Time from MSIV inoperability to exiting MODE 1 is 14 hours. This reduces the CTS Completion Time to restore an inoperable MSIV by 2 hours (16 hours versus 14 hours).

In addition, the CTS Mode 1 shutdown Action is changed from HOT SHUTDOWN (MODE 4) to MODE 2. This change has no technical affect as once MODE 2 is entered, the CTS Actions for MODES 2 and 3 will apply and the CTS Actions for MODE 1 are exited. Therefore, the current requirement to be in MODE 4 will never be applicable in the MODE 1 Actions and will never need to be completed. The change in the time to enter MODE 4 from the CTS Action for MODES 2 and 3 is discussed in DOC M.2. This change is being made so the BVPS ITS is consistent as possible with NUREG-1431.

The purpose of CTS 3.7.1.5 Action for MODE 1 is to provide time to restore the inoperable MSIV to OPERABLE status and to specify the appropriate MODE to enter with an inoperable MSIV. This change is acceptable because it further restricts the time frame when the valve is open and cannot perform its intended safety function. In addition, this change is acceptable because of the low probability of an accident occurring during the allowed out-of-service time requiring closure of the MSIVs. This change is designated as more restrictive because the time allowed to restore the inoperable MSIV has been reduced.

M.2 CTS 3.7.1.5 Actions for MODES 2, and 3 states subsequent operation in MODES 2 or 3 may proceed provided the inoperable MSIV is maintained closed. The CTS does not require further verification of the MSIV position after it is closed. If the valve is not maintained closed, the unit must be in HOT SHUTDOWN (MODE 4) within the next 12 hours. The CTS does not include a specific time in which the unit must be placed in Mode 3. Thus, the CTS would allow continued operation in Modes 2 and 3 with an open and inoperable MSIV for up to 12 hours before Mode 4 must be entered. The CTS Action does not require the inoperable MSIV be closed prior to the 12 hours allowed to transition into Mode 4. Since in Mode 4 the MSIV is not required operable, the CTS does not require the MSIV to be closed. The corresponding ITS 3.7.2 Required Actions C.1 requires an inoperable MSIV to be closed within 8 hours and Required Action C.2 requires the valve to be verified closed once per 7 days. Thus, the ITS limits operation with an open inoperable MSIV to 8 hours. Additionally, the ISTS requires a continuous check of the valve position to verify that it is closed while operating in Modes 2 or 3 (which is not required by the CTS). As long as the requirements of C.1 and C.2 are met, the ISTS permits continued operation in Modes 2 and 3. Otherwise, ISTS Condition D requires the unit to be placed in MODE 3 within 6 hours and MODE 4 within 12 hours. The CTS is revised to conform to the ISTS. This changes the CTS by specifying a time within which an inoperable MSIV must be closed (8 hours) and requiring periodic verification that the inoperable MSIV is closed. In addition, the CTS has been changed to add a specific time the unit is required to be in MODE 3 (within 6 hours). These changes are made to conform to the ISTS.

The purpose of the CTS Actions is to provide assurance that an inoperable MSIV is placed in a position consistent with the safety analysis or the unit is placed in a Mode where the MSIVs are no longer required operable. This change is acceptable because the additional requirements are prudent if the MSIV(s) cannot be restored to an OPERABLE status in MODES 2 and 3. A closed MSIV is in the position assumed by the safety analysis. Specifying a time requirement for closing an inoperable valve minimizes the potential risk from continued operation with an inoperable MSIV. The requirement to periodically verify the inoperable valves are closed is reasonable to ensure the valves have not been unintentionally mispositioned. The requirement to be in MODE 3 within 6 hours and MODE 4 within 12 hours is consistent with similar ITS requirements, such as ITS 3.0.3. The additional action to be in Mode 3 provides assurance that operation continues to be appropriately limited as long as the MSIV remains inoperable and open.

Thus, the proposed changes serve to minimize potential risk and limit continued operation with inoperable equipment. Therefore, the proposed changes provide additional assurance of safe plant operation consistent with the assumptions of the applicable safety analyses. This change is designated as more restrictive because the ITS applies more restrictive actions and Completion Times than the CTS.

M.3 The CTS does not require testing to verify that the MSIVs close on an actuation signal. ITS SR 3.7.2.2 requires verification that each MSIV actuates to the isolation position on an actual or simulated actuation signal. This changes the CTS by requiring verification that each MSIV actuates to the isolation position on an actual or simulated actuation signal.

The purpose of the ITS SR 3.7.2.2 is to verify the MSIV can close on an actual or simulated actuation signal. This change is acceptable because the test is conducted to ensure the MSIV will perform its safety function. This change is considered more restrictive because a new requirement is added to the ITS.

Removed Detail Changes (LA)

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* SR 4.7.1.5 requires the verification of MSIV full closure within 5 seconds (Unit 1) and 6 seconds (Unit 2). ITS SR 3.7.2.1 requires the verification of isolation time of each MSIV is within limits. This changes the CTS by moving the specific response times to the Licensing Requirements Manual (LRM).

The removal of these response times from the TS is acceptable because this type of information is not necessary to be included in the TS to provide adequate protection of public health and safety. The TS retain the requirement the isolation times are within limits. The retained SR provides adequate assurance the plant will continue to be operated in a safe manner and within the bounds of the safety analysis. The listing of response time details are contained in the LRM. The placement of the MSIV actuation times in the LRM is consistent with the location of the Reactor Trip System and ESFAS response times as well as all the containment isolation valve closure times. As such, the proposed change maintains a consistent location for this type of information that has proven adequate (for reactor protection response times and containment isolation valve actuation times) to ensure the safe operation of the plant.

It also should be noted that the MSIVs perform an ESF function (i.e., Main Steam Isolation). The ESFAS response time definition in Section 1.1 of the ITS specifically includes the time it takes for ESF equipment to perform its safety function "i.e., the valves travel to their required positions...." Therefore, the MSIV isolation time is included in the ESFAS response time required to be met for the main steam isolation Function in ITS 3.3.2, ESFAS Instrumentation. The ESFAS response times are currently specified in the BVPS LRM. The inclusion of a separate valve actuation time in the MSIV specification is redundant and unnecessary to assure the MSIV isolates within the required time.

This change is also considered acceptable because the removed information will be adequately controlled in the LRM. The LRM is incorporated by reference into the UFSAR and any changes to the LRM are made under 10 CFR 50.59, which ensures changes are properly evaluated. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the TS.

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 CTS 3.7.1.5 Action for MODES 2 and 3 provides when a MSIV is inoperable subsequent operation may proceed after the MSIV is restored to OPERABLE status. Condition C of ITS 3.7.2 does not specifically state this restoration allowance. The CTS is revised to eliminate this unnecessary restoration allowance and conform to the ITS. This change is being made so the BVPS ITS is consistent as possible with NUREG-1431.

This change is acceptable because it does not result in a technical change to the CTS. In both the CTS and the ITS, if the inoperable MSIV is not restored the unit must be placed in a MODE in which the LCO does not apply. The ITS Actions simply recognize that restoration of systems or parameters to comply with the associated LCO is always an option when the LCO is not met. Explicit requirements to restore systems and components to operable status are not always necessary if the TS Actions direct the plant to be placed in a Mode or condition where the LCO requirements are no longer applicable. The affected systems or parameters may always be restored to operable status at any time while the plant is transitioning to a Mode or condition where the LCO is no longer required. Therefore, eliminating the CTS restoration Action has no effect on the practical options available when the LCO is not met and the Action to remove the plant from the applicable Mode must be met. This change is designated as administrative as it results in no technical change to the TS.

ITS 3.7.3 Main Feedwater Isolation Valves (MFIVs) and Main Feedwater Regulation Valves (MFRVs)

DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

None

More Restrictive Changes (M)

M.1 CTS does not have any requirement for main feedwater isolation valves (MFIVs), main feedwater regulating valves (MFRVs), and associated bypass valves to be OPERABLE, other than a requirement for an actuation signal to be supplied to the valves in CTS 3.3.2.1. ITS 3.7.3 requires the MFIVs, MFRVs, and associated bypass valves be OPERABLE in MODES 1, 2, and 3. This changes the CTS by incorporating the requirements of ITS 3.7.3. This change is being made so the BVPS ITS is consistent as possible with NUREG-1431.

The safety-related function of the MFIVs, MFRVs and associated bypass valves is to provide isolation of main feedwater from the secondary side of the steam generators following a high energy line break. This change is acceptable because the safety analyses assume that closure of MFIVs, or the MFRVs and associated bypass valves terminates the addition of feedwater to an affected steam generator, limits the mass and energy release for steam or feedwater line breaks, and minimizes the positive reactivity effects of the Reactor Coolant System (RCS) cooldown associated with a high energy line break. This new LCO is appropriate for BVPS and applicable to the BVPS design. This change is designated as more restrictive because it adds new requirements to the CTS.

Removed Detail Changes (LA)

None

Administrative Changes (A)

None

CTS 3.7.3.1 PRIMARY COMPONENT COOLING WATER SYSTEM
ITS 3.7.7 Component Cooling Water (CCW) System
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

L.1 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.7.3.1.b verifies every 31 days that each CCW valve (manual, power operated or automatic) servicing safety related equipment that is not locked, sealed, or otherwise secured in position is in the correct position. ITS SR 3.7.7.1 requires the same surveillance but contains a Note clarifying the isolation of the CCW flow to individual components does not render the CCW system inoperable. The CTS has been revised by adding a Note providing clarification the CCW system is not rendered inoperable by the isolation of flow to individual components. This change is being made so the BVPS ITS is consistent as possible with NUREG-1431.

The purpose of CTS 4.7.3.1.b provides assurance the proper flow path exists for CCW operation. This change is acceptable because the isolation of individual components from the CCW system reduces the heat load and flow requirements on the CCW system. This will not render the system inoperable. Moreover, the definition of OPERABILITY would require the isolated components without required cooling water to be considered inoperable. The CCW system is still capable of performing its intended function for the remaining operable components it services and individual TS requirements including LCO 3.0.6 and the Safety Function Determination Program in Section 5.0 address the inoperable supported components and provide the appropriate actions for those components. The isolation of individual components does not prevent the CCW system from performing its function for the remaining components serviced. However, isolation of the valves to those components could result in the interpretation that the CCW valve position surveillance (CTS 4.7.3.b) is not met. Therefore, the addition of this clarifying Note prevents the CCW System from being declared inoperable for failure to meet the valve position surveillance when in fact the CCW System remains operable. This change is designated as less restrictive because of the greater flexibility of meeting the Surveillance Requirement if an individual component were isolated.

L.2 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.7.3.1.c requires at least once per 18 months during shutdown, the cycling of each power operated valve servicing safety related equipment that is not testable during plant operation, through at least one complete cycle of full travel. The ITS does not contain this surveillance requirement. The CTS has been revised to conform to the ITS by eliminating the current surveillance requirement for cycling the power operated valves.

The purpose of a TS surveillance is to confirm the associated system is capable of performing its intended safety function (i.e., the system is operable). The proposed change is acceptable because the CTS surveillance being deleted is not required to confirm the capability of the CCW system to perform its required safety function.

The affected CTS surveillance verifies the capability of the non-automatic power-operated valves to be cycled. However, remaining ITS SR 3.7.7.1 (CST 4.7.3.1.b) verifies each valve is in its correct position to ensure the CCW system can perform its required function. In addition, ASME code class valves will continue to be tested in accordance with the Inservice Testing Program. Compliance with the provisions of the Inservice Testing Program is not optional and is required by the TS (ITS Section 5.0) and Federal regulations (10 CFR 50.55a(f). The required Program specifies industry standard valve test requirements that are adequate to assure valve operability. Together, the remaining ITS surveillance and the Inservice Testing Program provide adequate assurance the required CCW flow path is available and that CCW valve operability is maintained. Therefore, the capability of the CCW system to perform its required function is assured by the remaining surveillance and the Inservice Testing Program. As such, CTS surveillance requirement 4.7.3.1.c is not required to ensure the CCW system is capable of performing its required function and is eliminated from the TS consistent with the ISTS. The proposed change is designated less restrictive because a surveillance required by the CTS will not be required in the ITS.

L.3 *(Category 4 – Relaxation of Required Action)* CTS 3.7.3.1 contains no explicit provision for action when two CCW trains are inoperable. As a result, the unit would require entry into Specification 3.0.3 and the initiation of a unit shutdown to MODE 5 (exiting the Mode of Applicability). However, with two trains of CCW inoperable, sufficient cooling capacity to place and maintain the unit in Mode 5 may not exist. Proposed new Condition C of ITS LCO 3.7.7 would acknowledge this plant condition and provide more appropriate actions in lieu of LCO 3.0.3 for entering Mode 5. The proposed new Actions would require implementing an alternative means of decay heat removal (in Mode 4) and the initiation of actions to be in MODE 5. The new Condition would only replace LCO 3.0.3 when there is insufficient CCW flow to the RHR heat exchangers such that the unit could not be safely maintained in Mode 5 as required by LCO 3.0.3. The CTS is revised to incorporate these new and more appropriate Actions for the condition of two inoperable CCW trains. The addition of the new Actions is consistent with the similar ISTS Actions for three inoperable AFW pumps that supercede LCO 3.0.3 until at least one train of AFW is restored to operable status.

The purpose of the revised CTS 3.7.3.1 Actions is to ensure that the plant is placed in a safe condition outside of the Mode of Applicability. Entry into Specification 3.0.3 requires a plant shutdown to MODE 5 within 37 hours. The entry into Specification 3.0.3 does not take into account specific actions to restore the means of decay heat removal when no CCW trains are available. The proposed change is acceptable since adequate CCW flow is necessary to transfer heat loads from the reactor coolant via the RHR heat exchangers in order to place and maintain the plant in Mode 5. The proposed change provides the appropriate Actions for the specified plant condition and will continue to assure the plant is operated in a safe and orderly manner. LCO 3.0.3 does not provide any guidance regarding this plant condition and would simply continue to force the plant to be Mode 5.

The proposed Action to immediately implement an alternative means of decay heat removal addresses the unavailability of adequate RHR cooling in Mode 4 and would require heat removal be accomplished by other means such as feeding and steaming the SGs. The plant can be safely maintained in Mode 4 with the other systems available. As such, forcing entry into Mode 5 in the time specified in LCO 3.0.3 may not be the best course of action with inadequate cooling capability to safely maintain the plant in Mode 5. The proposed Action to immediately initiate actions to be in MODE 5 would address the condition of providing sufficient cooling water flow to the RHR heat exchangers to safely place and maintain the plant in Mode 5 where the LCO requirements for CCW no longer apply. Requiring that action be initiated immediately to be in MODE 5 provides adequate assurance that the plant will be placed in a safe condition without unnecessary delay as soon as practical (i.e., as soon as adequate cooling capacity is restored). Specifying a time in which this action must be met (as LCO 3.0.3 does) would not be appropriate given the plant condition and the need to restore the required cooling capacity prior to meeting the action. This change is designated as less restrictive because less stringent Action requirements are being applied in the ITS than were applied in the CTS.

L.4 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.7.3.1.b verifies every 31 days that each CCW valve (manual, power operated or automatic) servicing safety related equipment that is not locked, sealed, or otherwise secured in position is in the correct position. ITS SR 3.7.7.1 requires the same surveillance but clarifies that the acceptance criterion of the CCW System services "the RHR system" rather "safety related equipment." The CTS has been revised to add this clarification to the CCW system surveillance requirement.

The BVPS CCW system is not relied on in the safety analysis to perform an accident mitigation function. The primary safety load of the BVPS CCW system is the RHR system. The BVPS RHR system is not part of the Emergency Core Cooling System and performs a dedicated decay heat removal function only. The purpose of CTS 4.7.3.1.b provides assurance the proper flow path exists for CCW operation. This change is acceptable because the only required safety function of the CCW System at BVPS is to supply the RHR heat exchangers with cooling water to safely maintain the plant in a shutdown condition. The other functions of the CCW System are related to providing a heat sink for operating heat generated from various components during normal (i.e., not accident mitigation) plant operation. This change is designated as less restrictive because of the greater flexibility of meeting the Surveillance Requirement.

More Restrictive Changes (M)

M.1 CTS 3.7.3.1 Action currently contains no requirement to enter applicable Actions of CTS 3.4.1.3, "RCS Loops and Coolant Circulation – Shutdown" for RHR loops made inoperable by CCW. ITS 3.7.7 Required Action A.1 Note provides this requirement. The CTS is revised to conform to the ITS. This changes the CTS by adding a note is to the CTS Actions requiring entry into the applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops - Mode 4" for RHR loops made inoperable by CCW.

The change is acceptable because LCO 3.4.6 contains appropriate Actions and Conditions to address various combinations of inoperable RCS and RHR loops and requires immediate action be taken. If the RHR loop affected by the inoperable CCW train was required operable to meet LCO 3.4.6, then the note requires the applicable Action Condition of LCO 3.4.6 are entered. If the RHR loop affected by the inoperable CCW train was not used to meet LCO 3.4.6, there is no applicable Condition in LCO 3.4.6 to enter. The ITS Note provides support/supported system guidance and, due to the immediate actions of the RCS LCO, is necessary since the ITS includes LCO 3.0.6 which precludes entering a supported system TS unless specifically directed by the support system LCO. Although consistent with the operability requirements of the RHR system, this additional TS requirement was not previously specified in the TS. Therefore, the addition of this Note is considered more restrictive.

Removed Detail Changes (LA)

None

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 The CTS 3.7.3.1 LCO states "At least two component cooling water subsystems shall be OPERABLE." ITS 3.7.7 LCO states "Two CCW trains shall be OPERABLE." This changes the CTS consistent with the wording of the ISTS 3.7.7 LCO. Specifically, the term "at least" is deleted and the term "subsystems" has been replaced with "trains." This change is being made so the BVPS ITS is consistent as possible with NUREG-1431.

This change is acceptable since the intent of the LCO statement is to specify the minimum requirements, the descriptive phrase "at least" is redundant and unnecessary and is not used in the ISTS. The ISTS includes a sufficient description of the system design and related operability requirements located in the TS Bases. The word "subsystems" is replaced by the word "trains" to maintain consistency with the ISTS terminology in this and other TS. The ISTS terminology "trains" is consistent with the intent of the CTS LCO requirement for CCW subsystems. The changes described above are considered clarifications and enhancements that do not introduce technical changes to the intent of the CTS or affect plant design, and are made to conform with the presentation and format of this information in the ISTS. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.3 For Unit 1 only, CTS 3.7.3.1 Action states "With less than two component cooling water subsystems OPERABLE, restore at least two subsystems to OPERABLE status within 72 hours." Condition A of ITS 3.7.7 requires with one CCW train inoperable, restore the inoperable train to OPERABLE status within 72 hours. This changes the CTS consistent with the wording of ISTS 3.7.7. Specifically, the phrase "with less than two...OPERABLE" is replaced with "one...inoperable." This change is being made so the BVPS ITS is consistent as possible with NUREG-1431.

The purpose of the CTS Action is to specify an allowable out-of-service time for one CCW subsystem inoperable. The literal wording of the CTS Action ("with less than two") would allow a restoration time of 72 hours if both subsystems were inoperable. This change is acceptable since the intent of the CTS Action is to specify an allowable out-of-service time of 72 hours when one CCW subsystem is inoperable. With both CCW subsystems inoperable, the unit would be without functional capability. The change to the CTS wording is intended to eliminate a potential misinterpretation and misapplication of the requirements for an inoperable CCW subsystem. The changes described above are considered clarifications and enhancements that do not introduce technical changes to the intent of the CTS or affect plant design, and are made to conform with the presentation and format of this information in the ISTS. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.4 CTS 4.7.3.1.a requires each CCW pump to be tested in accordance with the requirements of Specification 4.0.5. ITS 5.5 provides controls for Inservice Testing of ASME Code Class 1, 2, and 3 components. ITS 3.7.7 does not contain the specific Surveillance to test each CCW pump in accordance with Specification 4.0.5. This changes the CTS by eliminating a redundant requirement to perform testing in accordance with the Inservice Testing Program.

The purpose of CTS Specification 4.0.5 is to require Inservice Testing in accordance with 10 CFR 50.55a. The purpose of Inservice Testing of the CCW pumps is to detect gross degradation caused by impeller structural damage or other hydraulic component problems. This change is acceptable because the CCW pumps are still required to be tested in accordance the Inservice Testing Program in ITS Section 5.5. This change is designated as administrative because it does not result in technical changes to the CTS.

CTS 3.7.4.1 SERVICE WATER SYSTEM
ITS 3.7.8 Service Water System
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

L.1 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.7.4.1.b verifies every 31 days that each SWS valve (manual, power operated or automatic) servicing safety related equipment that is not locked, sealed, or otherwise secured in position is in the correct position. ITS SR 3.7.8.1 requires the same surveillance but contains a Note clarifying that the isolation of the SWS flow to individual components does not render the SWS inoperable. The CTS has been revised by adding a Note providing clarification that the SWS is not rendered inoperable by the isolation of flow to individual components. This change is being made so the BVPS ITS is consistent as possible with NUREG-1431.

The purpose of CTS 4.7.4.1.b provides assurance that the proper flow path exists for SWS operation. This change is acceptable because the isolation of individual components from the SWS reduces the heat load and flow requirements on the SWS system. This will not render the system inoperable. Moreover, the definition of OPERABILITY would require the isolated components without required cooling water to be considered inoperable. The SWS is still capable of performing its intended safety function for the remaining components it services and individual TS requirements including LCO 3.0.6 and the Safety Function Determination Program in Section 5.0 address the inoperable supported components and provide the appropriate actions for those components. The isolation of individual components does not prevent the SWS from performing its safety function for the remaining components serviced, however, isolation of the valves to those components results in a failure to meet the SWS valve position surveillance (CTS 4.7.4.b). Therefore, the addition of this Note also provides a necessary exception to SR 3.0.1, which states that failure to meet a SR constitutes failure to meet the LCO. This change is designated as less restrictive because of the greater flexibility of meeting the Surveillance Requirement if an individual component were isolated.

L.2 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.7.4.1.c requires at least once per 18 months during shutdown, the cycling of each power operated valve servicing safety related equipment that is not testable during plant operation, through at least one complete cycle of full travel. The ITS does not contain this surveillance requirement but instead requires (ITS SR 3.7.8.2) the verification of "each SWS automatic valve in the flow path ... on an actual or simulated signal." The CTS has been revised by eliminating the current surveillance requirement for cycling the power operated valves. This DOC only addresses the elimination of CTS 4.7.4.1.c. Justification for the addition of ITS SR 3.7.8.2 is provided in DOC M.2. This change is being made so the BVPS ITS is consistent as possible with NUREG-1431.

The purpose of the TS surveillance is to confirm the associated system is capable of performing its intended safety function (i.e., the system is operable). The proposed change is acceptable because the CTS surveillance being deleted is not required to confirm the SWS is operable. The CTS surveillance verifies the capability of the non-automatic power-operated valves to be cycled. However, remaining ITS SR 3.7.8.1 requires each manual, power operated, and automatic valve in the flow path that is not locked sealed or other wise secured in position is in the correct position (note that this surveillance includes the position of non-automatic power operated valves). ITS 3.7.8.2 verifies that each automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal. In addition, ASME code class valves will continue to be tested in accordance with the Inservice Testing Program. Compliance with the provisions of the Inservice Testing Program is not optional and is required by the TS (ITS Section 5.0) and Federal regulations (10 CFR 50.55a(f). Together, the two remaining ITS surveillances and the ASME Inservice Testing Program provide adequate assurance the required SWS flow path is available and that the SWS valves are maintained operable. Therefore, CTS surveillance 4.6.2.1.c.1 is not required to ensure the SWS is capable of performing its required safety function and is deleted consistent with the ISTS. The proposed change is designated less restrictive because a surveillance required by the CTS will not be required in the ITS.

L.3 *(Category 4 – Relaxation of Required Action)* CTS 3.7.4.1 contains no explicit provision for action when two SWS trains are inoperable. As a result, the unit would require entry into Specification 3.0.3 and the initiation of a unit shutdown to MODE 5 (exiting the Mode of Applicability). However, with two trains of SWS inoperable, sufficient cooling capacity to place and maintain the unit in Mode 5 may not exist. Proposed new Condition C of ITS LCO 3.7.7 would acknowledge this plant condition and provide more appropriate actions in lieu of LCO 3.0.3 for entering Mode 5. The proposed new Actions would require implementing an alternative means of decay heat removal (in Mode 4) and the initiation of actions to be in MODE 5. The new Condition would only replace LCO 3.0.3 when there is insufficient SWS flow to the CCW heat exchangers (which provide RHR cooling) such that the unit could not be safely maintained in Mode 5 as required by LCO 3.0.3. The CTS is revised to incorporate these new and more appropriate Actions for the condition of two inoperable SWS trains. The addition of the new Actions is consistent with the similar ISTS Actions for three inoperable AFW pumps that supercede LCO 3.0.3 until at least one train of AFW is restored to operable status.

The purpose of the revised CTS 3.7.4.1 Actions is to ensure that the plant is placed in a safe condition outside of the Mode of Applicability. Entry into Specification 3.0.3 requires a plant shutdown to MODE 5 within 37 hours. The entry into Specification 3.0.3 does not take into account specific actions to restore the means of decay heat removal when no SWS trains are available. The proposed change is acceptable since adequate SWS flow is necessary to transfer heat loads from the reactor coolant via the CCW via the RHR heat exchangers in order to place and maintain the plant in Mode 5. The proposed change provides the appropriate Actions for the specified plant condition and will continue to assure the plant is operated in a safe and orderly manner. LCO 3.0.3 does not provide any guidance regarding this plant condition and would simply continue to force the plant to be Mode 5.

The proposed Action to immediately implement an alternative means of decay heat removal addresses the unavailability of adequate RHR cooling in Mode 4 and would require heat removal be accomplished by other means such as feeding and steaming the SGs. The plant can be safely maintained in Mode 4 with the other systems available. As such, forcing entry into Mode 5 in the time specified in LCO 3.0.3 may not be the best course of action with inadequate cooling capability to safely maintain the plant in Mode 5. The proposed Action to immediately initiate actions to be in MODE 5 would address the condition of providing sufficient cooling water flow to the CCW heat exchangers to safely place and maintain the plant in Mode 5 where the LCO requirements for SWS no longer apply. Requiring that action be initiated immediately to be in MODE 5 provides adequate assurance that the plant will be placed in a safe condition without unnecessary delay as soon as practical (i.e., as soon as adequate cooling capacity is restored). Specifying a time in which this action must be met (as LCO 3.0.3 does) would not be appropriate given the plant condition and the need to restore the required cooling capacity prior to meeting the action. This change is designated as less restrictive because less stringent Action requirements are being applied in the ITS than were applied in the CTS.

More Restrictive Changes (M)

M.1 CTS 3.7.4.1 Action currently contains no requirement to enter applicable Actions of CTS 3.4.1.3, "RCS Loops and Coolant Circulation – Shutdown" for RHR loops made inoperable by SWS or CTS 3.8.1.1, "A. C. Sources" for emergency diesel generator made inoperable by SWS. ITS 3.7.8 Required Action A.1 Note provides this requirement. The CTS is revised to conform to the ISTS. This changes the CTS by adding a note to the CTS Actions requiring entry into the applicable Conditions and Required Actions of LCO 3.4.6, "RCS Loops - Mode 4" for RHR loops made inoperable by SWS and LCO 3.8.1, "A. C. Sources – Operating" for an emergency diesel generator made inoperable by SWS.

The proposed change is acceptable because LCO 3.4.6 *contains appropriate* Actions and Conditions to address various combinations of inoperable RCS and RHR loops and requires immediate action be taken. If the RHR loop affected by the inoperable SWS train was required operable to meet LCO 3.4.6, then the note requires the applicable Action Condition of LCO 3.4.6 be entered. If the RHR loop affected by the inoperable SWS train was not used to meet LCO 3.4.6, there is no applicable Condition in LCO 3.4.6 to enter. LCO 3.8.1 contains appropriate Actions and Conditions to address various combinations of inoperable DG(s) and requires immediate action be taken. If the DG affected by the inoperable SWS train was required operable to meet LCO 3.8.1, then the note requires the applicable Action Condition of LCO 3.8.1 be entered. If the DG affected by the inoperable SWS train was not used to meet LCO 3.8.1, there is no applicable Condition in LCO 3.8.1 to enter. The ITS Note provides support/supported system guidance and, due to the immediate actions of the DG LCO, is necessary since the ITS includes LCO 3.0.6 which precludes entering a supported system TS unless specifically directed by the support system LCO. Although consistent with the operability requirements of the DG system, this additional TS requirement was not previously specified in the TS. Therefore, the addition of this Note is considered more restrictive.

M.2 CTS 4.7.4.1.c requires the cycling of power operated valves in the SWS flow path servicing safety related equipment that is not testable during plant operation once per 18 months during shutdown. ITS SR 3.7.8.2 requires every 18 months the verification that each SWS automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal. ITS SR 3.7.8.3 requires every 18 months the verification that each SWS pump starts automatically on an actual or simulated actuation signal. The CTS has been revised to incorporate the new ISTS surveillance requirements. This change is being made so the BVPS ITS is consistent as possible with NUREG-1431.

The purpose of SR 3.7.8.2 is to ensure proper automatic operation of the SWS valves. The purpose of SR 3.7.8.3 is to ensure proper automatic operation of the SWS pumps. The SWS is a normally operating system that cannot be fully actuated as part of normal testing for pumps and valves. This change to add these two surveillance requirements is acceptable because the safety analysis assumes automatic actuation of SWS components to provide a heat sink for the removal of processing and operating heat from safety related components and to isolate certain non-safety related systems during a DBA. These two new SRs are appropriate for BVPS and applicable to the BVPS design. This change is designated as more restrictive because it adds new requirements to the CTS.

Removed Detail Changes (LA)

None

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS). Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 CTS 3.7.4 states that "At least two service water subsystems supplying safety related equipment shall be "OPERABLE." Similar words are used in the CTS Action. ITS 3.7.8 states "Two SWS trains shall be OPERABLE." The CTS is revised to conform to the ISTS wording. This changes the CTS by deleting the term "at least" and replacing the term "subsystem" with "train." In addition, the descriptive term "safety related" is removed from the CTS LCO.

As the intent of the LCO statement is to specify the minimum requirements, the descriptive phrase "at least" is redundant and unnecessary and is not used in the ISTS. The CTS also revised by the use of the word "trains" in place of "subsystems." This change is made to maintain consistency with the ISTS terminology in this and other TS. The ISTS terminology "trains" is consistent with the intent of the CTS requirement for subsystems. The description of the SWS loads (safety related) is moved to the appropriate surveillance requirement that verifies the SWS valves to safety related equipment are in the correct position. The changes described above are considered clarifications and enhancements or changes in presentation that do not introduce technical changes to the intent of the CTS or affect plant design, and are made to conform with the presentation and format of this information in the ISTS. This change is being made so the BVPS ITS is consistent as possible with NUREG-1431. Therefore, these changes are considered administrative.

A.3 CTS 4.7.4.1.a requires each SWS pump to be tested in accordance with the requirements of Specification 4.0.5. ITS 5.5 provides controls for Inservice Testing of ASME Code Class 1, 2, and 3 components. ITS 3.7.8 does not contain the specific Surveillance to test each SWS pump in accordance with Specification 4.0.5. This changes the CTS by eliminating a redundant requirement to perform testing in accordance with the Inservice Testing Program.

The purpose of CTS Specification 4.0.5 is to require Inservice Testing in accordance with 10 CFR 50.55a. The purpose of Inservice Testing of the SWS pumps is to detect gross degradation caused by impeller structural damage or other hydraulic component problems. This change is acceptable because the SWS pumps are still required to be tested in accordance with the Inservice Testing Program in ITS Section 5.5. This change is designated as administrative because it does not result in technical changes to the CTS.

A.4 For Unit 1 only, CTS 3.7.4.1 Action states "With less than two RPRWS (SWS) subsystems OPERABLE, restore at least two subsystems to OPERABLE status within 72 hours." Condition A of ITS 3.7.8 requires with one SWS train inoperable, restore the inoperable train to OPERABLE status within 72 hours. This changes the CTS consistent with the wording of ISTS 3.7.8. Specifically, the phrase "with less than two...OPERABLE" is replaced with "one...inoperable." This change is being made so the BVPS ITS is consistent as possible with NUREG-1431.

The purpose of the CTS Action is to specify an allowable out-of-service time for one SWS subsystem inoperable. The literal wording of the CTS Action ("with less than two") would allow a restoration time of 72 hours if both subsystems were inoperable. This change is acceptable since the intent of the CTS Action is to specify an allowable out-of-service time of 72 hours for one SWS subsystem inoperable. With both SWS subsystems inoperable, the unit would be without functional capability. The change to the CTS wording is intended to eliminate a potential misinterpretation and misapplication of the requirements for an inoperable SWS subsystem. The changes described above are considered clarifications and enhancements that do not introduce technical changes to the intent of the CTS or affect plant design, and are made to conform with the presentation and format of this information in the ISTS. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

CTS 3.7.5.1 ULTIMATE HEAT SINK – OHIO RIVER
ITS 3.7.9 Ultimate Heat Sink (UHS)
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

L.1 *(Category 4 - Relaxation of Required Action)* CTS 3.7.5.1 Actions require that a Unit shutdown be initiated when the UHS (Ohio River) water temperature exceeds the limit. The proposed ITS 3.7.9 includes Action Condition A which allows the water temperature limit to be exceeded, provided the average water temperature over the previous 24 hours does not exceed the limit when checked once per hour. The CTS is revised to incorporate this proposed ITS Action. This changes the CTS by revising the existing CTS shutdown action to ITS Condition B and inserting the new ITS Action A to address the condition of UHS water temperature exceeding the limit. The proposed change will allow the UHS water temperature to exceed the technical specification limit for a short time to evaluate the trend (if any) and allow for a temporary fluctuation without initiating a plant shutdown.

The purpose of the UHS temperature limit is to ensure the required cooling capacity is available to mitigate design basis accidents. Exceeding the UHS temperature limit affects the plants ability to mitigate the most severe design basis accidents. Once the temperature limit is exceeded, the CTS requires a plant shutdown be initiated. The proposed change would allow for limited plant operation when the temperature limit is exceeded. The proposed change is acceptable because it would safely limit the time the plant could operate with the UHS temperature exceeding the limit to a matter of hours (i.e., until the average temperature over the previous 24 hours exceeds the limit). The proposed change would allow a reasonable time to determine if the temperature increase was a sustained change or a temporary fluctuation. Thus, the proposed change would avoid initiation of a plant shutdown and subsequent restart if the river water temperature fluctuates around the limit. The allowance to operate the plant when the temperature limit is exceeded for the short time that would be allowed by the proposed Action is acceptable because of the low probability of an severe accident occurring during this time that would require the maximum cooling capacity of the UHS. In addition, the proposed change would avoid the potential risk introduced by plant transients that could result from entering and exiting the shutdown Action when the UHS temperature fluctuates near the limit. As such, the proposed change provides a prudent operating flexibility in the Technical Specifications that would adequately restrict plant operation if the temperature limit is exceeded but allow for temporary fluctuations in river water temperature to avoid unnecessary plant transients. The proposed change is designated less restrictive because the proposed ITS Actions are less stringent than the CTS Actions.

More Restrictive Changes (M)

None

Removed Detail Changes (LA)

LA.1 *(Type 3 - Removing Procedural Details for Meeting TS Requirements)* CTS 3.7.5.1 requires the ultimate heat sink OPERABLE with a minimum water level at or above elevation 654 Mean Sea Level, at the intake structure. ITS SR 3.7.9.1 requires the verification the water level of the UHS is ≥ 654 ft mean sea level. The ITS does not contain the procedural details of denoting where the SR is performed (at the intake structure). This change is being made so the BVPS ITS is consistent as possible with NUREG-1431. This changes the CTS by moving the procedural details of the UHS surveillance test to the Bases.

The removal of this detail from the TS, which are related to the UHS surveillance test, is acceptable because this type of information is not necessary to be included in the TS in order to provide adequate protection of the public health and safety. The TS retains the requirement the UHS shall be OPERABLE and requires verification of the water level. As described in the ITS Bases, the SR verifies adequate long term cooling can be maintained. As such the details for meeting the surveillance is described in the ITS Bases. Also, this change is acceptable because this type of procedural detail will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Bases Control Program specified in the Administrative Controls section of the TS. The Bases control Program assures changes to the Bases are evaluated and prior NRC review and approval is obtained when required by 10 CFR 50.59. This change is designated as a less restrictive removal of detail change because procedural details for meeting requirements are being removed from the TS.

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS). Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

ITS 3.7.4 Atmospheric Dump Valves
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

None

More Restrictive Changes (M)

M.1 The BVPS CTS does not contain any requirements for the steam generator (SG) atmospheric dump valve (ADV) lines. Currently BVPS controls the operability of the ADV lines outside of the Technical Specifications. ISTS 3.7.4 specifies requirements for the ADV lines. The CTS is revised by adopting a BVPS specific version of ISTS 3.7.4. This changes the CTS by incorporating new Technical Specification requirements for the SG ADV lines based on ISTS 3.7.4.

This change is acceptable because the BVPS ADV lines perform an accident mitigation function described in the UFSAR (i.e., for a SG tube rupture accident) and therefore, meet Criterion 3 of 10 CFR 50.36 for inclusion in the Technical Specifications. The purpose of ITS 3.7.4 requirements is to ensure that the ADV lines are available to conduct a unit cool down following a limiting accident (i.e., a SG tube rupture). The proposed ITS 3.7.4 contains the appropriate requirements for the BVPS units, consistent with the BVPS design and safety analysis as described in the UFSAR and the proposed BVPS Bases for ITS 3.7.4. As the proposed ITS 3.7.4 contains requirements and restrictions not previously specified within the CTS, this change is designated as more restrictive.

Removed Detail Changes (LA)

None

Administrative Changes (A)

None

CTS 3.7.6 CONTROL ROOM EMERGENCY AIR TEMPERATURE CONTROL SYSTEM

ITS 3.7.11 Control Room Emergency Air Temperature Control System

DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

None.

More Restrictive Changes (M)

None.

Removed Detail Changes (LA)

None.

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS). Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 CTS Footnote * for LCO 3.7.6 modifies the CREACS operability requirement and states that emergency backup power for only one CREACS is required in MODES 5, 6, and with no fuel assemblies in the reactor vessel. The corresponding ISTS 3.7.11 does not contain a similar footnote. The CTS has been revised to delete the footnote consistent with the ISTS. This changes the CTS by eliminating the allowance provided by the note for emergency backup power for one train of CREACS.

The CTS Note is necessary due to the CTS definition of OPERABLE/OPERABILITY. The CTS definition requires both the emergency and normal source of power to be available to required equipment. However, the CTS definition is not consistent with the Technical Specification AC source requirements in Modes 5 and 6. In these Modes of operation, only one emergency diesel is required operable. In the ISTS, the definition of OPERABLE/OPERABILITY is consistent with the requirements for AC sources in Modes 5 and 6 (i.e., only normal or emergency power is required). Therefore, notes providing an exception to the requirements of the OPERABLE/OPERABILITY definition are not required in the ISTS.

The proposed change is acceptable because the CTS definition of OPERABLE - OPERABILTY has been revised consistent with the corresponding ISTS definition. The revision changes the CTS OPERABILITY requirement that both "normal and emergency power be available" to the requirement that "normal or emergency power be available" consistent with the ISTS. The revision of the CTS OPERABLE/OPERABILITY definition eliminates the need for the allowance provided by the CTS footnote. Changes to the CTS definitions are discussed separately in Section 1.0 of the Technical Specifications. As such, the proposed change does not affect the technical requirements for the system. The change results from the ISTS re-organization of requirements such that the definition of OPERABLE - OPERABILTY is consistent with the required power sources in Modes 5 and 6. The proposed change is designated administrative because the technical requirements regarding the necessary power sources have not changed, only the need for the exception provided by the CTS note.

A.3 The CTS CREACS Actions applicable when moving fuel are separated from the Actions applicable in Modes 1-4. The CTS text used to separate the Actions is reformatted to ISTS style Notes in the corresponding ITS Action Conditions (C and D). This changes the CTS by combining the different Unit 1 and Unit 2 fuel movement applicability (recently and non-recently irradiated fuel) into the same ITS Action Conditions. The addition of these Unit specific Notes also results in the deletion of the Unit 2 Action statement references to "recently". As the Unit 2 specific Action Condition Note identifies the Condition as only pertaining to the movement of recently irradiated fuel, the additional references to "recently" in the Required Actions are no longer necessary for Unit 2. The combination of Unit 1 and 2 specific notes in ITS Conditions C and D, define the applicability of the Conditions for each Unit and allow the text of the Required Actions to be the same for each Unit.

The proposed change is acceptable because it does not change the technical requirements of the CTS. The proposed change represents a reformat of the CTS requirements necessary to conform to the ISTS and also necessary to combine the Required Actions for each Unit into the same ITS Action Conditions (C and D). The proposed change is designated administrative because the technical requirements of the CTS are not changed.

A.4 Unit 1 only. The CREACS surveillance requirement specifies that the system's heat removal and purge functions be verified every 18 months. The Unit 1 surveillance requirement is revised by the addition of a note that that takes exception to the requirement to verify the heat removal capability of the system when moving non-recently irradiated fuel. The addition of the proposed surveillance note is consistent with the existing LCO Note that takes exception to the requirement for the heat removal function of the system to be operable to support fuel movement involving non-recently irradiated fuel.

The purpose of the heat removal function of the CREACS is to provide a means of cooling the control room during accident conditions when the control room must be isolated. The proposed change is acceptable because the Unit 1 fuel handling accident analysis associated with the movement of non-recently irradiated fuel does not require control room isolation to limit the dose to control room personnel to within the required limits. Therefore, the CREACS heat removal function is not required to assure the control room air temperature can be maintained within the limit.

In addition, the proposed note makes the CREACS surveillance requirement consistent with the LCO requirement. As the LCO did not require the Unit 1 heat removal function of the CREACS to be operable, the addition of the corresponding surveillance note is considered a clarification that does not change the operability requirements of the CTS. The proposed change is designated administrative because the operability requirements of the CTS are not changed.

CTS 3.7.7.1 (UNIT 1) 3.7.7 (UNIT 2) CONTROL ROOM EMERGENCY VENTILATION SYSTEM

ITS 3.7.10 Control Room Emergency Ventilation System

DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

None

More Restrictive Changes (M)

None

Removed Detail Changes (LA)

None

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS). Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 CTS Footnote * for LCO 3.7.7 states that emergency backup power for only one train of CREVS is required in MODES 5, 6, and with no fuel assemblies in the reactor vessel. The corresponding ISTS 3.7.10 does not contain a similar footnote. The CTS has been revised to delete the footnote consistent with the ISTS. This changes the CTS by eliminating the allowance provided by the note for emergency backup power for one train of CREVS.

The CTS Note is necessary due to the CTS definition of OPERABLE/OPERABILITY. The CTS definition requires both the emergency and normal source of power to be available to required equipment. However, the CTS definition is not consistent with the Technical Specification AC source requirements in Modes 5 and 6. In these Modes of operation, only one emergency diesel is required operable. In the ISTS, the definition of OPERABLE/OPERABILITY is consistent with the requirements for AC sources in Modes 5 and 6 (i.e., only one source of power, normal or emergency, is required). Therefore, notes providing an exception to the requirements of the OPERABLE/OPERABILITY definition are not required in the ISTS.

The proposed change is acceptable because the CTS definition of OPERABLE - OPERABILTY has been revised consistent with the corresponding ISTS definition. The revision changes the CTS OPERABILITY requirement that both "normal and emergency power be available" to the requirement that "normal or emergency power be available" consistent with the ISTS. The revision of the CTS OPERABLE/OPERABILITY definition eliminates the need for the allowance provided by the CTS footnote. Changes to the CTS definitions are discussed separately in Section 1.0 of the Technical Specifications. As such, the proposed change does not affect the technical requirements for the system. The change results from the ISTS re-organization of requirements such that the definition of OPERABLE - OPERABILTY is consistent with the required power sources in Modes 5 and 6. The proposed change is designated administrative because the technical requirements regarding the necessary power sources have not changed, only the need for the exception provided by the CTS note.

A.3 The CTS requires the CREVS to be demonstrated OPERABLE by various filtration testing requirements. These CTS surveillance requirements contain the details for verifying the operability of the CREVS filtration equipment. The corresponding ISTS surveillances contain a single requirement for verifying the operability of the CREVS filtration equipment (ITS SR 3.7.10.2). The ITS SR simply states "Perform required CREVS filter testing in accordance with the Ventilation Filter Testing Program (VFTP)." The CTS surveillances are changed by replacing the detailed filtration requirements with a single surveillance referencing the VFTP. The CREVS filtration requirements detailed in CTS surveillance 4.7.7.1 are moved to the VFTP. The details of the VFTP are specified in the Administrative Controls Section of the Technical Specifications (Section 5.0 of the ITS). Any changes to the CTS CREVS filtration surveillance requirements necessary to adopt the ISTS VFTP are addressed in Section 5.0. This DOC addresses the movement of the CTS requirements within the TS. The movement of these requirements to Section 5.0 is necessary to adopt the ISTS format and presentation of these requirements.

The CTS surveillance requirements moved to the VFTP provide the operability requirements of the CREVS filtration equipment. The proposed change is acceptable because it does not change the CTS operability requirements or the requirement to demonstration the operability of the CREVS filtration equipment. The proposed change moves the affected requirements within the TS. Although, the proposed change simplifies the presentation of the affected requirements, the change does not introduce a technical change to the operability requirements of the filtration equipment. Therefore, this change is designated as administrative.

A.4 Unit 1 only. The Unit 1 CTS surveillances for the CREVS include a requirement that references the corresponding Unit 2 CREVS surveillances (CTS 4.7.7.2). CTS 4.7.7.2 states, "the BV-2 CREVS, when utilized to meet BV-1 Technical Specification 3.7.7.1, shall be demonstrated OPERABLE in accordance with BV-2 Technical Specification 4.7.7.1". In order to meet the LCO requirements for two operable CREVS trains, Unit 1 may credit one or both of the Unit 2 CREVS trains. The CTS requirements for each Unit are contained in separate documents. Therefore, CTS surveillance 4.7.7.2 is used in the Unit 1 CREVS specification to reference the Unit 2 technical specifications in order to specify the operability requirements for a Unit 2 CREVS train when it is used to meet the Unit 1 LCO requirement. The proposed BVPS ITS 3.7.10 CREVS requirements combine both the Unit 1 and Unit 2 CTS requirements into a single Technical Specification. As a result of combining the requirements into a single technical specific applicable to both Units, the need for CTS surveillance 4.7.7.2 is eliminated. Therefore, CTS 4.7.7.2 is deleted.

The proposed change is acceptable because it does not change the operability requirements for the CREVS trains. The proposed change results from the re-organization of the separate Unit requirements into a single specification applicable to both Units. As the single set of CREVS requirements in ITS 3.7.10 are applicable to both units, the reference to the separate Unit 2 surveillance requirements for Unit 1 is no longer needed. The proposed change is designated administrative as it does not introduce a technical change and is the result of the ITS format and presentation of the affected requirements.

A.5 The CTS Staggered Test Frequency of 36 months is revised to 18 months consistent with the ISTS. As the ISTS definition of Staggered Testing is different from the CTS definition, the proposed change does not result in a change to the surveillance frequency. The CTS definition of Staggered Testing requires that the stated surveillance frequency be divided by the number of trains being tested to determine the frequency for an individual train (36 months divided by 2 equals 18 months). The corresponding ISTS definition requires that the frequency for testing an individual train be stated in the surveillance (in this case 18 months). The proposed change is necessary to adopt the new ISTS definition of Staggered Testing. Thus this change does not result in a technical change to the CTS and is considered administrative.

A.6 Unit 1 only. Unit 1 CTS surveillance 4.7.7.1.b verifies CREVS operability and states; "At least once per 31 days by verifying that the CREVS train operates for ≥ 15 minutes with the heaters in operation." The corresponding ITS SR 3.7.10.1 specifies a similar requirement to verify CREVS operability except that the ITS surveillance requires each CREVS train to be operated instead of "the" CREVS train be operated. The Unit 1 SR is revised to conform to the ITS SR. This changes the CTS by specifying both required CREVS trains be operated instead of the single Unit 1 train.

The purpose of the Unit 1 CTS surveillance is to test the single Unit 1 CREVS train. Although two trains are required operable, one Unit 2 CREVS train is relied on to meet the Unit 1 LCO requirement. Unit 1 relies on the Unit 2 surveillances for the

Unit 2 train. Unit 1 surveillance 4.7.7.2 simply references the Unit 2 surveillances for the Unit 2 train relied on by Unit 1. The proposed change would now include both Unit 1 required CREVS trains instead of only the Unit 1 CREVS train. The change is acceptable because the proposed ITS 3.7.10 is common for both BVPS units and the Unit 1 and Unit 2 CREVS requirements would no longer be divided between different technical specifications for each unit. The combined ITS requirements allow the affected surveillances to be the same for both units and consistent with the ISTS. The proposed change eliminates the need for the Unit 1 CTS to rely on the Unit 2 surveillance requirements. The proposed change is designated administrative because it results from the change in presentation of the CTS requirements (combined unit technical specifications) and does not introduce a technical change.

CTS 3.7.8.1 SUPPLEMENTAL LEAK COLLECTION AND RELEASE SYSTEM (SLCRS)
ITS N/A
DISCUSSION OF CHANGE (DOC)

Relocated (R)

R.1 CTS 3/4.7.8, "Supplemental Leak Collection and Release System (SLCRS)," requires that two SLCRS exhaust air filter trains be OPERABLE. CTS 3/4.7.8 is applicable in MODES 1, 2, 3, and 4 and contains surveillance requirements that verify the Operability of the SLCRS exhaust air filter train. The ISTS 3.7.12, ISTS 3.7.13, and ISTS 3.7.14 contain similar requirements in MODES 1, 2, 3, and 4 for plants that require filtration of airborne radioactivity following a design basis accident (DBA) in areas outside the containment.

The bases for including the requirements for SLCRS in the CTS was the need to filter airborne radioactivity, prior to release to the environment, from the areas of active Engineered Safeguards Features (ESF) components outside of the reactor containment building during the recirculation phase of a DBA LOCA. This ensures ESF leakage following the postulated DBA LOCA will not cause the resulting dose to exceed 10 CFR 50.67 limits. The CTS SLCRS surveillances and acceptance criteria verify the SLCRS filtration capability to assure it is adequate to mitigate the limiting dose consequences of a LOCA DBA.

In addition, SLCRS performs the secondary functions of heat removal from areas containing active ESF components and serves to minimize the accumulation of radiation in these areas to help support equipment EQ requirements.

Technical Specification Amendments 257 (Unit 1) and 139 (Unit 2) issued on 9/10/03 approved changes related to "Selective Implementation of Alternate Source Term and Control Room Habitability". In this amendment the alternate source term applied to the DBA LOCA analyses was approved. The result of this revised LOCA analysis was that the filtration capability of SLCRS was no longer credited to maintain the resulting dose to within the limits of 10 CFR 50.67. The BVPS Extended Power Uprate Licensing Report submitted with Licensing Amendment Request 302 (Unit 1) and 173 (Unit 2) also confirms that the revised LOCA analyses no longer credit the filtration capability of the SLCRS to maintain dose to within the limits of 10 CFR 50.67. As such, the bases for the CTS requirement that two SLCRS exhaust air filter trains be maintained operable in MODES 1, 2, 3, and 4 is no longer supported by the post Alternate Source Term/Uprate LOCA safety analyses.

Although SLCRS is no longer credited in the safety analyses for MODES 1, 2, 3, and 4, SLCRS operability requirements are retained in the ITS to address a potential Fuel Handling Accident involving "recently" irradiated fuel assemblies. The requirements necessary to address this fuel handling accident scenario have been proposed in ITS 3.7.12.

Based on the revised DBA LOCA safety analyses no longer crediting the SLCRS to maintain dose within the 10 CFR 50.67 limits, the CTS requirements for SLCRS in MODES 1, 2, 3, and 4 are proposed for relocation to the Licensing Requirements Manual (LRM).

An evaluation of the four selection criteria contained in 10 CFR 50.36(c)(2)(ii) for determining which regulatory requirements and operating restrictions should be included in the TS follows:

Criterion 1. Installed Instrumentation that is used to detect and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.

The SLCRS is not installed instrumentation that would be used to detect and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary. The SLCRS performs a ventilation/filtration function and does not include instrumentation that meets Criterion 1.

Criterion 2. A process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

The SLCRS is not a process variable, design feature, or operating restriction required in Modes 1, 2, 3, or 4 that is an initial condition of a DBA or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier. The SLCRS is a system with components that function to ventilate and filter the exhaust from ESF areas outside of containment.

Criterion 3. A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

The SLCRS is not a structure, system, or component that is part of the primary success path (of a safety sequence analysis) and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier. The current safety analyses no longer credit the SLCRS to limit the radiological consequences of a DBA. The SLCRS functions regarding ESF component area heat removal and EQ concerns are not part of the primary safety analysis success path for DBA mitigation. The capability of SLCRS to perform these secondary functions may be adequately assured by controls outside of the Technical Specifications (i.e., the LRM as described below).

Criterion 4. A structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

The SLCRS is not a structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

Consistent with the guidance of NRC Administrative Letter 96-04, "Efficient Adoption of Improved Standard Technical Specifications", BVPS proposes to relocate the SLCRS TS requirements applicable in Modes 1, 2, 3, and 4 and the associated Bases to the LRM. The NRC has previously approved the relocation of BVPS TS to the LRM. As TS relocated to the LRM are incorporated by reference in the BVPS UFSAR, changes to the relocated material must be controlled in the same manner as changes to the UFSAR, i.e., in accordance with 10CFR 50.59. Therefore, relocation of the SLCRS TS requirements to the LRM is acceptable as control of the relocated requirements is assured by 10 CFR 50.59. The provisions of 10 CFR 50.59 establish adequate controls over changes to requirements removed from the TS, including record maintenance. The 10 CFR 50.59 process assures future changes to these requirements will continue to be consistent with safe plant operation.

CTS 3.9.12 FUEL BUILDING VENTILATION SYSTEM - FUEL MOVEMENT
ITS 3.7.12 SUPPLEMENTAL LEAK COLLECTION AND RELEASE SYSTEM (SLCRS)
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

L.1 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.9.12.1 requires the verification that all fuel building doors are closed at least once per 12 hours. In addition, the CTS permits opening the fuel building doors for entry and exit. ITS 3.7.12 does not require a surveillance on the doors but contains a Note in the LCO that allows the boundary to be opened intermittently under administrative controls. The CTS has been revised to delete the surveillance requirement for the doors and to incorporate the broader ISTS LCO Note allowing intermittent opening of the fuel building boundary. This change makes the BVPS ITS more consistent with the ISTS.

The purpose of the CTS surveillance and Note is to ensure that the fuel building doors are closed such that the fuel building boundary is not breached during a postulated fuel handling accident that could release airborne activity. A potential breach in the fuel building boundary may prevent the airborne activity from being filtered prior to release to the environment. The CTS Note allows doors to be open for entry and exit of the fuel building. The proposed change is acceptable because the fuel building integrity continues to be maintained to assure the fuel building exhaust is filtered prior to release. The ITS provides the provision to open the boundary under administrative controls (which are proscribed in the bases). Except for doors, the administrative requirements assure someone is assigned to close the boundary if necessary. In addition, the ITS surveillances include the requirement to verify the fuel building integrity by verifying the SLCRS train can maintain the specified negative pressure in the fuel building. This surveillance requirement provides the necessary control of the fuel building integrity to assure the fuel building penetrations are maintained such that the required train of SLCRS can perform its safety function. The surveillance requirement for fuel building integrity must be met at all times of the Applicability (except as provided by the Note which takes exception to the LCO).

Just as the CTS provides for allowances to open the fuel building doors for entry and exit, the proposed ITS also contains allowances for periodic breaches of the boundary under administrative controls. These administrative controls are consistent with other similar controls in the ISTS and provide adequate compensatory measures for the flexibility provided by the controls. The difference between the CTS and the ITS is; 1) There is no need to perform a specific surveillance to assure the doors are maintained closed since they are administratively required to be closed, and 2) The ITS Note would allow other boundary breaches as long as the required administrative controls were in place. For entry and exit through doors, the ITS requires that the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, the ITS requires that these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for fuel building isolation is indicated. Thus, the proposed change continues to adequately control the fuel building integrity and assure it is periodically verified and maintained, such that the capability of the SLRCS to filter the fuel building exhaust is not adversely affected. Therefore, the proposed change does not adversely affect the safe operation of the plant. This change is designated as less restrictive because Surveillances which are required in the CTS will not be required in the ITS.

L.2 *(Category 5 – Deletion of Surveillance Requirement)* CTS surveillance 4.9.12.2 requires the fuel building portion of the SCLRS shall be demonstrated OPERABLE by testing the SLCRS per Specification 4.7.8 with the exception to item 4.7.8.1.c.2. Specification 4.7.8 includes surveillance 4.7.8.1.a which requires that the SCLRS be demonstrated operable at least once per 31 days by initiating, from the control room, flow through the "standby" HEPA filter and charcoal adsorber train and verifying that the train operates for at least 15 minutes with the heater controls operational. Although the corresponding ISTS surveillances include a similar requirement, the proposed SCLRS ITS 3.7.12 does not include this monthly surveillance. Thus, the CTS is changed by the elimination of this monthly requirement to run the system for 15 minutes to verify operability.

The purpose of the CTS and ISTS monthly surveillance to operate the system for 15 minutes is to verify the operability of a standby system. This surveillance is prudent for a system that is normally not in operation and is relied on to automatically start when required to mitigate an accident. The BVPS SLCRS, however, is not a standby system that automatically starts when required. The BVPS SLCRS is a ventilation system that is normally in operation that must be verified performing the required fuel building filtration function prior to the start of fuel movement involving recently irradiated fuel. The proposed SLCRS ITS LCO requires that an operable train be in operation and the bases describes that the required train be in operation with fuel building exhaust being filtered through the SLCRS filtration system. Therefore, any system failure would be readily detectable and would prevent meeting the LCO requirement (i.e., initial fuel movement could not take place until the system is in operation filtering the fuel building exhaust per the LCO). Thus, the performance of the monthly surveillance does not provide any additional assurance of system operability and is not required in the proposed ITS 3.7.12 for SLCRS. The remaining ITS surveillances verify that 1) the required SLCRS train remains in operation, 2) The filtration system is operable in accordance with the Ventilation Filter Test Program, and 3) Fuel Building integrity is maintained. As such, the remaining ITS surveillances provide adequate assurance the SLCRS is operable. This change is designated as less restrictive because Surveillances which are required in the CTS will not be required in the ITS.

More Restrictive Changes (M)

M.1 Unit 2 only. The Unit 2 CTS requirements for SLCRS do not include a requirement to verify the fuel building integrity by verifying that the required SLCRS can maintain a negative pressure in the fuel building. The proposed ITS 3.7.12 includes a surveillance requirement (SR 3.7.12.3) to verify a SLCRS train can maintain the Unit 2 fuel building at a negative pressure. The proposed new surveillance contains a note that clarifies the surveillance is only applicable for fuel movement involving recently irradiated fuel in the fuel storage pool. The Note is necessary as the Unit 1 SLCRS is also required operable for fuel movement involving recently irradiated fuel inside containment. The new surveillance is only for the fuel building integrity and would not be appropriate if the Unit 1 SLCRS was only required for fuel movement inside containment. The containment penetration refueling requirements are addresses in ITS 3.9.3 of the technical specifications. The note does not affect the Unit 2 surveillance as the Unit 2 SLCRS is only required for fuel movement in the fuel building. Thus, the Unit 2 CTS is revised by the addition of a new surveillance requirement.

The proposed change is acceptable because it adds a necessary requirement to verify the capability (operability) of the SLCRS. The additional requirement provides assurance that the Unit 2 SLCRS train can perform it's required safety function and that the Unit 2 fuel building integrity is maintained. With the exception of the value for negative pressure, the proposed surveillance is consistent with the corresponding Unit 1 requirements and the corresponding ISTS requirements. The proposed BVPS specific value for negative pressure used in the new surveillance (.05 inches water gauge) is consistent with the current Unit 2 non-technical specification requirements for the fuel building and SLCRS. Thus, the proposed change provides additional assurance that the plant is operated in a safe manner and that the fuel building exhaust will be filtered prior to release. Therefore, the proposed change does not adversely affect the safe operation of the plant. The change is designated more restrictive because an additional surveillance is required in the ITS that was not required in the CTS.

Removed Detail Changes (LA)

LA.1 *(Type 3 - Removing Procedural Details for Meeting TS Requirements)* CTS 3/4.9.12 requires the verification of the fuel building portion of the SLCRS by verifying fuel building exhaust flow discharging through at least one train of SLCRS HEPA filters and charcoal adsorbers. This requirement is verified at least once per 12 hours in accordance with CTS 4.9.12.1. ITS SR 3.7.12.1 requires at least once per 12 hours the verification that one SLCRS train is in operation. The ITS does not contain the procedural details of the fuel building exhaust flow path through the SLCRS during movement of recently irradiated fuel assemblies. This changes the CTS by moving the procedural details of the fuel building exhaust flow path to the Bases. This change is being made so the BVPS ITS is consistent as possible with NUREG-1431 format.

The removal of this detail from the TS, which is related to the operation of the SLCRS, is acceptable because this type of information is not necessary to be included in the TS in order to provide adequate protection of the public health and safety. The TS retains the requirement that the required SLCRS train shall be OPERABLE and in operation during movement of recently irradiated fuel assemblies or during movement of fuel assemblies over recently irradiated fuel assemblies. As denoted in the ITS Bases, the SR requires verification the SLCRS is in operation and the FBVS exhaust flow is discharging through at least one train of the SLCRS HEPA filters and charcoal adsorbers. As such the details for meeting the surveillance are described in the ITS Bases. Also, this change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Bases Control Program specified in the Administrative Controls section of the TS. The Bases control Program assures changes to the Bases are evaluated and prior NRC review and approval is obtained when required by 10 CFR 50.59. This change is designated as a less restrictive removal of detail change because procedural details for meeting requirements are being removed from the TS.

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 CTS 4.9.12.2.b (Unit 1) and CTS 4.9.12.2 (Unit 2) states "The fuel building portion of the SCLRS shall be demonstrated OPERABLE by testing the SLCRS per Specification 4.7.8 with the exception to item 4.7.8.1.c.2." ITS SR 3.7.12.2 states "Perform required SLCRS filter testing in accordance with the Ventilation Filter Testing Program (VFTP)." The CTS is changed by replacing the requirement referencing the SLCRS surveillance with a specific surveillance referencing the VFTP. The SLCRS filtration requirements of CTS 4.7.8.1.b, 4.7.8.1.c.1, and 4.7.8.1.d are moved to the VFTP located in the Administrative Controls Section 5.0 of the ITS for the movement of recently irradiated fuel assemblies. The CTS is revised to conform to the ISTS wording and format and is consistent with the location of these requirements in the ISTS. This DOC addresses those surveillances moved to the VFTP. Any technical changes to the requirements moved to the VFTP will be discussed and documented in Section 5.0 of the ITS (where the VFTP is specified). This change is being made so the BVPS ITS is consistent as possible with NUREG-1431.

The purpose of CTS 4.9.12.2.b (Unit 1) and CTS 4.9.12.2 (Unit 2) is to provide operability requirements of the SLCRS. The requirement merely references the surveillance requirements related to the operability of the SLCRS that is necessary for the filtration and ventilation following a fuel handling accident in the containment or the spent fuel area. The proposed change is acceptable because it does not change the surveillance requirements or the demonstration of operability of the SLCRS filtration system. The proposed change merely reformats the presentation of the required filter surveillances. Therefore, revising the wording of the testing requirement imposes no new requirement in the ITS. This change is designated as administrative because it does not result in a technical change to the TS.

A.3 Unit 1 only. The SLCRS CTS does not contain an explicit Applicability for the operation of the SLCRS whenever required during fuel movement involving recently irradiated fuel assemblies in the Unit 1 containment. In CTS 3.9.4, "Containment Building Penetrations," (ITS 3.9.3) the Unit 1 SLCRS is required operable and in operation filtering containment exhaust during fuel movement involving recently irradiated fuel assemblies in the Unit 1 containment. SLRCS operability in this case constitutes the ITS 3.9.3 required status of the Unit 1 containment purge and exhaust penetration when the containment purge and exhaust system is not isolated.

CTS 3.9.4 references the surveillances of SLCRS in CTS 4.7.8.1 that must be met when SLCRS is required per CTS 3.9.4. However, the corresponding CTS 3.7.8.1 (which contains the SLCRS requirements) does not contain any requirements in the Applicability or Actions that reflect the need for SLCRS operability in the conditions specified in CTS 3.9.4 (ITS 3.9.3). Therefore, proposed ITS 3.7.12 includes a specific Applicability stating "When required OPERABLE in accordance with LCO 3.9.3.c.3" and an Action that requires entry into the appropriate Actions of ITS 3.9.3 when the required SLCRS is not operable or in operation per ITS 3.9.3. This change is being made to consolidate the CTS SLCRS operability requirements into a single SLCRS Specification.

Unit 1 requires SLCRS operability during fuel movement involving recently irradiated fuel assemblies inside containment because Unit 1 unlike Unit 2, can not credit Containment Purge and Exhaust System isolation to mitigate the consequences of a fuel handling accident in containment. Due to the qualification of the Unit 1 purge and exhaust system (ductwork is not seismic), Unit 1 relies on filtration of the containment building effluent by SLCRS, if necessary, to mitigate the consequences of a fuel handling accident inside containment. This is further explained in the markups and DOCs associated with CTS 3.9.4.

As such, the Unit 1 requirement in CTS 3.9.4 for the containment air exhaust to be lined up to an operable SLCRS filtration train is appropriate for Unit 1 and has been retained for Unit 1 in proposed ITS 3.9.3. In addition, in order to make a more complete SLCRS Specification, requirements for an operable SLCRS train (from ITS 3.9.3) are also included in the SLCRS Specification 3.7.12. As modified, ITS 3.7.12 for SLCRS provides a complete set of requirements for SLCRS with an Applicability tie-in with ITS 3.9.3 and an Action to refer to ITS 3.9.3. ITS 3.9.3 contains the appropriate Actions for containment penetrations not in the required status.

The proposed change to the CTS SLCRS specification provides a consolidated set of requirements for the SLCRS but does not introduce a technical change to the CTS requirements. The proposed change merely ensures all the SLCRS requirements (from Section 3.9 and Section 3.7 of the technical specifications) are reflected in one Specification (proposed ITS 3.7.12). This change is designated as administrative because it does not result in a technical change to the TS.

A.4 Unit 1 only. Unit 1 CTS surveillance 4.9.12.2.a requires the integrity of the fuel pool storage area be verified by assuring a single train of SLCRS can maintain a negative pressure in the area. The CTS surveillance is revised by the addition of a Note that clarifies the surveillance is only applicable for fuel movement involving recently irradiated fuel in the fuel storage pool.

The surveillance is necessary to assure the effluent from the fuel storage building can be filtered prior to release in the event of a fuel handling accident in the spent fuel storage area. Although the Applicability of proposed ITS 3.7.12 includes fuel movement involving recently irradiated fuel inside containment (for Unit 1 only), the surveillance does not provide any safety benefit for fuel being moved inside containment. Therefore, a Note is included in ITS surveillance 3.7.12.3 that clarifies the surveillance requirement must be met only for fuel movement involving recently irradiated fuel in the spent fuel storage pool.

The proposed change is acceptable and necessary because the requirements for SLCRS operability from Section 3.9 (CTS 3.9.4) and Section 3.7 are combined into a single SLCRS Specification. Thus, the requirements for fuel movement involving recently irradiated fuel in the spent fuel storage pool and inside containment (Unit 1 only) are combined. Therefore, some clarification of the applicability of SR 3.7.12.3 (fuel storage pool area only) is necessary as this SR is not appropriate for containment. The requirements for containment penetrations during refueling operations are specified in ITS 3.9.3, "Containment Penetrations".

The need for the proposed change results from the revised format and presentation of the SLCRS requirements (in a single specification). The proposed change provides a clarification that does not result in a technical change to the CTS. Therefore, the proposed change is designated administrative.

CTS 3.9.11 STORAGE POOL WATER LEVEL
ITS 3.7.15 Fuel Storage Pool Water Level
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

None

More Restrictive Changes (M)

M.1 CTS 3.9.11 specifies the minimum spent fuel storage pool water level. If the required water level is not met the CTS 3.9.11 Action specifies that the movement of irradiated fuel assemblies and fuel assemblies over irradiated fuel assemblies be suspended. The corresponding ITS 3.7.15 Required Action is the same except that the ITS Action requires an "immediate" suspension of the specified fuel movement. The CTS Action is revised to be consistent with the ITS Action. This changes the CTS by adding the requirement that movement be suspended immediately.

The proposed change is acceptable because it provides additional assurance the required action is completed in a timely manner. Thus, the proposed change provides additional assurance the plant continues to be operated in a safe manner consistent with the assumptions of the applicable safety analyses. Although, the CTS Action would imply that action should be taken immediately, it does not specifically require it. Therefore, the addition of this specific requirement removes any interpretation of the action requirement and assures the Action is pursued without delay. The proposed change is designated more restrictive because it adds the additional and specific requirement that the Action be performed immediately.

Removed Detail Changes (LA)

None

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

CTS 3.9.14 SPENT FUEL POOL STORAGE
ITS 3.7.14 Spent Fuel Assembly Storage
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

None

More Restrictive Changes (M)

None

Removed Detail Changes (LA)

LA.1 *(Type 3 - Removing Procedural Details for Meeting TS Requirements)* CTS 4.9.14.1 (Unit 1) provides surveillance details for verifying fuel receipt records for new fuel, or by burnup analysis and comparison with the associated Table(s) for spent fuel to ensure that the spent fuel pool assemblies are within limits. ISTS SR 3.7.17.1 (ITS SR 3.7.14.1) specifies the verification by "administrative means" the initial enrichment and burnup of the fuel assembly is in accordance with the specified Table(s). ISTS SR 3.7.17.1 (ITS SR 3.7.14.1) does not contain the details of the administrative verification. This change is being made so the BVPS ITS is consistent as possible with NUREG-1431 format. This changes the CTS by moving the procedural details of the administrative verification to the Bases.

The removal of this detail from the TS, as related to the verification of fuel assembly burnup limits, is acceptable because this type of information is not necessary to be included in the TS in order to provide adequate protection of the public health and safety. The TS retains the requirement to "verify by administrative means" the initial enrichment and burnup of the fuel assembly. As denoted in the ITS Bases, verifying by administrative means may include the verification of through fuel receipt records for new fuel or by burnup analysis and comparison of the Table(s). As such, the details for meeting the surveillance requirement are described in the ITS Bases. Also, this change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Bases Control Program specified in the Administrative Controls section of the TS. The Bases Control Program assures changes to the Bases are evaluated and prior NRC review and approval is obtained when required by 10 CFR 50.59. This change is designated as a less restrictive removal of detail change because procedural details for meeting requirements are being removed from the TS.

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 Not used.

A.3 Action a of CTS 3.9.14 (Unit 1 only) requires the suspension of all actions involving "movement" of fuel in the spent fuel pool if it is determined a fuel assembly has been "placed" in the incorrect Region until such time as the correct storage location is determined. The CTS also requires "moving" the assembly to its correct location before resumption of any other fuel movement. In addition, CTS 4.9.14.1 specifies surveillance requirement verification for the "placing or moving" of fuel. ISTS 3.7.17 (ITS 3.7.14) requires the initiation of action to move the noncomplying fuel assembly to a location within the limits specified in Table 3.7.14-1A (Unit 1). The CTS is changed to clarify the Action based upon the specific wording of the LCO so not to prevent a potential misinterpretation of the TS. This change is being made so the BVPS ITS is consistent as possible with NUREG-1431.

The purpose of the CTS Action a is to ensure that the fuel pool storage configuration is in compliance with the specified table. The CTS Applicability is specified as "during storage of fuel in the spent fuel pool." The ITS Applicability denotes a similar requirement. This Applicability encompasses both the "movement and placement" of fuel assemblies. The LCO ensures that the placement of fuel, within the limits of the table, will not result in a potential criticality accident scenario.

This change is acceptable since the intent of the CTS Action requirement has not changed. The ITS Action provides the same protection from a criticality event as the CTS Action. The difference in wording between the ITS and CTS Actions does not result in a technical difference in the intent of the Actions. Therefore, revising the CTS Action requirement to be consistent with the ITS imposes no new requirements. This change is designated as administrative because it does not result in a technical change to the CTS.

A.4 Unit 1 only. Unit 1 CTS Tables 3.9.1 and 3.9.2 contain the fuel assembly minimum burnup vs. initial U235 enrichment for storage in Regions 2 and 3 respectively. The corresponding ITS Table 3.7.14 - 1A presents this information in a single Table with some enhancement and clarification. Conformance to the ITS Table results in the following changes to the CTS:

- The separate Unit 1 Tables are combined into a single Table,
- The title of the Table column specifying the value of U-235 is clarified by the addition of "Nominal" and (w/o U-235),
- A new column is added to the CTS Table to address the Region 1 storage locations in the spent fuel pool, and
- Additional burnup values are specified in the ITS Table that are not specified in the CTS Table due to combining the separate CTS Tables.

The proposed changes are acceptable because they do not introduce technical changes to the CTS Tables. Combining the separate Unit 1 Tables represents a change in the format of this information that makes the Unit 1 presentation of this information more consistent with Unit 2. The changes to the title of the U-235 enrichment column in the Tables clarify that the values listed are "nominal" and are "w/o" U-235. This additional clarification is consistent with the presentation of this information in the corresponding Unit 2 Table. The use of the term "nominal" for the specified values is appropriate due to the small tolerances normally associated with fuel enrichment values. The addition of a column for Region 1 provides a more complete set of requirements consistent with the corresponding Unit 2 Table. The additional burnup values added to the combined Unit 1 Table to fill out the Region 1 column and 1 value each in Region 2 and 3 columns are necessary to complete the new Table. The additional values are acceptable as they are consistent with the methods specified in the CTS Tables for calculating the burnup values or are zero.

The proposed changes do not introduce technical changes to the CTS requirements and serve to make the presentation of the Unit 1 and Unit 2 requirements more similar. Therefore, the proposed changes are designated administrative.

A.5 Unit 2 only. Unit 2 CTS Table 3.9-1 is titled "FUEL ASSEMBLY MINIMUM BURNUP VS. U-235 NOMINAL ENRICHMENT FOR STORAGE IN SPENT FUEL RACK REGIONS 1,2,3." The title of the corresponding ITS Table 3.7.14 -1B is "Fuel Assembly Minimum Burnup versus U-235 Initial Enrichment for Storage in Spent Fuel Rack Regions 1, 2, and 3." The CTS Table title is revised to conform to the ITS Table title. This changes the CTS Table title by revising "nominal" enrichment to "initial" enrichment.

The proposed change (nominal to initial) is acceptable as it is consistent with the CTS LCO stated requirement. The LCO states: "The combination of initial enrichment and burnup of each fuel assembly stored in the spent fuel storage pool shall comply with the limits specified in Table 3.9-1." Therefore, the appropriate title for the Table should include a reference to the " initial U-235 enrichment". In addition, the proposed change makes the Unit 2 CTS Table more consistent with the corresponding Unit 1Table. The specification of a nominal value is retained in the title of the enrichment column of the Table (i.e., "Nominal Enrichment Value"). The proposed change results in a more appropriate Table title (consistent with the

LCO requirement) without introducing a change to the type of value being specified. Therefore, the proposed change does not introduce a technical change to the CTS requirements and is designated administrative.

CTS 3.9.14 (Unit 1) SPENT FUEL STORAGE POOL
CTS 3.9.15 (Unit 2) FUEL STORAGE POOL BORON CONCENTRATION
ITS 3.7.16 Fuel Storage Pool Boron Concentration
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

L.1 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.9.14.2 (Unit 1 only) requires a verification that the fuel pool boron concentration is ≥ 1050 ppm within 8 hours prior to and at least once per 24 hours during movement of fuel assemblies in the spent fuel pool. In addition, CTS 4.9.14.2 requires this verification every 31 days whenever fuel assemblies are stored in the spent fuel storage pool. ITS 3.7.16 does not require a specific surveillance prior to movement of fuel assemblies and every 31 days, but includes a requirement for a surveillance to be performed every 7 days in accordance with the new Applicability of the ISTS (i.e., only if a fuel storage pool verification has not been performed since the last fuel movement). The CTS has been revised to delete the surveillance requirement specific to prior to the movement of fuel assemblies in the spent fuel pool and the 31 day surveillance that must be performed whenever fuel is stored in the spent fuel pool. The CTS surveillances are replaced with the ISTS surveillance which addresses fuel movement and the need to confirm storage locations after movement is complete. As such, the proposed change conforms to the corresponding ISTS requirements.

The purpose of the CTS is to ensure that boron concentration is maintained during fuel movement and whenever fuel assemblies are stored in the fuel storage pool. The CTS requirements conservatively ensure that sufficient boron concentration is maintained to prevent an inadvertent criticality. However, the CTS requirements are overly conservative and unnecessary to assure the plant is operated consistent with the assumptions of the applicable safety analysis.

The corresponding ISTS requirements provide assurance that the required boron concentration is maintained whenever fuel is stored in the spent fuel pool and when a fuel storage pool verification has not been performed since the last movement of fuel assemblies in the fuel storage pool. The ISTS requirements recognize that the Unit 1 boron concentration is only required to mitigate a criticality accident that could result from fuel movement (e.g., a misplaced assembly). Consistent with the safety analysis for criticality events in the spent fuel pool, once fuel movement is complete, and the assemblies are verified in the correct location (per ITS 3.7.14) boron is no longer necessary to prevent a criticality event. Placement in the correct positions in accordance with ITS 3.7.14 provides adequate assurance, without the reliance on boron, that the spent fuel pool k_{eff} is maintained ≤ 0.95.

The proposed change is acceptable because the 7 day surveillance verification must be performed prior to, and during movement of fuel assemblies but also includes the requirement to be performed until a verification of fuel assembly location is complete. This additional requirement assures all assemblies are stored in the correct location in accordance with ITS 3.7.14 or that the spent fuel boron concentration is verified to be within the limit. Thus, when the potential for a criticality event exists, the required boron concentration continues to be verified in a manner consistent with the assumptions of the applicable safety analysis. The 7 day Frequency is adequate to assure the boron concentration is maintained because no major replenishment of pool water is expected to take place over such a short period of time that could significantly affect the boron concentration. As such, the proposed change will continue to provide adequate assurance the potential spent fuel pool criticality events are fully addressed consistent with the safety analysis. Therefore, the plant will continue to be operated in a safe manner more consistent with the assumptions of the applicable safety analysis. This change is designated as less restrictive because Surveillances which are required in the CTS will not be required in the ITS.

More Restrictive Changes (M)

M.1 Action b of CTS 3.9.14 (Unit 1 only) does not require the initiation of action to restore fuel storage pool boron concentration to within limit whenever the limit is not met. ITS 3.7.16 requires the immediate initiation of action to restore fuel storage pool boron concentration to within limit whenever the limit is not met. This changes the CTS by adding a specific requirement to restore the boron concentration parameter.

This change is being made so the BVPS ITS is consistent as possible with NUREG-1431. The purpose of the proposed requirement is to immediately take action to preclude the occurrence of an accident or to mitigate the consequences of an accident in progress. This new requirement is appropriate for BVPS and applicable to the BVPS design. This change is designated as more restrictive because it adds new requirements to the CTS.

M.2 Unit 1 only. CTS 3.9.14 LCO requires that the specified boron concentration be maintained in the spent fuel pool when moving fuel in the spent fuel pool. The CTS 3.9.14 Applicability states during storage of fuel in the spent fuel pool. The Applicability of the corresponding ITS 3.7.16 requires the specified boron concentration be maintained in the fuel storage pool when fuel assemblies are stored in the fuel storage pool and a fuel storage pool verification has not been performed since the last movement of fuel assemblies in the fuel storage pool. ITS 3.7.16 also includes a new Action to perform a fuel storage pool verification in addition to the CTS requirement to stop moving fuel. The Unit 1 CTS is revised to conform to the ISTS requirements. This changes the CTS as follows:

- Deleting the boron concentration LCO condition of "when moving fuel in the spent fuel pool from the CTS LCO",
- Adding the Applicability Condition of " and a fuel storage pool verification has not been performed since the last movement of fuel assemblies in the fuel storage pool" to the existing CTS Applicability of "during storage of fuel in the spent fuel pool",
- Adding an Action requirement to perform a fuel storage pool verification immediately.

The purpose of the Unit 1 boron concentration requirement is to prevent a criticality event from occurring in the spent fuel pool. The prevention of criticality accidents is accomplished by two methods, the fuel pool boron concentration (ITS 3.7.16) and the fuel assembly storage location requirements of ITS 3.7.14. ITS 3.7.14 specifies the safe loading position for fuel assemblies in the spent fuel pool depending on the enrichment and burnup composition of the assembly. For Unit 1, if all assemblies are loaded in accordance with the requirements of 3.7.14 (and no further fuel movement takes place) no boron is required in the spent fuel pool to prevent a criticality event. The specified boron concentration is only required when the potential for a criticality accident exists (e.g., a misplaced fuel assembly). Therefore, after fuel movement is finished, and once the fuel assemblies have been verified to be stored in accordance with the requirements of ITS 3.7.14, the requirement to maintain the specified boron concentration is no longer necessary to preclude a reactivity excursion event.

The proposed change introduces more specific requirements for maintaining the required boron concentration. The proposed change is acceptable because it is more consistent with the Unit 1 spent fuel pool criticality safety analysis (as described above) than the CTS requirements. The CTS requirements for boron concentration are only applicable during fuel movement (as stated in the CTS LCO). Once fuel movement is stopped the CTS LCO requirement for boron concentration is no longer required. The proposed change, consistent with the ISTS, imposes the additional restriction (in both the applicability and Actions) that the fuel assemblies must be verified in the correct storage location in accordance with the requirements of ITS 3.7.14 after the last fuel movement. This additional ITS requirement ensures the required boron concentration is maintained in the spent fuel pool until all fuel assemblies are verified in the correct location after each fuel movement is complete. Thus, the proposed change provides additional assurance the plant is operated in a safe manner more consistent with the assumptions of the applicable safety analysis. The proposed change is designated more restrictive because it contains more stringent requirements than the CTS.

Removed Detail Changes (LA)

None

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS). Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

ENCLOSURE 4

DETERMINATIONS OF
NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC)
FOR
CHANGES MADE TO THE BVPS
CURRENT TECHNICAL SPECIFICATIONS (CTS)

Introduction
The determinations of NSHC contained within this Enclosure consist of two general types. This enclosure contains "Generic" NSHC developed for the categories of change identified in Enclosure 3 (Changes to the CTS) and "Specific" NSHC for those "Less Restrictive" changes that do not fit within one of the generic determinations of NSHC listed below. Each specific NSHC is identified by the associated Technical Specification and discussion of change (DOC) number from Enclosure 3.

Enclosure Contents

NO SIGNIFICANT HAZARDS DETERMINATION
FOR

ADMINISTRATIVE CHANGES

The Beaver Valley Power Station (BVPS) is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve reformatting, renumbering, and rewording of Technical Specifications with no change in intent. These changes, since they do not involve technical changes to the Technical Specifications, are administrative.

This type of change is associated with the movement of requirements within the Technical Specifications, or with the modification of wording or format that does not affect the technical content of the current Technical Specifications. In addition, these changes include all non-technical modifications of requirements to provide consistency with the ISTS in NUREG-1431. Administrative changes do not add, delete, or relocate any technical requirements of the current Technical Specifications.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change involves reformatting, renumbering, and rewording the existing Technical Specifications. The reformatting, renumbering, and rewording process involves no technical changes to the existing Technical Specifications. As such, this change is administrative in nature and does not affect initiators of analyzed events or assumed mitigation of accident or transient events. Therefore, this change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or changes in methods governing normal plant operation. The proposed change will not impose any new or eliminate any old requirements. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

   The proposed change will not reduce a margin of safety because it has no effect on any safety analyses assumptions. This change is administrative in nature. Therefore, the change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR

MORE RESTRICTIVE CHANGES

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve adding more restrictive requirements to the existing Technical Specifications by either making current requirements more stringent or by adding new requirements that currently do not exist.

These changes include such things as additional commitments that decrease allowed outage times, increase the frequency of surveillances, impose additional surveillances, increase the scope of specifications to include additional plant equipment, increase the applicability of specifications, or provide additional actions. These changes are generally made to conform to the ISTS in NUREG-1431 and are only included in the Technical Specifications when they serve to enhance the safe operation of the plant and are consistent with the applicable plant specific design basis and safety analysis assumptions.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change provides more stringent requirements for operation of the facility. These more stringent requirements do not result in operation that will increase the probability of initiating an analyzed event and do not alter assumptions relative to mitigation of an accident or transient event. The more restrictive requirements continue to ensure process variables, structures, systems, and components are maintained consistent with the safety analyses and licensing basis. Therefore, this change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or changes in methods governing normal plant operation. The proposed change does revise Technical Specification requirements. However, these changes are consistent with the assumptions in the safety analyses and licensing basis. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
MORE RESTRICTIVE CHANGES
(continued)

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

The imposition of more restrictive requirements either has no effect on or increases the margin of plant safety. Each change in this category is, by definition, providing additional restrictions to enhance plant safety. The change maintains requirements within the safety analyses and licensing basis. Therefore, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR

RELOCATED SPECIFICATIONS

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve relocating existing Technical Specification LCOs to licensee controlled documents.

FirstEnergy Nuclear Operating Company has evaluated the current Technical Specifications using the criteria set forth in 10 CFR 50.36. Specifications identified by this evaluation that did not meet the retention requirements specified in the regulation are not included in the ISTS conversion submittal. These specifications have been relocated from the current Technical Specifications to an appropriate licensee controlled document.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change relocates requirements and surveillances for structures, systems, components or variables that do not meet the criteria of 10 CFR 50.36 (c)(2)(ii) for inclusion in Technical Specifications as identified in the Application of Selection Criteria to the Beaver Valley Technical Specifications. The affected structures, systems, components or variables are not assumed to be initiators of analyzed events and are not assumed to mitigate accident or transient events. The requirements and surveillances for these affected structures, systems, components or variables will be relocated from the Technical Specifications to an appropriate administratively controlled document which will be maintained pursuant to 10 CFR 50.59. As such, the relocation of requirements will only affect the level of regulatory control applicable to changes to the requirements. Therefore, this change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or change in the methods governing normal plant operation. The proposed change will not impose or eliminate any requirements and adequate control of existing requirements will be maintained. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
RELOCATED SPECIFICATIONS
(continued)

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

The proposed change does not reduce a margin of safety. The affected requirements are not being changed and are not specific assumptions of any design basis safety analysis, as indicated by the fact that the requirements do not meet the 10 CFR 50.36 criteria for retention in the Technical Specifications. The affected requirements are relocated without change and any future changes to these requirements will be evaluated per 10 CFR 50.59. The provisions of 10 CFR 50.59 provide adequate assurance that future changes to the relocated material will not affect the safe operation of the plant. In addition, the proposed change is consistent with the application of the 10 CFR 50.36 criteria endorsed by the NRC, which provides additional assurance that the proposed change will not adversely affect the safe operation of the plant. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES -

REMOVED DETAIL

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve moving details out of the Technical Specifications and into the Technical Specifications Bases, the Updated Final Safety Analyses Report (UFSAR), the Licensing Requirements manual (LRM) or other documents under regulatory control such as the Quality Assurance Program. The removal of this information is considered to be less restrictive because the Technical Specification change process no longer controls the information. Typically, the affected information is descriptive detail and the removal of this information conforms to the NRC approved content and format of the ISTS in NUREG-1431.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change relocates certain details from the Technical Specifications to other documents under regulatory control. The Technical Specification Bases, UFSAR, and Licensing Requirement Manual will be maintained in accordance with 10 CFR 50.59. In addition to 10 CFR 50.59 provisions, the Technical Specification Bases are subject to the change control provisions in the Administrative Controls Chapter of the Technical Specifications. The UFSAR is subject to the change control provisions of 10 CFR 50.71(e). Other documents used to contain the removed information are subject to controls imposed by Technical Specifications or regulations. As such, the relocation of descriptive details will only affect the level of regulatory control applicable to changes to the information moved. Changes to the affected information will continue to be evaluated in accordance with 10 CFR 50.59. As such, no significant increase in the probability or consequences of an accident previously evaluated will result. Therefore, this change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operations. The proposed change will not impose or eliminate any requirements, and adequate control of the information will be maintained. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES - REMOVED DETAIL
(continued)

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

The proposed change will not reduce a margin of safety because it has no effect on any safety analysis assumptions. In addition, the descriptive details to be moved from the Technical Specifications to other documents are not being changed. Since any future changes to these details will be evaluated under the applicable regulatory change control mechanism, no significant reduction in a margin of safety will be allowed. A significant reduction in the margin of safety is not associated with the elimination of the 10 CFR 50.92 requirement for NRC review and approval of future changes to the relocated details. The proposed change provides consistency with the level of detail in the Westinghouse Standard Technical Specifications, NUREG-1431, issued and approved by the NRC Staff, which provides additional assurance that the proposed change has been evaluated and determined not to introduce a significant reduction in the margin of safety. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR

LESS RESTRICTIVE CHANGES
CATEGORY 1

RELAXATION OF LCO REQUIREMENTS

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve relaxation of the current Technical Specification (CTS) Limiting Conditions for Operation (LCOs) such as the elimination of specific items from the LCO or Tables referenced in the LCO, or the addition of exceptions to the LCO.

These changes reflect the ISTS approach to provide LCO requirements that specify the protective conditions that are required to meet safety analysis assumptions for required features. These conditions replace the lists of specific devices used in the CTS to describe the requirements needed to meet the safety analysis assumptions. The ISTS also includes LCO Notes that allow exceptions to the LCO for the performance of testing or other operational needs. The ISTS provides the protection required by the safety analysis and provides flexibility for meeting the conditions without adversely affecting operations since equivalent features are required to be OPERABLE. The proposed changes may also be consistent with the current licensing basis, as identified in the discussion of individual changes. These changes are generally made to conform to NUREG-1431 or more accurately reflect the current licensing basis and have been evaluated to not be detrimental to plant safety.

The proposed changes are acceptable because they have been determined to be applicable to the BVPS design and consistent with the assumptions of the BVPS safety analyses. The effect of each change relative to the safe operation of the plant was evaluated in the discussion associated with the change. In addition, the proposed changes that are consistent with the ISTS have been previously evaluated by Westinghouse Electric Corp., the Westinghouse Owners Group, NEI, and the NRC in developing the ISTS and found not to adversely affect the safe operation of Westinghouse plants. In the Final Policy Statement on Technical Specification Improvements for Nuclear Power Reactors (58 FR 39132, 7/22/93), the NRC encourages licensees to update their Technical Specifications consistent with their vendor-specific ISTS and endorses the implementation of these new Technical Specifications by stating that implementation of the ISTS is expected to produce an improvement in the safety of nuclear power plants. Furthermore, the provisions of the ISTS have been adopted by many Westinghouse plants over the last 10 years. The combined operating experience of the plants that have implemented the ISTS also serves to demonstrate that the provisions of the ISTS do not adversely affect the safe operation of Westinghouse plants.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 1
RELAXATION OF LCO REQUIREMENTS
(continued)

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

   The proposed change provides less restrictive LCO requirements for operation of the facility. The effect of the change relative to the safe operation of the plant was evaluated in the discussion associated with the change. The change has been determined not to adversely affect the safe operation of the plant. In addition, changes that are consistent with the ISTS have been previously evaluated and found not to adversely affect the safe operation of Westinghouse plants. Based on the conclusions of the plant specific evaluation associated with the change and the evaluation performed in developing the ISTS, the proposed change does not result in operating conditions that will significantly increase the probability of initiating an analyzed event. In addition, the proposed change was evaluated to assure that it does not alter the safety analysis assumptions relative to mitigation of an accident or transient event and that the resulting requirements continue to ensure the necessary process variables, structures, systems, and components are maintained operable consistent with the safety analyses. As such the proposed change also does not result in operating conditions that will significantly increase the consequences of an analyzed event. Therefore, the change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. The proposed change does impose different requirements. However, the change is consistent with the assumptions in the safety analyses and licensing basis. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

   The effect of the change relative to the safe operation of the plant was evaluated in the discussion associated with the change. The change has been determined not to adversely affect the safe operation of the plant. In addition, changes that are consistent with the ISTS have been previously evaluated and found not to adversely affect the safe operation of Westinghouse plants. Based on the conclusions of the plant specific evaluation associated with each change and the evaluation performed in developing the ISTS, the change has been determined to maintain plant operation within the assumptions of the applicable safety analyses. As such, the change does not result in operating conditions that significantly reduce any margin of safety. Therefore, the change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 2

RELAXATION OF APPLICABILITY

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve relaxation of the applicability of current Technical Specification (CTS) Limiting Conditions for Operation (LCOs) by reducing the conditions under which the LCO requirements must be met.

Technical Specification Applicability can be specific defined terms of reactor conditions or more general (e.g., all MODES or any operating MODE). Such generalized applicability conditions are not contained in ISTS, therefore the ISTS eliminates such Applicability requirements replacing them with ISTS defined MODES or specific reactor or plant conditions that are consistent with the safety analysis assumptions for operability of the required features.

Applicability requirements may also be eliminated during conditions for which the safety function of the specified safety system is met because the feature is performing its intended safety function (e.g. actuation instrumentation may no longer be required for an isolation valve already in its required safety position). Deleting applicability requirements that are indeterminate or that are inconsistent with the application of accident analyses assumptions is acceptable because when LCOs cannot be met, the Technical Specifications may be satisfied by exiting the applicability which takes the plant out of the conditions that require the safety system to be OPERABLE.

These changes provide the protection required by the safety analysis and provide flexibility for meeting limits by restricting the application of the limits to the conditions assumed in the safety analyses. The proposed changes may also be consistent with the current licensing basis, as identified in the discussion of individual changes. These changes are generally made to conform to NUREG-1431 or more accurately reflect the current licensing basis and have been evaluated to not be detrimental to plant safety.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 2
RELAXATION OF APPLICABILITY
(continued)

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

   The proposed change relaxes the conditions under which the LCO requirements for operation of the facility must be met. These less restrictive applicability requirements for the LCOs do not result in operation that will increase the probability of initiating an analyzed event and do not alter assumptions relative to mitigation of an accident or transient event in that the requirements continue to ensure that process variables, structures, systems, and components are maintained in the MODES and other specified conditions assumed in the safety analyses and licensing basis. Therefore, this change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. The proposed change does impose different requirements. However, the requirements are consistent with the assumptions in the safety analyses and licensing basis. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

   The relaxed applicability of LCO requirements does not involve a significant reduction in the margin of safety. This change has been evaluated to ensure that the LCO requirements are applied in the MODES and specified conditions assumed in the safety analyses and licensing basis. Therefore, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 3

RELAXATION OF COMPLETION TIME

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve relaxation of the Completion Times for Required Actions in the current Technical Specifications (CTS).

Upon discovery of a failure to meet a Limiting Condition for Operation (LCO), the ISTS specifies times for completing Required Actions of the associated Technical Specification Conditions. Required Actions of the associated Conditions are used to establish remedial measures that must be taken within specified Completion Times (referred to as Allowed Outage Times (AOTs) in the CTS). These times define limits during which operation in a degraded condition is permitted. Adopting Completion Times from the ISTS is acceptable because the Completion Times take into account the operability status of the redundant systems of required features, the capacity and capability of remaining features, a reasonable time for repairs or replacement of required features, and the low probability of a design basis accident occurring during the repair period. In addition, the ISTS provides consistent Completion Times for similar conditions. These changes are generally made to conform to NUREG-1431 and have been evaluated to not be detrimental to plant safety.

The effect of each change relative to the safe operation of the plant was evaluated in the discussion associated with the change. In addition, the proposed changes that are consistent with the ISTS have been previously evaluated by Westinghouse Electric Corp., the Westinghouse Owners Group, NEI, and the NRC in developing the ISTS and found not to adversely affect the safe operation of Westinghouse plants. In the Final Policy Statement on Technical Specification Improvements for Nuclear Power Reactors (58 FR 39132, 7/22/93), the NRC encourages licensees to update their Technical Specifications consistent with their vendor-specific ISTS and endorses the implementation of these new Technical Specifications by stating that implementation of the ISTS is expected to produce an improvement in the safety of nuclear power plants. Furthermore, the provisions of the ISTS have been adopted by many Westinghouse plants over the last 10 years. The combined operating experience of the plants that have implemented the ISTS also serves to demonstrate that the provisions of the ISTS do not adversely affect the safe operation of Westinghouse plants.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 3
RELAXATION OF COMPLETION TIME
(continued)

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

The proposed change provides a less restrictive Completion Time for a Required Action. The effect of the change relative to the safe operation of the plant was evaluated in the discussion associated with the change. The change has been determined not to adversely affect the safe operation of the plant. Required Actions and their associated Completion Times are not initiating conditions for any accident previously evaluated. In addition, changes that are consistent with the ISTS have been previously evaluated and found not to adversely affect the safe operation of Westinghouse plants or the initiation of any accident previously evaluated. Based on the conclusions of the plant specific evaluation associated with the change and the evaluation performed in developing the ISTS, the proposed change does not result in operating conditions that will significantly increase the probability of initiating an analyzed event. In addition, the proposed change was evaluated to assure that it does not alter the safety analysis assumptions relative to mitigation of an accident or transient event and that the resulting requirements continue to ensure the necessary process variables, structures, systems, and components are maintained operable consistent with the safety analyses or that the plant is placed in an operating Mode where the process variable, structure, system, or component is no longer required operable. The consequences of an analyzed accident during the relaxed Completion Time are the same as the consequences during the existing Completion Time (i.e., initial plant conditions are the same). As a result, the consequences of any accident previously evaluated are not significantly increased. As such, the proposed change also does not result in operating conditions that will significantly increase the consequences of an analyzed event. Therefore, the change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the method governing normal plant operation. The Required Actions and associated Completion Times in the ISTS have been evaluated to ensure that no new accident initiators are introduced. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 3
RELAXATION OF COMPLETION TIME
(continued)

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

The effect of the change relative to the safe operation of the plant was evaluated in the discussion associated with the change. The change has been determined not to adversely affect the safe operation of the plant. In addition, changes that are consistent with the ISTS have been previously evaluated and found not to adversely affect the safe operation of Westinghouse plants. Based on the conclusions of the plant specific evaluation associated with each change and the evaluation performed in developing the ISTS, the change has been determined to maintain plant operation within the assumptions of the applicable safety analyses. As such, the change does not result in operating conditions that significantly reduce any margin of safety. Therefore, the change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 4

RELAXATION OF REQUIRED ACTION

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve relaxation of the Required Actions in the current Technical Specifications (CTS).

Upon discovery of a failure to meet a Limiting Condition for Operation (LCO), the ISTS specifies Required Actions to complete for the associated Conditions. Required Actions of the associated Conditions are used to establish remedial measures that must be taken in response to the degraded conditions. These actions minimize the risk associated with continued operation while providing time to repair inoperable features. Some of the Required Actions are modified to place the plant in a MODE in which the LCO does not apply. Adopting Required Actions from the ISTS is acceptable because the Required Actions take into account the operability status of redundant systems of required features, the capacity and capability of the remaining features, and the compensatory attributes of the Required Actions as compared to the LCO requirements. These changes are generally made to conform to NUREG-1431 and have been evaluated to not be detrimental to plant safety.

The effect of each change relative to the safe operation of the plant was evaluated in the discussion associated with the change. In addition, the proposed changes that are consistent with the ISTS have been previously evaluated by Westinghouse Electric Corp., the Westinghouse Owners Group, NEI, and the NRC in developing the ISTS and found not to adversely affect the safe operation of Westinghouse plants. In the Final Policy Statement on Technical Specification Improvements for Nuclear Power Reactors (58 FR 39132, 7/22/93), the NRC encourages licensees to update their Technical Specifications consistent with their vendor-specific ISTS and endorses the implementation of these new Technical Specifications by stating that implementation of the ISTS is expected to produce an improvement in the safety of nuclear power plants. Furthermore, the provisions of the ISTS have been adopted by many Westinghouse plants over the last 10 years. The combined operating experience of the plants that have implemented the ISTS also serves to demonstrate that the provisions of the ISTS do not adversely affect the safe operation of Westinghouse plants.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 4
RELAXATION OF REQUIRED ACTION
(continued)

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

The proposed change provides less restrictive Required Actions for operation of the facility. The effect of the change relative to the safe operation of the plant was evaluated in the discussion associated with the change. The change has been determined not to adversely affect the safe operation of the plant. Required Actions are not initiating conditions for any accident previously evaluated. In addition, changes that are consistent with the ISTS have been previously evaluated and found not to adversely affect the safe operation of Westinghouse plants. Based on the conclusions of the plant specific evaluation associated with the change and the evaluation performed in developing the ISTS, the proposed change does not result in operating conditions that will significantly increase the probability of initiating an analyzed event. The proposed change was also evaluated to assure that it does not alter the safety analysis assumptions relative to mitigation of an accident or transient event and that the resulting requirements continue to ensure the necessary process variables, structures, systems, and components are maintained operable consistent with the safety analyses or that the plant is placed in an operating Mode where the process variable, structure, system, or component is no longer required operable. In addition, the proposed change provides the appropriate remedial actions to be taken in response to the degraded condition considering the operability status of the redundant systems of required features, and the capacity and capability of remaining features while minimizing the risk associated with continued operation. As such the proposed change also does not result in operating conditions that will significantly increase the consequences of an analyzed event. Therefore, the change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. The Required Actions in the ISTS have been evaluated to ensure that no new accident initiators are introduced. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 4
RELAXATION OF REQUIRED ACTION
(continued)

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

The effect of the change relative to the safe operation of the plant was evaluated in the discussion associated with the change. The change has been determined not to adversely affect the safe operation of the plant. In addition, changes that are consistent with the ISTS have been previously evaluated and found not to adversely affect the safe operation of Westinghouse plants. Based on the conclusions of the plant specific evaluation associated with each change and the evaluation performed in developing the ISTS, the change has been determined to maintain plant operation within the assumptions of the applicable safety analyses. As such, the change does not result in operating conditions that significantly reduce any margin of safety. Therefore, the change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 5

DELETION OF SURVEILLANCE REQUIREMENT

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve deletion of Surveillance Requirements in the current Technical Specifications (CTS).

The CTS require safety systems to be tested and verified Operable prior to entering applicable operating conditions. The ISTS eliminates unnecessary CTS Surveillance Requirements that do not contribute to verification that the equipment used to meet the Limiting Condition for Operation (LCO) can perform its required functions. Therefore, appropriate equipment continues to be tested in a manner and at a frequency necessary to give confidence that the equipment can perform its assumed safety function. These changes are generally made to conform to NUREG-1431 and have been evaluated to not be detrimental to plant safety.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change deletes Surveillance Requirements. Surveillances are not initiators to any accident previously evaluated. Consequently, the probability of an accident previously evaluated is not significantly increased. The equipment specified in the LCO is still required to be OPERABLE and capable of performing the accident mitigation functions assumed in the accident analysis. As a result, the consequences of any accident previously evaluated are not significantly affected. Therefore, this change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. The remaining Surveillance Requirements are consistent with industry practice and are considered to be sufficient to prevent the removal of the subject Surveillances from creating a new or different type of accident. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 5
DELETION OF SURVEILLANCE REQUIREMENT
(continued)

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

The deleted Surveillance Requirements do not result in a significant reduction in the margin of safety. The change has been evaluated to ensure that the deleted Surveillance Requirements are not necessary for verification that the equipment used to meet the LCO can perform its required functions. Therefore, appropriate equipment continues to be tested in a manner and at a frequency necessary to give confidence that the equipment can perform its assumed safety function. Therefore, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 6

RELAXATION OF SURVEILLANCE REQUIREMENT ACCEPTANCE CRITERIA

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve the relaxation of Surveillance Requirements acceptance criteria in the current Technical Specifications (CTS).

The CTS require safety systems to be tested and verified Operable prior to entering applicable operating conditions. The ISTS eliminates or relaxes the Surveillance Requirement acceptance criteria that do not contribute to verification that the equipment used to meet the Limiting Condition for Operation (LCO) can perform its required functions. For example, the ISTS allows some Surveillance Requirements to verify Operability under actual or test conditions. Adopting the ISTS allowance for "actual" conditions is acceptable because required features cannot distinguish between an "actual" signal and a "test" signal. Also included are changes to CTS requirements that are replaced in the ITS with separate and distinct testing requirements which, when combined, include Operability verification of all Technical Specification required components for the features specified in the CTS. Adopting this format preference in the ISTS is acceptable because Surveillance Requirements that remain include testing of all previous features required to be verified OPERABLE. Changes that provide exceptions to Surveillance Requirements to provide for variations that do not affect the results of the test are also included in this category. These changes are generally made to conform to NUREG-1431 and have been evaluated to not be detrimental to plant safety.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change relaxes the acceptance criteria of Surveillance Requirements. Surveillances are not initiators to any accident previously evaluated. Consequently, the probability of an accident previously evaluated is not significantly increased. The equipment being tested is still required to be OPERABLE and capable of performing the accident mitigation functions assumed in the accident analysis. As a result, the consequences of any accident previously evaluated are not significantly affected. Therefore, this change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 6
RELAXATION OF SURVEILLANCE REQUIREMENT ACCEPTANCE CRITERIA
(continued)

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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

   The relaxed acceptance criteria for Surveillance Requirements do not result in a significant reduction in the margin of safety. The relaxed Surveillance Requirement acceptance criteria have been evaluated to ensure that they are sufficient to verify that the equipment used to meet the LCO can perform its required functions. Therefore, appropriate equipment continues to be tested in a manner that gives confidence that the equipment can perform its assumed safety function. Therefore, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 7

RELAXATION OF SURVEILLANCE FREQUENCY

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve the relaxation of Surveillance Frequencies in the current Technical Specifications (CTS).

CTS and ISTS Surveillance Frequencies specify time interval requirements for performing surveillance testing. Increasing the time interval between Surveillance tests in the ISTS results in decreased equipment unavailability due to testing which also increases equipment availability. In general, the ISTS contain test frequencies that are consistent with industry practice or industry standards for achieving acceptable levels of equipment reliability. Adopting testing practices specified in the ISTS is acceptable based on similar design, like-component testing for the system application and the availability of other Technical Specification requirements which provide regular checks to ensure limits are met. Relaxation of Surveillance Frequency may also include changes such as the addition of Surveillance Notes which allow testing to be delayed until appropriate unit conditions for the test are established, or exempt testing in certain MODES or specified conditions in which the testing can not be performed.

Reduced testing can result in a safety enhancement because the unavailability due to testing is reduced and; in turn, reliability of the affected structure, system or component should remain constant or increase. Reduced testing is acceptable where operating experience, industry practice or the industry standards such as manufacturers' recommendations have shown that these components usually pass the Surveillance when performed at the specified interval, therefore the frequency is acceptable from a reliability standpoint. Surveillance Frequency changes to incorporate alternate train testing have been shown to be acceptable where other qualitative or quantitative test requirements are required which are established predictors of system performance. Surveillance Frequency extensions can be based on NRC-approved topical reports. The NRC staff has accepted topical report analyses that bound the plant-specific design and component reliability assumptions. These changes are generally made to conform to NUREG-1431 and have been evaluated to not be detrimental to plant safety.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change relaxes Surveillance Frequencies. The relaxed Surveillance Frequencies have been established based on achieving acceptable levels of equipment reliability.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 7
RELAXATION OF SURVEILLANCE FREQUENCY
(continued)

Consequently, equipment which could initiate an accident previously evaluated will continue to operate as expected and the probability of the initiation of any accident previously evaluated will not be significantly increased. The equipment being tested is still required to be OPERABLE and capable of performing any accident mitigation functions assumed in the accident analysis. As a result, the consequences of any accident previously evaluated are not significantly affected. Therefore, this change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

   The relaxed Surveillance Frequencies do not result in a significant reduction in the margin of safety. The relaxation in the Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. Thus, appropriate equipment continues to be tested at a Frequency that gives confidence that the equipment can perform its assumed safety function when required. Therefore, this change does not involve a significant reduction in a margin of safety.

BVPS CONVERSION TO IMPROVED STANDARD
TECHNICAL SPECIFICATIONS (ISTS)

SECTION 3.8 Electrical Power Systems

ENCLOSURES

1. MARKUP OF THE ISTS TO SHOW THE BVPS DIFFERENCE AND JUSTIFICATION FOR THE DEVIATION (JFD) FROM THE STANDARD

2. MARKUP OF THE ISTS BASES TO SHOW THE BVPS DIFFERENCE AND JFD FROM THE STANDARD

3. MARKUP OF THE CURRENT BVPS TECHNICAL SPECIFICATIONS (CTS) TO SHOW CHANGES AND DISCUSSION OF CHANGES (DOCs)

4. NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC) FOR CHANGES MADE TO THE CTS

ENCLOSURE 1

CHANGES TO THE ISTS

MARKUPS TO SHOW BVPS PLANT SPECIFIC DIFFERENCES
&
JUSTIFICATION FOR DEVIATION (JFD)
FROM THE STANDARD TS

Introduction

This enclosure contains the markup of the Improved Standard Technical Specifications (ISTS) to show the changes necessary to make the ISTS document specific to BVPS Units 1 and 2. Changes to the ISTS are identified with a number. The number is associated with a JFD that describes the reason for the change. The markup of the ISTS is followed by a document containing the numbered JFDs for the changes made to each of the ISTS. Not every change to the ISTS is identified and explained by a JFD. Changes that simply insert current Technical Specification (CTS) information into bracketed (optional) ISTS text are not identified with a separate JFD. Bracketed ISTS text identifies specific text that is to be replaced with the corresponding CTS information. Therefore, such changes to the ISTS are self-explanatory and represent the simple transference of CTS requirements to the ISTS. Other changes to the ISTS (i.e., less obvious changes) are described by a JFD.

As the BVPS Unit 1 & 2 Technical Specifications (TS) are being combined into a single set of TS, one markup of each ISTS is usually provided for both Units 1 and 2. In cases where significant Unit differences make separate Unit 1 and 2 TS desirable to preserve the presentation and clarity of the TS requirements, separate Unit specific TS are included. Unit differences are identified in each ISTS.

In addition, the ISTS in this enclosure are marked (where applicable) to show the changes to the standard text resulting from the Industry/NRC TS Task Force (TSTF) process. The TSTF revisions to the standard are marked-up and identified with the applicable TSTF number (i.e., TSTF-03, TSTF-19, etc.). Each TSTF change has its own justification associated with it as part of the Industry/NRC process. The TSTF justifications are not repeated in the BVPS ISTS conversion documentation.

The following Table contains the list of the ISTS and the corresponding BVPS CTS for this section along with the resulting BVPS specific ITS for the section. The Table provides a summary disposition of the ISTS and the CTS for this Section.

SECTION 3.8 ELECTRICAL POWER SYSTEMS

ISTS	BVPS ITS	CTS
3.8.1 AC Sources Operating	3.8.1 AC Sources Operating	3.8.1.1 AC Sources Operating
3.8.2 AC Sources Shutdown	3.8.2 AC Sources Shutdown	3.8.1.2 AC Sources Shutdown
3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air	3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air	3.8.1.1 AC Sources Operating
3.8.4 DC Sources Operating	3.8.4 DC Sources Operating	3.8.2.3 DC Distribution Operating
3.8.5 DC Sources Shutdown	3.8.5 DC Sources Shutdown	3.8.2.4 DC Distribution Shutdown
3.8.6 Battery Cell Parameters	3.8.6 Battery Cell Parameters	3.8.2.3 DC Distribution Operating
3.8.7 Inverters Operating	3.8.7 Inverters Operating	3.8.2.1 AC Distribution Operating
3.8.8 Inverters Shutdown	3.8.8 Inverters Shutdown	3.8.2.2 AC Distribution Shutdown
3.8.9 Distribution Systems Operating	3.8.9 Distribution Systems Operating	3.8.2.1 AC Distribution Operating
3.8.10 Distribution Systems Shutdown	3.8.10 Distribution Systems Shutdown	3.8.2.2 AC Distribution Shutdown

3

3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources - Operating

and sequencer timer(s)

18

LCO 3.8.1 The following AC electrical sources shall be OPERABLE:

a. Two qualified circuits between the offsite transmission network and the onsite Class 1E AC Electrical Power Distribution System,

b. Two diesel generators (DGs) capable of supplying the onsite Class 1E power distribution subsystem(s), and

timer(s)

each required DG

[c. Automatic load sequencers for ~~Train A and Train B~~.]

TSTF-359

-NOTE-
LCO 3.0.4.b is not applicable to DGs.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One [required] offsite circuit inoperable.	A.1	Perform SR 3.8.1.1 for [required] OPERABLE offsite circuit.	1 hour AND Once per 8 hours thereafter
	AND		
	A.2	Declare required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable.	24 hours from discovery of no offsite power to one train concurrent with inoperability of redundant required feature(s)
	AND		

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
	A.3	Restore {required} offsite circuit to OPERABLE status.	72 hours AND 6 days from discovery of failure to meet LCO
		20 → 17	
B. One {required} DG inoperable.	B.1	Perform SR 3.8.1.1 for the {required} offsite circuit(s).	1 hour AND Once per 8 hours thereafter
	AND		
	B.2	Declare required feature(s) supported by the inoperable DG inoperable when its required redundant feature(s) is inoperable.	4 hours from discovery of Condition B concurrent with inoperability of redundant required feature(s)
	AND		
	B.3.1	Determine OPERABLE DG(s) is not inoperable due to common cause failure.	{24} hours
	OR		
	B.3.2	Perform SR 3.8.1.2 for OPERABLE DG(s).	{24} hours
	AND		

ACTIONS (continued)

CTS

CONDITION	REQUIRED ACTION		COMPLETION TIME
	B.4	Restore {required} DG to OPERABLE status. 20 17	~~72 hours~~ 14 days 20 AND 6 days from discovery of failure to meet LCO
C. Two {required} offsite circuits inoperable.	C.1	Declare required feature(s) inoperable when its redundant required feature(s) is inoperable.	12 hours from discovery of Condition C concurrent with inoperability of redundant required features
	AND		
	C.2	Restore one {required} offsite circuit to OPERABLE status.	24 hours
D. One {required} offsite circuit inoperable. AND One {required} DG inoperable.		- NOTE - Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems – Operating," when Condition D is entered with no AC power source to any train.	NUREG-1431, Rev. 3
	D.1	Restore {required} offsite circuit to OPERABLE status.	12 hours
	OR		
	D.2	Restore {required} DG to OPERABLE status.	12 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Two {required} DGs inoperable.	E.1 Restore one {required} DG to OPERABLE status.	2 hours
~~REVIEWER'S NOTE~~ ~~This Condition may be deleted if the unit design is such that any sequencer failure mode will only affect the ability of the associated DG to power its respective safety loads following a loss of offsite power independent of, or coincident with, a Design Basis Event.~~ ~~F. [One {required} {automatic load sequencer} inoperable.~~	~~F.1 Restore {required} {automatic load sequencer} to OPERABLE status.~~ Insert Condition F 3	~~[12] hours]~~ 3
G. Required Action and associated Completion Time of Condition A, B, C, D, E, or [F] not met.	G.1 Be in MODE 3. AND G.2 Be in MODE 5.	6 hours 36 hours
H. Three or more {required} AC sources inoperable.	H.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.1.1	Verify correct breaker alignment and indicated power availability for each {required} offsite circuit.	7 days

7

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.2	- NOTES - 1. All DG starts may be preceded by an engine prelube period and followed by a warmup period prior to loading. [2. A modified DG start involving idling and gradual acceleration to synchronous speed may be used for this SR as recommended by the manufacturer. ~~When modified start procedures are not used, the time, voltage, and frequency tolerances of SR 3.8.1.7 must be met.~~] Verify each DG starts from standby conditions and achieves steady state voltage ~~≥ [3740] V and ≤ [4580] V~~, and frequency ~~≥ [58.8] Hz and ≤ [61.2]~~ Hz.	31 days
SR 3.8.1.3	- NOTES - 1. DG loadings may include gradual loading as recommended by the manufacturer. 2. Momentary transients outside the load range do not invalidate this test. 3. This Surveillance shall be conducted on only one DG at a time. 4. This SR shall be preceded by and immediately follow without shutdown a successful performance of SR 3.8.1.2 ~~or SR 3.8.1.7~~. Verify each DG is synchronized and loaded and operates for ≥ 60 minutes at a load ~~≥ [4500] kW and ≤ [5000] kW~~.	31 days
~~SR 3.8.1.4~~	~~Verify each day tank [and engine mounted tank] contains ≥ [220] gal of fuel oil.~~	~~31 days~~
~~SR 3.8.1.5~~	~~Check for and remove accumulated water from each day tank [and engine mounted tank].~~	[31] days

CTS Values

1

≥ 4106 V and ≤ 4368 V (Unit 1),
≥ 3994 V and ≤ 4368 V (Unit 2)

11

or based on operating experience.

17

CTS Values

1

≥ 58.8 Hz and ≤ 61.2 Hz (Unit 1)
≥ 59.9 Hz and ≤ 60.3 Hz (Unit 2)

or based on operating experience.

11

CTS Values

≥ 2340 kW and ≤ 2600 kW (Unit 1)
≥ 3814 kW and ≤ 4238 kW (Unit 2)

1

10

Insert SRs 3.8.1.4.1 and 3.8.1.4.2

Insert SRs 3.8.1.5.1 and 3.8.1.5.2

2

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.8.1.6	Verify the fuel oil ~~transfer~~ system operates to ~~[automatically]~~ transfer fuel oil from storage tank~~[s]~~ to the day tank ~~[and engine mounted tank]~~. 4	[92] days
~~SR 3.8.1.7~~	~~- NOTE - All DG starts may be preceded by an engine prelube period.~~ ~~Verify each DG starts from standby condition and achieves: a. In ≤ [10] seconds, voltage ≥ [3740] V and frequency ≥ [58.8] Hz and b. Steady state voltage ≥ [3740] V and ≤ [4580] V, and frequency ≥ [58.8] Hz and ≤ [61.2] Hz.~~	~~184 days~~ 11
SR 3.8.1.~~8~~ 7 11	5 ~~- NOTE - [This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced.~~ Verify ~~[automatic [and]~~ manual~~]~~ transfer of AC power sources from the ~~normal offsite~~ unit circuit to ~~each alternate [required]~~ system offsite circuit. 5	NUREG-1431, Rev. 3 ~~Credit may be taken for unplanned events that satisfy this SR.~~ ~~[18] months]~~

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.~~9~~ 8 (11)	- NOTES - [1. This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. 2. If performed with the DG synchronized with offsite power, it shall be performed at a power factor ≤ [0.9]. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable.] Verify each DG rejects a load greater than or equal to its associated single largest post-accident load, and: a. Following load rejection, the frequency is ≤ ~~[63] Hz~~, b. Within [3] seconds following load rejection, the voltage is ~~≥ [3740] V and ≤ [4580] V~~, and c. Within [3] seconds following load rejection, the frequency is ~~≥ [58.8] Hz and ≤ [61.2] Hz.~~	[18] months

NUREG-1431, Rev. 3

Credit may be taken for unplanned events that satisfy this SR.

1

≤ 66.2 Hz (Unit 1)
≤ 64.4 Hz (Unit 2)

CTS Values

≥ 4106 V and ≤ 4368 V (Unit 1)
≥ 3994 V and ≤ 4368 V (Unit 2)

1

1

≥ 58.8 Hz and ≤ 61.2 Hz (Unit 1)
≥ 59.9 Hz and ≤ 60.3 Hz (Unit 2).

CTS Values

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
~~SR 3.8.1.10~~	~~- NOTES - [1. This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. 2. If performed with the DG synchronized with offsite power, it shall be performed at a power factor ≤ [0.9]. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable.]~~	NUREG-1431, Rev. 3 ~~Credit may be taken for unplanned events that satisfy this SR.~~
	~~Verify each DG does not trip and voltage is maintained ≤ [5000] V during and following a load rejection of ≥ [4500] kW and ≤ [5000] kW.~~	~~[18] months~~

6

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.11	- NOTES - 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Verify on an actual or simulated loss of offsite power signal: a. De-energization of emergency buses, b. Load shedding from emergency buses, c. DG auto-starts from standby condition and: 1. Energizes permanently connected loads in ≤ [10] seconds, 2. Energizes auto-connected shutdown loads through [automatic load sequencer], 3. Maintains steady state voltage ≥ [3740] V and ≤ [4580] V, 4. Maintains steady state frequency ≥ [58.8] Hz and ≤ [61.2] Hz, and 5. Supplies permanently connected [and auto-connected] shutdown loads for ≥ 5 minutes.	[18] months

12

~~Credit may be taken for unplanned events that satisfy this SR.~~

NUREG-1431, Rev. 3

12

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.12	- NOTES - [1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not normally be performed in MODE 1 or 2. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Verify on an actual or simulated Engineered Safety Feature (ESF) actuation signal each DG auto-starts from standby condition and: a. In ≤ [10] seconds after auto-start and during tests, achieves voltage ≥ [3740] V and frequency ≥ [58.8] Hz, b. Achieves steady state voltage ≥ [3740] V and ≤ [4580] V and frequency ≥ [58.8] Hz and ≤ [61.2] Hz, c. Operates for ≥ 5 minutes, d. Permanently connected loads remain energized from the offsite power system, and e. Emergency loads are energized [or auto-connected through the automatic load sequencer] from the offsite power system.	[18] months]

13

~~Credit may be taken for unplanned events that satisfy this SR.~~

NUREG-1431, Rev. 3

13

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.~~13~~ 9 (13)	- NOTE - [This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced.]	Credit may be taken for unplanned events that satisfy this SR.
	Verify each DG's automatic trips are bypassed on [actual or simulated loss of voltage signal on the emergency bus ~~concurrent with an actual or simulated ESF actuation signal~~] except: (19) ~~a. Engine overspeed,~~ ~~b. Generator differential current,~~ [~~c. Low lube oil pressure,~~ ~~d.~~ ~~High crankcase pressure~~, and ~~e. Start failure relay.]~~	[18] months NUREG-1431, Rev. 3

Unit 1

a. Engine overspeed,

b. Generator differential current, and

c. Generator overcurrent.

1

Unit 2

a. Engine overspeed,

b. Generator differential current,

c. Backup phase fault detection, and

d. Generator overexcitation.

CTS requirements

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.~~14~~ 10 13	----------------------------- - NOTES - ----------------------------- 1. Momentary transients outside the load and power factor ranges do not invalidate this test. 2. This Surveillance shall not normally be performed in MODE 1 or 2. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. 3. If performed with DG synchronized with offsite power, it shall be performed at a power factor ≤ [0.9]. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable. -----------------------------	NUREG-1431, Rev. 3 Credit may be taken for unplanned events that satisfy this SR.
14 1	Verify each DG ~~operating at a power factor ≤ [0.9]~~ operates for ~~≥ 24 hours:~~ 1 ~~a. For ≥~~ [2] hours loaded ~~≥ [5250] kW and ≤ [5500] kW and~~ ≥ 2750 kW and ≤ 2850 kW (Unit 1) ≥ 4238 kW and ≤ 4535 kW (Unit 2). ~~b. For the remaining hours of the test loaded ≥ [4500] kW and ≤ [5000] kW.~~	NUREG-1431, Rev. 3 [18] months

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
SR 3.8.1.15 - NOTES - 1. This Surveillance shall be performed within 5 minutes of shutting down the DG after the DG has operated ≥ [2] hours loaded ≥ [4500] kW and ≤ [5000] kW. Momentary transients outside of load range do not invalidate this test. 2. All DG starts may be preceded by an engine prelube period. Verify each DG starts and achieves: a. In ≤ [10] seconds, voltage ≥ [3740] V and frequency ≥ [58.8] Hz and b. Steady state voltage ≥ [3740] V, and ≤ [4580] V and frequency ≥ [58.8] Hz and ≤ [61.2] Hz.	[18] months
SR 3.8.1.~~16~~ 11 - NOTE - This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Verify each DG: a. Synchronizes with offsite power source while loaded with emergency loads upon a simulated restoration of offsite power, b. Transfers loads to offsite power source, and ~~c. Returns to ready-to-load operation.~~	[18] months

15

15

NUREG-1431, Rev. 3

Credit may be taken for unplanned events that satisfy this SR.

7

c.1 Proceed through its shutdown sequence (Unit 1).

c.2 Returns to ready-to-load operation (Unit 2).

7

SURVEILLANCE REQUIREMENTS (continued)

8

	SURVEILLANCE	FREQUENCY
SR 3.8.1.~~17~~ 12	2. S - NOTE - ~~[~~ This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Verify, with a DG operating in test mode and connected to its bus, an actual or simulated ESF actuation signal overrides the test mode by~~:~~ ~~a.~~ Returning DG to ready-to-load operation ~~and~~ ~~b. [Automatically energizing the emergency load from offsite power].~~	1. Only applicable to Unit 2 Credit may be taken for unplanned events that satisfy this SR. ~~[~~18~~]~~ months~~]~~ NUREG-1431, Rev. 3
15 SR 3.8.1.~~18~~ 13	- NOTE - ~~[~~ This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, this Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Verify ~~interval between~~ each ~~sequenced load block~~ is within ± ~~[~~10% of ~~design interval] for each emergency [and shutdown] load sequencer.~~	NUREG-1431, Rev. 3 Credit may be taken for unplanned events that satisfy this SR. ~~[~~18~~]~~ months~~]~~

CTS wording

required value.

automatic load sequence timer

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.1.~~19~~ 14 15	- NOTES - 1. All DG starts may be preceded by an engine prelube period. 2. This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced.	NUREG-1431, Rev. 3 Credit may be taken for unplanned events that satisfy this SR.
	Verify on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ESF actuation signal: a. De-energization of emergency buses, b. Load shedding from emergency buses, and c. DG auto-starts from standby condition and: 1. Energizes permanently connected loads in ≤ [10] seconds, 2. Energizes auto-connected emergency loads through load sequencer, 3. Achieves steady state voltage ≥ ~~[3740] V and ≤ [4580] V~~, 4. Achieves steady state frequency ≥ ~~[58.8] Hz and ≤ [61.2] Hz~~, and 5. Supplies permanently connected [and auto-connected] emergency loads for ≥ 5 minutes.	[18] months

CTS Value

1

CTS Values

≥ 4106 V and ≤ 4368 V (Unit 1)
≥ 3994 V and ≤ 4368 V (Unit 2)

1

CTS Values

≥ 60.0 Hz and ≤ 60.4 Hz (Unit 1)
≥ 59.9 Hz and ≤ 60.3 Hz (Unit 2)

1. Only applicable to Unit 2.

16

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE	FREQUENCY
SR 3.8.1.20	- NOTE - All DG starts may be preceded by an engine prelube period. Verify when started simultaneously from standby condition, each DG achieves: a. In ≤ [10] seconds, ~~voltage ≥ [3740] V and frequency ≥ [58.8] Hz~~ and b. Steady state voltage ~~≥ [3744] V and ≤ [4576] V~~, and frequency ~~≥ [58.8] Hz and ≤ [61.2] Hz~~.	10 years

2.

S

15

15

1

≥ 3994 V and frequency ≥ 59.9 Hz

1

≥ 3994 V and ≤ 4368 V

1

≥ 59.9 Hz and ≤ 60.3 Hz

CTS Values

Inserts for ITS LCO 3.8.1

Insert Condition F

Condition	Required Action		Completion Time
- NOTE - Separate Condition entry is allowed for each sequence timer. F. One or more required sequence timer(s) inoperable.	F.1.1	Place the component(s) with the inoperable sequence timer(s) in a condition where it can not be automatically loaded to associated emergency bus.	Immediately
	<u>AND</u>		
	F.1.2	Enter appropriate Condition and Required Actions for any component that can not be automatically loaded to associated emergency bus.	Immediately
	<u>OR</u>		
	F.2	Declare the associated DG inoperable.	Immediately

Insert SR 3.8.1.4.1 and SR 3.8.1.4.2

SURVEILLANCE		FREQUENCY
	- Note - Only applicable to Unit 1.	
SR 3.8.1.4.1	Verify each DG's day and engine mounted tanks contain a combined total of ≥ 900 gal of fuel oil.	31 days
	- Note - Only applicable to Unit 2.	
SR 3.8.1.4.2	Verify each DG's day tank contains ≥ 350 gal of fuel oil.	31 days

Inserts for ITS LCO 3.8.1

Insert SR 3.8.1.5.1 and 3.8.5.2

SURVEILLANCE		FREQUENCY
SR 3.8.1.5.1	- Note - Only applicable to Unit 1. Check and remove accumulated water from each engine mounted tank.	31 days
SR 3.8.1.5.2	- Note - Only applicable to Unit 2 Check and remove accumulated water from each day tank.	31 days

3.8 ELECTRICAL POWER SYSTEMS

3.8.2 AC Sources - Shutdown

LCO 3.8.2 The following AC electrical power sources shall be OPERABLE:

a. One qualified circuit between the offsite transmission network and the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems - Shutdown" and

,

b. One diesel generator (DG) capable of supplying one train of the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.10.

During movement of irradiated fuel assemblies (Unit 1),
During movement of fuel assemblies over irradiated fuel assemblies (Unit 1),

APPLICABILITY: MODES 5 and 6,
~~During movement of [recently] irradiated fuel assemblies.~~

1

During movement of recently irradiated fuel assemblies (Unit 2),
During movement of fuel assemblies over recently irradiated fuel assemblies (Unit 2).

ACTIONS

- NOTE -
LCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required offsite circuit inoperable.	- NOTE - Enter applicable Conditions and Required Actions of LCO 3.8.10, with one required train de-energized as a result of Condition A.	NUREG-1431, Rev. 3
	A.1 Declare affected required feature(s) with no offsite power available inoperable.	Immediately
	OR	

1

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A.2.2 ---------- - Note - Only applicable to Unit 1 ---------- Suspend movement of irradiated fuel assemblies and movement of fuel assemblies over irradiated fuel assemblies.	A.2.1 Suspend CORE ALTERATIONS.	Immediately
AND	AND	
	~~A.2.2 Suspend movement of [recently] irradiated fuel assemblies.~~	Immediately
A.2.3 ---------- - Note - Only applicable to Unit 2 ---------- Suspend movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies.	AND $\boxed{4}$	
	A.2.3 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately
	1	
	AND $\boxed{5}$	
	A.2.4 Initiate action to restore required offsite power circuit to OPERABLE status.	Immediately
B. One [required] DG inoperable.	B.1 Suspend CORE ALTERATIONS.	Immediately
B.2 ---------- - Note - Only applicable to Unit 1 ---------- Suspend movement of irradiated fuel assemblies and movement of fuel assemblies over irradiated fuel assemblies.	AND	
	~~B.2 Suspend movement of [recently] irradiated fuel assemblies.~~	Immediately
AND	1	
B.3 ---------- - Note - Only applicable to Unit 2 ---------- Suspend movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies.	AND	
	B.3 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately
	AND $\boxed{4}$	
	1	

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
1	B.5 Initiate action to restore required DG to OPERABLE status.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.8.2.1 - NOTES - 1. The following SRs are not required to be performed: SR 3.8.1.3, ~~SR 3.8.1.9 through SR 3.8.1.11, SR 3.8.1.13 through SR 3.8.1.16, [SR 3.8.1.18], and SR 3.8.1.19.~~ 2. SR ~~3.8.1.12~~ and SR 3.8.1.19 are not ~~required~~ to be met when associated ~~ECCS subsystems(s)~~ are not required to be ~~OPERABLE~~ per ~~LCO~~ 3.5.3, "ECCS-~~Shutdown~~." For AC sources required to be OPERABLE, the SRs of *Specification 3.8.1*, "AC Sources - Operating," ~~except SR 3.8.1.8, SR 3.8.1.17, and SR 3.8.1.20,~~ are applicable	In accordance with applicable SRs

4 , SR 3.8.1.8, SR 3.8.1.9, SR 3.8.1.10, SR 3.8.1.11, SR 3.8.1.13, and SR 3.8.1.14

5 The verification of load sequencer functions in SR 3.8.1.13 and SR 3.8.1.14 is only required to be met for those loads required in the Applicable MODES of LCO 3.8.2.

5 TSTF-433

2 following

6 3. SR 3.8.1.14 is only required to be met with the use of an actual or simulated loss of offsite power signal.

3 :

SR 3.8.1.1	SR 3.8.1.4.2	SR 3.8.1.9
SR 3.8.1.2	SR 3.8.1.5.1	SR 3.8.1.10
SR 3.8.1.3	SR 3.8.1.5.2	SR 3.8.1.11
SR 3.8.1.4.1	SR 3.8.1.6	SR 3.8.1.13
	SR 3.8.1.8	SR 3.8.1.14

3.8 ELECTRICAL POWER SYSTEMS

3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air

LCO 3.8.3 The stored diesel fuel oil, lube oil, and starting air subsystem shall be within limits for each required diesel generator (DG).

APPLICABILITY: When associated DG is required to be OPERABLE.

ACTIONS

2

inventory

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

inventory

1

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	One or more DGs with fuel ~~level < [33,000] gal and > [28,285] gal~~ in storage tank.	A.1	Restore fuel oil ~~level~~ to within limits.	48 hours
B.	One or more DGs with lube oil inventory ~~< [500] gal and > [425] gal~~.	B.1	Restore lube oil inventory to within limits.	48 hours
C.	One or more DGs with stored fuel oil total particulates not within limit.	C.1	Restore fuel oil total particulates to within limits.	7 days
D.	One or more DGs with new fuel oil properties not within limits.	D.1	Restore stored fuel oil properties to within limits.	30 days
E.	One or more DGs with starting air receiver pressure ~~< [225] psig and ≥ [125] psig~~	E.1	Restore starting air receiver pressure to ~~≥ [225] psig~~.	48 hours

<17,500 gal and ≥ 15,000 gal (Unit 1),
< 53,225 gal and ≥ 45,625 gal (Unit 2)

< 330 gal and ≥ 283 gal

1

< 165 psig and ≥ 125 psig (Unit 1)
< 394 psig and ≥ 285 psig (Unit 2)

≥ 165 psig (Unit 1)
≥ 394 psig (Unit 2)

1

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. Required Action and associated Completion Time not met. OR One or more DGs with diesel fuel oil, lube oil, or starting air subsystem not within limits for reasons other than Condition A, B, C, D, or E.	F.1 Declare associated DG inoperable.	Immediately

CTS Values

≥ 17,500 gal of fuel oil (Unit 1)
≥ 53,225 gal of fuel oil (Unit 2)

1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.3.1	Verify each fuel oil storage tank contains ~~≥ [33,000] gal of fuel.~~	31 days
SR 3.8.3.2	Verify lubricating oil inventory is ~~≥ [500] gal.~~	31 days
SR 3.8.3.3	Verify fuel oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.	In accordance with the Diesel Fuel Oil Testing Program
SR 3.8.3.4	Verify ~~each~~ DG air start receiver pressure is ~~≥ [225] psig.~~	31 days
SR 3.8.3.5	Check for and remove accumulated water from each fuel oil storage tank.	~~[31]~~ days

≥ 330 gal

1

3

CTS Value

92

≥ 165 psig (Unit 1)
≥ 394 psig (Unit 2)

1

3.8 ELECTRICAL POWER SYSTEMS

3.8.4 DC Sources - Operating

LCO 3.8.4 The Train A and Train B DC electrical power subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One {or two} battery charger[s on one train} inoperable.	A.1	Restore battery terminal voltage to greater than or equal to the minimum established float voltage.	2 hours
	AND		
	A.2	Verify battery float current ≤ [2] amps.	Once per [12] hours
	AND		
	A.3	Restore battery charger[s] to OPERABLE status.	7 days
[B. One [or two] batter[y][ies on one train} inoperable.	B.1	Restore batter[y][ies] to OPERABLE status.	[2] hours]
C. One DC electrical power subsystem inoperable for reasons other than Condition A {or B}.	C.1	Restore DC electrical power subsystem to OPERABLE status.	[2] hours
D. Required Action and Associated Completion Time not met.	D.1	Be in MODE 3.	6 hours
	AND		
	D.2	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.8.4.1	Verify battery terminal voltage is greater than or equal to the minimum established float voltage.	7 days
SR 3.8.4.2 CTS values from 4.8.2.3.2.c.4	Verify each battery charger supplies ≥ [400] amps at greater than or equal to the minimum established float voltage for ≥ [8] hours. 4 100 OR Verify each battery charger can recharge the battery to the fully charged state within [24] hours while supplying the largest combined demands of the various continuous steady state loads, after a battery discharge to the bounding design basis event discharge state.	[18] months
SR 3.8.4.3	- NOTES - 1. The modified performance discharge test in SR 3.8.6.6 may be performed in lieu of SR 3.8.4.3. 2. This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced.	NUREG-1431, Rev. 3 Credit may be taken for unplanned events that satisfy this SR.
	Verify battery capacity is adequate to supply, and maintain in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test.	[18] months

3.8 ELECTRICAL POWER SYSTEMS

3.8.5 DC Sources - Shutdown

LCO 3.8.5 ~~[DC electrical power subsystem shall be OPERABLE to support the DC electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems - Shutdown."]~~

1

[One DC electrical power subsystem shall be OPERABLE.]

~~- REVIEWER'S NOTE -~~
~~This second option above applies for plants having a pre-ITS licensing basis (CTS) for electrical power requirements during shutdown conditions that required only one DC electrical power subsystem to be OPERABLE. Action A the bracketed optional wording in Condition B are also eliminated for this case. The first option above is adopted for plants that have a licensing basis (CTS) requiring the same level of DC electrical power subsystem support as is required for power operating conditions.~~

During movement of irradiated fuel assemblies (Unit 1),
During movement of fuel assemblies over irradiated fuel assemblies (Unit 1),

APPLICABILITY: MODES 5 and 6,
~~During movement of [recently] irradiated fuel assemblies.~~

2

During movement of recently irradiated fuel assemblies (Unit 2),
During [movement of fuel assemblies over recently irradiated fuel assemblies (Unit 2)]

ACTIONS

- NOTE -
LCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
1 [A. ~~One [or two] battery charger[s on one train] inoperable.~~ ~~AND~~	~~A.1 Restore battery terminal voltage to greater than or equal to the minimum established float voltage.~~ ~~AND~~	~~2 hours~~

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
~~The redundant train battery and charger[s] OPERABLE.~~	~~A.2 Verify battery float current ≤ [2] amps.~~ ~~AND~~ ~~A.3 Restore battery charger[s] to OPERABLE status.~~	~~Once per [12] hours~~ ~~7 days~~]
B. One ~~[or more]~~ required DC electrical power subsystem~~[s]~~ inoperable ~~[for reasons other than Condition A.~~ ~~OR~~ ~~Required Actions and associated Completion Time of Condition A not met~~].	~~B.1~~ Declare affected required feature(s) inoperable.	Immediately
	OR	
	B.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	~~B.2.2 Suspend movement of [recently] irradiated fuel assemblies.~~	Immediately
	AND	
	~~B.2.3~~ Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately
	AND	
	~~B.2.4~~ Initiate action to restore required DC electrical power subsystems to OPERABLE status.	Immediately

A

1

2

A.2.4

A.2.5

Immediately

for A.2.3

A.2.2 --
- Note -
Only applicable to Unit 1

Suspend movement of irradiated fuel assemblies and movement of fuel assemblies over irradiated fuel assemblies.

AND

A.2.3 --
- Note -
Only applicable to Unit 2

Suspend movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies.

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.5.1	- NOTE - The following SRs are not required to be performed: SR 3.8.4.2 and SR 3.8.4.3. For DC sources required to be OPERABLE, the following SRs are applicable: SR 3.8.4.1 SR 3.8.4.2 SR 3.8.4.3	In accordance with applicable SRs

3.8 ELECTRICAL POWER SYSTEMS

3.8.6 Battery Parameters

1

- REVIEWER'S NOTE -
Licensees must implement a program, as specified in Specification 5.5.17, to monitor battery parameters that is based on the recommendations of IEEE Standard 450-1995, "IEEE Recommended Practice For Maintenance, Testing, And Replacement Of Vented Lead-Acid Batteries For Stationary Applications."

LCO 3.8.6 Battery parameters for Train A and Train B batteries shall be within limits.

APPLICABILITY: When associated DC electrical power subsystems are required to be OPERABLE.

ACTIONS

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

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One {or two} batter~~{y}~~{ies on one train} with one or more battery cells float voltage < {2.07} V.	A.1 Perform SR 3.8.4.1.	2 hours
	<u>AND</u>	
	A.2 Perform SR 3.8.6.1.	2 hours
	<u>AND</u>	
	A.3 Restore affected cell voltage ≥ {2.07} V.	24 hours
B. One {or two} batter~~{y}~~{ies on one train} with float current > {2} amps.	B.1 Perform SR 3.8.4.1.	2 hours
	<u>AND</u>	
	B.2 Restore battery float current to ≤ {2} amps.	{12} hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
- NOTE - Required Action C.2 shall be completed if electrolyte level was below the top of plates.	- NOTE - Required Actions C.1 and C.2 are only applicable if electrolyte level was below the top of plates.		NUREG-1431, Rev. 3
C. One [or two] batter~~[y]~~[ies on one train] with one or more cells electrolyte level less than minimum established design limits.	C.1	Restore electrolyte level to above top of plates.	8 hours
	<u>AND</u>		
	C.2	Verify no evidence of leakage.	12 hours
	<u>AND</u>		
	C.3	Restore electrolyte level to greater than or equal to minimum established design limits.	31 days
D. One [or two] batter~~[y]~~[ies on one train] with pilot cell electrolyte temperature less than minimum established design limits.	D.1	Restore battery pilot cell temperature to greater than or equal to minimum established design limits.	12 hours
E. One or more batteries in redundant trains with battery parameters not within limits.	E.1	Restore battery parameters for batteries in one train to within limits.	2 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
F. Required Action and associated Completion Time of Condition A, B, C, D, or E not met. OR One {or two} batter[y][ies on one train} with one or more battery cells float voltage < {2.07} V and float current > {2} amps.	F.1	Declare associated battery inoperable.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.6.1	- NOTE - Not required to be met when battery terminal voltage is less than the minimum established float voltage of SR 3.8.4.1. Verify each battery float current is ≤ {2} amps.	7 days
SR 3.8.6.2	Verify each battery pilot cell voltage is ≥ {2.07} V.	31 days
SR 3.8.6.3	Verify each battery connected cell electrolyte level is greater than or equal to minimum established design limits.	31 days
SR 3.8.6.4	Verify each battery pilot cell temperature is greater than or equal to minimum established design limits.	31 days

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.8.6.5	Verify each battery connected cell voltage is ≥ {2.07} V.	92 days
SR 3.8.6.6	- NOTE - This Surveillance shall not be performed in MODE 1, 2, 3, or 4. ~~However, credit may be taken for unplanned events that satisfy this SR.~~ However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. NUREG-1431, Rev. 3 Verify battery capacity is ≥ {80%} of the manufacturer's rating when subjected to a performance discharge test or a modified performance discharge test.	60 months AND 18 ~~12~~ months when battery shows degradation, or has reached {85}% of the expected life ~~with capacity < 100% of manufacturer's rating~~ ~~AND~~ ~~24 months when battery has reached {85}% of the expected life with capacity ≥ 100% of manufacturer's rating~~ 2

3.8 ELECTRICAL POWER SYSTEMS

3.8.7 Inverters - Operating

LCO 3.8.7 The required Train A and Train B inverters shall be OPERABLE.

- NOTE -
~~[~~[One/~~two~~] inverter~~[s]~~ may be disconnected from [its/~~their~~] associated DC bus for ≤ 24 hours to perform an equalizing charge on [its/~~their~~] associated ~~[common]~~ battery, provided:

2

or

a. The associated AC vital bus~~(es)~~ [is/~~are~~] energized from [its/~~their~~] [Class 1E constant voltage source transformers][inverter using internal AC source], and

b. All other AC vital buses are energized from their associated OPERABLE inverters.~~]~~

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One ~~[required]~~ inverter inoperable. 3	A.1	- NOTE - Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating" with any AC vital bus de-energized. Restore inverter to OPERABLE status.	 24 hours
B. Required Action and associated Completion Time not met.	B.1 AND	Be in MODE 3.	6 hours

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	B.2 Be in MODE 5.	36 hours

1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.7.1	Verify correct inverter voltage, ~~[frequency],~~ and alignment to required AC vital buses.	7 days

3.8 ELECTRICAL POWER SYSTEMS

3.8.8 Inverters - Shutdown

LCO 3.8.8

CTS value

~~[Inverters shall be OPERABLE to support the onsite Class 1E AC vital bus electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems – Shutdown."]~~

Two

[~~One~~] inverter[s] shall be OPERABLE.]

2

- REVIEWER'S NOTE -
This second option above applies for plants having a pre-ITS licensing basis (CTS) for electrical power requirements during shutdown conditions that required only [one] inverter to be OPERABLE. The "[or more]" optional wording in Condition A is also eliminated for this case. The first option above is adopted for plants that have a licensing basis (CTS) requiring the same level of DC electrical power subsystem/inverter support as is required for power operating conditions.

During movement of irradiated fuel assemblies (Unit 1),
During movement of fuel assemblies over irradiated fuel assemblies (Unit 1),

APPLICABILITY: MODES 5 and 6,
~~During movement of [recently] irradiated fuel assemblies.~~

During movement of recently irradiated fuel assemblies (Unit 2),
During movement of fuel assemblies over recently irradiated fuel assemblies (Unit 2).

1

ACTIONS

- NOTE -
LCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One ~~[or more]~~ [required] inverter[s] inoperable.	A.1 Declare affected required feature(s) inoperable.	Immediately
	<u>OR</u>	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	

1

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A.2.2 ---------- - Note - Only applicable to Unit 1 ---------- Suspend movement of irradiated fuel assemblies and movement of fuel assemblies over irradiated fuel assemblies. AND A.2.3 ---------- - Note - Only applicable to Unit 2 ---------- Suspend movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies.	~~A.2.2 Suspend movement of [recently] irradiated fuel assemblies.~~	Immediately Immediately for A.2.3
	AND 4 A.2.3 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately
	AND 5 A.2.4 Initiate action to restore required inverters to OPERABLE status.	Immediately

1

3

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.8.1	Verify correct inverter voltage~~, [frequency,]~~ and alignments to required AC vital buses.	7 days

3.8 ELECTRICAL POWER SYSTEMS

3.8.9 Distribution Systems - Operating

LCO 3.8.9 Train A and Train B AC, DC, and AC vital bus electrical power distribution subsystems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One or more AC electrical power distribution subsystems inoperable.		- NOTE - Enter applicable Conditions and Required Actions of LCO 3.8.4, "DC Sources - Operating," for DC trains made inoperable by inoperable power distribution subsystems.	NUREG-1431, Rev. 3
	A.1	Restore AC electrical power distribution subsystem(s) to OPERABLE status.	8 hours <u>AND</u> 16 hours from discovery of failure to meet LCO
B. One or more AC vital buses inoperable.	B.1	Restore AC vital bus subsystem(s) to OPERABLE status.	2 hours <u>AND</u> 16 hours from discovery of failure to meet LCO

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
C. One or more DC electrical power distribution subsystems inoperable.	C.1	Restore DC electrical power distribution subsystem(s) to OPERABLE status.	2 hours AND 16 hours from discovery of failure to meet LCO
D. Required Action and associated Completion Time not met.	D.1 AND D.2	Be in MODE 3. Be in MODE 5.	6 hours 36 hours
E. Two or more electrical power distribution subsystems inoperable that result in a loss of safety function.	E.1	Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.9.1	Verify correct breaker alignments and voltage to [required] AC, DC, and AC vital bus electrical power distribution subsystems.	7 days

1

3.8 ELECTRICAL POWER SYSTEMS

3.8.10 Distribution Systems - Shutdown

LCO 3.8.10 The necessary portion of AC, DC, and AC vital bus electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE.

During movement of irradiated fuel assemblies (Unit 1),
During movement of fuel assemblies over irradiated fuel assemblies (Unit 1),

APPLICABILITY: MODES 5 and 6,
~~During movement of [recently] irradiated fuel assemblies.~~

1

During movement of recently irradiated fuel assemblies (Unit 2),
During movement of fuel assemblies over recently irradiated fuel assemblies (Unit 2).

ACTIONS

- NOTE -
LCO 3.0.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required AC, DC, or AC vital bus electrical power distribution subsystems inoperable.	A.1 Declare associated supported required feature(s) inoperable.	Immediately
	OR	
	A.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	~~A.2.2 Suspend movement of [recently] irradiated fuel assemblies.~~	Immediately
	AND	
	A.2.3 Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	Immediately
	AND	

1

4

1

A.2.2
- Note -
Only applicable to Unit 1

Suspend movement of irradiated fuel assemblies and movement of fuel assemblies over irradiated fuel assemblies.

AND

A.2.3
- Note -
Only applicable to Unit 2

Suspend movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies.

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
5	A.2	Initiate actions to restore required AC, DC, and AC vital bus electrical power distribution subsystems to OPERABLE status.	Immediately
1	<u>AND</u>		
6	A.2	Declare associated required residual heat removal subsystem(s) inoperable and not in operation.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.10.1	Verify correct breaker alignments and voltage to required AC, DC, and AC vital bus electrical power distribution subsystems.	7 days

3.8 ELECTRICAL POWER SYSTEMS

JUSTIFICATIONS FOR DEVIATION

ITS 3.8.1 AC Sources - Operating

JUSTIFICATION FOR DEVIATION (JFD)

1. Various ISTS 3.8.1 SRs are modified to accommodate differences between Unit 1 and Unit 2 design and CTS requirements. This change is acceptable because the ITS SRs specify unit specific requirements and values.

2. ISTS SR 3.8.1.4 states "Verify each day tank [and engine mounted tank] contains ≥ [220] gal of fuel oil." ITS SR 3.8.1.4.1 states "Verify each DG's day and engine mounted tanks contain a combined total of ≥ 900 gal of fuel oil." The SR is required to be performed every 31 days. A Note modifies the requirement that states "Only applicable to Unit 1." ITS SR 3.8.1.4.2 states "Verify each DG's day tank contains ≥ 350 gal of fuel oil." The SR is required to be performed every 31 days. A Note modifies the requirement that states "Only applicable to Unit 2." This change is acceptable because the requirements are different between the units and the construction of separate SR will prevent confusion of the unit's requirements.

3. ISTS Condition F is modified to include the applicable sequence timers. The sequence timers are individual timers. A failure of a timer can only affect the individual component and the emergency bus when powered by the DG. ITS Condition F is constructed to reflect the unit specific design of the sequence timers. A Note modifies the Condition. The Note states that separate entry conditions are allowed for each sequence timer. Required Action F.1.2 specifies that an immediate entry is required into the appropriate Conditions and Required Actions for a component made inoperable by an inoperable sequence timer. Required Actions F.1.1, and F.2 specifies that the affected component must be placed in a condition where it can not be loaded to the associated emergency bus, or the associated DG must be declared inoperable. This change is acceptable because the sequence timer(s) are individual timer(s) that affect individual components or DG for Unit 2. The Unit 1 sequence timer(s) are provided on a train bases and may affect individual components.

4. ISTS SR 3.8.1.6 states "Verify the fuel oil transfer system operates to [automatically] transfer fuel oil from storage tank[s] to the day tank [and engine mounted tank]." ITS SR 3.8.1.6 states "Verify the fuel oil transfer system operates to transfer fuel oil from storage tank to the day tank." This changes the SR by deleting the word "automatically" and the phrase "and engine mounted tank." The deletion of automatically is acceptable because the licensing basis for this surveillance requires only that the pump be capable of being started and transfering fuel oil to the day tank. This does not specify the automatic capability for the fuel oil transfer system is verified. The deletion of the phase "and engine mounted tank" is acceptable because the fuel oil transfer system only provides a makeup to the day tank.

5. ISTS SR 3.8.1.8 requires the verification of the ability to transfer of the AC power source from the normal offsite circuit to an alternate circuit. A note modifies the SR. The note requires that the SR shall not be normally be performed in MODE 1 or 2. The note allows the performance of the SR to reestablish OPERABILITY provided an assessment

determines the safety of the plant is maintained or enhanced. ITS SR 3.8.1.7 states "Verify automatic and manual transfer of AC power sources from the unit circuit to system offsite circuit." This change is acceptable because the SR reflects the plant specific nomenclature and the current requirement. The proposed ITS requirement does not place a MODE restriction on the performance of this SR. This change is acceptable because the transfer to the system circuit has been performed in MODES 1 and 2 and the SR does not cause a perturbation to any of the electrical distribution systems. The performance of this surveillance requirement in the CTS is not restricted by MODE requirements. Therefore, the Note is deleted from the ITS SR 3.8.1.7.

6. ISTS SR 3.8.1.10 requires verification every 18 months that each DG will not trip and will maintain voltage within a maximum limit on a full load rejection test. This test is not included in the ITS requirement for the DG. A full load rejection test is not required by the CTS requirements. Each DG will continue to perform the largest post-accident load rejection test every 18 months. This change is acceptable because the DG output breaker utilizes a greater current trip than from individual loads. Therefore, the individual loads will trip the associated breaker instead of tripping the DG output breaker. Tripping of the DG output breaker is the most likely way to cause a 100% load rejection. Testing of the largest post-accident load rejection is sufficient to ensure DG reliability. The ISTS SRs that follow are re-numbered to reflect this SR deletion.

7. ISTS SR 3.8.1.16 requires the DG synchronization with offsite power source while loaded with emergency loads and upon a simulated restoration of offsite power, transfers loads to offsite power source. The DG is then required to return to the ready-to-load condition. ITS SR 3.8.1.11 requires each DG be synchronized with offsite power source while loaded with emergency load and upon a simulated restoration of offsite power transfers loads to offsite power source. Upon the transfer of load to the offsite source, the Unit 2 DG is required to return to the ready-to-load condition and the Unit 1 DG is required to proceed through its shutdown sequence. This change is acceptable because Unit 1 DGs are not required by current licensing basis or designed to return to the ready-to-load condition.

8. ISTS SR 3.8.1.17 verifies, with a DG operating in test mode and connected to its bus, an actual or simulated ESF actuation signal overrides the test mode by returning DG to ready-to-load operation. ITS SR 3.8.1.12 verifies, with a DG operating in test mode and connected to its bus, an actual or simulated ESF actuation signal overrides the test mode by returning DG to ready-to-load operation for Unit 2 DGs only. This is designated with the addition of a note to the SR that states that the requirement is applicable to Unit 2 DGs only. This change is acceptable because Unit 1 DGs are not required by current licensing basis or designed to return to the ready-to-load condition.

9. ISTS LCO 3.8.1 requires AC sources shall be OPERABLE. Part c states "Automatic load sequencers for Train A and Train B." ITS LCO 3.8.1 part c requires the automatic load sequence timer(s) for each required DG to be OPERABLE. This change is acceptable because the system nomenclature for these components is a sequence timer(s). These components are associated with the DG.

10. ISTS SR 3.8.1.5 states "Check for and remove accumulated water from each day tank [and engine mounted tank]." ITS SR 3.8.1.5.1 states "Check for and remove accumulated water from each engine mounted tank." A Note modifies the SR that states

"Only applicable to Unit 1." ITS SR 3.8.1.5.2 states "Check for and remove accumulated water from each day tank." A Note modifies the SR that states "Only applicable to Unit 2." These changes to the SRs are acceptable because only the Unit 1 DGs have engine mounted tank and must be checked for water. The engine mounted tank is fed from the day tank and is the low point of the fuel oil system. For Unit 2, the day tank is the appropriate tank to verify and does not have an engine mounted tank.

11. ISTS SR 3.8.1.7 requires the fast start of each DG to rated voltage and frequency every 184 days. This requirement is not added because the units are licensed in accordance with applicable Safety Guide or Regulatory Guide and does not require the performance of this test and a fast start is performed once every 18 months. The Unit 1 DGs will not field flash on fast start unless an undervoltage signal is present. The Unit 1 DGs can not be emergency started from the control room. This change will minimize the fast starts for the DGs. The ISTS SRs that follow are re-numbered to reflect this SR deletion.

12. ISTS SR 3.8.1.11 requires the fast start of each DG to rated voltage and frequency on an actual or simulated loss of offsite power every 18 months. This requirement is not added because the units are licensed in accordance with applicable Safety Guide or Regulatory Guide and do not require the performance of this test and a fast start is performed on a loss of offsite power concurrent with an ESF signal once every 18 months. The loss of offsite power concurrent with an ESF signal performs some of the technical requirements listed in this SR. The ISTS SRs that follow are re-numbered to reflect this SR deletion.

13. ISTS SR 3.8.1.12 requires the fast start of each DG to rated voltage and frequency on an actual or simulated ESF actuation (SI) signal every 18 months. This requirement is not added because the units are licensed in accordance with applicable Safety Guide or Regulatory Guide and do not require the performance of this test and a fast start is performed on a loss of offsite power in conjunction with an ESF signal once every 18 months. This is another fast start of the DG with the machine not loading and the emergency buses continued to be powered from the offsite source. The ISTS SRs that follow are re-numbered to reflect this SR deletion.

14. ISTS SR 3.8.1.14 requires the performance of a 24-hour run for each DG every 18 months. This requires a minimum 2-hour run at 105 % to 110 % of rated load and the remaining time of 90 % to 100 % of rated load. ITS SR 3.8.1.10 requires a 1-hour run at a load of the CTS requirement of 2750 kW for Unit 1 and 4238 kW for Unit 2 to the 2000 hour load limit for each DG (Unit 1 2850 kW and Unit 2 4535 kW). The performance of the one-hour run within the specified load band ensures the capability of the DG to sustain the full emergency loading requirements without excessive loading. This is acceptable for Unit 1 because Safety Guide 9, the Unit's current licensing basis, did not require the performance of the 24-hour run. For Unit 2 this is acceptable because it is the current licensing basis described in the UFSAR. As stated in the Unit 2 UFSAR Section 1.8, "Conformance to NRC Regulatory Guides," with regard to the testing requirements of Regulatory Guide 1.108:

> "Paragraph C.2.a(3) suggests a periodic 24-hour, full-load-carrying capability test consisting of 22 hours at the continuous diesel generator rating and 2 hours at the 2-hour rating. Such a test is appropriate only for initial qualification of the diesel

generator by the vendor or during preoperational testing to demonstrate adequate design and construction. Since this test imposes more severe service than is required by plant design, periodic performance of this test would only serve to repeatedly demonstrate suitable design or sizing of the units and is beyond what is necessary to demonstrate operability or reliability. Testing on a periodic basis is unnecessary and is inconsistent with the goals of Generic Letter 84-15 by providing conditions which could increase diesel generator degradation and reduce reliability. The diesel generator may occasionally be run to demonstrate its capability to operate for prolonged periods (24 hours or longer) when it is determined that such operation is prudent."

15. ISTS SR 3.8.1.15 requires the hot fast re-start of each DG to rated voltage and frequency after operating for at least 2 hours every 18 months. This test is normally associated with the requirement to perform a 24-hour run (to establish the required "hot" conditions). This surveillance requirement is not added to the BVPS ITS because current licensing basis does not require the performance of this test. This is acceptable for Unit 1 because Safety Guide 9, the Unit's current licensing basis, did not require the performance of this surveillance. For Unit 2 this is acceptable because it is the current licensing basis described by the NRC's initial SER and the Unit 2 UFSAR which took exception to such testing requirements as explained in JFD 14 above. The ISTS SRs that follow are re-numbered to reflect this SR deletion.

16. ISTS SR 3.8.1.20 requires the verification that each DG when started simultaneously from a standby condition can achieve rated voltage and frequency within 10 seconds. ITS SR 3.8.1.15 requires the performance of the test for Unit 2 only. A Note is added to SR to specify that it is applicable to Unit 2 only. This is acceptable because the current licensing basis does not require the SR for Unit 1 and not required by Safety Guide 9, the Unit's current licensing basis.

17. ISTS SR 3.8.1.2 is modified by a Note. The Note states "A modified DG start involving idling and gradual acceleration to synchronous speed may be used for this SR as recommended by the manufacturer." ISTS SR 3.8.1.3 is modified by a Note that states "DG loadings may include gradual loading as recommended by the manufacturer DG loadings may include gradual loading as recommended by the manufacturer." ITS SRs 3.8.1.2 and 3.8.1.3 change the modifying Note to the SRs with the addition of the following statement "or based on operating experience." These changes are acceptable because the experience gained by operating the DGs is vital in determining the minimum impact of testing for the machines.

18. ISTS LCO 3.8.1 states "The following AC electrical sources shall be OPERABLE: Two qualified circuits between the offsite transmission network and the onsite Class 1E AC Electrical Power Distribution System, b. Two diesel generators (DGs) capable of supplying the onsite Class 1E power distribution subsystem(s), and c. Automatic load sequencers for Train A and Train B." ITS LCO 3.8.1 states "The following AC electrical sources and sequencer timer(s)shall be OPERABLE: Two qualified circuits between the offsite transmission network and the onsite Class 1E AC Electrical Power Distribution System, b. Two diesel generators (DGs) capable of supplying the onsite Class 1E power distribution subsystem(s), and c. Automatic load sequencer timer(s) for each required

DG." This changes the ISTS by adding sequencer timer(s) to the LCO requirements. The sequencer timers are not electrical sources similar to the offsite circuits or DGs, therefore the sequencer timers are added to the LCO requirements to accurately reflect the technical requirements.

19. The bracketed ISTS surveillance SR 3.8.1.13 requires verification that "each DG's automatic trips are bypassed on [actual or simulated loss of voltage signal on the emergency bus concurrent with an actual or simulated ESF actuation signal]...." The corresponding BVPS ITS surveillance SR 3.8.1.9 only requires verification that "each DG's automatic trips are bypassed on actual or simulated loss of voltage signal on the emergency bus...." The proposed BVPS ITS surveillance is consistent with the corresponding CTS surveillance 4.8.1.1.2.b.4. The change is acceptable because the addition of an ESF signal to the surveillance does not change the trips that are bypassed during an emergency start of the affected DG on a loss of voltage signal. A more complete set of trips are bypassed during a DG emergency start on loss of voltage. On a loss of voltage signal, the affected DG is automatically started and connected to the associated emergency bus. On an ESF signal alone, the affected DG is automatically started but is not automatically connected to the associated emergency bus. Therefore, although a subset of trips are bypassed during an emergency start on an ESF signal, all the affected trips are bypassed during an emergency start on a loss of voltage (including all the trips bypassed during an ESF signal start). As such, the inclusion of an ESF signal in the surveillance is unnecessary and does not add anything new to be verified that is not already verified during a DG emergency start on a loss of voltage signal. The proposed change maintains the previously NRC approved CTS requirements for this SR.

20. The ISTS Completion Times for an inoperable offsite circuit (Condition A) and for an inoperable DG (Condition B) are revised based on the 14 day DG Completion Time in the CTS. The CTS was revised to incorporate a 14 day DG Completion Time in License Amendment Request numbers 306 (Unit 1) and 176 (Unit 2) submitted to the NRC on 5/26/04. Based on the 14 days allowed in the CTS to restore one inoperable DG, the Completion Times that start "from discovery of failure to meet the LCO" in Conditions A and B are revised to 17 days. The Completion Times in the ISTS that limit the total time the LCO is not met are generally based on the sum of two other Completion Times in that Specification. In this case, the ISTS Completion Time for one inoperable offsite circuit is 72 hours and the Completion Time for one inoperable DG is 72 hours. Thus, the ISTS allows the LCO to be not met for up to 6 days or one complete sequential entry into Condition A and Condition B. As there are Action Conditions for Two AC Sources inoperable, some overlap between the two Action Conditions (concurrent entry) is assumed to occur such that a continuous time may exist where the LCO is not met. In order for the corresponding BVPS Action Conditions to function in the same manner as the ISTS, the Completion Time that limits the total time the LCO is not met must be 17 days. This BVPS specific implementation would allow, for example, entry into Action Condition A (an inoperable offsite circuit) for up to 72 hours and one sequential (with some overlap) entry into Action Condition B (one inoperable DG) for up to14 days. Thus, instead of 6 days for the same sequential Condition entry, the BVPS specific Actions allow for a total of 17 days that the LCO may not met.

The corresponding CTS Actions do not contain a limit on the total time the LCO may not be met. Therefore, the adoption of this ISTS Completion Time limit for not meeting the LCO imposes an additional operating restriction in the BVPS Technical Specifications.

ITS 3.8.2 AC Sources - Shutdown

JUSTIFICATION FOR DEVIATION (JFD)

1. The CTS requirements for LCO 3.8.1.2 for Unit 1 for the Applicability and Action state ". . . movement of irradiated fuel assemblies." The Unit 2 CTS requirements for LCO 3.8.1.2 in the Applicability and Action state ". . . movement of recently irradiated fuel assemblies." ISTS LCO 3.8.2 Applicability and Action requirements specify ". . movement of [recently] irradiated fuel assemblies. ITS LCO 3.8.2 Applicability states "During movement of irradiated fuel assemblies and During movement of fuel assemblies over irradiated fuel assemblies for Unit 1, and During movement of recently irradiated fuel assemblies and During movement of fuel assemblies over recently irradiated fuel assemblies for Unit 2." ITS 3.8.2 Required Actions A.2.2 and B.2 state "Suspend movement of irradiated fuel assemblies and movement of fuel assemblies over irradiated fuel assemblies," immediately. A Note modifies these Required Actions. The Note states "Only applicable to Unit 1." ITS 3.8.2 Required Actions A.2.3 and B.3 state "Suspend movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies," immediately. A Note modifies these Required Actions. The Note states "Only applicable to Unit 2." These changes are acceptable because an evaluation has been completed for Unit 2 that allows the term "recently" to be used to describe irradiated fuel assemblies. Recently is defined as 100 hours or less since the irradiated fuel assemblies have been in a critical reactor core. For Unit 1, the term "recently" can not be used and the requirements apply to all irradiated fuel assemblies. Required Actions that follow are re-numbered.

2. ISTS SR 3.8.2.1 specifies the surveillance requirements for the AC Sources – Shutdown. The requirement states the surveillances that are not applicable and is modified by Notes that provide additional exceptions by stating which SRs are not required to be performed and met. By only specifying exceptions, the presentation of the surveillance requirements in the ISTS is unclear and inconsistent with the CTS. The proposed change (ITS SR 3.8.2.1) modifies ISTS SR 3.8.2.1 to list the surveillance requirements of LCO 3.8.1 that are applicable instead of listing the exceptions. This change maintains the logic of the corresponding CTS surveillance requirement. The presentation of the ISTS exception Notes applicable to SR 3.8.2.1 are retained. Therefore, the proposed list of applicable SRs in the surveillance and the presentation of exceptions in the Notes provide a more clear set of requirements applicable to the AC Sources when in shutdown Modes. This change is acceptable because it is a minor change in format that provides a more logical presentation of the LCO 3.8.1 SRs that are applicable with the applicable exceptions stated in the SR notes.

3. ISTS SR 3.8.2.1 specifies the surveillance requirements for the AC Sources – Shutdown. The applicable SRs are listed for the OPERABILITY of the DG and offsite circuit. The ISTS surveillance requires all SRs except SR 3.8.1.8, SR 3.8.1.17, and SR 3.8.1.20. Therefore, considering the specified exceptions, the ISTS requires SRs 3.8.1.1, 3.8.1.2, 3.8.1.3, 3.8.1.4, 3.8.1.5, 3.8.1.6, 3.8.1.7, 3.8.1.9, 3.8.1.10, 3.8.1.11, 3.8.1.12, 3.8.1.13, 3.8.1.14, 3.8.1.15, 3.8.1.16, 3.8.1.18 and 3.8.1.19 to confirm AC Source operability in shutdown Modes.

As explained in JFD 2 above, ISTS SR 3.8.2.1 is modified to list the applicable surveillances instead of the exceptions. Due to changes made in the SR requirements of ISTS 3.8.1, the BVPS specific ITS surveillance numbers differ from the applicable ISTS SR numbers listed above for SR 3.8.2.1. A cross-reference Table follows the JFDs for Specification 3.8.2. This Table summarizes the differences between the ISTS 3.8.1 SRs and the proposed BVPS ITS SRs.

The following BVPS specific ITS SRs are listed as applicable in SR 3.8.2.1: 3.8.1.1, 3.8.1.2, 3.8.1.3, 3.8.1.4.1, 3.8.1.4.2, 3.8.1.5.1, 3.8.1.5.2, 3.8.1.6, 3.8.1.8, 3.8.1.9, 3.8.1.10, 3.8.1.11, 3.8.1.13, and 3.8.1.14. SR Number differences are summarized in the cross-reference Table that follows these 3.8.2 JFDs.

The significant difference between the SRs required in the ISTS and the SRs specified in the BVPS specific SR 3.8.2.1 is due to changes made to the SRs in ISTS 3.8.1. Certain Specification 3.8.1 SRs referenced in the ISTS SR 3.8.2.1 have not been adopted in the BVPS specific ITS 3.8.1. Therefore, these surveillances are not referenced in the BVPS specific ITS SR 3.8.2.1. The deleted SRs are ISTS SR 3.8.1.7, SR 3.8.1.10, SR 3.8.1.11, SR 3.8.1.12, and SR 3.8.1.15. The elimination of these five ISTS SRs from the BVPS ITS is justified in the JFDs associated with ISTS 3.8.1. The justification for deleting these SRs from ISTS 3.8.1 is applicable to their elimination from ISTS SR 3.8.2.1 as well and is not repeated here. The disposition of ISTS 3.8.1 SRs and renumbering resulting from the elimination of the five ISTS SRs is identified in the surveillance cross-reference Table that follows these JFDs.

4. ISTS SR 3.8.2.1 specifies the surveillance requirements for the AC Sources – Shutdown. The requirement is modified by Note 1 that states some of the SRs are not required to be performed. ISTS SRs not required to be performed are ISTS 3.8.1.3, 3.8.1.9, 3.8.1.10, 3.8.1.11, 3.8.1.13, 3.8.1.14, 3.8.1.15, 3.8.1.16, [3.8.1.18], and 3.8.1.19. The basis for the exception provided by Note 1 is that the affected surveillances if performed on the required DG could de-energize the emergency bus or otherwise render the required DG inoperable. As only one DG is required operable during shutdown conditions certain SRs must be met for the required DG, but should not be performed at the time the DG is required operable. These surveillances should be performed at another time when the affected DG is not the single DG being relied on to ensure the availability of backup emergency power during shutdown conditions.

   The corresponding BVPS specific ITS SRs listed as not required to be performed are 3.8.1.3, 3.8.1.8, 3.8.1.9, 3.8.1.10, 3.8.1.11, 3.8.1.13, and 3.8.1.14. Due to changes made in the SR requirements of ISTS 3.8.1, the BVPS specific ITS surveillance numbers differ from the ISTS SR numbers referenced in Note 1. A surveillance cross-reference Table follows the JFDs for Specification 3.8.2. This Table summarizes the differences between the ISTS 3.8.1 SRs and the proposed BVPS ITS SRs.

   The proposed list of BVPS specific SRs in Note 1 agree with the ISTS SRs listed except for the numbering differences described above and the deleted ISTS 3.8.1 SRs described in JFD # 3 above. All BVPS ITS 3.8.1 SRs that have the potential to de-energize the emergency bus or otherwise render the affected DG inoperable are included in the note. Refer to the surveillance cross-reference Table that follows for a detailed comparison of ISTS and ITS SRs.

5. ISTS SR 3.8.2.1 Note 2 states that SR 3.8.1.12 and SR 3.8.1.19 are not required to be met when associated ECCS subsystems(s) are not required to be OPERABLE per LCO 3.5.3, "ECCS-Shutdown." This ISTS Note is replaced with a BVPS specific Note 2. ITS LCO 3.5.3, referred to in ISTS Note 2, is not applicable in Modes 5 and 6 when ITS 3.8.2 is applicable. The inclusion of this note in the Westinghouse ISTS was an error that has been identified in TSTF-433. TSTF-433 deletes this Note from the Westinghouse ISTS based on the fact that Westinghouse plants do not have ECCS requirements in Modes 5 and 6 where ISTS 3.8.2 is applicable. As this SR is extensively modified to incorporate BVPS specific changes, and in order to simplify the presentation, all the miscellaneous changes introduced by TSTF-433 to this SR are not shown on the ISTS markup. This method of presentation avoids the potential confusion introduced by marking up the TSTF markups to show the BVPS specific changes.

   In addition, ISTS SR 3.8.1.12 was not included in BVPS ITS 3.8.1. The justification for not including this ISTS SR in the BVPS specific ITS is discussed in the JFDs associated with ITS 3.8.1. Also, the requirement to meet ISTS SR 3.8.1.19 (ITS SR 3.8.1.14) is included in the BVPS ITS SR 3.8.2.1 (except as noted in BVPS ITS SR 3.8.2.1 Note 3). Therefore, the exceptions provided by the ISTS Note are not applicable to BVPS and the ISTS Note is deleted. The proposed BVPS specific Note states: "The verification of load sequencer functions in SR 3.1.8.13 and SR 3.8.1.14 is only required to be met for those loads required in the Applicable MODES of LCO 3.8.2."

   The proposed BVPS specific Note, that replaces ISTS Note 2, addresses the surveillances used to verify the capability of the DG automatic load sequence function (SR 3.1.8.13 and SR 3.8.1.14). The BVPS specific Note 2 clarifies that the load sequencer function surveillance requirements only include the verification of loads applicable (necessary for operability) in the shutdown Modes of operation addressed by ITS 3.8.2. The Bases for the proposed Note explains that the required loads referred to in the Note consist of the equipment required operable by the Technical Specifications and the equipment required to support the operability of the Technical Specification required equipment. The proposed note is consistent with the intent of ISTS Note 2 that it replaces. Both notes clarify the fact that the equipment associated with many ESF functions are not required operable in shutdown Modes. During shutdown Modes only a small subset of the equipment capable of being automatically sequenced on the emergency bus is required operable. As such, the proposed change more clearly defines the scope of the load sequence capability verification required for the shutdown Modes addressed by ITS 3.8.2. The proposed change confines the load sequence functions that must be verified to those associated with the equipment necessary to maintain the plant in a safe condition during the specific Modes of operation addressed by ITS 3.8.2. The proposed change is necessary to avoid failing an SR (and declaring the associated DG inoperable) due to the inability to automatically sequence a load within the specified timing that is not required during shutdown conditions and does not contribute to the safe operation of the plant in shutdown Modes.

6 ISTS SR 3.8.2.1 is revised by the addition of a third BVPS specific Note. The proposed Note 3 to ITS SR 3.8.2.1 states, "SR 3.8.1.14 is only required to be met with the use of an actual or simulated loss of offsite power signal". SR 3.8.1.14 verifies the response of the emergency bus and DG to an ESF signal in conjunction with a loss of offsite power. The proposed note clarifies that in the shutdown Modes addressed by SR 3.8.2.1 there are no required ESF actuation signals. The ESF actuation instrumentation (specified in ITS 3.3.2) is only required operable in Modes 1-4 and ITS 3.8.2, "AC Sources

Shutdown" is only applicable in Modes 5 and 6 and during the specified fuel movement. Therefore, no ESF actuation (i.e., SI) for the emergency DG is required. The only applicable actuation signal specified in SR 3.8.1.14 is the loss of voltage (offsite power) actuation signal. As such, the proposed change continues to assure that the required system response to a loss of voltage is verified. The change only serves to clarify that the verification of the system response to an ESF signal is not necessary to confirm system operability during the shutdown conditions addressed by ITS 3.8.2.

ISTS/ITS SR Comparison Table

ISTS SR #	Required by ISTS 3.8.2.1	Excluded by ISTS 3.8.2.1 Note (1) or (2)	BVPS ITS #	Required by ITS 3.8.2.1	Excluded by ITS Notes (1), (2) or (3)	Notes
3.8.1.1 3.8.1.2 3.8.1.3	Yes Yes Yes	No No Yes (1)	3.8.1.1 3.8.1.2 3.8.1.3	Yes Yes Yes	No No Yes (1)	1
3.8.1.4	Yes Yes	No No	3.8.1.4.1 3.8.1.4.2	Yes Yes	No No	2
3.8.1.5	Yes Yes	No No	3.8.1.5.1 3.8.1.5.2	Yes Yes	No No	2
3.8.1.6	Yes	No	3.8.1.6	Yes	No	1
3.8.1.7	Yes	No	N/A	N/A	N/A	3
3.8.1.8	No	N/A	3.8.1.7	No	N/A	1
3.8.1.9	Yes	Yes (1)	3.8.1.8	Yes	Yes (1)	1
3.8.1.10	Yes	Yes (1)	NA	NA	NA	3
3.8.1.11	Yes	Yes (1)	NA	NA	NA	3
3.8.1.12	Yes	Yes (2)	NA	NA	NA	3
3.8.1.13	Yes	Yes (1)	3.8.1.9	Yes	Yes (1)	1
3.8.1.14	Yes	Yes (1)	3.8.1.10	Yes	Yes (1)	1
3.8.1.15	Yes	Yes (1)	N/A	NA	NA	3
3.8.1.16	Yes	Yes (1)	3.8.1.11	Yes	Yes (1)	1
3.8.1.17	No	NA	3.8.1.12	No	NA	1
3.8.1.18	Yes	Yes (1)	3.8.1.13	Yes	Yes (1) (2)	4
3.8.1.19	Yes	Yes (1)	3.8.1.14	Yes	Yes (1) (2) (3)	5
3.8.1.20	No	NA	3.8.1.15	No	NA	1

(continued)

ISTS/ITS SR Comparison Table Notes:

1. The BVPS specific ITS SR is the same as the ISTS SR.
2. The single ISTS SR is made into two BVPS unit specific SRs.
3. ISTS SR deleted in BVPS specific ITS LCO 3.8.1 (i.e., no corresponding ITS SR).
4. SR contains requirements for the verification of automatic load sequencing capability and by BVPS Note 2 is only required to be met for loads (equipment) required in the Applicable MODES of LCO 3.8.2. See JFD # 5.
5. A portion of this SR verifies automatic load sequencing capability and by BVPS Note 2 is only required to be met for loads (equipment) required in the Applicable MODES of LCO 3.8.2. See JFD # 5. In addition, in accordance with BVPS ITS Note 3, the use of a simulated or actual ESF signal is not required to meet this SR. See JFD # 6.

ITS 3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air

JUSTIFICATION FOR DEVIATION (JFD)

1. Various ISTS 3.8.3 Conditions and SRs are modified to accommodate differences between Unit 1 and Unit 2 design and CTS requirements. Equality signs are added to the lower limits for Conditions A and B. This change is acceptable because the ITS Conditions and SRs specify unit specific requirements and values. The lower limits for Condition A and B set to ≥ instead > the specified value and is acceptable because the exact six-day value is specified for each Condition.

2. ISTS LCO 3.8.3 Condition A states "One or more DGs with fuel level < [33,000] gal and > [28,285] gal in storage tank." ITS 3.8.3 Condition A requires one or more DGs with fuel inventory with specific limits in gallons per storage tank. This changes the word level to inventory. A volume of fuel oil is quantity of the fluid and inventory is a more appropriate wording.

3. ISTS SR 3.8.3.4 is revised by the deletion of the word "each" from the requirement to verify DG air start receiver pressure. Although BVPS has two air start systems for each DG, only one air bank (air receiver) per DG is necessary to supply the required air volume at the specified pressure for 5 DG starts. Unit 1 requires two air storage tanks per air start bank. Unit 2 requires only the single air storage tank per air start bank. The word "each" in the ISTS surveillance implies that more than one air bank (air receiver) per DG must be verified to ensure the required air start capacity is available. Therefore, consistent with the BVPS design, the word "each" is deleted. The details of the required air banks is described in the SR Bases.

ITS 3.8.4 DC Sources - Operating

JUSTIFICATION FOR DEVIATION (JFD)

None

ITS 3.8.5 DC Sources - Shutdown

JUSTIFICATION FOR DEVIATION (JFD)

1. Editorial change made with the removal of the Reviewer's Note to be consistent with the ISTS writers' guide. The reviewer's note provides an option for the construction of the LCO depending on the unit's licensing basis. The first option is deleted and the second option is incorporated into the ITS requirement for the LCO. This affects the choice of subsequent Actions as well as the LCO.

2. The CTS requirements for LCO 3.8.2.4 for Unit 1 for the Applicability and Action state " . . . movement of irradiated fuel assemblies." The Unit 2 CTS requirements for LCO 3.8.2.4 in the Applicability and Action state " . . . movement of recently irradiated fuel assemblies." ISTS LCO 3.8.5 Applicability and Action requirements specify " . . movement of [recently] irradiated fuel assemblies. ITS LCO 3.8.5 Applicability states "During movement of irradiated fuel assemblies and During movement of fuel assemblies over irradiated fuel assemblies for Unit 1, During movement of recently irradiated fuel assemblies and During movement of fuel assemblies over recently irradiated fuel assemblies for Unit 2." ITS 3.8.5 Required Actions A.2.2 states "Suspend movement of irradiated fuel assemblies and movement of fuel assemblies over irradiated fuel assemblies," immediately. A Note modifies the Required Action. The Note states "Only applicable to Unit 1." ITS 3.8.5 Required Actions A.2.3 states "Suspend movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies," immediately. A Note modifies the Required Action. The Note states "Only applicable to Unit 2." These changes are acceptable because an evaluation has been completed for Unit 2 that allows the term "recently" to be used to describe irradiated fuel assemblies. Recently is defined as 100 hours or less since the irradiated fuel assemblies have been in a critical reactor core. For Unit 1, the term "recently" can not be used and the requirements apply to all irradiated fuel assemblies. Required Actions that follow are re-numbered.

ITS 3.8.6 Battery Parameters

JUSTIFICATION FOR DEVIATION (JFD)

1. Editorial change made with the removal of the Reviewer's Note to be consistent with the ISTS writers' guide. A program will be added to ITS Chapter 5 requirement for the batteries.

2. ISTS SR 3.8.6.6 second Frequency requires the SR to be performed every 12 months when battery shows degradation, or has reached [85]% of the expected life with capacity < 100% of manufacturer's rating and every 24 months when battery has reached [85]% of the expected life with capacity ≥ 100% of manufacturer's rating. ITS SR 3.8.6.6 requires the SR to be performed every 18 months when battery shows degradation, or has reached 85% of the expected life. This is acceptable because the CTS requires the performance of the SR every 18 months with battery degradation or expected life is < 85 %. These tests must be performed regardless of capacity specified by manufacturer's rating. The 18-month frequency is consistent with refueling outage schedule and operating experience has shown that the batteries successfully complete the Surveillance Requirement.

ITS 3.8.7 Inverters - Operating

JUSTIFICATION FOR DEVIATION (JFD)

1. ISTS SR 3.8.7.1 specifies the requirement that a verification of the correct inverter voltage, [frequency,] and alignments to required AC vital buses. ITS SR 3.8.7.1 states "Verify correct inverter voltage and alignments to required AC vital buses." This change deletes the requirement to verify inverter frequency. This change is acceptable because the CTS does not require frequency of the inverter be specified. Inverter monitoring instruments for frequency do not allow precise readings to be monitored. Therefore, the frequency requirement is deleted.

2. A Note modifies ISTS LCO 3.8.7. The Note provides [One/two] inverter[s] may be disconnected from [its/their] associated DC bus for ≤ 24 hours to perform an equalizing charge on [its/their] associated [common] battery, provided the associated AC vital bus(es) [is/are] energized from [its/their] [Class 1E constant voltage source transformers] [inverter using internal AC source], and all other AC vital buses are energized from their associated OPERABLE inverters.] A Note modifies ITS LCO 3.8.7. The Note states "One inverter may be disconnected from its associated DC bus for ≤ 24 hours to perform an equalizing charge on its associated battery, provided the associated AC vital bus is energized from its Class 1E constant voltage source transformers or inverter using internal AC source, and all other AC vital buses are energized from their associated OPERABLE inverters." This change is acceptable because the appropriate values and wording has been selected to represent the plant's design and licensing basis.

3. ISTS LCO 3.8.7 Condition A states "One [required] inverter inoperable." ITS LCO 3.8.7 Condition A states "One inverter inoperable." This changes the Condition by deleting the word "[required]." This change is acceptable because the word is not necessary to accurately reflect the requirement. All four inverters are required to be OPERABLE and only one is allowed to be inoperable within this LCO requirement. If more than one inverter is inoperable, LCO 3.0.3 must be entered.

ITS 3.8.8 Inverters - Shutdown

JUSTIFICATION FOR DEVIATION (JFD)

1. The CTS requirements for LCO 3.8.2.2 for Unit 1 for the Applicability and Action state "... movement of irradiated fuel assemblies." The Unit 2 CTS requirements for LCO 3.8.2.2 in the Applicability and Action state "... movement of recently irradiated fuel assemblies." ISTS LCO 3.8.8 Applicability and Action requirements specify ". . movement of [recently] irradiated fuel assemblies. ITS LCO 3.8.8 Applicability states "During movement of irradiated fuel assemblies and During movement of fuel assemblies over irradiated fuel assemblies for Unit 1, and During movement of recently irradiated fuel assemblies and During movement of fuel assemblies over recently irradiated fuel assemblies for Unit 2." ITS 3.8.8 Required Action A.2.2 states "Suspend movement of irradiated fuel assemblies and movement of fuel assemblies over irradiated fuel assemblies for Unit 1." Required Action A.2.3 states "Suspend movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies for Unit 2." These changes are acceptable because an evaluation has been completed for Unit 2 that allows the term "recently" to be used to describe irradiated fuel assemblies. Recently is defined as 100 hours or less since the irradiated fuel assemblies have been in a critical reactor core. For Unit 1, the term "recently" can not be used and the requirements apply to all irradiated fuel assemblies. Required Actions that follow are re-numbered.
2. Editorial change made with the removal of the Reviewer's Note to be consistent with the ISTS writers' guide. The reviewer's note provides an option for the construction of the LCO depending on the unit's licensing basis. The first option is deleted and the second option is incorporated into the ITS requirement for the LCO.
3. ISTS SR 3.8.8.1 specifies the requirement that a verification of the correct inverter voltage, [frequency,] and alignments to required AC vital buses. ITS SR 3.8.8.1 states "Verify correct inverter voltage and alignments to required AC vital buses." This change deletes the requirement to verify inverter frequency. This change is acceptable because the CTS does not require frequency of the inverter be specified. Inverter monitoring instruments for frequency do not allow precise readings to be monitored. Therefore, the frequency requirement is deleted.

ITS 3.8.9 Distribution Systems - Operating

JUSTIFICATION FOR DEVIATION (JFD)

1. ISTS SR 3.8.9.1 states "Verify correct breaker alignments and voltage to [required] AC, DC, and AC vital bus electrical power distribution subsystems." ITS SR 3.8.9.1 states "Verify correct breaker alignments and voltage to required AC, DC, and AC vital bus electrical power distribution subsystems." This changes the ISTS by including the word "required" for the AC, DC, and AC vital bus electrical power distributions subsystems. This is acceptable because "required' most accurately describes the specified distribution subsystems.

ITS 3.8.10 Distribution Systems - Shutdown

JUSTIFICATION FOR DEVIATION (JFD)

1. The CTS requirements for LCO 3.8.2.2 for Unit 1 for the Applicability and Action state ". . . movement of irradiated fuel assemblies." The Unit 2 CTS requirements for LCO 3.8.2.2 in the Applicability and Action state ". . . movement of recently irradiated fuel assemblies." ISTS LCO 3.8.10 Applicability and Action requirements specify ". . movement of [recently] irradiated fuel assemblies. ITS LCO 3.8.10 Applicability states "During movement of irradiated fuel assemblies and During movement of fuel assemblies over irradiated fuel assemblies for Unit 1, and During movement of recently irradiated fuel assemblies and During movement of fuel assemblies over recently irradiated fuel assemblies for Unit 2." ITS 3.8.10 Required Action A.2.2 states "Suspend movement of irradiated fuel assemblies and movement of fuel assemblies over irradiated fuel assemblies for Unit 1." Required Action A.2.3 states "Suspend movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies for Unit 2." These changes are acceptable because an evaluation has been completed for Unit 2 that allows the term "recently" to be used to describe irradiated fuel assemblies. Recently is defined as 100 hours or less since the irradiated fuel assemblies have been in a critical reactor core. For Unit 1, the term "recently" can not be used and the requirements apply to all irradiated fuel assemblies. Required Actions that follow are re-numbered.

ENCLOSURE 2

CHANGES TO THE ISTS BASES

MARKUP TO SHOW BVPS PLANT SPECIFIC DIFFERENCES
&
JUSTIFICATION FOR DEVIATION (JFD)
FROM THE STANDARD BASES

Introduction

This enclosure contains the markup of the Improved Standard Technical Specifications (ISTS) Bases to show the changes necessary to make the ISTS Bases document specific to BVPS Units 1 and 2. Changes to the ISTS Bases are identified with a number. The number is associated with a JFD that describes the reason for the change. The markups of the ISTS Bases are followed by a document containing the numbered JFDs for the changes made to the ISTS Bases. Not every change to the ISTS Bases is identified and explained by a JFD. Changes that simply insert current Technical Specification (CTS) information into bracketed (optional) ISTS text are not typically identified with a separate JFD. Bracketed ISTS text identifies specific text that is to be replaced with the corresponding CTS information. Therefore, such changes to the ISTS Bases are self-explanatory and represent the simple transference of CTS requirements to the ISTS. Other changes to the ISTS (i.e., less obvious changes) are described by a JFD.

As the BVPS Unit 1 & 2 Technical Specifications (TS) are being combined into a single set of TS, one markup of each ISTS Bases is provided for both Unit 1 and 2. Unit differences are identified in each ISTS Bases.

In addition, the Bases in this enclosure are marked (where applicable) to show the changes to the standard text resulting from the Industry/NRC TS Task Force (TSTF) process. The TSTF revisions to the standard are marked-up and identified with the applicable TSTF number (i.e., TSTF-03, TSTF-19, etc.). Each TSTF change has its own justification associated with it as part of the Industry/NRC process. The TSTF justifications are not repeated in the BVPS ISTS conversion documentation.

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.1 AC Sources - Operating

6 As discussed in Reference 1

BASES

BACKGROUND

The unit Class 1E AC Electrical Power Distribution System AC sources consist of the offsite power sources (preferred power sources, normal and alternate(s)), and the onsite standby power sources (Train A and Train B diesel generators (DGs)). ~~As required by 10 CFR 50, Appendix A, GDC 17 (Ref. 1)~~, the design of the AC electrical power system provides independence and redundancy to ensure an available source of power to the Engineered Safety Feature (ESF) systems.

5

one required offsite power source

The onsite Class 1E AC Distribution System is divided into redundant load groups (trains) so that the loss of any one group does not prevent the minimum safety functions from being performed. Each train has connections to ~~two preferred offsite power sources~~ and a single DG.

Offsite power is supplied to the switchyard from several 345KV and 138KV transmission lines.

service

5 U

~~Offsite power is supplied to the unit switchyard(s) from the transmission network by [two] transmission lines.~~ From the switchyard(s), two electrically and physically separated circuits provide AC power, through [step down station ~~auxiliary~~ transformers], to the 4.16 kV ESF buses. A detailed description of the offsite power network and the circuits to the Class 1E ESF buses is found in the FSAR, Chapter ~~[8]~~ (Ref. 2).

An offsite circuit consists of all breakers, transformers, switches, interrupting devices, cabling, and controls required to transmit power from the offsite transmission network to the onsite Class 1E ESF bus(es).

5

~~Certain required unit loads are returned to service in a predetermined sequence in order to prevent overloading the transformer supplying offsite power to the onsite Class 1E Distribution System. Within [1] minute after the initiating signal is received, all automatic and permanently connected loads needed to recover the unit or maintain it in a safe condition are returned to service via the load sequencer.~~

1-1 for Unit 1 and 2-1 for Unit 2

1-2 for Unit 1 and 2-2 for Unit 2

5 DF

AE

5

low pressurizer pressure, steamline pressure – low, manual,

and Bus Separation

The onsite standby power source for each 4.16 kV ESF bus is a dedicated DG. DGs ~~[11]~~ and ~~[12]~~ are dedicated to ESF buses ~~[11]~~ and ~~[12]~~, respectively. A DG starts automatically on a safety injection (SI) signal (i.e., ~~low pressurizer pressure~~ or high containment pressure signals) or on an ~~[ESF bus degraded voltage or~~ undervoltage signal] (refer to LCO 3.3.5, "Loss of Power (LOP) Diesel Generator (DG) Start Instrumentation"). After the DG has started, it will automatically tie to its respective bus after offsite power is tripped as a consequence of ESF bus undervoltage or degraded voltage, independent of or coincident with

BASES

BACKGROUND (continued)

2 timer(s)

The sequence timer(s) provide a time delay for the individual component to close its breaker to the associated emergency electrical bus. Each component is sequenced onto the emergency bus by an initiating signal. Improper loading sequence may cause the emergency bus to become inoperable. The Unit 1 sequence timers are provided for each train of ESF components and may affect individual components and the associated DG. The Unit 2 sequence timers affect individual components and the associated DG.

an SI signal. The DGs will also start and operate in the standby mode without tying to the ESF bus on an SI signal alone. Following the trip of offsite power, [~~a sequencer/~~an undervoltage signal] strips nonpermanent loads from the ESF bus. When the DG is tied to the ESF bus, loads are then sequentially connected to its respective ESF bus by the automatic load sequencer. The sequencing logic controls the permissive and starting signals to motor breakers to prevent overloading the DG by automatic load application.

unit and system 5

Bus DF

In the event of a loss of ~~preferred~~ power, the ESF electrical loads are automatically connected to the DGs in sufficient time to provide for safe reactor shutdown and to mitigate the consequences of a Design Basis Accident (DBA) such as a loss of coolant accident (LOCA).

5 (Reference 2)

Bus AE

Certain required unit loads are returned to service in a predetermined sequence in order to prevent overloading the DG in the process. Within [1] minute after the initiating signal is received, all loads needed to recover the unit or maintain it in a safe condition are returned to service.

6 Reference 3

2 for Unit 1 2600 kW and for Unit 2 4238 kW

a 2850 kW (Unit 1) and 4535 kW (Unit 2) allowable for up to 2000 hours per year.

Ratings for Train A and Train B DGs satisfy the requirements of ~~Regulatory Guide 1.9 (Ref. 3)~~. The continuous service rating of each DG ~~is [7000] kW~~ with ~~[10]% overload permissible for up to 2 hours in any 24 hour period.~~ The ESF loads that are powered from the 4.16 kV ESF buses are listed in Reference 2.

U 5

Reference 5 6

APPLICABLE SAFETY ANALYSES

The initial conditions of DBA and transient analyses in the FSAR, Chapter [6] (Ref. 4) and ~~Chapter [15] (Ref. 5)~~, assume ESF systems are OPERABLE. The AC electrical power sources are designed to provide sufficient capacity, capability, redundancy, and reliability to ensure the availability of necessary power to ESF systems so that the fuel, Reactor Coolant System (RCS), and containment design limits are not exceeded. These limits are discussed in more detail in the Bases for Section 3.2, Power Distribution Limits; Section 3.4, Reactor Coolant System (RCS); and Section 3.6, Containment Systems.

The OPERABILITY of the AC electrical power sources is consistent with the initial assumptions of the Accident analyses and is based upon meeting the design basis of the unit. This results in maintaining at least one train of the onsite or offsite AC sources OPERABLE during Accident conditions in the event of:

a. An assumed loss of all offsite power or all onsite AC power and

BASES

APPLICABLE SAFETY ANALYSIS (continued)

b. A worst case single failure.

The AC sources satisfy Criterion 3 of ~~NRC Policy Statement~~. 10 CFR 50.36(c)(2)(ii). 8

LCO

Two qualified circuits between the offsite transmission network and the onsite Class 1E Electrical Power System and separate and independent DGs for each train ensure availability of the required power to shut down the reactor and maintain it in a safe shutdown condition after an anticipated operational occurrence (AOO) or a postulated DBA.

Qualified offsite circuits are those that are described in the FSAR and are part of the licensing basis for the unit. U 5

[In addition, ~~one~~ required automatic load sequencer ~~per train~~ must be OPERABLE.] timer(s) 2

Each offsite circuit must be capable of maintaining rated frequency and voltage, and accepting required loads during an accident, while connected to the ESF buses.

[~~Offsite circuit #1 consists of Safeguards Transformer B, which is supplied from Switchyard Bus B, and is fed through breaker 52-3 powering the ESF transformer XNB01, which, in turn, powers the #1 ESF bus through its normal feeder breaker. Offsite circuit #2 consists of the Startup Transformer, which is normally fed from the Switchyard Bus A, and is fed through breaker PA 0201, powering the ESF transformer, which, in turn, powers the #2 ESF bus through its normal feeder breaker.~~]

During normal plant operation, electrical power for the onsite circuits comes from either the main generator through 22 kV to 4.36 kV unit station service transformers or from the two independent offsite 138KV buses through 138KV to 4.36 kV system station service transformers. The secondary windings of the transformers are connected to four separate 4.16 kV normal buses, A, B, C and D. Buses A and D provide power for the two redundant Class 1E 4.16 kV emergency buses AE and DF, respectively. During plant shutdown, the emergency buses receive power from the system station service transformers, or may receive power from the unit station service transformers by backfeeding the main transformer. Automatic and manual transfer capabilities to the system station service transformers are available when the offsite source(s) are required to be OPERABLE. 4

Each DG must be capable of starting, accelerating to ~~rated~~ nominal speed and voltage, and connecting to its respective ESF bus on detection of bus undervoltage. This will be accomplished within [10] seconds from the time the signal is received by the DG starting circuit. Each DG must also be capable of accepting required loads within the assumed loading sequence intervals, and continue to operate until offsite power can be restored to the ESF buses. These capabilities are required to be met from a variety of initial conditions such as DG in standby with the engine hot and DG in standby with the engine at ambient conditions. Additional DG capabilities must be demonstrated to meet required Surveillance, e.g., capability of the DG to revert to standby status on an ~~ECCS~~ Emergency Core Cooling Systems (ECCS) signal while operating in parallel test mode for Unit 2 only. 5 2 9

Proper sequencing of loads, [including tripping of nonessential loads,] is a required function for DG OPERABILITY.

BASES

LCO (continued)

9

electrical

The AC sources in one train must be separate and independent (to the extent possible) of the AC sources in the other train. For the DGs, separation and independence are complete.

5

A circuit that is not connected to an ESF bus is required to have OPERABLE fast transfer capability to align that circuit to its associated ESF bus.

For the offsite AC sources, separation and independence are to the extent practical. ~~A circuit may be connected to more than one ESF bus, with fast transfer capability to the other circuit OPERABLE, and not violate separation criteria. A circuit that is not connected to an ESF bus is required to have OPERABLE fast transfer interlock mechanisms to at least two ESF buses to support OPERABILITY of that circuit.~~

5

2

timer(s)

APPLICABILITY

The AC sources {and sequencers} are required to be OPERABLE in MODES 1, 2, 3, and 4 to ensure that:

a. Acceptable fuel design limits and reactor coolant pressure boundary limits are not exceeded as a result of AOOs or abnormal transients and

b. Adequate core cooling is provided and containment OPERABILITY and other vital functions are maintained in the event of a postulated DBA.

TSTF-359

The AC power requirements for MODES 5 and 6 are covered in LCO 3.8.2, "AC Sources - Shutdown."

ACTIONS

A Note prohibits the application of LCO 3.0.4.b to an inoperable DG. There is an increased risk associated with entering a MODE or other specified condition in the Applicability with an inoperable DG and the provisions of LCO 3.0.4.b, which allow entry into a MODE or other specified condition in the Applicability with the LCO not met after performance of a risk assessment addressing inoperable systems and components, should not be applied in this circumstance.

A.1

To ensure a highly reliable power source remains with one offsite circuit inoperable, it is necessary to verify the OPERABILITY of the remaining required offsite circuit on a more frequent basis. Since the Required Action only specifies "perform," a failure of SR 3.8.1.1 acceptance criteria does not result in a Required Action not met. However, if a second required circuit fails SR 3.8.1.1, the second offsite circuit is inoperable, and Condition C, for two offsite circuits inoperable, is entered.

- REVIEWER'S NOTE -

The turbine driven ~~auxiliary~~ feedwater pump is ~~only~~ required to be considered a redundant required ~~feature, and~~, therefore, required to be determined OPERABLE by ~~this Required Action~~, if the design is such that the remaining ~~OPERABLE~~ motor or turbine driven ~~auxiliary~~ feedwater pump~~(s) is not~~ by itself capable (without any reliance on the ~~motor driven~~

3

BASES

ACTIONS (continued)

auxiliary ~~feedwater~~ pump powered by the emergency ~~bus associated~~ with the inoperable diesel ~~generator) of providing 100%~~ of the auxiliary feedwater flow ~~assumed in the safety analysis.~~

A.2

Required Action A.2, which only applies if the train cannot be powered from an offsite source, is intended to provide assurance that an event coincident with a single failure of the associated DG will not result in a complete loss of safety function of critical redundant required features. These features are powered from the redundant AC electrical power train. ~~This includes motor driven auxiliary feedwater pumps. Single train systems, such as turbine driven auxiliary feedwater pumps, may not be included.~~ 3

The Completion Time for Required Action A.2 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." In this Required Action, the Completion Time only begins on discovery that both: 5

a. The train has no offsite power supplying it loads and 9

b. A required feature on the other train is inoperable. s

If at any time during the existence of Condition A (one offsite circuit inoperable) a redundant required feature subsequently becomes inoperable, this Completion Time begins to be tracked.

Discovering no offsite power to one train of the onsite Class 1E Electrical Power Distribution System coincident with one or more inoperable required support or supported features, or both, that are associated with the other train that has offsite power, results in starting the Completion Times for the Required Action. Twenty-four hours is acceptable because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown.

The remaining OPERABLE offsite circuit and DGs are adequate to supply electrical power to Train A and Train B of the onsite Class 1E Distribution System. The 24 hour Completion Time takes into account the component OPERABILITY of the redundant counterpart to the inoperable required feature. Additionally, the 24 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a

BASES

ACTIONS (continued)

reasonable time for repairs, and the low probability of a DBA occurring during this period.

A.3

According to Regulatory Guide 1.93 (Ref. 6), operation may continue in Condition A for a period that should not exceed 72 hours. With one offsite circuit inoperable, the reliability of the offsite system is degraded, and the potential for a loss of offsite power is increased, with attendant potential for a challenge to the unit safety systems. In this Condition, however, the remaining OPERABLE offsite circuit and DGs are adequate to supply electrical power to the onsite Class 1E Distribution System.

The 72 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.

2

The second Completion Time for Required Action A.3 establishes a limit on the maximum time allowed for any combination of required AC power sources to be inoperable during any single contiguous occurrence of failing to meet the LCO. If Condition A is entered while, for instance, a DG is inoperable and that DG is subsequently returned OPERABLE, the LCO may already have been not met for up to ~~72 hours.~~ 14 days. This could lead to a total of ~~144 hours~~ 17 days, since initial failure to meet the LCO, ~~to~~ restore the offsite circuit. At this time, a DG could again become inoperable, the circuit restored OPERABLE, and an additional ~~72 hours~~ 14 days (for a total of ~~9~~ 31 days) allowed prior to complete restoration of the LCO. The ~~6~~ 17 day Completion Time provides a limit on the time allowed in a specified condition after discovery of failure to meet the LCO. This limit is considered reasonable for situations in which Conditions A and B are entered concurrently. The "AND" connector between the 72 hour and ~~6~~ 17-day Completion Times means that both Completion Times apply simultaneously, and the more restrictive Completion Time must be met.

As in Required Action A.2, the Completion Time allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." This will result in establishing the "time zero" at the time that the LCO was initially not met, instead of at the time Condition A was entered.

B.1

To ensure a highly reliable power source remains with an inoperable DG, it is necessary to verify the availability of the offsite circuits on a more

BASES

ACTIONS (continued)

frequent basis. Since the Required Action only specifies "perform," a failure of SR 3.8.1.1 acceptance criteria does not result in a Required Action being not met. However, if a circuit fails to pass SR 3.8.1.1, it is inoperable. Upon offsite circuit inoperability, additional Conditions and Required Actions must then be entered.

- REVIEWER'S NOTE -

The turbine driven auxiliary feedwater pump is only required to be considered a redundant required feature, and, therefore, required to be determined OPERABLE by this Required Action, if the design is such that the remaining OPERABLE motor or turbine driven auxiliary feedwater pump(s) is not by itself capable (without any reliance on the motor driven auxiliary feedwater pump powered by the emergency bus associated with the inoperable diesel generator) of providing 100% of the auxiliary feedwater flow assumed in the safety analysis. 3

B.2

Required Action B.2 is intended to provide assurance that a loss of offsite power, during the period that a DG is inoperable, does not result in a complete loss of safety function of critical systems. These features are designed with redundant safety related trains. ~~This includes motor driven auxiliary feedwater pumps. Single train systems, such as turbine driven auxiliary feedwater pumps, are not included.~~ Redundant required feature failures consist of inoperable features associated with a train, redundant to the train that has an inoperable DG. 5

The Completion Time for Required Action B.2 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." In this Required Action, the Completion Time only begins on discovery that both:

a. An inoperable DG exists and

b. A required feature on the other train (Train A or Train B) is inoperable.

If at any time during the existence of this Condition (one DG inoperable) a required feature subsequently becomes inoperable, this Completion Time would begin to be tracked.

BASES

ACTIONS (continued)

Discovering one required DG inoperable coincident with one or more inoperable required support or supported features, or both, that are associated with the OPERABLE DG, results in starting the Completion Time for the Required Action. Four hours from the discovery of these events existing concurrently is Acceptable because it minimizes risk while allowing time for restoration before subjecting the unit to transients associated with shutdown.

In this Condition, the remaining OPERABLE DG and offsite circuits are adequate to supply electrical power to the onsite Class 1E Distribution System. Thus, on a component basis, single failure protection for the required feature's function may have been lost; however, function has not been lost. The 4 hour Completion Time takes into account the OPERABILITY of the redundant counterpart to the inoperable required feature. Additionally, the 4 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.

5

Examples of these activities, which do not require performance of SR 3.8.1.2 for the OPERABLE DG, include testing, preplanned preventative maintenance, and individual testable components.

B.3.1 and B.3.2

Required Action B.3.1 provides an allowance to avoid unnecessary testing of OPERABLE DG~~(s)~~. If it can be determined that the cause of the inoperable DG does not exist on the OPERABLE DG, SR 3.8.1.2 does not have to be performed. If the cause of inoperability exists on other DG~~(s)~~, the other DG~~(s)~~ would be declared inoperable upon discovery and Condition E of LCO 3.8.1 would be entered. Once the failure is repaired, the common cause failure no longer exists, and Required Action B.3.1 is satisfied. If the cause of the initial inoperable DG cannot be confirmed not to exist on the remaining DG~~(s)~~, performance of SR 3.8.1.2 suffices to provide assurance of continued OPERABILITY of that DG.

In the event the inoperable DG is restored to OPERABLE status prior to completing either B.3.1 or B.3.2, the [plant corrective action program] will continue to evaluate the common cause possibility. This continued evaluation, however, is no longer under the 24 hour constraint imposed while in Condition B.

According to Generic Letter 84-15 (Ref. 7), [24] hours is reasonable to confirm that the OPERABLE DG(s) is not affected by the same problem as the inoperable DG.

BASES

ACTIONS (continued)

The 14 day Completion Time is a risk informed and based on a plant specific risk analysis.

B.4

2

According to ~~Regulatory Guide 1.93 (Ref. 6), operation~~ may continue in Condition B ~~for a period that should not exceed 72 hours.~~

In Condition B, the remaining OPERABLE DG and offsite circuits are adequate to supply electrical power to the onsite Class 1E Distribution System. The ~~72 hour~~ Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.

also

The second Completion Time for Required Action B.4 establishes a limit on the maximum time allowed for any combination of required AC power sources to be inoperable during any single contiguous occurrence of failing to meet the LCO. If Condition B is entered while, for instance, an offsite circuit is inoperable and that circuit is subsequently restored OPERABLE, the LCO may already have been not met for up to 72 hours. This could lead to a total of ~~144 hours~~, since initial failure to meet the LCO, to restore the DG. At this time, an offsite circuit could again become inoperable, the DG restored OPERABLE, and an additional 72 hours (for a total of ~~9~~ days) allowed prior to complete restoration of the LCO. The ~~6~~ day Completion Time provides a limit on time allowed in a specified condition after discovery of failure to meet the LCO. This limit is considered reasonable for situations in which Conditions A and B are entered concurrently. The "AND" connector between the ~~72 hour~~ and ~~6~~ day Completion Times means that both Completion Times apply simultaneously, and the more restrictive Completion Time must be met.

2

17 days

20

17

14 day

17

As in Required Action B.2, the Completion Time allows for an exception to the normal "time zero" for beginning the allowed time "clock." This will result in establishing the "time zero" at the time that the LCO was initially not met, instead of at the time Condition B was entered.

C.1 and C.2

Required Action C.1, which applies when two offsite circuits are inoperable, is intended to provide assurance that an event with a coincident single failure will not result in a complete loss of redundant required safety functions. The Completion Time for this failure of redundant required features is reduced to 12 hours from that allowed for one train without offsite power (Required Action A.2). The rationale for the reduction to 12 hours is that Regulatory Guide 1.93 (Ref. 6) allows a Completion Time of 24 hours for two required offsite circuits inoperable,

BASES

ACTIONS (continued)

based upon the assumption that two complete safety trains are OPERABLE. When a concurrent redundant required feature failure exists, this assumption is not the case, and a shorter Completion Time of 12 hours is appropriate. These features are powered from redundant AC safety trains. ~~This includes motor driven auxiliary feedwater pumps.~~ 5 ~~Single train features, such as turbine driven auxiliary pumps, are not included in the list.~~

The Completion Time for Required Action C.1 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." In this Required Action the Completion Time only begins on discovery that both:

a. All required offsite circuits are inoperable and

b. A required feature is inoperable.

If at any time during the existence of Condition C (two offsite circuits inoperable) a required feature becomes inoperable, this Completion Time begins to be tracked.

According to Regulatory Guide 1.93 (Ref. 6), operation may continue in Condition C for a period that should not exceed 24 hours. This level of degradation means that the offsite electrical power system does not have the capability to effect a safe shutdown and to mitigate the effects of an accident; however, the onsite AC sources have not been degraded. This level of degradation generally corresponds to a total loss of the immediately accessible offsite power sources.

Because of the normally high availability of the offsite sources, this level of degradation may appear to be more severe than other combinations of two AC sources inoperable that involve one or more DGs inoperable. However, two factors tend to decrease the severity of this level of degradation:

a. The configuration of the redundant AC electrical power system that remains available is not susceptible to a single bus or switching failure and

b. The time required to detect and restore an unavailable offsite power source is generally much less than that required to detect and restore an unavailable onsite AC source.

BASES

ACTIONS (continued)

With both of the required offsite circuits inoperable, sufficient onsite AC sources are available to maintain the unit in a safe shutdown condition in the event of a DBA or transient. In fact, a simultaneous loss of offsite AC sources, a LOCA, and a worst case single failure were postulated as a part of the design basis in the safety analysis. Thus, the 24 hour Completion Time provides a period of time to effect restoration of one of the offsite circuits commensurate with the importance of maintaining an AC electrical power system capable of meeting its design criteria.

According to Reference 6, with the available offsite AC sources, two less than required by the LCO, operation may continue for 24 hours. If two offsite sources are restored within 24 hours, unrestricted operation may continue. If only one offsite source is restored within 24 hours, power operation continues in accordance with Condition A.

D.1 and D.2

Pursuant to LCO 3.0.6, the Distribution System ACTIONS would not be entered even if all AC sources to it were inoperable, resulting in de-energization. Therefore, the Required Actions of Condition D are modified by a Note to indicate that when Condition D is entered with no AC source to any train, the Conditions and Required Actions for LCO 3.8.9, "Distribution Systems - Operating," must be immediately entered. This allows Condition D to provide requirements for the loss of one offsite circuit and one DG, without regard to whether a train is de-energized. LCO 3.8.9 provides the appropriate restrictions for a de-energized train.

According to Regulatory Guide 1.93 (Ref. 6), operation may continue in Condition D for a period that should not exceed 12 hours.

In Condition D, individual redundancy is lost in both the offsite electrical power system and the onsite AC electrical power system. Since power system redundancy is provided by two diverse sources of power, however, the reliability of the power systems in this Condition may appear higher than that in Condition C (loss of both required offsite circuits). This difference in reliability is offset by the susceptibility of this power system configuration to a single bus or switching failure. The 12 hour Completion Time takes into account the capacity and capability of the remaining AC sources, a reasonable time for repairs, and the low probability of a DBA occurring during this period.

BASES

ACTIONS (continued)

E.1

With Train A and Train B DGs inoperable, there are no remaining standby AC sources. Thus, with an assumed loss of offsite electrical power, insufficient standby AC sources are available to power the minimum required ESF functions. Since the offsite electrical power system is the only source of AC power for this level of degradation, the risk associated with continued operation for a very short time could be less than that associated with an immediate controlled shutdown (the immediate shutdown could cause grid instability, which could result in a total loss of AC power). Since any inadvertent generator trip could also result in a total loss of offsite AC power, however, the time allowed for continued operation is severely restricted. The intent here is to avoid the risk associated with an immediate controlled shutdown and to minimize the risk associated with this level of degradation.

According to Reference 6, with both DGs inoperable, operation may continue for a period that should not exceed 2 hours.

2

Insert Bases
F.1.1, F.1.2, and F.2

[~~F.1~~

~~The sequencer(s) is an essential support system to [both the offsite circuit and the DG associated with a given ESF bus]. [Furthermore, the sequencer is on the primary success path for most major AC electrically powered safety systems powered from the associated ESF bus.] Therefore, loss of an [ESF bus sequencer] affects every major ESF system in the [division]. The [12] hour Completion Time provides a period of time to correct the problem commensurate with the importance of maintaining sequencer OPERABILITY. This time period also ensures that the probability of an accident (requiring sequencer OPERABILITY) occurring during periods when the sequencer is inoperable is minimal.~~

~~This Condition is preceded by a Note that allows the Condition to be deleted if the unit design is such that any sequencer failure mode will only affect the ability of the associated DG to power its respective safety loads under any conditions. Implicit in this Note is the concept that the Condition must be retained if any sequencer failure mode results in the inability to start all or part of the safety loads when required, regardless of power availability, or results in overloading the offsite power circuit to a safety bus during an event and thereby causes its failure. Also implicit in have a sequencer.~~]

BASES

ACTIONS (continued)

G.1 and G.2

If the inoperable AC electric power sources cannot be restored to OPERABLE status within the required Completion Time, the unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the unit must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging plant systems.

H.1

Condition H corresponds to a level of degradation in which all redundancy in the AC electrical power supplies has been lost. At this severely degraded level, any further losses in the AC electrical power system will cause a loss of function. Therefore, no additional time is justified for continued operation. The unit is required by LCO 3.0.3 to commence a controlled shutdown.

SURVEILLANCE REQUIREMENTS

The AC sources are designed to permit inspection and testing of all important areas and features, especially those that have a standby function, ~~in accordance with 10 CFR 50, Appendix A, GDC 18 (Ref. 8)~~. Periodic component tests are supplemented by extensive functional tests during refueling outages (under simulated accident conditions). The SRs for demonstrating the OPERABILITY of the DGs are in accordance with the recommendations of ~~Regulatory Guide 1.9 (Ref. 3),~~ Regulatory Guide 1.108 (Ref. 9), and Regulatory Guide 1.137 (Ref. 10), as addressed in the FSAR.

as discussed in Reference 8

6

Reference 3

U

Where the SRs discussed herein specify voltage and frequency tolerances, the following is applicable. The minimum steady state output voltage ~~of [3740] V is 90% of the nominal 4160 V output voltage. This value, which is specified in ANSI C84.1 (Ref. 11), allows for voltage drop to the terminals of 4000 V motors whose minimum operating voltage is specified as 90% or 3600 V. It also allows for voltage drops to motors and other equipment down through the 120 V level where minimum operating voltage is also usually specified as 90% of name plate rating.~~ The specified maximum steady state output voltage of ~~[4756] V~~ is equal to the maximum operating voltage specified for 4000 V motors. It ensures that for a lightly loaded distribution system, the voltage at the terminals of 4000 V motors is no more than the maximum rated operating voltages. ~~The specified minimum and maximum frequencies of the DG~~

CTS Values

for Unit 1 is 4106 V and for Unit 2 is 3994 V.

5

The SR value bands specified for voltage and frequency for each Unit are analysis values, except for the frequency values of 58.8 Hz to 61.2 Hz specified for Unit 1 in SRs 3.8.1.2 and 3.8.1.8. These Unit 1 Frequency tolerances are RG 1.9 recommendations.

NOTE: The voltage and frequency values specified in each SR need to be reduced or increased, as appropriate, to account for measurement uncertainties.

1

4368

CTS Value

The kW requirements specified in the SRs are indicated values.

12

BASES

SURVEILLANCE REQUIREMENTS (continued)

2

~~are 58.8 Hz and 61.2 Hz, respectively. These values are equal to ± 2% of the 60 Hz nominal frequency and are derived from the recommendations given in Regulatory Guide 1.9 (Ref. 3).~~

SR 3.8.1.1

This SR ensures proper circuit continuity for the offsite AC electrical power supply to the onsite distribution network and availability of offsite AC electrical power. The breaker alignment verifies that each breaker is in its correct position to ensure that distribution buses and loads are connected to their preferred power source, and that appropriate independence of offsite circuits is maintained. The 7 day Frequency is adequate since breaker position is not likely to change without the operator being aware of it and because its status is displayed in the control room.

2

SR 3.8.1.2 ~~and SR 3.8.1.7~~ s

These SRs help to ensure the availability of the standby electrical power supply to mitigate DBAs and transients ~~and~~ to maintain the unit in a safe shutdown condition. is 1

To minimize the wear on moving parts that do not get lubricated when the engine is not running, these SRs are modified by a Note ~~(Note 1 for SR 3.8.1.2 and Note for SR 3.8.1.7)~~ to indicate that all DG starts for these Surveillances may be preceded by an engine prelube period and followed by a warmup period prior to loading. is

For the purposes of SR 3.8.1.2 ~~and SR 3.8.1.7~~ testing, the DGs are started from standby conditions. Standby conditions for a DG mean that the diesel engine coolant and oil are being continuously circulated and temperature is being maintained consistent with manufacturer recommendations.

or knowledge gained through operating experience. Barring of the engine may be performed prior to DG start without invalidating SR for starting from standby conditions.

11

[In order to reduce stress and wear on diesel engines, some manufacturers recommend a modified start in which the starting speed of DGs is limited, warmup is limited to this lower speed, and the DGs are gradually accelerated to synchronous speed prior to loading. These start procedures are the intent of Note 2, which is only applicable when such modified start procedures are recommended by the manufacturer.]

2

~~SR 3.8.1.7 requires that, at a 184 day Frequency, the DG starts from standby conditions and achieves required voltage and frequency within~~

BASES

SURVEILLANCE REQUIREMENTS (continued)

~~10 seconds. The 10 second start requirement supports the assumptions of the design basis LOCA analysis in the FSAR, Chapter [15] (Ref. 5).~~

~~The 10 second start requirement is not applicable to SR 3.8.1.2 (see Note 2) when a modified start procedure as described above is used. If a modified start is not used, the 10 second start requirement of SR 3.8.1.7 applies.~~

2

~~Since SR 3.8.1.7 requires a 10 second start, it is more restrictive than SR 3.8.1.2, and it may be performed in lieu of SR 3.8.1.2.~~

6

~~In addition to the SR requirements, the time for the DG to reach steady state operation, unless the modified DG start method is employed, is periodically monitored and the trend evaluated to identify degradation of governor and voltage regulator performance.~~

The 31 day Frequency for SR 3.8.1.2 is consistent with ~~Regulatory Guide 1.9 (Ref. 3)~~. ~~The 184 day Frequency for SR 3.8.1.7 is a reduction in cold testing consistent with Generic Letter 84-15 (Ref. 7).~~ These Frequencies provide adequate assurance of DG OPERABILITY, while minimizing degradation resulting from testing.

Reference 3

2

y

s

SR 3.8.1.3

This Surveillance verifies that the DGs are capable of synchronizing with the offsite electrical system and accepting loads ~~greater than or equal to the equivalent of the maximum expected accident loads.~~ A minimum run time of 60 minutes is required to stabilize engine temperatures, while minimizing the time that the DG is connected to the offsite source.

2

equivalent to the continuous duty rating of the DG.

Although no power factor requirements are established by this SR, the DG is normally operated at a power factor between [0.8 lagging] and [1.0. The [0.8] value is the design rating of the machine, while the [1.0] is an operational limitation [to ensure circulating currents are minimized]. The load band is provided to avoid routine overloading of the DG. Routine overloading may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY.

The 31 day Frequency for this Surveillance is consistent with ~~Regulatory Guide 1.9 (Ref. 3)~~.

the recommendations of Reference 3

6

BASES

2 or knowledge gained through operating experience

SURVEILLANCE REQUIREMENTS (continued)

9 outside the normal operating range

9 greater than or equal to the required fuel oil inventory. The required Unit 1 inventory is expressed as an equivalent usable volume in gallons and is selected to ensure the DG can operate for more than 1 hour at full load plus 10 %.

This SR is modified by four Notes. Note 1 indicates that diesel engine runs for this Surveillance may include gradual loading, as recommended by ~~the~~ manufacturer, so that mechanical stress and wear on the diesel engine are ~~minimized~~. Note 2 states that momentary transients, because of changing bus loads, do not invalidate this test. Similarly, momentary power factor transients ~~above the limit~~ do not invalidate the test. Note 3 indicates that this Surveillance should be conducted on only one DG at a time in order to avoid common cause failures that might result from offsite circuit or grid perturbations. Note 4 stipulates a prerequisite requirement for performance of this SR. A successful DG start must precede this test to credit satisfactory performance.

~~SR 3.8.1.4~~ SR 3.8.1.4.1 and SR 3.8.1.4.2 2

9 inventory

2 For Unit 1, this

~~This~~ SR provides ~~verification~~ that the ~~level of~~ fuel oil in the day tank ~~[and~~ engine mounted tank] is ~~at or above the level at which fuel oil is automatically added. The level is expressed as an equivalent volume gallons, and is selected to ensure adequate fuel oil for a minimum of 1 hour of DG operation at full load plus 10%.~~

2 in combination with the

For Unit 2, this SR provides verification that the inventory of fuel oil in the day tank is greater than or equal to the required fuel oil inventory. The required Unit 2 inventory is expressed as an equivalent usable volume in gallons and is selected to ensure adequate fuel oil for a minimum of 1 hour of DG operation at full load plus 10 %.

The 31 day Frequency is adequate to assure that a sufficient supply of fuel oil is available, since low level alarms are provided and facility operators would be aware of any large uses of fuel oil during this period.

The SRs are modified by Notes that specify the applicable unit. 2

~~SR 3.8.1.5~~ SR 3.8.1.5.1 and SR 3.8.1.5.2 2

Microbiological fouling is a major cause of fuel oil degradation. There are numerous bacteria that can grow in fuel oil and cause fouling, but all must have a water environment in order to survive. Removal of water from the fuel oil ~~day [and engine mounted]~~ tanks once every ~~[31]~~ days eliminates the necessary environment for bacterial survival. This is the most effective means of controlling microbiological fouling. In addition, it eliminates the potential for water entrainment in the fuel oil during DG operation. Water may come from any of several sources, including condensation, ground water, rain water, contaminated fuel oil, and breakdown of the fuel oil by bacteria. Frequent checking for and removal of accumulated water minimizes fouling and provides data regarding the watertight integrity of the fuel oil system. The Surveillance Frequencies ~~are established by~~ Regulatory Guide 1.137 (Ref. 10). This SR is for preventative maintenance. The presence of water does not necessarily represent failure of this SR, provided the accumulated water is removed during the performance of this Surveillance.

se 9

9 consistent with

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.1.6

5 (only one pump required per DG)

This Surveillance demonstrates that each required fuel oil transfer pump operates and transfers fuel oil from its associated storage tank to its associated day tank. This is required to support continuous operation of standby power sources. This Surveillance provides assurance that the fuel oil transfer pump is OPERABLE, the fuel oil piping system is intact, the ~~fuel delivery~~ piping is not obstructed, and the controls and control systems for ~~automatic~~ fuel transfer systems are OPERABLE.

2 s 7

[The Frequency for this SR is ~~variable, depending on individual system design, with up to a~~ [92] day ~~interval~~. The [92] day Frequency corresponds to the testing requirements for pumps as contained in the ASME Code, Section XI (Ref. 11)~~; however, the design of fuel transfer systems is such that pumps operate automatically or must be started manually in order to maintain an adequate volume of fuel oil in the day [and engine mounted] tanks during or following DG testing. In such a case, a 31 day Frequency is appropriate. Since proper operation of fuel transfer systems is an inherent part of DG OPERABILITY, the Frequency of this SR should be modified to reflect individual designs.]~~

2 ~~SR 3.8.1.7~~

~~See SR 3.8.1.2~~

7 [SR 3.8.1.8

system 2 unit

Transfer of each [4.16 kV ESF bus] power supply from the ~~normal offsite~~ circuit to the ~~alternate~~ offsite circuit demonstrates the OPERABILITY of the alternate circuit distribution network to power the shutdown loads. The [18 month] Frequency of the Surveillance is based on engineering judgment, taking into consideration the unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths. Operating experience has shown that these components usually pass the SR when performed at the [18 month] Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

~~This SR is modified by a Note. The reason for the Note is that, during operation with the reactor critical, performance of this SR could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. This restriction from normally performing the Surveillance in~~ 2

BASES

SURVEILLANCE REQUIREMENTS (continued)

MODE 1 or 2 is further amplified to allow the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g. post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed Surveillance, a successful Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when the Surveillance is performed in MODE 1 or 2. Risk insights or deterministic methods may be used for this assessment.]

2

NUREG-1431, Rev.3

Credit may be taken for unplanned events that satisfy this SR.

2 8

SR 3.8.1.9

CTS Values

Each DG is provided with an engine overspeed trip to prevent damage to the engine. Recovery from the transient caused by the loss of a large load could cause diesel engine overspeed, which, if excessive, might result in a trip of the engine. This Surveillance demonstrates the DG load response characteristics and capability to reject the largest single load without exceeding predetermined ~~voltage and~~ frequency and while maintaining a specified margin to the overspeed trip. ~~[For this unit, the single load for each DG and its horsepower rating is as follows:]~~ This Surveillance may be accomplished by either:

For Unit 1 615 kW with a frequency limit of 66.2 Hz (993 RPM). For Unit 2 825 kW with a frequency limit of 64.4 Hz (552 RPM).

or tripping the emergency feeder breaker

a. Tripping the DG output breaker with the DG carrying greater than or equal to its associated single largest post-accident load while paralleled to offsite power, or ~~while solely supplying the bus or~~

5

b. Tripping its associated single largest post-accident load with the DG solely supplying the bus.

Reference 12

1

9

Consistent with the recommendations of

~~As required by IEEE-308 (Ref. 12)~~, the load rejection test is acceptable if the increase in diesel speed does not exceed 75% of the difference between synchronous speed and the overspeed trip setpoint, or 15% above synchronous speed, whichever is lower.

The time, voltage, and frequency tolerances specified in this SR are derived from ~~Regulatory Guide 1.9 (Ref. 3)~~ recommendations for response during load sequence intervals. The 3 seconds specified is

6

Reference 3

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.1.8.c 2

2 SR 3.8.1.8.a SR 3.8.1.8.b

equal to 60% of a typical 5 second load sequence interval associated with sequencing of the largest load. The voltage and frequency specified are consistent with the design range of the equipment powered by the DG. ~~SR 3.8.1.9.a~~ corresponds to the maximum frequency excursion, while ~~SR 3.8.1.9.b~~ and ~~SR 3.8.1.9.c~~ are steady state voltage and frequency values to which the system must recover following load rejection. The [18 month] Frequency is consistent with the recommendation of Regulatory Guide 1.108 (Ref. 9).

This SR is modified by two Notes. The reason for Note 1 is that during operation with the reactor critical, performance of this SR could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. This restriction from normally performing the Surveillance in MODE 1 or 2 is further amplified to allow the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g. post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed Surveillance, a successful Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when the Surveillance is performed in MODE 1 or 2. Risk insights or deterministic methods may be used for this assessment.

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Credit may be taken for unplanned events that satisfy this SR.

Note 2 ensures that the DG is tested under load conditions that are as close to design basis conditions as possible. When synchronized with offsite power, testing should be performed at a power factor of ≤ [0.9]. This power factor is representative of the actual inductive loading a DG would see under design basis accident conditions. Under certain conditions, however, Note 2 allows the surveillance to be conducted at a power factor other than ≤ [0.9]. These conditions occur when grid voltage is high, and the additional field excitation needed to get the power factor to ≤ [0.9] results in voltages on the emergency busses that are too high. Under these conditions, the power factor should be maintained as close as practicable to [0.9] while still maintaining acceptable voltage limits on the emergency busses. In other circumstances, the grid voltage may be such that the DG excitation levels needed to obtain a power factor of [0.9] may not cause unacceptable voltages on the emergency

BASES

SURVEILLANCE REQUIREMENTS (continued)

busses, but the excitation levels are in excess of those recommended for the DG. In such cases, the power factor shall be maintained as close as practicable to [0.9] without exceeding the DG excitation limits.

- REVIEWER'S NOTE -

The above MODE restrictions may be deleted if it can be demonstrated to the staff, on a plant specific basis, that performing the SR with the reactor in any of the restricted MODES can satisfy the following criteria, as applicable: 3

a. Performance of the SR will not render any safety system or component inoperable,

b. Performance of the SR will not cause perturbations to any of the electrical distribution systems that could result in a challenge to steady state operation or to plant safety systems, and

c. Performance of the SR, or failure of the SR, will not cause, or result in, an AOO with attendant challenge to plant safety systems.

SR 3.8.1.10

This Surveillance demonstrates the DG capability to reject a full load without overspeed tripping or exceeding the predetermined voltage limits. The DG full load rejection may occur because of a system fault or inadvertent breaker tripping. This Surveillance ensures proper engine generator load response under the simulated test conditions. This test simulates the loss of the total connected load that the DG experiences following a full load rejection and verifies that the DG does not trip upon loss of the load. These acceptance criteria provide for DG damage protection. While the DG is not expected to experience this transient during an event and continues to be available, this response ensures that the DG is not degraded for future application, including reconnection to the bus if the trip initiator can be corrected or isolated. 2

The [18 month] Frequency is consistent with the recommendation of Regulatory Guide 1.108 (Ref. 9) and is intended to be consistent with expected fuel cycle lengths.

This SR has been modified by two Notes. The reason for Note 1 is that during operation with the reactor critical, performance of this SR could cause perturbation to the electrical distribution systems that could

BASES

SURVEILLANCE REQUIREMENTS (continued)

challenge continued steady state operation and, as a result, unit safety systems. Note 2 ensures that the DG is tested under load conditions that are as close to design basis conditions as possible. When synchronized with offsite power, testing should be performed at a power factor of ≤ [0.9]. This power factor is representative of the actual inductive loading a DG would see under design basis accident conditions. Under certain conditions, however, Note 2 allows the surveillance to be conducted at a power factor other than ≤ [0.9]. These conditions occur when grid voltage is high, and the additional field excitation needed to get the power factor to ≤ [0.9] results in voltages on the emergency busses that are too high. Under these conditions, the power factor should be maintained as close as practicable to [0.9] while still maintaining acceptable voltage limits on the emergency busses. In other circumstances, the grid voltage may be such that the DG excitation levels needed to obtain a power factor of [0.9] may not cause unacceptable voltages on the emergency busses, but the excitation levels are in excess of those recommended for the DG. In such cases, the power factor shall be maintained as close as practicable to [0.9] without exceeding the DG excitation limits. This restriction from normally performing the Surveillance in MODE 1 or 2 is further amplified to allow the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g. post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed Surveillance, a successful Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when the Surveillance is performed in MODE 1 or 2. ~~Risk insights~~ or deterministic methods may be used for this assessment.

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NUREG-1431, Rev. 3

Credit may be taken for unplanned events that satisfy this SR.

- REVIEWER'S NOTE -

The above MODE ~~restrictions~~ may be deleted if it ~~can be~~ demonstrated to the staff, on a plant ~~specific basis~~, that performing the SR with the reactor in any of the restricted MODES ~~can satisfy~~ the following criteria, as applicable:

a. Performance of the SR will not render any safety system or component inoperable,

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BASES

SURVEILLANCE REQUIREMENTS (continued)

b. Performance of the SR will not cause perturbations to any of the electrical distribution systems that could result in a challenge to steady state operation or to plant safety systems, and

c. Performance of the SR, or failure of the SR, will not cause, or result in, an AOO with attendant challenge to plant safety systems.

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SR 3.8.1.11

As required by Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(1), this Surveillance demonstrates the as designed operation of the standby power sources during loss of the offsite source. This test verifies all actions encountered from the loss of offsite power, including shedding of the nonessential loads and energization of the emergency buses and respective loads from the DG. It further demonstrates the capability of the DG to automatically achieve the required voltage and frequency within the specified time.

The DG autostart time of [10] seconds is derived from requirements of the accident analysis to respond to a design basis large break LOCA. The Surveillance should be continued for a minimum of 5 minutes in order to *demonstrate that all starting transients have decayed and stability is* achieved.

2

The requirement to verify the connection and power supply of permanent and autoconnected loads is intended to satisfactorily show the relationship of these loads to the DG loading logic. In certain circumstances, many of these loads cannot actually be connected or loaded without undue hardship or potential for undesired operation. For instance, Emergency Core Cooling Systems (ECCS) injection valves are not desired to be stroked open, or high pressure injection systems are not capable of being operated at full flow, or residual heat removal (RHR) systems performing a decay heat removal function are not desired to be realigned to the ECCS mode of operation. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the DG systems to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

The Frequency of [18 months] is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(1), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

BASES

SURVEILLANCE REQUIREMENTS (continued)

2

This SR is modified by two Notes. The reason for Note 1 is to minimize wear and tear on the DGs during testing. For the purpose of this testing, the DGs must be started from standby conditions, that is, with the engine coolant and oil continuously circulated and temperature maintained consistent with manufacturer recommendations. The reason for Note 2 is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. This restriction from normally performing the Surveillance in MODE 1 or 2 is further amplified to allow portions of the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g. post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial Surveillance, a successful partial Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the partial Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when portions of the Surveillance are performed in MODE 1 or 2. Risk insights or deterministic methods may be used for the assessment.

[SR 3.8.1.12

NUREG-1431, Rev. 3

Credit may be taken for unplanned events that satisfy this SR.

This Surveillance demonstrates that the DG automatically starts and achieves the required voltage and frequency within the specified time ([10] seconds) from the design basis actuation signal (LOCA signal) and operates for ∃ 5 minutes. The 5 minute period provides sufficient time to demonstrate stability. SR 3.8.1.12.d and SR 3.8.1.12.e ensure that permanently connected loads and emergency loads are energized from the offsite electrical power system on an ESF signal without loss of offsite power.

The requirement to verify the connection of permanent and autoconnected loads is intended to satisfactorily show the relationship of these loads to the DG loading logic. In certain circumstances, many of these loads cannot actually be connected or loaded without undue hardship or potential for undesired operation. For instance, ECCS injection valves are not desired to be stroked open, or high pressure injection systems are not capable of being operated at full flow, or RHR

BASES

SURVEILLANCE REQUIREMENTS (continued)

systems performing a decay heat removal function are not desired to be realigned to the ECCS mode of operation. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the DG system to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

2

The Frequency of [18 months] takes into consideration unit conditions required to perform the Surveillance and is intended to be consistent with the expected fuel cycle lengths. Operating experience has shown that these components usually pass the SR when performed at the [18 month] Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

This SR is modified by two Notes. The reason for Note 1 is to minimize wear and tear on the DGs during testing. For the purpose of this testing, the DGs must be started from standby conditions, that is, with the engine coolant and oil continuously circulated and temperature maintained consistent with manufacturer recommendations. The reason for Note 2 is that during operation with the reactor critical, performance of this Surveillance could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. This restriction from normally performing the Surveillance in MODE 1 or 2 is further amplified to allow portions of the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g. post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial Surveillance, a successful partial Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the partial Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when portions of the Surveillance are performed in MODE 1 or 2. Risk insights or deterministic methods may be used for the assessment.

NUREG-1431, Rev. 3

~~Credit may be taken for unplanned events that satisfy this SR.~~

BASES

SURVEILLANCE REQUIREMENTS (continued)

2 5 if they exist

SR 3.8.1.~~13~~ 9

emergency start

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TSTF-400

This Surveillance demonstrates that DG noncritical protective functions (~~e.g.,~~ high jacket water temperature) are bypassed on a loss of voltage signal ~~concurrent with an ESF actuation test signal~~ ~~and critical protective functions (engine overspeed, generator differential current, [low lube oil pressure, high crankcase pressure, and start failure relay]) trip the DG to avert substantial damage to the DG unit~~. The noncritical trips are bypassed during DBAs and provide an alarm on an abnormal engine condition. This alarm provides the operator with sufficient time to react appropriately. The DG availability to mitigate the DBA is more critical than protecting the engine against minor problems that are not immediately detrimental to emergency operation of the DG.

The [18 month] Frequency is based on engineering judgment, taking into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths. Operating experience has shown that these components usually pass the SR when performed at the [18 month] Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

The SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required DG from service. This restriction from normally performing the Surveillance in MODE 1 or 2 is further amplified to allow the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed Surveillance, a successful Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when the Surveillance is performed in MODE 1 or 2. Risk insights or deterministic methods may be used for this assessment.

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Credit may be taken for unplanned events that satisfy this SR.

BASES

SURVEILLANCE REQUIREMENTS (continued)

- REVIEWER'S NOTE -
~~The above MODE restrictions may be deleted if it can be demonstrated to the staff, on a plant specific basis, that performing the SR with the reactor in any of the restricted MODES can satisfy the following criteria, as applicable:~~

~~a. Performance of the SR will not render any safety system or component inoperable,~~

~~b. Performance of the SR will not cause perturbations to any of the electrical distribution systems that could result in a challenge to steady state operation or to plant safety systems, and~~

~~c. Performance of the SR, or failure of the SR, will not cause, or result in, an AOO with attendant challenge to plant safety systems.~~

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2

SR 3.8.1.~~14~~ 10

Once per 18 months, the DGs are required to start and run from a minimum of the calculated accident loads for Unit 1, and the continuous duty rating of the DG for Unit 2, up to a maximum loading of the 2000 hour rating for each DG.

~~Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(3), requires demonstration once per 18 months that the DGs can start and run continuously at full load capability for an interval of not less than 24 hours, 3 [2] hours of which is at a load equivalent to 110% of the continuous duty rating and the remainder of the time at a load equivalent to the continuous duty rating of the DG.~~ The DG starts for this Surveillance can be performed either from standby or hot conditions. The provisions for prelubricating and warmup, discussed in SR 3.8.1.2, and for gradual loading, discussed in SR 3.8.1.3, are applicable to this SR.

The load band is provided to avoid routine overloading of the DG. Routine overloading may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY.

The [18-month] Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(3), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

9

outside of

9

required range

This Surveillance is modified by three Notes. Note 1 states that momentary transients due to changing bus loads do not invalidate this test. Similarly, momentary power factor transients ~~above~~ the power factor ~~limit~~ will not invalidate the test. The reason for Note 2 is that during

BASES

SURVEILLANCE REQUIREMENTS (continued)

operation with the reactor critical, performance of this Surveillance could cause perturbations to the electrical distribution systems that could challenge continued steady state operation and, as a result, unit safety systems. Note 3 ensures that the DG is tested under load conditions that are ~~as~~ close to design basis conditions as possible. When synchronized with offsite power, testing should be performed at a power factor of ≤ {0.9}. This power factor is representative of the actual inductive loading a DG would see under design basis accident conditions. Under certain conditions, however, Note 3 allows the Surveillance to be conducted as a *power factor other than* ≤ {0.9}. *These conditions occur when grid voltage* is high, and the additional field excitation needed to get the power factor to ≤ {0.9} results in voltages on the emergency busses that are too high. Under these conditions, the power factor should be maintained as close as practicable to {0.9} while still maintaining acceptable voltage limits on the emergency busses. In other circumstances, the grid voltage may be such that the DG excitation levels needed to obtain a power factor of {0.9} may not cause unacceptable voltages on the emergency busses, but the excitation levels are in excess of those recommended for the DG. In such cases, the power factor shall be maintained close as practicable to {0.9} without exceeding the DG excitation limits. This restriction from normally *performing the Surveillance in MODE 1 or 2 is further amplified to allow* the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed Surveillance, a successful Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be *measured against the avoided risk of a plant shutdown and startup to* determine that plant safety is maintained or enhanced when the Surveillance is performed in MODE ~~1 or 2~~. Risk insights or deterministic methods may be used for this assessment.

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Credit may be taken for unplanned events that satisfy this SR.

2

~~SR 3.8.1.15~~

~~This Surveillance demonstrates that the diesel engine can restart from a hot condition, such as subsequent to shutdown from normal Surveillances, and achieve the required voltage and frequency within [10] seconds. The [10] second time is derived from the requirements of the accident analysis to respond to a design basis large break LOCA.~~

BASES

SURVEILLANCE REQUIREMENTS (continued)

The [18 month] Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(5).

This SR is modified by two Notes. Note 1 ensures that the test is performed with the diesel sufficiently hot. The load band is provided to avoid routine overloading of the DG. Routine overloads may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY. The requirement that the diesel has operated for at least [2] hours a conditions prior to performance of this Surveillance is based on manufacturer recommendations for achieving hot conditions. M transients due to changing bus loads do not invalidate this test. allows all DG starts to be preceded by an engine prelube perio minimize wear and tear on the diesel during testing.

For Unit 1, the Surveillance also verifies that the DG proceeds through its normal shutdown sequence after transferring its load. For Unit 2, the Surveillance verifies that

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Consistent with the recommendations of

SR 3.8.1.~~16~~ 11 2 Unit 2 . 2

~~As required by~~ Regulatory Guide 1.108 (Ref. 9), paragraph 2.~~a~~.(6), this Surveillance ensures that the manual synchronization and ~~automatic~~ load transfer from the DG to the offsite source can be made ~~and~~ the DG can be returned to ready to load status when offsite power is restored. It also ensures that the autostart logic is reset to allow the DG to reload if a subsequent loss of offsite power occurs. The DG is considered to be in ready to load status when the DG is at ~~rated~~ speed and voltage, the output breaker is open and can receive an autoclose signal on bus undervoltage, and the load ~~sequence timers~~ are reset. 5

2

timer(s)

nominal 9

The Frequency of [18-months] is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(6), and takes into consideration unit conditions required to perform the Surveillance.

9

1, 2, 3, or 4

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety ~~systems~~. This restriction from normally performing the Surveillance in MODE ~~1 or 2~~ is further amplified to allow the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed Surveillance, a successful Surveillance, and a perturbation of the offsite

BASES

NUREG-1431, Rev. 3

SURVEILLANCE REQUIREMENTS (continued)

Credit may be taken for unplanned events that satisfy this SR.

or onsite system when they are tied together or operated independently for the Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when the Surveillance is performed in MODE ~~1 or 2~~ 1, 2, 3, or 4. Risk insights or deterministic methods may be used for this assessment.

2

For the Unit 2 DGs, demonstration

[SR 3.8.1.~~17~~ 12]

~~Demonstration~~ of the test mode override ensures that the DG availability under accident conditions will not be compromised as the result of testing and the DG will automatically reset to ready to load operation if a LOCA actuation signal is received during operation in the test mode. Ready to load operation is defined as the DG running at ~~rated~~ nominal speed and voltage with the DG output breaker open. These provisions for automatic switchover are ~~required by~~ consistent with the recommendations of IEEE-308 (Ref. ~~13~~ 12), paragraph 6.2.6(2).

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~~The requirement to automatically energize the emergency loads with offsite power is essentially identical to that of SR 3.8.1.12. The intent in the requirement associated with SR 3.8.1.17.b is to show that the emergency loading was not affected by the DG operation in test mode. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the emergency loads to perform these functions is acceptable.~~

~~This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.~~

2

The [18 month] Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(8), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

This SR is modified by ~~a Note~~ two Notes. Note 1 states that the SR is applicable to Unit 2 only. The reason for the Note 2 is that performing the Surveillance ~~would remove a required offsite circuit from service,~~ may perturb the electrical distribution system, and challenge safety systems. This restriction from normally performing the Surveillance in MODE ~~1 or 2~~ 1, 2, 3, or 4 is further amplified to allow portions of the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant

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BASES

TSTF-472

SURVEILLANCE REQUIREMENTS (continued)

NUREG-1431, Rev. 3

Credit may be taken for unplanned events that satisfy this SR.

This restriction from normally performing the Surveillance in MODE 1, 2, 3 or 4 is further amplified to allow the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g. post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed Surveillance, a successful Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when the Surveillance is performed in MODE 1, 2, 3 or 4. Risk insights or deterministic methods may be used for this assessment. Credit may be taken for unplanned events that satisfy this SR.

safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial Surveillance, a successful partial Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the partial Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when portions of the Surveillance are performed in MODE ~~1 or 2~~. Risk insights or deterministic methods may be used for the assessment. }

SR 3.8.1.~~18~~ 13 2 with 9 1, 2, 3, or 4 5 timers

Under accident ~~{and loss~~ of offsite power} conditions loads are sequentially connected to the bus by the {automatic load sequence~~r~~}. The sequencing logic controls the permissive and starting signals to motor breakers to prevent overloading of the DGs due to high motor starting currents. The [10]% load sequence time interval tolerance ensures that sufficient time exists for the DG to restore frequency and voltage prior to applying the next load and that safety analysis assumptions regarding ESF equipment time delays are not violated. Reference 2 provides a summary of the automatic loading of ESF buses.

The Frequency of [18 months] is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9), paragraph 2.a.(2), takes into consideration unit conditions required to perform the Surveillance, and is intended to be consistent with expected fuel cycle lengths.

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems.

~~- REVIEWER'S NOTE -~~
~~The above MODE restrictions may be deleted if it can be demonstrated to the staff, on a plant specific basis, that performing the SR with the reactor in any of the restricted MODES can satisfy the following criteria, as applicable:~~

~~a. Performance of the SR will not render any safety system or component inoperable,~~

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BASES

SURVEILLANCE REQUIREMENTS (continued)

b. ~~Performance of the SR will not cause perturbations to any of the electrical distribution systems that could result in a challenge to steady state operation or to plant safety systems, and~~

c. ~~Performance of the SR, or failure of the SR, will not cause, or result in, an AOO with attendant challenge to plant safety systems.~~

3

SR 3.8.1.~~19~~ 14 2

In the event of a DBA coincident with a loss of offsite power, the DGs are required to supply the necessary power to ESF systems so that the fuel, RCS, and containment design limits are not exceeded.

2

11

This Surveillance demonstrates the DG operation~~, as discussed in the Bases for SR 3.8.1.11,~~ during a loss of offsite power actuation test signal in conjunction with an ESF actuation signal. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the DG system to perform these functions is acceptable. This testing may include any series of sequential, overlapping, or total steps so that the entire connection and loading sequence is verified.

The 10-second start requirement supports the assumptions of the design basis accident analyses described in the UFSAR (Ref. 5). The 10-second timing requirement begins when the DG start signal is received by the DG start circuit and does not include the time it takes the instrumentation to detect a loss of voltage on the emergency busses.

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The Frequency of [18 months] takes into consideration unit conditions required to perform the Surveillance and is intended to be consistent with an expected fuel cycle length of [18 months].

or knowledge gained through operating experience. Barring of the engine may be performed prior to DG start without invalidating SR for starting from standby conditions.

This SR is modified by two Notes. The reason for Note 1 is to minimize wear~~ and tear~~ on the DGs during testing. For the purpose of this testing, the DGs must be started from standby conditions, that is, with the engine coolant and oil continuously circulated and temperature maintained consistent with manufacturer recommendations for DGs. The reason for Note 2 is that the performance of the Surveillance would remove a required offsite circuit from service, perturb the electrical distribution system, and challenge safety systems. This restriction from normally performing the Surveillance in MODE ~~1 or 2~~ is further amplified to allow portions of the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial Surveillance, a successful partial Surveillance, and a perturbation of the offsite or onsite system

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1, 2, 3, or 4

BASES

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SURVEILLANCE REQUIREMENTS (continued)

Credit may be taken for unplanned events that satisfy this SR.

when they are tied together or operated independently for the partial Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when portions of the Surveillance are performed in MODE ~~1 or 2~~. Risk insights or deterministic methods may be used for the assessment.

1, 2, 3, or 4

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SR 3.8.1.~~20~~ 15 2

This Surveillance demonstrates that the DG starting independence has not been compromised. Also, this Surveillance demonstrates that each engine can achieve proper speed within the specified time when the DGs are started simultaneously.

The 10 year Frequency is consistent with the recommendations of Regulatory Guide 1.108 (Ref. 9).

two Notes.

second

2

2

Note 1 states that the SR is applicable to Unit 2 only.

This SR is modified by ~~a Note~~. The reason for the Note is to minimize wear on the DG ~~during~~ testing. For the purpose of this testing, the DGs ~~must be~~ started from standby conditions, that is, with the engine coolant and oil continuously circulated and temperature maintained consistent with manufacturer recommendations.

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or knowledge gained through operating experience. Barring of the engine may be performed prior to DG start without invalidating SR for starting from standby conditions.

REFERENCES

1. ~~10 CFR 50, Appendix A, GDC 17.~~

Unit 1 UFSAR Appendix 1A, "1971 AEC General Design Criteria Conformance" and Unit 2 UFSAR Section 3.1, "Conformance with U. S. Nuclear Regulatory Commission General Design Criteria."

2. FSAR, Chapter ~~[8]~~.

U

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3. Regulatory Guide 1.9, ~~Rev. 3~~.

UFSAR Section 8.5 for Unit 1 and UFSAR Chapter 1.8 - 1 for Unit 2.

4. FSAR, Chapter ~~[6]~~.

5. FSAR, Chapter ~~[15]~~.

14 for Unit 1 and Chapter 15 for Unit 2.

6

6. Regulatory Guide 1.93, Rev. 0, December 1974.

7. Generic Letter 84-15, "Proposed Staff Actions to Improve and Maintain Diesel Generator Reliability," July 2, 1984.

8. ~~10 CFR 50, Appendix A, GDC 18.~~

Unit 1 UFSAR Appendix 1A, "1971 AEC General Design Criteria Conformance" and Unit 2 UFSAR Section 3.1, "Conformance with U. S. Nuclear Regulatory Commission General Design Criteria."

9. Regulatory Guide 1.108, Rev. 1, August 1977.

(Unit 2)

BASES

REFERENCES (continued)

1 October 1979 (Unit 2)

10. Regulatory Guide 1.137, Rev. [ ], [~~date~~].
11. ASME, Boiler and Pressure Vessel Code, Section XI.

6

12. IEEE Standard 308-~~1978~~ Unit 1-1971 and Unit 2-1974.

Insert Bases

F.1.1, F.1.2, and F.2

Condition F is entered any time a required sequence timer(s) becomes inoperable. Required Action F.1.1 requires that action be taken immediately to place the affected component (ESF equipment) in a condition where it can not be automatically loaded to its emergency bus. Required Action F.1.1 provides assurance that the DG loading sequence will not be adversely affected by the inoperable sequence timer(s) (i.e., the component will not be loaded onto an emergency bus at an incorrect time). Therefore, rendering a component with an inoperable sequence timer(s) incapable of loading to the emergency bus prevents a possible overload condition. Required Action F.1.2 requires that the appropriate Condition and Required Actions associated with the affected individual component(s) made inoperable by the inoperable sequence timer(s) be applied immediately. Thus, Required Actions F.1.1 and F.1.2 serve to isolate the affected component(s) from the emergency bus and assure the appropriate remedial measures for the affected component(s) are taken in a timely manner. Required Action F.2 provides an alternative option to Required Actions F.1.1 and F.1.2. Required Action F.2 simply requires that the associated DG be immediately declared inoperable.

A Note modifies Condition F. The Note states that separate Condition entry is allowed for each inoperable sequence timer(s) for a DG.

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.2 AC Sources - Shutdown

or movement of fuel assemblies over irradiated fuel assemblies for Unit 1 (which includes recently irradiated fuel) and during movement of recently irradiated fuel assemblies or movement of fuel assemblies over recently irradiated fuel assemblies for Unit 2 ensure that:

BASES

1

BACKGROUND

A description of the AC sources is provided in the Bases for LCO 3.8.1, "AC Sources - Operating."

APPLICABLE SAFETY ANALYSES

The OPERABILITY of the minimum AC sources during MODES 5 and 6 and during movement of ~~[recently]~~ irradiated fuel assemblies ~~ensures that:~~

a. The unit can be maintained in the shutdown or refueling condition for extended periods,

b. Sufficient instrumentation and control capability is available for monitoring and maintaining the unit status, and

c. Adequate AC electrical power is provided to mitigate events postulated during shutdown, such as a fuel handling accident. ~~[involving handling recently irradiated fuel. Due to radioactive decay, AC electrical power is only required to mitigate fuel handling accidents involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous [ ] days)].~~

2

INSERT 1

In general, when the unit is shut down, the Technical Specifications requirements ensure that the unit has the capability to mitigate the consequences of postulated accidents. However, assuming a single failure and concurrent loss of all offsite or all onsite power is not required. The rationale for this is based on the fact that many Design Basis Accidents (DBAs) that are analyzed in MODES 1, 2, 3, and 4 have no specific analyses in MODES 5 and 6. Worst case bounding events are deemed not credible in MODES 5 and 6 because the energy contained within the reactor pressure boundary, reactor coolant temperature and pressure, and the corresponding stresses result in the probabilities of occurrence being significantly reduced or eliminated, and in minimal consequences. These deviations from DBA analysis assumptions and design requirements during shutdown conditions are allowed by the LCO for required systems.

During MODES 1, 2, 3, and 4, various deviations from the analysis assumptions and design requirements are allowed within the Required Actions. This allowance is in recognition that certain testing and

BASES

APPLICABLE SAFETY ANALYSES (continued)

maintenance activities must be conducted provided an acceptable level of risk is not exceeded. During MODES 5 and 6, performance of a significant number of required testing and maintenance activities is also required. In MODES 5 and 6, the activities are generally planned and administratively controlled. Relaxations from MODE 1, 2, 3, and 4 LCO requirements are acceptable during shutdown modes based on:

a. The fact that time in an outage is limited. This is a risk prudent goal as well as a utility economic consideration.

b. Requiring appropriate compensatory measures for certain conditions. These may include administrative controls, reliance on systems that do not necessarily meet typical design requirements applied to systems credited in operating MODE analyses, or both.

c. Prudent utility consideration of the risk associated with multiple activities that could affect multiple systems.

d. Maintaining, to the extent practical, the ability to perform required functions (even if not meeting MODE 1, 2, 3, and 4 OPERABILITY requirements) with systems assumed to function during an event.

In the event of an accident during shutdown, this LCO ensures the capability to support systems necessary to avoid immediate difficulty, assuming either a loss of all offsite power or a loss of all onsite diesel generator (DG) power.

The AC sources satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

One offsite circuit capable of supplying the onsite Class 1E power distribution subsystem(s) of LCO 3.8.10, "Distribution Systems - Shutdown," ensures that all required loads are powered from offsite power. An OPERABLE DG, associated with a distribution system train required to be OPERABLE by LCO 3.8.10, ensures a diverse power source is available to provide electrical power support, assuming a loss of the offsite circuit. Together, OPERABILITY of the required offsite circuit and DG ensures the availability of sufficient AC sources to operate the unit in a safe manner and to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents involving irradiated fuel (Unit 1) and recently irradiated fuel (Unit 2) ~~[involving handling recently irradiated fuel]~~). 2

The qualified offsite circuit must be capable of maintaining ~~rated~~ nominal frequency and voltage, and accepting required loads during an accident,

100

BASES

LCO (continued) U 2

3

INSERT 2

while connected to the Engineered Safety Feature (ESF) bus(es). Qualified offsite circuits are those that are described in the FSAR and are part of the licensing basis for the unit.

~~[Offsite circuit #1 consists of Safeguards Transformer B, which is supplied from Switchyard Bus B, and is fed through breaker 52-3 powering the ESF transformer XNB01, which, in turn, powers the #1 ESF bus through its normal feeder breaker. The second offsite circuit consists of the Startup Transformer, which is normally fed from the Switchyard Bus A, and is fed through breaker PA 0201 powering the ESF transformer, which, in turn, powers the #2 ESF bus through its normal feeder breaker.]~~

2

The 10-second timing requirement begins when the DG start signal is received by the DG start circuit and does not include the time it takes the instrumentation to detect a loss of voltage on the emergency busses.

The DG must be capable of starting, accelerating to ~~rated~~ speed and voltage, and connecting to its respective ESF bus on detection of bus undervoltage. This sequence must be accomplished within [10] seconds. *The DG must be capable of accepting required loads* within the assumed loading sequence intervals, and continue to operate until offsite power can be restored to the ESF buses. These capabilities are required to be met from a variety of initial conditions such as DG in standby with the engine hot and DG in standby at ambient conditions.

nominal

required

Proper sequencing of loads, including tripping of nonessential loads, is a required function for DG OPERABILITY.

2

~~[In addition, proper sequencer operation is an integral part of offsite circuit OPERABILITY since its inoperability impacts on the ability to start and maintain energized loads required OPERABLE by LCO 3.8.10.]~~

It is acceptable for trains to be cross tied during shutdown conditions, allowing a single offsite power circuit to supply all required trains.

1

APPLICABILITY

during movement of irradiated fuel or movement of fuel assemblies over irradiated fuel assemblies for Unit 1 (which includes recently irradiated fuel) and during movement of recently irradiated fuel assemblies or movement of fuel assemblies over recently irradiated fuel assemblies for Unit 2

The AC sources required to be OPERABLE in MODES 5 and 6 and ~~during movement of [recently] irradiated fuel assemblies~~ provide assurance that:

irradiated fuel (Unit 1) and

a. Systems to provide adequate coolant inventory makeup are available for the irradiated fuel assemblies in the core,

b. Systems needed to mitigate a fuel handling accident [involving ~~handling~~ recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous ~~[ ] days~~)] are available,

2

100 hours (Unit 2)

BASES

APPLICABILITY (continued)

c. Systems necessary to mitigate the effects of events that can lead to core damage during shutdown are available, and

d. Instrumentation and control capability is available for monitoring and maintaining the unit in a cold shutdown condition or refueling condition.

The AC power requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.1.

ACTIONS

2

LCO 3.0.3 is not applicable while in MODE 5 or 6. However, since ~~irradiated~~ fuel assembly movement can occur in MODE 1, 2, 3, or 4, the ACTIONS have been modified by a Note stating that LCO 3.0.3 is not applicable. If moving ~~irradiated~~ fuel assemblies while in MODE 5 or 6, LCO 3.0.3 would not specify any action. If moving ~~irradiated~~ fuel assemblies while in MODE 1, 2, 3, or 4, the fuel movement is independent of reactor operations. Entering LCO 3.0.3, while in MODE 1, 2, 3, or 4 would require the unit to be shutdown unnecessarily.

5

the necessary portions of the electrical power distribution subsystem(s).

A.1

An offsite circuit would be considered inoperable if it were not available to ~~one required ESF train. Although two trains are required by LCO 3.8.10, the~~ one train with offsite power available may be capable of supporting sufficient required features to allow continuation of CORE ALTERATIONS and ~~[recently] irradiated~~ fuel movement. By the allowance of the option to declare required features inoperable, with no offsite power available, appropriate restrictions will be implemented in accordance with the affected required features LCO's ACTIONS.

O

2

A.2.5,

A.2.1, A.2.2, A.2.3, A.2.4, B.1, B.2, B.3, ~~and B.4~~

B.4, and B.5

With the offsite circuit not available to all required trains, the option would still exist to declare all required features inoperable. Since this option may involve undesired administrative efforts, the allowance for sufficiently conservative actions is made. With the required DG inoperable, the minimum required diversity of AC power sources is not available. It is, therefore, required to suspend CORE ALTERATIONS, movement of ~~[recently] irradiated~~ fuel assemblies, and operations involving positive reactivity additions that could result in loss of required SDM (MODE 5) or boron concentration (MODE 6). Suspending positive reactivity additions that could result in failure to meet the minimum SDM or boron concentration limit is required to assure continued safe operation.

BASES

ACTIONS (continued)

4

Introduction of coolant inventory must be from sources that have a boron concentration greater than ~~that~~ what would be required in the RCS for minimum SDM or refueling boron concentration. This may result in an overall reduction in RCS boron concentration, but provides acceptable margin to maintaining subcritical operation. Introduction of temperature changes including temperature increases when operating with a positive MTC must also be evaluated to ensure they do not result in a loss of required SDM.

Suspension of these activities does not preclude completion of actions to establish a safe conservative condition. These actions minimize the probability or the occurrence of postulated events. It is further required to immediately initiate action to restore the required AC sources and to continue this action until restoration is accomplished in order to provide the necessary AC power to the unit safety systems.

The Completion Time of immediately is consistent with the required times for actions requiring prompt attention. The restoration of the required AC electrical power sources should be completed as quickly as possible in order to minimize the time during which the unit safety systems may be without sufficient power.

Pursuant to LCO 3.0.6, the Distribution System's ACTIONS would not be entered even if all AC sources to it are inoperable, resulting in de-energization. Therefore, the Required Actions of Condition A are modified by a Note to indicate that when Condition A is entered with no AC power to any required ESF bus, the ACTIONS for LCO 3.8.10 must be immediately entered. This Note allows Condition A to provide requirements for the loss of the offsite circuit, whether or not a train is de-energized. LCO 3.8.10 would provide the appropriate restrictions for the situation involving a de-energized train.

SURVEILLANCE REQUIREMENTS

SR 3.8.2.1

7 | power is normally supplied by the | 1

SR 3.8.2.1 requires the SRs from LCO 3.8.1 that are necessary for ensuring the OPERABILITY of the AC sources in other than MODES 1, 2, 3, and 4. SR 3.8.1.8 is not required to be met since ~~only one~~ offsite circuit ~~is required to be OPERABLE~~. SR 3.8.1.~~17~~ is not required to be met because the required OPERABLE DG(s) is not required to undergo periods of being synchronized to the offsite circuit. SR 3.8.1.~~20 is~~ excepted because starting independence is not required with the DG(s) that is not required to be operable.

12

15

1

BASES

three

SURVEILLANCE REQUIREMENTS (continued)

This SR is modified by ~~two~~ Notes. The reason for Note 1 is to preclude requiring the OPERABLE DG(s) from being paralleled with the offsite power network or otherwise rendered inoperable during performance of SRs, and to preclude deenergizing a required 4160 V ESF bus or disconnecting a required offsite circuit during performance of SRs. With limited AC sources available, a single event could compromise both the required circuit and the DG. It is the intent that these SRs must still be capable of being met, but actual performance is not required during periods when the DG and offsite circuit is required to be OPERABLE. Refer to the corresponding Bases for LCO 3.8.1 for a discussion of each SR. ~~Note 2 states that SRs 3.8.1.12 and 3.8.1.19 are not required to be met when its associated ECCS subsystem(s) are not required to be OPERABLE. These SRs demonstrate the DG response to an ECCS signal (either alone or in conjunction with a loss-of-power signal). This is consistent with the ECCS instrumentation requirements that do not require the ECCS signals when the ECCS System is not required to be OPERABLE per LCO 3.5.3, "ECCS-Shutdown."~~

TSTF-433

1

INSERT 3

REFERENCES ~~None~~

1. NUREG-1431, "Standard Technical Specifications for Westinghouse Plants," Rev. 2, April 2001.

1

B 3.8.2 INSERTS

1. The current fuel handling accident safety analysis does not rely on the automatic actuation of any systems or components to mitigate the accident. Furthermore, the current fuel handling accident analysis does not assume isolation or filtration to mitigate the event. However, in order to limit the control room dose following a fuel handling accident, Unit 1 must purge the control room atmosphere for 30 minutes following termination of the release (2 hours after the accident). The required Unit 1 purge is a manual action for which the Technical Specifications require power (LCO 3.8.2) and ventilation system (LCO 3.7.11) OPERABILITY when moving any irradiated fuel assemblies or fuel assemblies over any irradiated fuel assemblies. The Unit 1 requirement to purge the control room after a fuel handling accident involving any type of irradiated fuel is the reason for the difference in the fuel movement applicability for each unit in LCO 3.8.2 and LCO 3.7.11.

   Although not a specific assumption of the safety analyses, this specification requires that the DG automatically start, connect to the emergency bus, and automatically sequence the required loads. This capability in conjunction with the loss of voltage relays required OPERABLE by LCO 3.3.5, "Loss of Power (LOP) DG Start and Bus Separation Instrumentation," assures that a reliable source of AC power is promptly available in the event offsite power is lost. In addition, this capability provides automatic protection against degraded voltage conditions (via the degraded voltage sensing relays required OPERABLE in LCO 3.3.5) that could damage equipment required to maintain the unit in a safe shutdown condition. Therefore, the prompt availability of reliable backup emergency power provides additional assurance that the unit can be maintained in a safe shutdown condition in the event the grid becomes unstable.

   Current requirements based on the decay time of the fuel prevent the movement of recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous 100 hours). However, the Technical Specifications continue to address fuel movement involving recently irradiated fuel to support requirements for isolation or filtration that may be necessary to mitigate a fuel handling accident involving recently irradiated fuel. The retention of requirements within the Technical Specifications, in case the requirements are necessary to support fuel movement involving recently irradiated fuel, is consistent with the guidance of Ref. 1.

2. During normal plant operation, electrical power for the onsite circuits comes from either the main generator through 22 kV to 4.36 kV unit station service transformers or from the two independent offsite 138KV buses through 138KV to 4.36 kV system station service transformers. The secondary windings of the transformers are connected to four separate 4.16 kV normal buses, A, B, C and D. Buses A and D provide power for the two redundant Class 1E 4.16 kV emergency buses AE and DF, respectively. During plant shutdown, the emergency buses receive power from the system station service transformers, or may receive power from the unit station service transformers by backfeeding the main transformer. Automatic and manual transfer capabilities to the system station service transformers are available when the offsite source(s) are required to be OPERABLE.

3. Note 2 limits the scope of the requirement to verify the automatic load sequencing functions. The Note recognizes that the majority of equipment automatically sequenced on the emergency bus is not required to assure safe operation of the plant in shutdown MODES. The Note limits the verifications required by SR 3.8.1.13 and SR 3.8.1.14 to those loads required in the Applicable MODES of LCO 3.8.2. The required loads are the loads required OPERABLE by Technical Specifications and loads necessary to support the OPERABILITY of the loads required OPERABLE by Technical Specifications.

   Note 3 clarifies the requirements of SR 3.8.1.14 such that only the DG response to the loss of offsite power must be verified to confirm OPERABILITY in the shutdown conditions addressed by LCO 3.8.2. No ESF (i.e., SI) actuation of the DG is required to be verified during the shutdown conditions addressed by LCO 3.8.2. Note 3 does not preclude the verification of ESF actuations and is only intended to clarify that an ESF actuation is not required to confirm DG or emergency bus OPERABILITY during the shutdown conditions addressed by LCO 3.8.2.

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air

Unit 1's fuel oil requirement provides three and one-half days of inventory for the associated storage tank.

BASES

3

A required Unit 2

BACKGROUND

3

~~Each~~ diesel generator (DG) is provided with a storage tank having a fuel oil capacity sufficient to operate that diesel for a period of 7 days while the DG is supplying maximum post loss of coolant accident load demand discussed in ~~the FSAR, Section [9.5.4.2] (Ref. 1)~~. The maximum load demand is calculated using the assumption ~~that a minimum of any two DGs is available~~. This onsite fuel oil capacity is sufficient to operate the DGs for longer than the time to replenish the onsite supply from outside sources.

Reference 1

1

one DG is operated at full load for 7 days.

Fuel oil is transferred from storage tank to day tank by either of two transfer pumps associated with each storage tank. Redundancy of pumps and piping precludes the failure of one pump, or the rupture of any pipe, valve or tank to result in the loss of more than one DG. All outside tanks~~, pumps,~~ and piping are located underground.

3

1

Reference 3

For proper operation of the standby DGs, it is necessary to ensure the proper quality of the fuel oil. Regulatory Guide 1.137 (Ref. 2) addresses the recommended fuel oil practices as supplemented by ~~ANSI N195 (Ref. 3)~~. The fuel oil properties governed by these SRs are the water and sediment content, the kinematic viscosity, specific gravity (or API gravity), and impurity level.

The DG lubrication system is designed to provide sufficient lubrication to permit proper operation of its associated DG under all loading conditions. The system is required to circulate the lube oil to the diesel engine working surfaces and to remove excess heat generated by friction during operation. ~~Each engine oil sump contains an inventory capable of supporting a minimum of [7] days of operation. [The onsite storage in addition to the engine oil sump is sufficient to ensure 7 days of continuous operation.]~~ This supply is sufficient to allow the operator to replenish lube oil from outside sources.

The required lube oil inventory for each DG is sufficient to ensure 7 days of continuous operation.

3

Each DG has an air start system with adequate capacity for five successive start attempts on the DG without recharging the air start receiver(s).

For Unit 1, the required air start capacity for each DG is met with two out of three air tanks in one of the two air banks at the specified air pressure. For Unit 2, one out of the two air banks (consisting of a single air tank) supplies sufficient volume at the specified pressure to meet the required capacity for each DG.

BASES

U

3

1

Reference 5

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses in the FSAR, Chapter [6] (Ref. 4), and in ~~the FSAR, Chapter [15] (Ref. 5)~~, assume Engineered Safety Feature (ESF) systems are OPERABLE. The DGs are designed to provide sufficient capacity, capability, redundancy, and reliability to ensure the availability of necessary power to ESF systems so that fuel, Reactor Coolant System and containment design limits are not exceeded. These limits are discussed in more detail in the Bases for Section 3.2, Power Distribution Limits; Section 3.4, Reactor Coolant System (RCS); and Section 3.6, Containment Systems.

Since diesel fuel oil, lube oil, and the air start subsystem support the operation of the standby AC power sources, they satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

3

for Unit 2 DGs. Unit 1 DGs have a three and one-half day supply at a full load operation.

3

the required

Stored diesel fuel oil is required to have sufficient supply for 7 days of full load operation. It is also required to meet specific standards for quality. Additionally, sufficient lubricating oil supply must be available to ensure the capability to operate at full load for ~~7 days~~. This requirement, in conjunction with an ability to obtain replacement supplies within ~~7 days~~, supports the availability of DGs required to shut down the reactor and to maintain it in a safe condition for an anticipated operational occurrence (AOO) or a postulated DBA with loss of offsite power. DG day tank fuel requirements, as well as transfer capability from the storage tank to the day tank, are addressed in LCO 3.8.1, "AC Sources - Operating," and LCO 3.8.2, "AC Sources - Shutdown."

The starting air system is required to have a minimum capacity for five successive DG start attempts without recharging the air start receivers.

APPLICABILITY

The AC sources (LCO 3.8.1 and LCO 3.8.2) are required to ensure the availability of the required power to shut down the reactor and maintain it in a safe shutdown condition after an AOO or a postulated DBA. Since stored diesel fuel oil, lube oil, and the starting air subsystem support LCO 3.8.1 and LCO 3.8.2, stored diesel fuel oil, lube oil, and starting air are required to be within limits when the associated DG is required to be OPERABLE.

ACTIONS

The ACTIONS Table is modified by a Note indicating that separate Condition entry is allowed for each DG. This is acceptable, since the Required Actions for each Condition provide appropriate compensatory actions for each inoperable DG subsystem. Complying with the Required Actions for one inoperable DG subsystem may allow for continued

BASES

ACTIONS (continued)

operation, and subsequent inoperable DG subsystem(s) are governed by separate Condition entry and application of associated Required Actions.

A.1

for Unit 2. In this condition, the three and one-half day fuel oil supply for a DG is not available for Unit 1.

3

for Unit 2 and a three day supply for Unit 1.

In this Condition, the 7-day fuel oil supply for a DG is not available. However, the Condition is restricted to fuel oil level reductions that maintain at least a 6 day supply. These circumstances may be caused by events, such as full load operation required after an inadvertent start while at minimum required level, or feed and bleed operations, which may be necessitated by increasing particulate levels or any number of other oil quality degradations. This restriction allows sufficient time for obtaining the requisite replacement volume and performing the analyses required prior to addition of fuel oil to the tank. A period of 48 hours is considered sufficient to complete restoration of the required level prior to declaring the DG inoperable. This period is acceptable based on the remaining capacity (> 6 days), the fact that procedures will be initiated to obtain replenishment, and the low probability of an event during this brief period.

B.1

330 ← 4

4 → ≥

With lube oil inventory < ~~500~~ gal, sufficient lubricating oil to support 7 days of continuous DG operation at full load conditions may not be available. However, the Condition is restricted to lube oil volume reductions that maintain at least a 6 day supply. This restriction allows sufficient time to obtain the requisite replacement volume. A period of 48 hours is considered sufficient to complete restoration of the required volume prior to declaring the DG inoperable. This period is acceptable based on the remaining capacity (> 6 days), the low rate of usage, the fact that procedures will be initiated to obtain replenishment, and the low probability of an event during this brief period.

C.1

3.8.3.3 ← 5

This Condition is entered as a result of a failure to meet the acceptance criterion of SR ~~3.8.3.6~~. Normally, trending of particulate levels allows sufficient time to correct high particulate levels prior to reaching the limit of acceptability. Poor sample procedures (bottom sampling), contaminated sampling equipment, and errors in laboratory analysis can produce failures that do not follow a trend. Since the presence of particulates does not mean failure of the fuel oil to burn properly in the diesel engine, and particulate concentration is unlikely to change significantly between Surveillance Frequency intervals, and proper engine

BASES

ACTIONS (continued)

92 — 4

performance has been recently demonstrated (within ~~31~~ days), it is prudent to allow a brief period prior to declaring the associated DG inoperable. The 7 day Completion Time allows for further evaluation, resampling and re-analysis of the DG fuel oil.

5

3.8.3.3

D.1

With the new fuel oil properties defined in the Bases for SR ~~3.8.3.4~~ not within the required limits, a period of 30 days is allowed for restoring the stored fuel oil properties. This period provides sufficient time to test the stored fuel oil to determine that the new fuel oil, when mixed with previously stored fuel oil, remains acceptable, or to restore the stored fuel oil properties. This restoration may involve feed and bleed procedures, filtering, or combinations of these procedures. Even if a DG start and load was required during this time interval and the fuel oil properties were outside limits, there is a high likelihood that the DG would still be capable of performing its intended function.

4

165 psig for Unit 1, and 394 psig for Unit 2

E.1

With starting air receiver pressure < ~~[225] psig~~, sufficient capacity for five successive DG start attempts does not exist. However, as long as the receiver pressure is > ~~[125] psig~~, there is adequate capacity for at least one start attempt, and the DG can be considered OPERABLE while the air receiver pressure is restored to the required limit. A period of 48 hours is considered sufficient to complete restoration to the required pressure prior to declaring the DG inoperable. This period is acceptable based on the remaining air start capacity, the fact that most DG starts are accomplished on the first attempt, and the low probability of an event during this brief period.

125 psig for Unit 1, and 285 psig for Unit 2

E — 2

F.1

With a Required Action and associated Completion Time not met, or one or more DG's fuel oil, lube oil, or starting air subsystem not within limits for reasons other than addressed by Conditions A through ~~D~~, the associated DG may be incapable of performing its intended function and must be immediately declared inoperable.

BASES

3

three and one-half days for Unit 1 and 7 days for Unit 2.

SURVEILLANCE REQUIREMENTS

SR 3.8.3.1

3 a

usable 6

This is

~~This~~ SR provides verification that there is an adequate inventory of fuel oil in the storage tanks to support ~~each~~ DG's operation for ~~7 days at full load.~~ ~~The 7 day period is~~ sufficient time to place the unit in a safe shutdown condition and to bring in replenishment fuel from an offsite location.

The 31 day Frequency is adequate to ensure that a sufficient supply of fuel oil is available, since low level alarms are provided and unit operators would be aware of any large uses of fuel oil during this period.

3

The required inventory for each DG is confirmed by verifying that a lube oil volume of 330 gallons (six 55 gallon oil drums) is available, in storage, for each DG. This required inventory is in addition to the lube oil in the DG sump required to maintain the manufacturer's recommended minimum sump level. If necessary to meet the required inventory, credit may be taken for lube oil in the DG sump above the manufacturer's recommended minimum sump level to supplement the required storage volume.

SR 3.8.3.2

4 330

This Surveillance ensures that sufficient lube oil inventory is available to support at least 7 days of full load operation for each DG. The ~~[500]~~ gal ~~requirement is based on the DG manufacturer consumption~~ values for the run time of the DG. Implicit in this SR is the requirement to verify the capability to transfer the lube oil from its storage location to the DG, when the DG lube oil sump does not hold adequate inventory for 7 days of full load operation without the level reaching the manufacturer recommended minimum level.

A 31 day Frequency is adequate to ensure that a sufficient lube oil supply is onsite, since DG starts and run time are closely monitored by the unit staff.

SR 3.8.3.3

The tests listed below are a means of determining whether new fuel oil is of the appropriate grade and has not been contaminated with substances that would have an immediate, detrimental impact on diesel engine combustion. If results from these tests are within acceptable limits, the fuel oil may be added to the storage tanks without concern for contaminating the entire volume of fuel oil in the storage tanks. These tests are to be conducted prior to adding the new fuel to the storage tank(s), but in no case is the time between receipt of new fuel and conducting the tests to exceed 31 days. The tests, limits, and applicable ASTM Standards are as follows:

CTS Values

81

a. Sample the new fuel oil in accordance with ASTM D4057-[ ] (Ref. 6),

b. Verify in accordance with the tests specified in ASTM D975-[ ] (Ref. 6) that the sample has an absolute specific gravity at 60/60°F

3

or an API Gravity of within 0.3 degrees at 60 °F, or a specific gravity of within 0.0016 at 60 / 60 °F when compared to the supplier's certificate

BASES

SURVEILLANCE REQUIREMENTS (continued)

of ≥ 0.83 and ≤ 0.89 or an API gravity at 60 °F of ≥ 27°and ≤ 39 °F, a kinematic viscosity at 40 °C of ≥ 1.9 centistokes and ≤ 4.1 centistokes, and a flash point of ≥ 125°F, and

water and sediment content of less than or equal to 0.05% when tested in accordance with ASTM D1796-83

CTS Values

c. Verify that the new fuel oil has ~~a clear and bright appearance with proper color when tested in accordance with ASTM D4176-[ ]~~ (Ref. 6).

Failure to meet any of the above limits is cause for rejecting the new fuel oil, but does not represent a failure to meet the LCO concern since the fuel oil is not added to the storage tanks.

Within 31 days following the initial new fuel oil sample, the fuel oil is analyzed to establish that the other properties specified in Table 1 of ASTM D975-~~[ ]~~ (Ref. 7) are met for new fuel oil when tested in accordance with ASTM D975-~~[ ]~~ (Ref. 6), except that the analysis for ~~sulfur may be performed in accordance with ASTM D1552-[ ] (Ref. 6) or ASTM D2622-[ ]~~ (Ref. 6). The 31 day period is acceptable because the fuel oil properties of interest, even if they were not within stated limits, would not have an immediate effect on DG operation. This Surveillance ensures the availability of high quality fuel oil for the DGs.

6 81 79 82

CTS Values

Fuel oil degradation during long term storage shows up as an increase in particulate, due mostly to oxidation. The presence of particulate does not mean the fuel oil will not burn properly in a diesel engine. The particulate can cause fouling of filters and fuel oil injection equipment, however, which can cause engine failure.

78

Particulate concentrations should be determined in accordance with ~~ASTM D2276-[ ]~~, Method A (Ref. 6). This method involves a gravimetric determination of total particulate concentration in the fuel oil and has a limit of 10 mg/l. It is acceptable to obtain a field sample for subsequent laboratory testing in lieu of field testing. ~~[For those designs in which the total~~ stored fuel oil volume is contained in ~~two or~~ more ~~interconnected tanks,~~ each tank ~~must be~~ considered and tested separately.]

2 is

than one tank (i.e., day tanks and storage tanks)

The Frequency of this test takes into consideration fuel oil degradation trends that indicate that particulate concentration is unlikely to change significantly between Frequency intervals.

3

BASES

The air receiver volume that ensures the required air start capacity is met, at the specified pressures, consists of the following:

For Unit 1, two out of three air tanks in one of the two air banks for each DG, and

For Unit 2, one out of the two air banks (consisting of a single air tank) for each DG.

3

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.3.4

This Surveillance ensures that, without the aid of the refill compressor, sufficient air start capacity for each DG is available. The system design requirements provide for a minimum of {five} engine start cycles without recharging. {A start cycle is defined by the DG vendor, but usually is measured in terms of time (seconds of cranking) or engine cranking speed.} The pressure specified in this SR is intended to reflect the lowest value at which the {five} starts can be accomplished.

The 31 day Frequency takes into account the capacity, capability, redundancy, and diversity of the AC sources and other indications available in the control room, including alarms, to alert the operator to below normal air start pressure.

SR 3.8.3.5

CTS Value

92

Microbiological fouling is a major cause of fuel oil degradation. There are numerous bacteria that can grow in fuel oil and cause fouling, but all must have a water environment in order to survive. Removal of water from the fuel storage tanks once every ~~[31]~~ days eliminates the necessary environment for bacterial survival. This is the most effective means of controlling microbiological fouling. In addition, it eliminates the potential for water entrainment in the fuel oil during DG operation. Water may come from any of several sources, including condensation, ground water, rain water, and contaminated fuel oil, and from breakdown of the fuel oil by bacteria. Frequent checking for and removal of accumulated water minimizes fouling and provides data regarding the watertight integrity of the fuel oil system. ~~The Surveillance Frequencies are established by~~ Regulatory Guide 1.137 (Ref. 2). This SR is for ~~preventive~~ maintenance. The presence of water does not necessarily represent failure of this SR, provided the accumulated water is removed during performance of the Surveillance.

2

preventative

2

consistent with the recommendations of

REFERENCES

3

U

1. FSAR, Section ~~[9.5.4.2]~~. 9.14.4 for Unit 1 and Section 9.5.4 for Unit 2
2. Regulatory Guide 1.137.
3. ~~ANSI N195-1976, Appendix B.~~ UFSAR Section 9.14.6 for Unit 1, and UFSAR Section 9.5.4 for Unit 2.
4. FSAR, Chapter [6].
5. FSAR, Chapter ~~[15]~~. 14 for Unit 1 and Chapter 15 for Unit 2.

1

BASES

REFERENCES (continued)

81 79

6. ASTM Standards: D4057-[ ], D975-[ ], ~~D4176-[ ]~~, D1552-[ ], D2622-[ ], and D2276-[ ], Method A.

82 78 D1796-83

7. ASTM Standards, D975-[ ], Table 1.

81 6

CTS Values

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.4 DC Sources - Operating

1 described

2 Reference

BASES

BACKGROUND

The station DC electrical power system provides the AC emergency power system with control power. It also provides both motive and control power to selected safety related equipment and preferred AC vital bus power (via inverters). As ~~required~~ by ~~10 CFR 50, Appendix A, GDC 17 (Ref.~~ 1), the DC electrical power system is designed to have sufficient independence, redundancy, and testability to perform its safety functions, assuming a single failure. The DC electrical power system also conforms to the recommendations of Regulatory Guide 1.6 (Ref. 2) and IEEE-308 (Ref. 3) as addressed in the UFSAR.

3 INSERT 1

The [125/~~250~~] VDC electrical power system consists of two independent and redundant safety related Class 1E DC electrical power subsystems ([Train A and Train B]). Each subsystem consists of [two] 125 VDC batteries [(each battery ~~[50]% capacity~~)], the associated battery charger(s) for each battery, and all the associated control equipment and interconnecting cabling.

100 % capacity for that portion of the subsystem

[~~The 250 VDC source is obtained by use of the two 125 VDC batteries connected in series. Additionally there is [one] spare battery charger per subsystem, which provides backup service in the event that the preferred battery charger is out of service. If the spare battery charger is substituted for one of the preferred battery chargers, then the requirements of independence and redundancy between subsystems are maintained.~~] 4

During normal operation, the [125/~~250~~] VDC load is powered from the battery chargers with the batteries floating on the system. In case of loss of normal power to the battery charger, the DC load is automatically powered from the station batteries.

for Unit 1. For Unit 2, the battery chargers are described as charger / rectifier for buses 2-3 and 2-4 and chargers for buses 2-1 and 2-2. The rectifiers provide DC to inverters 2-1 and 2-2. The battery charger for the associated DC buses provides a backup function to the rectifier for the inverter. A blocking diode prevents the rectifier from supplying the battery charging function. DC buses 2-3 and 2-4 have a charger / rectifier providing the DC to power the inverter and maintaining the associated battery charged. Hereafter, the charger/rectifier is referred to as a "charger." 3

The [Train A and Train B] DC electrical power subsystems provide the control power for its associated Class 1E AC power load group, [4.16] kV switchgear, and [480] V load centers. The DC electrical power subsystems also provide DC electrical power to the inverters, which in turn power the AC vital buses.

The DC power distribution system is described in more detail in Bases for LCO 3.8.9, "Distribution System - Operating," and LCO 3.8.10, "Distribution Systems - Shutdown."

BASES

BACKGROUND (continued)

3

Each 125/~~250~~ VDC battery is separately housed in a ventilated room apart from its charger and distribution centers. Each subsystem is located in an area separated physically and electrically from the other subsystem to ensure that a single failure in one subsystem does not cause a failure in a redundant subsystem. There is no sharing between redundant Class 1E subsystems, such as batteries, battery chargers, or distribution panels.

1
Reference

Each battery has adequate storage capacity to meet the duty cycle(s) discussed in ~~the FSAR, Chapter [8] (Ref 4)~~. The battery is designed with additional capacity above that required by the design duty cycle to allow for temperature variations and other factors.

The batteries for Train A and Train B DC electrical power subsystems are sized to produce required capacity at 80% of nameplate rating, corresponding to warranted capacity at end of life cycles and the 100% design demand. The minimum design voltage limit is 105/~~210~~ V.

1
124
1
2.07
60

The battery cells are of flooded lead acid construction with ~~a nominal~~ specific gravity of [1.215]. This specific gravity ~~corresponds~~ to an open ~~circuit battery~~ voltage of approximately ~~120~~ V for a ~~[58]~~ cell battery (i.e., cell voltage of ~~[2.065]~~ volts per cell (Vpc)). The open circuit voltage is the voltage maintained when there is no charging or discharging. ~~Once fully charged with its open circuit voltage ≥ [2.0654] Vpc, the battery cell will maintain its capacity for [30] days without further charging per manufacturer's instructions.~~ Optimal long term performance ~~however, is~~ obtained by maintaining a float voltage ~~[2.20 to 2.25]~~ Vpc. ~~This~~ provides adequate over-potential, which limits the formation of lead sulfate and self discharge. ~~The~~ nominal float voltage of ~~[2.22]~~ Vpc corresponds to a total float voltage output of ~~[128.8]~~ V for a ~~[58]~~ cell battery as discussed in ~~the FSAR, Chapter [8] (Ref. 4)~~.

5
2.25
135
Reference
60
1

Each Train A and Train B DC electrical power subsystem battery charger has ample power output capacity for the steady state operation of connected loads required during normal operation, while at the same time maintaining its battery bank fully charged. Each battery charger also has sufficient excess capacity to restore the battery from the design minimum charge to its fully charged state within 24 hours while supplying normal steady state loads discussed in ~~the FSAR, Chapter [8] (Ref. 4)~~.

1
Reference

The battery charger is normally in the float-charge mode. Float-charge is the condition in which the charger is supplying the connected loads and the battery cells are receiving adequate current to optimally charge the

BASES

BACKGROUND (continued)

battery. This assures the internal losses of a battery are overcome and the battery is maintained in a fully charged state.

When desired, the charger can be placed in the equalize mode. The equalize mode is at a higher voltage than the float mode and charging current is correspondingly higher. The battery charger is operated in the equalize mode after a battery discharge or for routine maintenance. Following a battery discharge, the battery recharge characteristic accepts current at the current limit of the battery charger (if the discharge was significant, e.g., following a battery service test) until the battery terminal voltage approaches the charger voltage setpoint. Charging current then reduces exponentially during the remainder of the recharge cycle. Lead-calcium batteries have recharge efficiencies of greater than 95%, so once at least 105% of the ampere-hours discharged have been returned, the battery capacity would be restored to the same condition as it was prior to the discharge. This can be monitored by direct observation of the exponentially decaying charging current or by evaluating the amp-hours discharged from the battery and amp-hours returned to the battery.

6

Reference

APPLICABLE SAFETY ANALYSES

3

U

The initial conditions of Design Basis Accident (DBA) and transient analyses in the FSAR, Chapter [6] (Ref. 5) and ~~Chapter [15] (Ref. 6)~~, ~~assume that~~ Engineered Safety Feature (ESF) systems are OPERABLE. The DC electrical power system provides normal and emergency DC electrical power for the DGs, emergency auxiliaries, and control and switching during all MODES of operation.

The OPERABILITY of the DC sources is consistent with the initial assumptions of the accident analyses and is based upon meeting the design basis of the unit. This includes maintaining the DC sources OPERABLE during accident conditions in the event of:

a. An assumed loss of all offsite AC power or all onsite AC power and

b. A worst-case single failure.

The DC sources satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

The DC electrical power subsystems, each subsystem consisting of [two] batteries, battery charger [for each battery] and the corresponding control equipment and interconnecting cabling supplying power to the associated bus within the train are required to be OPERABLE to ensure the availability of the required power to shut down the reactor and maintain it

BASES

LCO (continued)

in a safe condition after an anticipated operational occurrence (AOO) or a postulated DBA. Loss of any train DC electrical power subsystem does not prevent the minimum safety function from being performed (Ref. 4).

An OPERABLE DC electrical power subsystem requires all required batteries and respective chargers to be operating and connected to the associated DC bus(es).

APPLICABILITY

The DC electrical power sources are required to be OPERABLE in MODES 1, 2, 3, and 4 to ensure safe unit operation and to ensure that:

a. Acceptable fuel design limits and reactor coolant pressure boundary limits are not exceeded as a result of AOOs or abnormal transients and

b. Adequate core cooling is provided, and containment integrity and other vital functions are maintained in the event of a postulated DBA.

The DC electrical power requirements for MODES 5 and 6 are addressed in the Bases for LCO 3.8.5, "DC Sources - Shutdown."

ACTIONS

CTS Values

7

The minimum established float voltage for Unit 1 is ≥ 127.8 volts for 60 cell batteries 1-1 and 1-2, and 125.67 volts for 59 cell batteries 1-3 and 1-4. The minimum established float voltage for Unit 2 is ≥ 127.8 volts.

<u>A.1, A.2, and A.3</u>

time

1

Condition A represents one train with one [or two] battery chargers inoperable (e.g., the voltage limit of SR 3.8.4.1 is not maintained). The ACTIONS provide a tiered response that focuses on returning the battery to the fully charged state and restoring a fully qualified charger to OPERABLE status in a reasonable time period. Required Action A.1 requires that the battery terminal voltage be restored to greater than or <u>equal to the minimum established float voltage within 2 hours.</u> ~~This time~~ provides for returning the inoperable charger to OPERABLE status or providing an alternate means of restoring battery terminal voltage to greater than or equal to the minimum established float voltage. Restoring the battery terminal voltage to greater than or equal to the minimum established float voltage provides ~~good~~ assurance that, within [12] hours, the battery will be restored to its fully charged condition (Required Action A.2) from any discharge that might have occurred due to the charger inoperability.

The 2-hour limit

1

reasonable

BASES

ACTIONS (continued)

8

- REVIEWER'S NOTE -
A plant that cannot meet the 12-hour Completion Time due to an inherent battery charging characteristic can propose an alternate time equal to 2 hours plus the time experienced to accomplish the exponential charging current portion of the battery charge profile following the service test (SR 3.8.4.3).

A discharged battery having terminal voltage of at least the minimum established float voltage indicates that the battery is on the exponential charging current portion (the second part) of its recharge cycle. The time to return a battery to its fully charged state under this condition is simply a function of the amount of the previous discharge and the recharge characteristic of the battery. Thus there is ~~good~~ assurance of fully recharging the battery within [12] hours, avoiding a premature shutdown with its own attendant risk.

reasonable

1

If established battery terminal float voltage cannot be restored to greater than or equal to the minimum established float voltage within 2 hours, and the charger is not operating in the current-limiting mode, a faulty charger is indicated. A faulty charger that is incapable of maintaining established battery terminal float voltage does not provide assurance that it can revert to and operate properly in the current limit mode that is necessary during the recovery period following a battery discharge event that the DC system is designed for.

If the charger is operating in the current limit mode after 2 hours that is an indication that the battery is partially discharged and its capacity margins will be reduced. The time to return the battery to its fully charged condition in this case is a function of the battery charger capacity, the amount of loads on the associated DC system, the amount of the previous discharge, and the recharge characteristic of the battery. The charge time can be extensive, and there is not adequate assurance that it can be recharged within [12] hours (Required Action A.2).

Required Action A.2 requires that the battery float current be verified as less than or equal to [2] amps. This indicates that, if the battery had been discharged as the result of the inoperable battery charger, it has now been fully recharged. If at the expiration of the initial [12] hour period the battery float current is not less than or equal to [2] amps this indicates there may be additional battery problems and the battery must be declared inoperable.

BASES

ACTIONS (continued)

Required Action A.3 limits the restoration time for the inoperable battery charger to 7 days. This action is applicable if an alternate means of restoring battery terminal voltage to greater than or equal to the minimum established float voltage has been used (e.g., balance of plant non-Class 1E battery charger). The 7 day Completion Time reflects a reasonable time to effect restoration of the qualified battery charger to OPERABLE status.

B.1

8

- REVIEWER'S NOTE -
The 2 hour Completion Times of Required Actions B.1 and C.1 are in brackets. Any licensee wishing to request a longer Completion Time will need to demonstrate that the longer Completion Time is appropriate for the plant in accordance with the guidance in Regulatory Guide (RG) 1.177, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications."

Condition B represents one train with one [or two] batter[y][ies] inoperable. With one [or two] batter[y][ies] inoperable, the DC bus is being supplied by the OPERABLE battery charger[s]. Any event that results in a loss of the AC bus supporting the battery charger[s] will also result in loss of DC to that train. Recovery of the AC bus, especially if it is due to a loss of offsite power, will be hampered by the fact that many of the components necessary for the recovery (e.g., diesel generator control and field flash, AC load shed and diesel generator output circuit breakers, etc.) likely rely upon the batter[y][ies]. In addition the energization transients of any DC loads that are beyond the capability of the battery charger[s] and normally require the assistance of the batter[y][ies] will not be able to be brought online. The [2] hour limit allows sufficient time to effect restoration of an inoperable battery given that the majority of the conditions that lead to battery inoperability (e.g., loss of battery charger, battery cell voltage less than [2.07] V, etc.) are identified in Specifications 3.8.4, 3.8.5, and 3.8.6 together with additional specific Completion Times.

C.1

Condition C represents one train with a loss of ability to completely respond to an event, and a potential loss of ability to remain energized during normal operation. It is therefore, imperative that the operator's attention focus on stabilizing the unit, minimizing the potential for complete loss of DC power to the affected train. The 2 hour limit is

BASES

ACTIONS (continued)

consistent with the allowed time for an inoperable DC distribution system train.

If one of the required DC electrical power subsystems is inoperable for reasons other than Condition A or B (e.g., inoperable battery charger and associated inoperable battery), the remaining DC electrical power subsystem has the capacity to support a safe shutdown and to mitigate an accident condition. Since a subsequent worst- case single failure could, however, result in the loss of minimum necessary DC electrical subsystems to mitigate a worst case accident, continued power operation should not exceed 2 hours. The 2 hour Completion Time is based on Regulatory Guide 1.93 (Ref. 7) and reflects a reasonable time to assess unit status as a function of the inoperable DC electrical power subsystem and, if the DC electrical power subsystem is not restored to OPERABLE status, to prepare to effect an orderly and safe unit shutdown.

D.1 and D.2

If the inoperable DC electrical power subsystem cannot be restored to OPERABLE status within the required Completion Time, the unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the unit must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging plant systems. The Completion Time to bring the unit to MODE 5 is consistent with the time ~~required~~ recommended in Regulatory Guide 1.93 (Ref. ~~8~~ 7).

CTS Values

NUREG-1431, Rev. 3

1

SURVEILLANCE REQUIREMENTS

SR 3.8.4.1

Verifying battery terminal voltage while on float charge ~~for the batteries~~ helps to ensure the effectiveness of the battery chargers, which support the ability of the batteries to perform their intended function. Float charge is the condition in which the charger is supplying the continuous charge required to overcome the internal losses of a battery and maintain the battery in a fully charged state while supplying the continuous steady state loads of the associated DC subsystem. On float charge, battery cells will receive adequate current to optimally charge the battery. The voltage requirements are based on the nominal design voltage of the battery and ~~are~~ consistent with the minimum float voltage established by the battery manufacturer ~~([2.20] Vpc or [127.6] V~~ 2.13 Vpc or ≥ 127.8 volts for 60 cell batteries 1-1 and 1-2, and ≥ 125.67 volts for 59 cell batteries 1-3 and 1-4 for Unit 1. For Unit 2 ≥ 127.8 volts is required for each battery at the battery terminals). This voltage maintains the battery plates in a condition that supports maintaining the grid life (expected to be approximately 20 years). The

7

BASES

SURVEILLANCE REQUIREMENTS (continued)

7 day Frequency is consistent with ~~manufacturer recommendations and~~ IEEE-450 (Ref. 8).

SR 3.8.4.2

This SR verifies the design capacity of the battery chargers. According to Regulatory Guide 1.32 (Ref. 9), the battery charger supply is recommended to be based on the largest combined demands of the various steady state loads and the charging capacity to restore the battery from the design minimum charge state to the fully charged state, irrespective of the status of the unit during these demand occurrences. ~~The minimum~~ required amperes and duration ensure that these requirements can be ~~satisfied.~~

CTS Values

100

4

~~This~~ SR provides two options. One option requires that each battery charger ~~be capable~~ of supplying ~~[400]~~ amps at the minimum established float voltage for ~~[8]~~ hours. The ampere requirements are based on the output rating of the chargers. The voltage requirements are based on the charger voltage level after a response to a loss of AC power. The ~~time period if~~ sufficient for the charger temperature to have stabilized ~~and to have been maintained for at lease [2] hours~~.

7

The charger voltage requires a minimum output of 140 volts.

4-hour time period is

The other option requires that each battery charger be capable of recharging the battery after a service test coincident with supplying the largest ~~coincident~~ demands of the various continuous steady state loads (irrespective of the status of the plant during which these demands occur). This level of loading may not normally be available following the battery service test and will need to be supplemented with additional loads. The duration for this test may be longer than the charger sizing criteria since the battery recharge is affected by float voltage, temperature, ~~an~~ the exponential decay in charging current. The battery is recharged when the measured charging current is ≤ [2] amps.

combined

TSTF-451

1

and

The Surveillance Frequency is acceptable, given the unit conditions required to perform the test and the other administrative controls existing to ensure adequate charger performance during these [18 month] intervals. In addition, this Frequency is intended to be consistent with expected fuel cycle lengths.

SR 3.8.4.3

A battery service test is a special test of the battery capability, as found, to satisfy the design requirements (battery duty cycle) of the DC electrical

BASES

SURVEILLANCE REQUIREMENTS (continued)

7

of 2 hours, using actual or simulated emergency loads

power system. The discharge rate and test length should correspond to the design duty cycle ~~requirements~~ as specified in Reference 4.

The Surveillance Frequency of [18 months] is consistent with the recommendations of Regulatory Guide 1.32 (Ref. 9) and Regulatory Guide 1.129 (Ref. 10), which state that the battery service test should be performed during refueling operations, or at some other outage, with intervals between tests not to exceed ~~[18 months]~~.

1

the SR Frequency plus any allowed extension.

This SR is modified by two Notes. Note 1 allows the performance of a modified performance discharge test in lieu of a service test.

The reason for Note 2 is that performing the Surveillance would perturb the electrical distribution system and challenge safety systems. This restriction from normally performing the Surveillance in MODE ~~1 or 2~~ is further amplified to allow portions of the Surveillance to be performed for the purpose of reestablishing OPERABILITY (e.g., post work testing following corrective maintenance, corrective modification, deficient or incomplete surveillance testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial Surveillance, a successful partial Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the partial Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when portions of the Surveillance are performed in MODE ~~1 or 2~~. Risk insights or deterministic methods may be used for the assessment.

1

1, 2, 3, or 4

NUREG-1431, Rev. 3

Credit may be taken for unplanned events that satisfy this SR.

2

REFERENCES

1. ~~10 CFR 50, Appendix A, GDC 17.~~

Unit 1 UFSAR Appendix 1A, "1971 AEC General Design Criteria Conformance" and Unit 2 UFSAR Section 3.1, "Conformance with U. S. Nuclear Regulatory Commission General Design Criteria."

Safety Guide 6 (Unit 1) and

2. Regulatory Guide 1.6, March 10, 1971

(Unit 2).

3. IEEE-308-~~[1978]~~

1971 for Unit 1 and 1974 for Unit 2.

3

4. FSAR, Chapter ~~[8]~~.

5. FSAR, Chapter ~~[6]~~.

6. FSAR, Chapter ~~[15]~~

14 for Unit 1 and Chapter 15 for Unit 2.

3

U

6

BASES

REFERENCES (continued)

7. Regulatory Guide 1.93, December 1974.
8. IEEE-450-[1995].
9. Regulatory Guide 1.32, February 1977.
10. Regulatory Guide 1.129, December 1974.

3.8.4 BASES INSERTS

1. For Unit 1, the required battery banks are Banks 1-1 and 1-3 on the orange bus and Banks 1-2 and 1-4 on the purple bus. The Unit 1 battery chargers are designated 1-1 and 1-3 on the orange bus and 1-2 and 1-4 on the purple bus. The required Unit 2 battery banks are Banks 2-1 and 2-3 on the orange bus and Banks 2-2 and 2-4 on the purple bus. The Unit 2 battery chargers/rectifiers are designated 2-1 and 2-3 on the orange bus and 2-2 and 2-4 on the purple bus. In addition, for Unit 2, a spare, fully qualified charger (2–7) is also provided. This charger is portable and can be connected to a permanent, enclosed safety switch with interlocked receptacle. Spare Charger (2-7) may be substituted for any one charger or rectifier. One safety switch is provided for each DC bus to provide a backup method for battery charging and bus supply if the primary charger is out of service. This is discussed in the UFSAR, Chapter 8 (Ref 4).

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.5 DC Sources - Shutdown

BASES

BACKGROUND

A description of the DC sources is provided in the Bases for LCO 3.8.4, "DC Sources - Operating."

4 U (DBA) Reference 1

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident and transient analyses in the FSAR, Chapter [6] (Ref. 1) and ~~Chapter [15] (Ref.~~ 2), assume that Engineered Safety Feature systems are OPERABLE. The DC electrical power system provides normal and emergency DC electrical power for the diesel generators, emergency auxiliaries, and control and switching during all MODES of operation.

The OPERABILITY of the DC subsystems is consistent with the initial assumptions of the accident analyses and the requirements for the supported systems' OPERABILITY.

2 — or movement of fuel assemblies over irradiated fuel assemblies for Unit 1 or movement of recently irradiated fuel assemblies or movement of fuel assemblies over recently irradiated fuel assemblies for Unit 2 ensure

The OPERABILITY of the minimum DC electrical power ~~sources during~~ MODES 5 and 6 and during movement of ~~[recently]~~ irradiated fuel assemblies ~~ensures~~ that:

a. The unit can be maintained in the shutdown or refueling condition for extended periods,

b. Sufficient instrumentation and control capability is available for monitoring and maintaining the unit status, and

c. Adequate DC electrical power is provided to mitigate events postulated during shutdown, such as a fuel handling accident [involving handling ~~recently~~ irradiated fuel. ~~Due~~ to radioactive decay, DC electrical power is only required to mitigate fuel handling accidents involving handling recently irradiated fuel (i.e., fuel ~~that has~~ occupied part of a critical reactor core within the previous ~~[7 days~~)].

4 — For Unit 2 only, due — 100 hours

3 — In future discussions, the term fuel assemblies will include "irradiated" and "recently irradiated" as applicable for each unit.

In general, when the unit is shut down, the Technical Specifications requirements ensure that the unit has the capability to mitigate the consequences of postulated accidents. However, assuming a single failure and concurrent loss of all offsite or all onsite power is not required. The rationale for this is based on the fact that many ~~Design Basis Accidents (~~DBAs~~)~~ that are analyzed in MODES [1,2,3, and 4] have no specific analyses in MODES [5 and 6] because the energy contained

BASES

APPLICABLE SAFETY ANALYSES (continued)

within the reactor pressure boundary, reactor coolant temperature and pressure, and the corresponding stresses result in the probabilities of occurrence being significantly reduced or eliminated, and in minimal consequences. These deviations from DBA analysis assumptions and design requirements during shutdown conditions are allowed by the LCO for required systems.

S 3 DBAs

The shutdown Technical Specification requirements are designed to ensure that the unit has the capability to mitigate the consequences of certain postulated accidents. Worst case ~~Design Basis Accidents~~ which are analyzed for operating MODES are generally viewed not to be a significant concern during shutdown MODES due to the lower energies involved. The Technical Specifications therefore require a lesser complement of electrical equipment to be available during shutdown than is required during operating MODES. More recent work completed on the potential risks associated with shutdown, however, have found significant risk associated with certain shutdown evolutions. As a result, in addition to the requirements established in the Technical Specifications, the industry has adopted NUMARC 91-06, "Guidelines for Industry Actions to Assess Shutdown Management," as an Industry initiative to manage shutdown tasks and associated electrical support to maintain risk at an acceptable low level. This may require the availability of additional equipment beyond that required by the shutdown Technical Specifications.

6

or rectifier

The DC sources satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

5

The DC electrical power subsystems, ~~[each required]~~ [the required] [subsystem consisting of two batteries, one battery charger per battery, and the corresponding control equipment and interconnecting cabling within ~~[one]~~ the train, ~~[are]~~ [is] required to be OPERABLE to support ~~[required]~~ [one] train~~[s]~~ of the distribution systems required OPERABLE by LCO 3.8.10, "Distribution Systems - Shutdown."] This ensures the availability of sufficient DC electrical power sources to operate the unit in a safe manner and to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents [involving handling ~~recently irradiated~~ fuel]).

APPLICABILITY

The DC electrical power sources required to be OPERABLE in MODES 5 and 6, and during movement of ~~[recently] irradiated~~ fuel assemblies, provide assurance that:

3

BASES

APPLICABILITY (continued)

a. Required features to provide adequate coolant inventory makeup are available for the irradiated fuel assemblies in the core,

5

b. Required features needed to mitigate a fuel handling accident [involving handling ~~recently irradiated~~ fuel ~~(i.e., fuel that has occupied part of a critical reactor core within the previous [ ] days)~~] are available,

c. Required features necessary to mitigate the effects of events that can lead to core damage during shutdown are available, and

d. Instrumentation and control capability is available for monitoring and *maintaining the unit in a cold shutdown condition or refueling* condition.

The DC electrical power requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.4.

ACTIONS

LCO 3.0.3 is not applicable while in MODE 5 or 6. However, since irradiated fuel assembly movement can occur in MODE 1, 2, 3, or 4, the ACTIONS have been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODE 5 or 6, LCO 3.0.3 would not specify any action. If moving ~~irradiated~~ fuel assemblies while in MODE 1, 2, 3, or 4, the fuel movement is independent of reactor operations. Entering LCO 3.0.3, while in MODE 1, 2, 3, or 4 would require the unit to be shutdown unnecessarily. 3

2

<u>A.1, A.2, and A.3</u>

- REVIEWER'S NOTE -

ACTION A is included only when plant-specific implementation of LCO 3.8.5 includes the potential to require both trains of the DC System to be OPERABLE. If plant-specific implementation results in LCO 3.8.5 requiring only one trains of the DC System to be OPERABLE, then ACTION A is omitted and ACTION B is renumbered as ACTION A.

Condition A represents one train with one [or two] battery chargers inoperable (e.g., the voltage limit of SR 3.8.4.1 is not maintained). The ACTIONS provide a tiered response that focuses on returning the battery to the fully charged state and restoring a fully qualified charger to OPERABLE status in a reasonable time period. Required Action A.1 requires that the battery terminal voltage be restored to greater than or

BASES

ACTIONS (continued)

equal to the minimum established float voltage within 2 hours. This time provides for returning the inoperable charger to OPERABLE status or providing an alternate means of restoring battery terminal voltage to greater than or equal to the minimum established float voltage. Restoring the battery terminal voltage to greater than or equal to the minimum established float voltage provides good assurance that, within [12] hours, the battery will be restored to its fully charged condition (Required Action A.2) from any discharge that might have occurred due to the charger inoperability.

- REVIEWER'S NOTE -
A plant that cannot meet the 12-hour Completion Time due to an inherent battery charging characteristic can propose an alternate time equal to 2 hours plus the time experienced to accomplish the exponential charging current portion of the battery charge profile following the service test (SR 3.8.4.3).

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2

A discharged battery having terminal voltage of at least the minimum established float voltage indicates that the battery is on the exponential charging current portion (the second part) of its recharge cycle. The time to return a battery to its fully charged state under this condition is simply a function of the amount of the previous discharge and the recharge characteristic of the battery. Thus there is good assurance of fully recharging the battery within [12] hours

, avoiding a premature shutdown with its own attendant risk.

If established battery terminal float voltage cannot be restored to greater than or equal to the minimum established float voltage within 2 hours, and the charger is not operating in the current-limiting modes, a faulty charger is indicated. A faulty charger that is incapable of maintaining established battery terminal float voltage does not provide assurance that it can revert to and operate properly in the current limit modes that is necessary during the recovery period following a battery discharge event that the DC system is designed for.

If the charger is operating in the current limit mode after 2 hours that is an indication that the battery is partially discharged and its capacity margins will be reduced. The time to return the battery to its fully charged condition in this case is a function of the battery charger capacity, the amount of loads on the associated DC system, the amount of the previous discharge, and the recharge characteristic of the battery. The charge time can be extensive, and there is not adequate assurance that it can be recharged within [12] hours (Required Action A.2).

BASES

ACTIONS (continued)

~~Required Action A.2 requires that the battery float current be verified as less than or equal to [2] amps. This indicates that, if the battery had been discharged as the result of the inoperable battery charger, it has now been fully recharged. If at the expiration of the initial [12] hour period the battery float current is not less than or equal to [2] amps this indicates there may be additional battery problems and the battery must be declared inoperable.~~

~~Required Action A.3 limits the restoration time for the inoperable battery charger to 7 days. This action is applicable if an alternate means of restoring battery terminal voltage to greater than or equal to the minimum established float voltage has been used (e.g. balance of plant non-Class 1E battery charger). The 7 day Completion Time reflects a reasonable time to effect restoration of the qualified battery charger to OPERABLE status.~~

2

A.1, A.2.1, A.2.2, A.2.3, A.2.4 and A.2.5

~~B.1, B.2.1, B.2.2, B.2.3, and B.2.4~~

~~[If two trains are required by LCO 3.8.10, the remaining train with DC power available may be capable of supporting sufficient systems to allow continuation of CORE ALTERATIONS and fuel movement] [involving handling recently irradiated fuel].~~ By allowing the option to declare required features inoperable with the associated DC power source(s) inoperable, appropriate restrictions will be implemented in accordance with the affected required features LCO ACTIONS. In many instances this option may involve undesired administrative efforts. ~~Therefore, the~~ allowance for sufficiently conservative actions is made ~~(i.e.,~~ to suspend CORE ALTERATIONS, movement of ~~[recently] irradiated~~ fuel assemblies, and operations involving positive reactivity additions) that could result in ~~failure to meet the minimum SDM or boron concentration limit is required to assure continued safe operation~~. Introduction of coolant inventory must be from sources that have a boron concentration greater than ~~that~~ what would be required in the RCS for minimum SDM or refueling boron concentration. This may result in an overall reduction in RCS boron concentration, but provides acceptable margin to maintaining subcritical operation. Introduction of temperature changes including temperature increases when operating with a positive MTC must also be evaluated to ensure they do not result in a loss of required SDM.

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loss of required SDM (MODE 5) or boron concentration (MODE 6). Suspending positive reactivity additions that could result in failure to meet the minimum SDM or boron concentration limit is required to assure continued safe operation.

3

Suspension of these activities shall not preclude completion of actions to establish a safe conservative condition. These actions minimize probability of the occurrence of postulated events. It is further required to immediately initiate action to restore the required DC electrical power

BASES

ACTIONS (continued)

subsystem~~[s]~~ and to continue this action until restoration is accomplished in order to provide the necessary DC electrical power to the unit safety systems.

The Completion Time of immediately is consistent with the required times for actions requiring prompt attention. The restoration of the required DC electrical power subsystems should be completed as quickly as possible in order to minimize the time during which the unit safety systems may be without sufficient power.

SURVEILLANCE REQUIREMENTS

SR 3.8.5.1

SR 3.8.5.1 requires performance of all Surveillances required by SR 3.8.4.1 through SR 3.8.4.3. Therefore, see the corresponding Bases for LCO 3.8.4 for a discussion of each SR.

This SR is modified by a Note. The reason for the Note is to preclude requiring the OPERABLE DC sources from being discharged below their capability to provide the required power supply or otherwise rendered inoperable during the performance of SRs. It is the intent that these SRs must still be capable of being met, but actual performance is not required.

REFERENCES

U

1. FSAR, Chapter ~~[6]~~.
2. FSAR, Chapter ~~[15]~~. 14 for Unit 1 and Chapter 15 for Unit 2.

1

4

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.6 Battery Parameters

Battery Monitoring and Maintenance Program

BASES

BACKGROUND

This LCO delineates the limits on battery float current as well as electrolyte temperature, level, and float voltage for the DC power subsystem batteries. A discussion of these batteries and their OPERABILITY requirements is provided in the Bases for LCO 3.8.4, "DC Sources - Operating," and LCO 3.8.5, "DC Sources - Shutdown." In addition to the limitations of this Specification, the ~~[licensee controlled program]~~ also implements a program specified in Specification 5.5.~~17~~ 13 for monitoring various battery parameters that is based on the recommendations of IEEE Standard 450-1995, "IEEE Recommended Practice For Maintenance, Testing, And Replacement Of Vented Lead-Acid Batteries For Stationary Applications" (Ref. ~~1~~ 3).

5

The battery cells are of flooded lead acid construction with a ~~nominal~~ specific gravity of [1.215]. This specific gravity corresponds to an open circuit battery voltage of approximately ~~120~~ 124 V for ~~[58]~~ 60 cell battery (i.e., cell voltage of ~~[2.065]~~ 2.07 volts per cell (Vpc)). The open circuit voltage is the voltage maintained when there is no charging or discharging. ~~Once fully charged with its open circuit voltage ≥ [2.065] Vpc, the battery cell will maintain its capacity for [30] days without further charging per manufacturer's instructions.~~ Optimal long term performance however, is obtained by maintaining a float voltage ~~[2.20 to 2.25]~~ 2.25 Vpc. This provides adequate over-potential which limits the formation of lead sulfate and self discharge. The nominal float voltage of ~~[2.22]~~ Vpc corresponds to a total float voltage output of ~~[128.8]~~ 135 V for a ~~[58]~~ 60 cell battery as discussed in the U FSAR, Chapter [8] (Ref. ~~2~~ 5).

6

2

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient Reference analyses in the U FSAR, Chapter [6] (Ref. 1) and ~~Chapter [15] (Ref. 2)~~, assume Engineered Safety Feature systems are OPERABLE. The DC electrical power system provides normal and emergency DC electrical power for the DGs, emergency auxiliaries, and control and switching during all MODES of operation.

1

The OPERABILITY of the DC subsystems is consistent with the initial assumptions of the accident analyses and is based upon meeting the design basis of the unit. This includes maintaining at least one train of DC sources OPERABLE during accident conditions, in the event of:

a. An assumed loss of all offsite AC power or all onsite AC power and

BASES

APPLICABLE SAFETY ANALYSES (continued)

b. A worst-case single failure.

Battery parameters satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

Battery parameters must remain within acceptable limits to ensure availability of the required DC power to shut down the reactor and maintain it in a safe condition after an anticipated operational occurrence or a postulated DBA. Battery parameter limits are conservatively established, allowing continued DC electrical system function even with limits not met. Additional preventative maintenance, testing, and monitoring performed in accordance with the ~~[licensee controlled program]~~ *is conducted as specified in Specification 5.5.~~17~~.*

Battery Monitoring and Maintenance Program

13

APPLICABILITY

The battery parameters are required solely for the support of the associated DC electrical power subsystems. Therefore, battery parameter limits are only required when the DC power source is required to be OPERABLE. Refer to the Applicability discussion in Bases for LCO 3.8.4 and LCO 3.8.5.

ACTIONS

A.1, A.2, and A.3

With one or more cells in one or more batteries in one train < [2.07] V, the battery cell is degraded. Within 2 hours verification of the required battery charger OPERABILITY is made by monitoring the battery terminal voltage (SR 3.8.4.1) and of the overall battery state of charge by monitoring the battery float charge current (SR 3.8.6.1). This assures that there is still sufficient battery capacity to perform the intended function. Therefore, the affected battery is not required to be considered inoperable solely as a result of one or more cells in one or more batteries < [2.07] V, and continued operation is permitted for a limited period up to 24 hours.

Since the Required Actions only specify "perform," a failure of SR 3.8.4.1 or SR 3.8.6.1 acceptance criteria does not result in this Required Action not met. However, if one of the SRs is failed the appropriate Condition(s), depending on the cause of the failures, is entered. If SR 3.8.6.1 is failed then there is not assurance that there is still sufficient battery capacity to perform the intended function and the battery must be declared inoperable immediately.

BASES

ACTIONS (continued)

current

B.1 and B.2

One or more batteries in one train with float > [2] amps indicates that a partial discharge of the battery capacity has occurred. This may be due to a temporary loss of a battery charger or possibly due to one or more battery cells in a low voltage condition reflecting some loss of capacity. Within 2 hours verification of the required battery charger OPERABILITY is made by monitoring the battery terminal voltage. If the terminal voltage is found to be less than the minimum established float voltage there are two possibilities, the battery charger is inoperable or is operating in the current limit mode. Condition A addresses charger inoperability. If the charger is operating in the current limit mode after 2 hours that is an indication that the battery has been substantially discharged and likely cannot perform its required design functions. The time to return the battery to its fully charged condition in this case is a function of the battery charger capacity, the amount of loads on the associated DC system, the amount of the previous discharge, and the recharge characteristic of the battery. The charge time can be extensive, and there is not adequate assurance that it can be recharged within [12] hours (Required Action B.2). The battery must therefore be declared inoperable.

5

reasonable

If the float voltage is found to be satisfactory but there are one or more battery cells with float voltage less than [2.07] V, the associated "OR" statement in Condition F is applicable and the battery must be declared inoperable immediately. If float voltage is satisfactory ~~and there are~~ no cells less than [2.07] V there is ~~good assurance~~ that, within [12] hours, the battery will be restored to its fully charged condition (Required Action B.2) from any discharge that might have occurred due to a temporary loss of the battery charger.

3

- REVIEWER'S NOTE -
A plant that cannot meet the 12-hour Completion Time due to an inherent battery charging characteristic can propose an alternate time equal to 2 hours plus the time experienced to accomplish the exponential charging current portion of the battery charge profile following the service test (SR 3.8.4.3).

A discharged battery with float voltage (the charger setpoint) across its terminals indicates that the battery is on the exponential charging current portion (the second part) of its recharge cycle. The time to return a battery to its fully charged state under this condition is simply a function

BASES

ACTIONS (continued) reasonable 5

of the amount of the previous discharge and the recharge characteristic of the battery. Thus there is ~~good~~ assurance of fully recharging the battery within [12] hours, avoiding a premature shutdown with its own attendant risk.

If the condition is due to one or more cells in a low voltage condition but still greater than [2.07] V and float voltage is found to be satisfactory, this is not indication of a substantially discharged battery and [12] hours is a reasonable time prior to declaring the battery inoperable.

Since Required Action B.1 only specifies "perform," a failure of SR 3.8.4.1 acceptance criteria does not result in the Required Action not met. However, if SR 3.8.4.1 is failed, the appropriate Condition(s), depending on the cause of the failure, is entered.

C.1, C.2, and C.3

With one or more batteries in one train with one or more cells electrolyte level above the top of the plates, but below the minimum established design limits, the battery still retains sufficient capacity to perform the intended function. Therefore, the affected battery is not required to be considered inoperable solely as a result of electrolyte level not met. Within 31 days the minimum established design limits for electrolyte level must be re-established.

With electrolyte level below the top of the plates there is a potential for dryout and plate degradation. Required Actions C.1 and C.2 address this potential (as well as provisions in Specification 5.5.~~17~~, Battery Monitoring and Maintenance Program). They are modified by a Note that indicates they are only applicable if electrolyte level is below the top of the plates. Within 8 hours level is required to be restored to above the top of the plates. The Required Action C.2 requirement to verify that there is no leakage by visual inspection and the Specification 5.5.~~17~~.b item to initiate action to equalize and test in accordance with manufacturer's recommendation are taken from Annex D of IEEE Standard 450-1995. They are performed following the restoration of the electrolyte level to above the top of the plates. Based on the results of the manufacturer's recommended testing the batter[y][ies] may have to be declared inoperable and the affected cell[s] replaced. 13

BASES

ACTIONS (continued)

D.1

With one or more batteries in one train with pilot cell temperature less than the minimum established design limits, 12 hours is allowed to restore the temperature to within limits. A low electrolyte temperature limits the current and power available. Since the battery is sized with margin, while battery capacity is degraded, sufficient capacity exists to perform the intended function and the affected battery is not required to be considered inoperable solely as a result of the pilot cell temperature not met.

E.1

With one or more batteries in redundant trains with battery parameters not within limits there is not sufficient assurance that battery capacity has not been affected to the degree that the batteries can still perform their required function, given that redundant batteries are involved. With redundant batteries involved this potential could result in a total loss of function on multiple systems that rely upon the batteries. The longer Completion Times specified for battery parameters on non-redundant batteries not within limits are therefore not appropriate, and the parameters must be restored to within limits on at least one train within 2 hours.

F.1

With one or more batteries with any battery parameter outside the allowances of the Required Actions for Condition A, B, C, D, or E, sufficient capacity to supply the maximum expected load requirement is not assured and the corresponding battery must be declared inoperable. Additionally, discovering one or more batteries in one train with one or more battery cells float voltage less than [2.07] V and float current greater than [2] amps indicates that the battery capacity may not be sufficient to perform the intended functions. The battery must therefore be declared inoperable immediately.

SURVEILLANCE REQUIREMENTS

SR 3.8.6.1

Verifying battery float current while on float charge is used to determine the state of charge of the battery. Float charge is the condition in which the charger is supplying the continuous charge required to overcome the internal losses of a battery and maintain the battery in a charged state. The float current requirements are based on the float current indicative of

BASES

SURVEILLANCE REQUIREMENTS (continued)

a charged battery. Use of float current to determine the state of charge of the battery is consistent with IEEE-450 (Ref. ~~1~~). The 7 day Frequency is consistent with IEEE-450 (Ref. ~~1~~).

This SR is modified by a Note that states the float current requirement is not required to be met when battery terminal voltage is less than the minimum established float voltage of SR 3.8.4.1. When this float voltage is not maintained the Required Actions of LCO 3.8.4 ACTION A are being taken, which provide the necessary and appropriate verifications of the battery condition. Furthermore, the float current limit of [2] amps is established based on the nominal float voltage value and is not directly applicable when this voltage is not maintained.

SR 3.8.6.2 and SR 3.8.6.5

Optimal long term battery performance is obtained by maintaining a float voltage greater than or equal to the minimum established design limits provided by the battery manufacturer~~, which corresponds to [130.5] V at the battery terminals, or [2.25] Vpc~~. This provides adequate over-potential, which limits the formation of lead sulfate and self discharge, which could eventually render the battery inoperable. Float voltages in this range or less, but greater than [2.07] Vpc, are addressed in Specification 5.5.~~17~~. SRs 3.8.6.2 and 3.8.6.5 require verification that the cell float voltages are equal to or greater than the short term absolute minimum voltage of [2.07] V. The Frequency for cell voltage verification every 31 days for pilot cell and 92 days for each connected cell is consistent with IEEE-450 (Ref. ~~1~~).

SR 3.8.6.3

The limit specified for electrolyte level ensures that the plates suffer no physical damage and maintains adequate electron transfer capability. The Frequency is consistent with IEEE-450 (Ref. ~~1~~).

SR 3.8.6.4

This Surveillance verifies that the pilot cell temperature is greater than or equal to the minimum established design limit (i.e., [40] °F). Pilot cell electrolyte temperature is maintained above this temperature to assure the battery can provided the required current and voltage to meet the design requirements. Temperatures lower than assumed in battery sizing calculations act to inhibit or reduce battery capacity. The Frequency is consistent with IEEE-450 (Ref. ~~1~~).

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.8.6.6

A battery performance discharge test is a test of constant current capacity of a battery, normally done in the as found condition, after having been in service, to detect any change in the capacity determined by the acceptance test. The test is intended to determine overall battery degradation due to age and usage.

Either the battery performance discharge test or the modified performance discharge test is acceptable for satisfying SR 3.8.6.6; however, only the modified performance discharge test may be used to satisfy the battery service test requirements of SR 3.8.4.3.

A modified discharge test is a test of the battery capacity and its ability to provide a high rate, short duration load (usually the highest rate of the duty cycle). This will often confirm the battery's ability to meet the critical period of the load duty cycle, in addition to determining its percentage of rated capacity. Initial conditions for the modified performance discharge test should be identical to those specified for a service test.

It may consist of just two rates; for instance the one minute rate for the battery or the largest current load of the duty cycle, followed by the test rate employed for the performance test, both of which envelope the duty cycle of the service test. Since the ampere-hours removed by a one minute discharge represents a very small portion of the battery capacity, the test rate can be changed to that for the performance test without compromising the results of the performance discharge test. The battery terminal voltage for the modified performance discharge test must remain above the minimum battery terminal voltage specified in the battery service test for the duration of time equal to that of the service test.

The acceptance criteria for this Surveillance are consistent with IEEE-450 (Ref. 3) and IEEE-485 (Ref. 4). These references recommend that the battery be replaced if its capacity is below 80% of the manufacturer's rating. A capacity of 80% shows that the battery rate of deterioration is increasing, even if there is ample capacity to meet the load requirements. Furthermore, the battery is sized to meet the assumed duty cycle loads when the battery design capacity reaches this [80]% limit.

The Surveillance Frequency for this test is normally 60 months. If the battery shows degradation, or if the battery has reached 85% of its expected life ~~and capacity is < 100% of the manufacturer's rating~~, the Surveillance Frequency is reduced to ~~12~~ 18 months. ~~However, if the battery~~

4

BASES

SURVEILLANCE REQUIREMENTS (continued)

4

~~shows no degradation but has reached 85% of its expected life, the Surveillance Frequency is only reduced to 24 months for batteries that retain capacity ≥ 100% of the manufacturer's ratings.~~ Degradation is indicated, according to IEEE-450 (Ref. 3), when the battery capacity drops by more than 10% relative to its capacity on the previous performance test or when it is ≥ [10%] below the manufacturer's rating. These Frequencies are consistent with the recommendations in IEEE-450 (Ref. 3).

This SR is modified by a Note. The reason for the Note is that performing the Surveillance would perturb the electrical distribution system and challenge safety systems. This restriction from normally performing the Surveillance in MODE ~~1 or 2~~ is further amplified to allow portions of the Surveillance to be performed for ~~the purpose~~ of reestablishing OPERABILITY (e.g., post work testing ~~following corrective maintenance, corrective modification, deficient or incomplete surveillance~~ testing, and other unanticipated OPERABILITY concerns) provided an assessment determines plant safety is maintained or enhanced. This assessment shall, as a minimum, consider the potential outcomes and transients associated with a failed partial Surveillance, a successful partial Surveillance, and a perturbation of the offsite or onsite system when they are tied together or operated independently for the partial Surveillance; as well as the operator procedures available to cope with these outcomes. These shall be measured against the avoided risk of a plant shutdown and startup to determine that plant safety is maintained or enhanced when portions of the Surveillance are performed in MODE ~~1 or 2~~. Risk insights or deterministic methods may be used for the assessment.

5

1, 2, 3, or 4

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Credit may be taken for unplanned events that satisfy this SR.

REFERENCES

2

U

1. FSAR, Chapter [6].
2. FSAR, Chapter ~~[15]~~ 14 for Unit 1 and Chapter 15 for Unit 2.
3. IEEE-450-[1995].
4. IEEE-485-[1983], June 1983
5. UFSAR, Chapter 8 (Unit 2).

1

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.7 Inverters - Operating

BASES

However, inverters with backup power available from the

the required

, a battery charger

1

BACKGROUND

The inverters are the preferred source of power for the AC vital buses because of the stability and reliability they achieve. The function of the inverter is to provide AC electrical power to the vital buses. The inverters can be powered from an internal AC source/rectifier or from the station battery. ~~The~~ station battery provides ~~an~~ uninterruptible power source for the instrumentation and controls for the Reactor Protective System (RPS) and the Engineered Safety Feature Actuation System (ESFAS). Specific details on inverters and their operating characteristics are found in the FSAR, Chapter [8] (Ref. 1).

The battery chargers have sufficient capacity to supply the required vital bus loads and may be used in lieu of the internal rectified AC source to power inverters.

APPLICABLE SAFETY ANALYSES

U

1

The initial conditions of Design Basis Accident (DBA) and transient analyses in the FSAR, Chapter [6] (Ref. 2) and ~~Chapter [15] (Ref. 3)~~, assume Engineered Safety Feature systems are OPERABLE. ~~The~~ inverters are designed to provide the required capacity, capability, redundancy, and reliability to ensure the availability of necessary power to the RPS and ESFAS instrumentation and controls so that the fuel, Reactor Coolant System, and containment design limits are not exceeded. These limits are discussed in more detail in the Bases for Section 3.2, Power Distribution Limits; Section 3.4, Reactor Coolant System (RCS); and Section 3.6, Containment Systems.

Reference

2

The OPERABILITY of the inverters is consistent with the initial assumptions of the accident analyses and is based on meeting the design basis of the unit. This includes maintaining required AC vital buses OPERABLE during accident conditions in the event of:

a. An assumed loss of all offsite AC electrical power or all onsite AC electrical power and

b. A worst case single failure.

Inverters are a part of the distribution system and, as such, satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

The inverters ensure the availability of AC electrical power for the systems instrumentation required to shut down the reactor and maintain it in a safe condition after an anticipated operational occurrence (AOO) or a postulated DBA.

BASES

LCO (continued)

Maintaining the required inverters OPERABLE ensures that the redundancy incorporated into the design of the RPS and ESFAS instrumentation and controls is maintained. The four inverters [(two per train)] ensure an uninterruptible supply of AC electrical power to the AC vital buses even if the 4.16 kV safety buses are de-energized.

3

1

OPERABLE inverters require the associated ~~vital bus~~ to be powered by the inverter with output voltage ~~and frequency~~ within tolerances, and power input to the inverter from a [125 VDC] station battery. Alternatively, power supply may ~~be~~ from an internal AC source via rectifier as long as the station battery is available as the uninterruptible power supply.

a battery charger or

OPERABLE

3

4

Under certain conditions, if

This LCO is modified by a Note that allows [one~~/two]~~ inverters to be disconnected from a ~~[common]~~ battery for ≤ 24 hours, if the vital bus~~(es)~~ is powered from a [Class 1E constant voltage transformer or inverter using internal AC source] during the period and all other inverters are ~~operable~~. This allows an equalizing charge to be placed on one battery. If the inverters were not disconnected, the resulting voltage condition might damage the inverter~~[s]~~. These provisions minimize the loss of equipment that would occur in the event of a loss of offsite power. The 24 hour time period for the allowance minimizes the time during which a loss of offsite power could result in the loss of equipment energized from the affected AC vital bus while taking into consideration the time required to perform an equalizing charge on the battery bank.

The intent of this Note is to limit the number of inverters that may be disconnected. Only these inverters associated with the single battery undergoing an equalizing charge may be disconnected. All other inverters must be aligned to their associated batteries, regardless of the number of inverters or unit design.

APPLICABILITY

The inverters are required to be OPERABLE in MODES 1, 2, 3, and 4 to ensure that:

a. Acceptable fuel design limits and reactor coolant pressure boundary limits are not exceeded as a result of AOOs or abnormal transients and

b. Adequate core cooling is provided, and containment OPERABILITY and other vital functions are maintained in the event of a postulated DBA.

BASES

APPLICABILITY (continued)

Inverter requirements for MODES 5 and 6 are covered in the Bases for LCO 3.8.8, "Inverters - Shutdown."

ACTIONS

A.1

With a required inverter inoperable, its associated AC vital bus becomes inoperable until it is ~~[manually]~~ re-energized from its [Class 1E constant voltage source transformer or inverter using internal AC source]. or battery charger 1

For this reason a Note has been included in Condition A requiring the entry into the Conditions and Required Actions of LCO 3.8.9, "Distribution Systems - Operating." This ensures that the vital bus is re-energized within 2 hours.

Required Action A.1 allows 24 hours to fix the inoperable inverter and return it to service. The 24 hour limit is based upon engineering judgment, taking into consideration the time required to repair an inverter and the additional risk to which the unit is exposed because of the inverter inoperability. This has to be balanced against the risk of an immediate shutdown, along with the potential challenges to safety systems such a shutdown might entail. When the AC vital bus is powered ~~from its constant voltage source~~ from a source other than an inverter with battery backup 1, it is relying upon interruptible AC electrical power sources (offsite and onsite). The uninterruptible inverter source to the AC vital buses is the preferred source for powering instrumentation trip setpoint devices.

B.1 and B.2

If the inoperable devices or components cannot be restored to OPERABLE status within the required Completion Time, the unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the unit must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.8.7.1

This Surveillance verifies that the inverters are functioning properly with all required circuit breakers closed and AC vital buses energized from the inverter. The verification of ~~proper~~ correct 3 voltage ~~and frequency~~ output ensures

BASES

SURVEILLANCE REQUIREMENTS (continued)

that the required power is readily available for the instrumentation of the RPS and ESFAS connected to the AC vital buses. The 7 day Frequency takes into account the redundant capability of the inverters and other indications available in the control room that alert the operator to inverter malfunctions.

REFERENCES

1. FSAR, Chapter [8].
2. FSAR, Chapter [6].
3. FSAR, Chapter ~~[15]~~ 14 for Unit 1 and Chapter 15 for Unit 2.

1 U

2

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.8 Inverters - Shutdown

BASES

BACKGROUND

A description of the inverters is provided in the Bases for LCO 3.8.7, "Inverters - Operating."

APPLICABLE SAFETY ANALYSES

The initial conditions of Design Basis Accident (DBA) and transient analyses ~~in the~~ U FSAR, Chapter [6] (Ref. 1) and ~~Chapter [15] (Ref.~~ Reference 2), ~~assume~~ Engineered Safety Feature systems are OPERABLE. The DC to AC inverters are designed to provide the required capacity, capability, redundancy, and reliability to ensure the availability of necessary power to the Reactor Protective System and Engineered Safety Features Actuation System instrumentation and controls so that the fuel, Reactor Coolant System, and containment design limits are not exceeded.

1

2

The OPERABILITY of the inverters is consistent with the initial assumptions of the accident analyses and the requirements for the supported systems' OPERABILITY.

The OPERABILITY of the minimum inverters to each AC vital bus during MODES 5 and 6 ensures that:

a. The unit can be maintained in the shutdown or refueling condition for extended periods,

b. Sufficient instrumentation and control capability is available for monitoring and maintaining the unit status, and

c. Adequate power is available to mitigate events postulated during shutdown, such ~~as~~ a fuel handling ~~accident~~ [involving handling ~~recently~~ irradiated fuel. ~~Due~~ to radioactive decay, the ~~AC and DC~~ inverters are only required to mitigate fuel handling accidents involving handling recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous ~~[ ] days~~).]

or movement of fuel assemblies over irradiated fuel assemblies for Unit 1 or movement of recently irradiated fuel assemblies or movement of fuel assemblies over recently irradiated fuel assemblies for Unit 2.

3

In future discussions, the term fuel assemblies will include "irradiated" and "recently irradiated" as applicable for each unit.

4

For Unit 2 only, due

4

100 hours

1

In general, when the unit is shut down, the Technical Specifications requirements ensure that the unit has the capability to mitigate the consequences of postulated accidents. However, assuming a single failure and concurrent loss of all offsite or all onsite power is not required. The rationale for this is based on the fact that many ~~Design Basis Accidents (DBAs)~~ that are analyzed in MODES [1, 2, 3, and 4] have no specific analyses in MODES [5 and 6] because the energy contained

BASES

APPLICABLE SAFETY ANALYSES (continued)

within the reactor pressure boundary, reactor coolant temperature and pressure, and the corresponding stresses result in the probabilities of occurrence being significantly reduced or eliminated, and in minimal consequences. These deviations from DBA analysis assumptions and design requirements during shutdown conditions are allowed by the LCO for required systems.

S 4 DBAs

The shutdown Technical Specification requirements are designed to ensure that the unit has the capability to mitigate the consequences of certain postulated accidents. Worst case ~~Design Basis Accidents~~ which are analyzed for operating MODES are generally viewed not to be a significant concern during shutdown MODES due to the lower energies involved. The Technical Specifications therefore require a lesser complement of electrical equipment to be available during shutdown than is required during operating MODES. More recent work completed on the potential risks associated with shutdown, however, have found significant risk associated with certain shutdown evolutions. As a result, in addition to the requirements established in the Technical Specifications, the industry has adopted NUMARC 91-06, "Guidelines for Industry Actions to Assess Shutdown Management," as an Industry initiative to manage shutdown tasks and associated electrical support to maintain risk at an acceptable low level. This may require the availability of additional equipment beyond that required by the shutdown Technical Specifications.

The inverters were previously identified as part of the distribution system and, as such, satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

with battery backup power 1

LCO

The inverter[s] ensure the availability of electrical power for the instrumentation for systems required to shut down the reactor and maintain it in a safe condition after an anticipated operational occurrence or a postulated DBA. The ~~battery-powered~~ inverter[s] provide[s] uninterruptible supply of AC electrical power to the AC vital bus[es] even if the 4.16 kV safety buses are de-energized. OPERABILITY of the inverter[s] requires that the AC vital bus be powered by the inverter. This ensures the availability of sufficient inverter power sources to operate the unit in a safe manner and to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents [involving handling 4 ~~recently irradiated~~ fuel]).

BASES

APPLICABILITY

The inverter[s] required to be OPERABLE in MODES 5 and 6 and during movement of ~~[recently] irradiated~~ fuel assemblies provide assurance that:

4

a. Systems to provide adequate coolant inventory makeup are available for the irradiated fuel in the core,

b. Systems needed to mitigate a fuel handling accident [involving handling ~~recently irradiated~~ fuel ~~(i.e., fuel that has occupied part of a critical reactor core within the previous [ ] days)~~] are available,

c. Systems necessary to mitigate the effects of events that can lead to *core damage during shutdown are available, and*

d. Instrumentation and control capability is available for monitoring and maintaining the unit in a cold shutdown condition or refueling condition.

Inverter requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.7.

ACTIONS

LCO 3.0.3 is not applicable while in MODE 5 or 6. However, since irradiated fuel assembly movement can occur in MODE 1, 2, 3, or 4, the ACTIONS have been modified by a Note ~~stating that LCO 3.0.3~~ is not applicable. If moving ~~irradiated~~ fuel assemblies while in MODE 5 ~~or 6~~, LCO 3.0.3 would not specify any action. If moving ~~irradiated~~ fuel assemblies while in MODE 1, 2, 3, or 4, the fuel movement is independent of reactor operations. Entering LCO 3.0.3, while in MODE 1, 2, 3, or 4 would require the unit to be shutdown unnecessarily.

4

A.1, A.2.1, A.2.2, A.2.3, ~~and~~ A.2.4 , and A.2.5 3

[If two trains are required by LCO 3.8.10, "Distribution Systems - Shutdown," the remaining OPERABLE Inverters may be capable of supporting sufficient required features to allow continuation of CORE ALTERATIONS, ~~[recently] irradiated~~ fuel movement, and operations with a potential for positive reactivity additions.] By the allowance of the option to declare required features inoperable with the associated inverter(s) inoperable, appropriate restrictions will be implemented in accordance with the affected required features LCOs' Required Actions. In many instances, this option may involve undesired administrative efforts. Therefore, the allowance for sufficiently conservative actions is made (i.e., to suspend CORE ALTERATIONS, movement of ~~[recently] irradiated~~ fuel assemblies, and operations involving positive reactivity additions) that could result in loss of required

4

BASES

ACTIONS (continued)

SDM (MODE 5) or boron concentration (MODE 6). Suspending positive reactivity additions that could result in failure to meet the minimum SDM or boron concentration limit is required to assure continued safe operation. Introduction of coolant inventory must be ~~from sources that~~ have a boron concentration greater than ~~that~~ what would be required in the RCS for minimum SDM or refueling boron concentration. This may result in an overall reduction in RCS boron concentration, but provides acceptable margin to maintaining subcritical operation. Introduction of temperature changes including temperature increases when operating with a positive MTC must also be evaluated to ensure they do not result in a loss of required SDM. 4

Suspension of these activities shall not preclude completion of actions to establish a safe conservative condition. These actions minimize the probability of the occurrence of postulated events. It is further required to immediately initiate action to restore the required inverter[s] and to continue this action until restoration is accomplished in order to provide the necessary inverter power to the unit safety systems.

The Completion Time of immediately is consistent with the required times for actions requiring prompt attention. The restoration of the required inverters should be completed as quickly as possible in order to minimize the time the unit safety systems may be without power or powered from a constant voltage source transformer.

SURVEILLANCE REQUIREMENTS

SR 3.8.8.1 correct 3

This Surveillance verifies that the inverters are functioning properly with all required circuit breakers closed and AC vital buses energized from the inverter. The verification of ~~proper~~ voltage ~~and frequency~~ output ensures that the required power is readily available for the instrumentation connected to the AC vital buses. The 7 day Frequency takes into account the redundant capability of the inverters and other indications available in the control room that alert the operator to inverter malfunctions.

REFERENCES

1. FSAR, Chapter [6].
1 U ~~2.~~ FSAR, Chapter ~~[15].~~ 14 for Unit 1 and Chapter 15 for Unit 2. 2

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.9 Distribution Systems - Operating

BASES

BACKGROUND

The onsite Class 1E AC, DC, and AC vital bus electrical power distribution systems are divided by train into [two] redundant and independent AC, DC, and AC vital bus electrical power distribution subsystems.

The AC electrical power subsystem for each train consists of a primary Engineered Safety Feature (ESF) 4.16 kV bus and secondary [480 ~~and 120~~] V buses, ~~distribution panels, motor control centers~~ and load centers. Each [4.16 kV ESF bus] has at least [one separate and independent offsite source of power] as well as a dedicated onsite diesel generator (DG) source. Each [4.16 kV ESF bus] is normally connected to a ~~preferred~~ unit ~~offsite~~ source. After a loss of the ~~preferred~~ unit ~~offsite~~ power source to a 4.16 kV ESF bus, a transfer to the ~~alternate~~ offsite source is accomplished by utilizing a time delayed bus undervoltage relay. If all offsite sources are unavailable, the onsite emergency DG supplies power to the 4.16 kV ESF bus. Control power for the 4.16 kV ESF breakers is supplied from the Class 1E batteries. Additional description of this system may be found in the Bases for LCO 3.8.1, "AC Sources - Operating," and the Bases for LCO 3.8.4, "DC Sources - Operating."

The secondary AC electrical power distribution subsystem for each train includes the safety related buses~~,~~ and load centers~~, motor control centers, and distribution panels~~ shown in Table B 3.8.9-1.

The 120 VAC vital buses are arranged in two load groups per train and are normally powered from the inverters. The alternate power supply for the vital buses are Class 1E constant voltage source transformers powered from the same train as the associated inverter, and its use is governed by LCO 3.8.7, "Inverters - Operating." Each constant voltage source transformer is powered from a Class 1E AC bus.

The DC electrical power ~~distribution~~ subsystem consists of [125]V bus(es) ~~and distribution panel(s)~~.

The list of all required DC and vital AC distribution buses ~~[and panels]~~ is presented in Table B 3.8.9-1.

U 1

BASES

APPLICABLE SAFETY ANALYSES

Reference

2

The initial conditions of Design Basis Accident (DBA) and transient analyses in the FSAR, Chapter [6] (Ref. 1), and in ~~the FSAR, Chapter [15] (Ref. 2)~~, assume ESF systems are OPERABLE. The AC, DC, and AC vital bus electrical power distribution systems are designed to provide sufficient capacity, capability, redundancy, and reliability to ensure the availability of necessary power to ESF systems so that the fuel, Reactor Coolant System, and containment design limits are not exceeded. These limits are discussed in more detail in the Bases for Section 3.2, Power Distribution Limits; Section 3.4, Reactor Coolant System (RCS); and Section 3.6, Containment Systems.

The OPERABILITY of the AC, DC, and AC vital bus electrical power distribution systems is consistent with the initial assumptions of the accident analyses and is based upon meeting the design basis of the unit. This includes maintaining power distribution systems OPERABLE during accident conditions in the event of:

a. An assumed loss of all offsite power or all onsite AC electrical power and

b. A worst case single failure.

The distribution systems satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

The required power distribution subsystems listed in Table B 3.8.9-1 ensure the availability of AC, DC, and AC vital bus electrical power for the systems required to shut down the reactor and maintain it in a safe condition after an anticipated operational occurrence (AOO) or a postulated DBA. The AC, DC, and AC vital bus electrical power distribution subsystems are required to be OPERABLE.

Maintaining the Train A and Train B AC, DC, and AC vital bus electrical power distribution subsystems OPERABLE ensures that the redundancy incorporated into the design of ESF is not defeated. Therefore, a single failure within any system or within the electrical power distribution subsystems will not prevent safe shutdown of the reactor.

and

5

OPERABLE AC electrical power distribution subsystems require the associated buses~~,~~ load centers, ~~motor control centers, and distribution panels~~ to be energized to their ~~proper~~ voltages. OPERABLE DC electrical power distribution subsystems require the associated buses and distribution panels to be energized to their ~~proper~~ voltage from either the associated battery or charger. OPERABLE vital bus electrical power distribution subsystems require the associated buses to be energized to

6 correct

BASES

correct 6

LCO (continued)

their ~~proper~~ correct voltage from the associated [inverter via inverted DC voltage, inverter using internal AC source, or Class 1E constant voltage transformer].

In addition, tie breakers between redundant safety related AC, DC, and AC vital bus power distribution subsystems, if they exist, must be open. This prevents any electrical malfunction in any power distribution subsystem from propagating to the redundant subsystem, that could cause the failure of a redundant subsystem and a loss of essential safety function(s). If any tie breakers are closed, the affected redundant electrical power distribution subsystems are considered inoperable. This applies to the onsite, safety related redundant electrical power distribution subsystems. It does not, however, preclude redundant Class 1E 4.16 kV buses from being powered from the same offsite circuit.

APPLICABILITY

The electrical power distribution subsystems are required to be OPERABLE in MODES 1, 2, 3, and 4 to ensure that:

a. Acceptable fuel design limits and reactor coolant pressure boundary limits are not exceeded as a result of AOOs or abnormal transients and

b. Adequate core cooling is provided, and containment OPERABILITY and other vital functions are maintained in the event of a postulated DBA.

Electrical power distribution subsystem requirements for MODES 5 and 6 are covered in the Bases for LCO 3.8.10, "Distribution Systems - Shutdown."

ACTIONS

A.1

and 5

With one or more Train A and B required AC buses~~,~~ and load centers~~, motor control centers, or distribution panels~~ (except AC vital buses), in one train inoperable and a loss of function has not occurred, the remaining AC electrical power distribution subsystems are capable of supporting the minimum safety functions necessary to shut down the reactor and maintain it in a safe shutdown condition, assuming no single failure. The overall reliability is reduced, however, because a single failure in the remaining power distribution subsystems could result in the minimum required ESF functions not being supported. Therefore, the required AC

BASES

ACTIONS (continued) and 5

buses~~,~~ load centers~~, motor control centers, and distribution panels~~ must be restored to OPERABLE status within 8 hours.

Condition A worst scenario is one train without AC power (i.e., no offsite power to the train and the associated DG inoperable). In this Condition, the unit is more vulnerable to a complete loss of AC power. It is, therefore, imperative that the unit operator's attention be focused on minimizing the potential for loss of power to the remaining train by stabilizing the unit, and on restoring power to the affected train. The 8 hour time limit before requiring a unit shutdown in this Condition is acceptable because of:

a. The potential for decreased safety if the unit operator's attention is diverted from the evaluations and actions necessary to restore power to the affected train, to the actions associated with taking the unit to shutdown within this time limit and

b. The potential for an event in conjunction with a single failure of a redundant component in the train with AC power.

The second Completion Time for Required Action A.1 establishes a limit on the maximum time allowed for any combination of required distribution subsystems to be inoperable during any single contiguous occurrence of failing to meet the LCO. If Condition A is entered while, for instance, a DC bus is inoperable and subsequently restored OPERABLE, the LCO may already have been not met for up to 2 hours. This could lead to a total of 10 hours, since initial failure of the LCO, to restore the AC distribution system. At this time, a DC circuit could again become inoperable, and AC distribution restored OPERABLE. This could continue indefinitely.

The Completion Time allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." This will result in establishing the "time zero" at the time the LCO was initially not met, instead of the time Condition A was entered. The 16 hour Completion Time is an acceptable limitation on this potential to fail to meet the LCO indefinitely.

Required Action A.1 is modified by a Note that requires the applicable Conditions and Required Actions of LCO 3.8.4, "DC Sources - Operating," to be entered for DC trains made inoperable by inoperable power distribution subsystems. This is an exception to LCO 3.0.6 and ensures the proper actions are taken for these components. Inoperability

BASES

ACTIONS (continued)

of a distribution system can result in loss of charging power to batteries and eventual loss of DC power. This Note ensures that the appropriate attention is given to restoring charging power to batteries, if necessary, after loss of distribution systems.

B.1

With one or more AC vital buses inoperable, and a loss of function has not yet occurred, the remaining OPERABLE AC vital buses are capable of supporting the minimum safety functions necessary to shut down the unit and maintain it in the safe shutdown condition. Overall reliability is reduced, however, since an additional single failure could result in the minimum [required] ESF functions not being supported. Therefore, the required AC vital bus must be restored to OPERABLE status within 2 hours by powering the bus from the associated [inverter via inverted DC, inverter using internal AC source, or Class 1E constant voltage transformer].

Condition B represents one or more AC vital buses without power; potentially both the DC source and the associated AC source are nonfunctioning. In this situation, the unit is significantly more vulnerable to a complete loss of all noninterruptible power. It is, therefore, imperative that the operator's attention focus on stabilizing the unit, minimizing the potential for loss of power to the remaining vital buses and restoring power to the affected vital bus.

This 2 hour limit is more conservative than Completion Times allowed for the vast majority of components that are without adequate vital AC power. Taking exception to LCO 3.0.2 for components without adequate vital AC power, that would have the Required Action Completion Times shorter than 2 hours if declared inoperable, is acceptable because of:

a. The potential for decreased safety by requiring a change in unit conditions (i.e., requiring a shutdown) and not allowing stable operations to continue,

b. The potential for decreased safety by requiring entry into numerous Applicable Conditions and Required Actions for components without adequate vital AC power and not providing sufficient time for the operators to perform the necessary evaluations and actions for restoring power to the affected train, and

ACTIONS (continued)

c. The potential for an event in conjunction with a single failure of a redundant component.

The 2 hour Completion Time takes into account the importance to safety of restoring the AC vital bus to OPERABLE status, the redundant capability afforded by the other OPERABLE vital buses, and the low probability of a DBA occurring during this period.

The second Completion Time for Required Action B.1 establishes a limit on the maximum allowed for any combination of required distribution subsystems to be inoperable during any single contiguous occurrence of failing to meet the LCO. If Condition B is entered while, for instance, an AC bus is inoperable and subsequently returned OPERABLE, the LCO may already have been not met for up to 8 hours. This could lead to a total of 10 hours, since initial failure of the LCO, to restore the vital bus distribution system. At this time, an AC train could again become inoperable, and vital bus distribution restored OPERABLE. This could continue indefinitely.

This Completion Time allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." This will result in establishing the "time zero" at the time the LCO was initially not met, instead of the time Condition B was entered. The 16 hour Completion Time is an acceptable limitation on this potential to fail to meet the LCO indefinitely.

C.1

5

With one or more DC buses ~~or distribution panels~~ inoperable, and a loss of function has not yet occurred, the remaining DC electrical power distribution subsystems are capable of supporting the minimum safety functions necessary to shut down the reactor and maintain it in a safe shutdown condition, assuming no single failure. The overall reliability is reduced, however, because a single failure in the remaining DC electrical power distribution subsystem could result in the minimum required ESF functions not being supported. Therefore, the [required] DC buses ~~and distribution panels~~ must be restored to OPERABLE status within 2 hours by powering the bus from the associated battery or charger.

Condition C represents one or more DC buses ~~or distribution panels~~ without adequate DC power; potentially both with the battery significantly degraded and the associated charger nonfunctioning. In this situation, the unit is significantly more vulnerable to a complete loss of all DC

BASES

ACTIONS (continued)

power. It is, therefore, imperative that the operator's attention focus on stabilizing the unit, minimizing the potential for loss of power to the remaining trains and restoring power to the affected train.

This 2 hour limit is more conservative than Completion Times allowed for the vast majority of components that would be without power. Taking exception to LCO 3.0.2 for components without adequate DC power, which would have Required Action Completion Times shorter than 2 hours, is acceptable because of:

a. The potential for decreased safety by requiring a change in unit conditions (i.e., requiring a shutdown) while allowing stable operations to continue,

b. The potential for decreased safety by requiring entry into numerous applicable Conditions and Required Actions for components without DC power and not providing sufficient time for the operators to perform the necessary evaluations and actions for restoring power to the affected train, and

c. The potential for an event in conjunction with a single failure of a redundant component.

The 2 hour Completion Time for DC buses is consistent with Regulatory Guide 1.93 (Ref. 3). The second Completion Time for Required Action C.1 establishes a limit on the maximum time allowed for any combination of required distribution subsystems to be inoperable during any single contiguous occurrence of failing to meet the LCO. If Condition C is entered while, for instance, an AC bus is inoperable and subsequently returned OPERABLE, the LCO may already have been not met for up to 8 hours. This could lead to a total of 10 hours, since initial failure of the LCO, to restore the DC distribution system. At this time, an AC train could again become inoperable, and DC distribution restored OPERABLE. This could continue indefinitely.

This Completion Time allows for an exception to the normal "time zero" for beginning the allowed outage time "clock." This will result in establishing the "time zero" at the time the LCO was initially not met, instead of the time Condition C was entered. The 16 hour Completion Time is an acceptable limitation on this potential to fail to meet the LCO indefinitely.

BASES

ACTIONS (continued)

D.1 and D.2

If the inoperable distribution subsystem cannot be restored to OPERABLE status within the required Completion Time, the unit must be brought to a MODE in which the LCO does not apply. To achieve this status, the unit must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging plant systems.

E.1

Condition E corresponds to a level of degradation in the electrical power distribution system that causes a required safety function to be lost. When more than one inoperable electrical power distribution subsystem results in the loss of a required function, the plant is in a condition outside the accident analysis. Therefore, no additional time is justified for continued operation. LCO 3.0.3 must be entered immediately to commence a controlled shutdown.

SURVEILLANCE REQUIREMENTS

SR 3.8.9.1

6

correct

This Surveillance verifies that the [required] AC, DC, and AC vital bus electrical power distribution systems are functioning properly, with the correct circuit breaker alignment. The correct breaker alignment ensures the appropriate separation and independence of the electrical divisions is maintained, and the appropriate voltage is available to each required bus. The verification of ~~proper~~ voltage availability on the buses ensures that the required voltage is readily available for motive as well as control functions for critical system loads connected to these buses. The 7 day Frequency takes into account the redundant capability of the AC, DC, and AC vital bus electrical power distribution subsystems, and other indications available in the control room that alert the operator to subsystem malfunctions.

REFERENCES

1 U

2

1. FSAR, Chapter ~~[6]~~.
2. FSAR, Chapter ~~[15]~~. 14 for Unit 1 and Chapter 15 for Unit 2.
3. Regulatory Guide 1.93, December 1974.

4

Insert Table B 3.8.9-1

Table B 3.8.9-1 (page 1 of 1)
AC and DC Electrical Power Distribution Systems

TYPE	VOLTAGE	TRAIN A*	TRAIN B*
AC safety buses	[4160 V]	[ESF Bus] [NB01]	[ESF Bus] [NB02]
	[480 V]	Load Centers [NG01, NG03]	Load Centers [NG02, NG04]
	[480 V]	Motor Control Centers [NG01A, NG01I, NG01B, NG03C, NG03I, NG03D]	Motor Control Centers [NG02A, NG02I, NG02B, NG04C, NG04I, NG04D]
	[120 V]	Distribution Panels [NP01, NP03]	Distribution Panels [NP02, NP04]
DC buses	[125 V]	Bus [NK01]	Bus [NK02]
		Bus [NK03]	Bus [NK04]
		Distribution Panels [NK41, NK43, NK51]	Distribution Panels [NK42, NK44, NK52]
AC vital buses	[120 V]	Bus [NN01]	Bus [NN02]
		Bus [NN03]	Bus [NN04]

*Each train of the AC and DC electrical power distribution systems is a subsystem.

Table B 3.8.9-1

		Unit 1 Only		Unit 2 Only	
		(Orange)	(Purple)	(Orange)	(Purple)
TYPE	VOLTAGE	TRAIN A*	TRAIN B*	TRAIN A*	TRAIN B*
AC emergency buses	4160 V 480 V	ESF Bus 1AE Load Center 8N	ESF Bus 1DF Load Center 9P	ESF Bus 2AE Load Center 2N	ESF Bus 2DF Load Center 2P
DC buses	125 V	Bus 1-1 Bus 1-3	Bus 1-2 Bus 1-4	Bus 2-1 Bus 2-3	Bus 2-2 Bus 2-4
AC vital buses	120 V	Bus I Bus III	Bus II Bus IV	Bus I Bus III	Bus II Bus IV

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.10 Distribution Systems - Shutdown

BASES

BACKGROUND

A description of the AC, DC, and AC vital bus electrical power distribution systems is provided in the Bases for LCO 3.8.9, "Distribution Systems - Operating."

Reference

2

APPLICABLE SAFETY ANALYSES

U

1

The initial conditions of Design Basis Accident and transient analyses in the FSAR, Chapter [6] (Ref. 1) and ~~Chapter [15] (Ref.~~ 2), assume Engineered Safety Feature (ESF) systems are OPERABLE. The AC, DC, and AC vital bus electrical power distribution systems are designed to provide sufficient capacity, capability, redundancy, and reliability to ensure the availability of necessary power to ESF systems so that the fuel, Reactor Coolant System, and containment design limits are not exceeded.

The OPERABILITY of the AC, DC, and AC vital bus electrical power distribution system is consistent with the initial assumptions of the accident analyses and the requirements for the supported systems' OPERABILITY.

or movement of fuel assemblies over irradiated fuel assemblies for Unit 1 or movement of recently irradiated fuel assemblies or movement of fuel assemblies over recently irradiated fuel assemblies for Unit 2 ensure

The OPERABILITY of the minimum AC, DC, and AC vital bus electrical power distribution subsystems during MODES 5 and 6, and during movement of ~~[recently]~~ irradiated fuel assemblies ~~ensures~~ that:

3

a. The unit can be maintained in the shutdown or refueling condition for extended periods,

(Unit 1).

3

For Unit 2 only, due

b. Sufficient instrumentation and control capability is available ~~for~~ monitoring and maintaining the unit status, and

1

c. Adequate power is provided to mitigate ~~events~~ postulated during shutdown, such as a fuel ~~handling accident~~ [involving handling ~~recently~~ irradiated fuel. ~~Due~~ to radioactive decay, AC and DC electrical power is only required to mitigate fuel handling ~~accidents~~ involving handling recently irradiated fuel (i.e., fuel ~~that has~~ occupied part of a critical reactor core within the previous [ ] ~~days~~)].

100 hours

In future discussions, the term fuel assemblies will include "irradiated" and "recently irradiated" as applicable for each unit.

The AC and DC electrical power distribution systems satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

BASES

LCO

Various combinations of subsystems, equipment, and components are required OPERABLE by other LCOs, depending on the specific plant condition. Implicit in those requirements is the required OPERABILITY of necessary support required features. This LCO explicitly requires energization of the portions of the electrical distribution system necessary to support OPERABILITY of required systems, equipment, and components - all specifically addressed in each LCO and implicitly required via the definition of OPERABILITY.

Maintaining these portions of the distribution system energized ensures the availability of sufficient power to operate the unit in a safe manner to mitigate the consequences of postulated events during shutdown (e.g., fuel handling accidents [involving handling ~~recently irradiated~~ fuel]).

APPLICABILITY

The AC and DC electrical power distribution subsystems required to be OPERABLE in MODES 5 and 6, and during movement of ~~[recently] irradiated~~ fuel assemblies, provide assurance that:

4

a. Systems to provide adequate coolant inventory makeup are available for the irradiated fuel in the core,

b. Systems needed to mitigate a fuel handling accident [involving handling ~~recently irradiated~~ fuel ~~(i.e., fuel that has occupied part of a critical reactor core within the previous [ ] days)~~] are available,

c. Systems necessary to mitigate the effects of events that can lead to core damage during shutdown are available, and

d. Instrumentation and control capability is available for monitoring and maintaining the unit in a cold shutdown condition and refueling condition.

The AC, DC, and AC vital bus electrical power distribution subsystems requirements for MODES 1, 2, 3, and 4 are covered in LCO 3.8.9.

ACTIONS

LCO 3.0.3 is not applicable while in MODE 5 or 6. However, since irradiated fuel assembly movement can occur in MODE 1, 2, 3, or 4, the ACTIONS have been modified by a Note stating that LCO 3.0.3 is not applicable. If moving irradiated fuel assemblies while in MODE 5 or 6, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODE 1, 2, 3, or 4, the fuel movement is independent of reactor operations. Entering LCO 3.0.3, while in MODE 1, 2, 3, or 4 would require the unit to be shutdown unnecessarily.

BASES

ACTIONS (continued)

A.1, A.2.1, A.2.2, A.2.3, A.2.4, ~~and~~ A.2.5 , and A.2.6 3

Although redundant required features may require redundant trains of electrical power distribution subsystems to be OPERABLE, one OPERABLE distribution subsystem train may be capable of supporting sufficient required features to allow continuation of CORE ALTERATIONS and ~~[recently] irradiated~~ fuel movement. By allowing the option to declare required features associated with an inoperable distribution subsystem inoperable, appropriate restrictions are implemented in accordance with the affected distribution subsystem LCO's Required Actions. In many instances, this option may involve undesired administrative efforts. Therefore, the allowance for sufficiently conservative actions is made (i.e., to suspend CORE ALTERATIONS, movement of ~~[recently] irradiated~~ fuel assemblies, and operations involving positive reactivity additions that could result in loss of required SDM (MODE 5) or boron concentration (MODE 6). Suspending positive reactivity additions that could result in failure to meet the minimum SDM or boron concentration limit is required to assure continued safe operation. Introduction of ~~coolant~~ inventory must be from sources that have a boron concentration greater than ~~that~~ what would be required in the RCS for minimum SDM or refueling boron concentration. This may result in an overall reduction in RCS boron concentration, but provides acceptable margin to maintaining subcritical operation. Introduction of temperature changes including temperature increases when operating with a positive MTC must also be evaluated to ensure they do not result in a loss of required SDM.

4 4

Suspension of these activities does not preclude completion of actions to establish a safe conservative condition. These actions minimize the probability of the occurrence of postulated events. It is further required to immediately initiate action to restore the required AC and DC electrical power distribution subsystems and to continue this action until restoration is accomplished in order to provide the necessary power to the unit safety systems.

Notwithstanding performance of the above conservative Required Actions, a required residual heat removal (RHR) subsystem may be inoperable. In this case, Required Actions A.2.1 through ~~A.2.4~~ do not adequately address the concerns relating to coolant circulation and heat removal. Pursuant to LCO 3.0.6, the RHR ACTIONS would not be entered. Therefore, Required Action ~~A.2.5~~ is provided to direct declaring RHR inoperable, which results in taking the appropriate RHR actions.

A.2.6 3 A.2.5

BASES

ACTIONS (continued)

The Completion Time of immediately is consistent with the required times for actions requiring prompt attention. The restoration of the required distribution subsystems should be completed as quickly as possible in order to minimize the time the unit safety systems may be without power.

SURVEILLANCE REQUIREMENTS

SR 3.8.10.1 4 required

This Surveillance verifies that the AC, DC, and AC vital bus electrical power distribution subsystems are functioning properly, with all the buses energized. The verification of ~~proper~~ voltage availability on the buses ensures that the required power is readily available for motive as well as control functions for critical system loads connected to these buses. The 7 day Frequency takes into account the capability of the electrical power distribution subsystems, and other indications available in the control room that alert the operator to subsystem malfunctions.

correct 3

REFERENCES

1 U

1. FSAR, Chapter ~~[6]~~.
2. FSAR, Chapter ~~[15]~~. 14 for Unit 1 and Chapter 15 for Unit 2.

2

3.8 Electrical Power Systems

JUSTIFICATIONS FOR DEVIATION

ITS 3.8.1 AC Sources – Operating Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. The ITS Bases are modified by moving descriptive information from the CTS specifications.
2. Changes to the ITS Bases are made to reflect changes in the ITS Specifications.
3. Editorial change made with the removal of the Reviewer's Note to be consistent with the ISTS writers' guide.
4. Bracketed description is replaced with information from UFSAR Chapter 8.
5. Changes are made (additions, deletion, and or changes) to the ISTS, which reflect the plant specific nomenclature, number reference, system description, design, analysis, or licensing basis description.
6. Section / Chapter references are changed to reflect a unit specific reference (i.e., Accident analysis for Unit 1 is Chapter 14 and for Unit 2 is Chapter 15), if applicable.
7. A bracketed portion of the Bases for ITS SR 3.8.1.6 is modified to reflect the ITS Specification.
8. The criteria of the NRC Final Policy Statement on Technical Specifications Improvements have been included in 10 CFR 50.36 (c)(2)(ii). Therefore, references in the ISTS Bases to the NRC Final Policy Statement are revised in the ITS Bases to reference 10 CFR 50.36.
9. This is an editorial change for clarity, for consistency with the Improved Technical Specifications Writers' Guide, or consistency with similar statements in the other ITS Bases.
10. The BVPS Unit 1 and 2 UFSAR each contain a section that describes how the unit complies with the GDC. The ISTS Bases references to the GDC have been replaced with references to the appropriate section of each BVPS Unit's UFSAR that describes compliance with the GDC. Supplement each reference to the "10 CFR 50, Appendix A General Design Criteria" in the ISTS Bases with the phrase "as discussed in Reference 1".
11. ISTS SR 3.8.1.2, SR 3.8.1.19, and SR 3.8.1.20 become ITS SRs 3.8.1.2, 3.8.1.14, and 3.8.1.15. Each of these SRs requires the DG to be started from standby conditions. The Bases for each SR states that standby conditions are with the engine's coolant and oil continuously circulated and temperature maintained consistent with manufacturer recommendations. The Bases for each SR is modified by adding the following phrase and sentence, "or knowledge gained through operating experience. Barring of the engine may be performed prior to DG start without invalidating SR for starting from standby conditions." This change is acceptable because operating experience gained from operating the DGs or from the industry is a valuable and valid as the manufacturer's recommendations. Cycling the DG (barring, rolling, or cranking) with the petcocks open to detect water in the cylinders is an acceptable preconditioning example in NUREG-1216 as documented in the NRC Inspection Manual Section 9900 "Technical Guidance/Maintenance/ Precondition of SSC before determining OPERABILITY."

12. A statement is added to the Surveillance Requirement section of the Bases to indicate the loading of the DGs for various SRs are approximate kW values. This change is acceptable because these values reflect the range of kW produced by the DG. These kW values are based on manufacturer limitations (listed in the UFSAR) or the accident analysis assumption for loads of the DG. Any indication uncertainties associated with these kW values are not critical to adequately demonstrate the ability of the DG capability to accept load.

ITS 3.8.2 AC Sources – Shutdown Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. Changes to the ITS Bases are made to reflect changes in the ITS Specifications.
2. Changes are made (additions, deletion, and or changes) to the ISTS, which reflect the plant specific nomenclature, number reference, system description, design, analysis, or licensing basis description. The BVPS applicability includes the movement of any fuel assembly over irradiated fuel assemblies (Unit 1) or over recently irradiated fuel assemblies (Unit 2).
3. Bracketed description is replaced with information from UFSAR Chapter 8.
4. Editorial change made to be consistent with the ISTS writers' guide.
5. The ISTS Required Action A.1 Bases discussion regarding the requirements of LCO 3.8.10 is revised to be more consistent with the actual requirements stated in ISTS LCO 3.8.10.

ITS 3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. Section / Chapter references are changed to reflect a unit specific reference (i.e., Accident analysis for Unit1 is Chapter 14 and for Unit 2 is Chapter 15), if applicable.
2. Editorial change made to be consistent with the ISTS writers' guide.
3. Changes are made (additions, deletion, and or changes) to the ISTS, which reflect the plant specific nomenclature, number reference, system description, analysis, design, or licensing basis description.
4. Changes to the ITS Bases are made to reflect changes in the ITS Specifications.
5. Change to ITS Bases to correct an incorrect SR reference.
6. The ITS Bases are modified by moving descriptive information moved from the CTS specifications.

ITS 3.8.4 DC Sources – Operating Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. Editorial change made to be consistent with the ISTS writers' guide.
2. The BVPS Unit 1 and 2 UFSAR each contain a section that describes how the unit complies with the GDC. The ISTS Bases references to the GDC have been replaced with references to the appropriate section of each BVPS Unit's UFSAR that describes compliance with the GDC. Supplement each reference to the "10 CFR 50, Appendix A General Design Criteria" in the ISTS Bases with the phrase "as discussed in Reference 1".
3. Changes are made (additions, deletion, and or changes) to the ISTS, which reflect the plant specific nomenclature, number reference, system description, analysis, or licensing basis description.
4. Bracketed information is deleted because it is not applicable.
5. Details not required to understand operation of DC sources and is therefore deleted.
6. Section / Chapter references are changed to reflect a unit specific reference (i.e., Accident analysis for Unit1 is Chapter 14 and for Unit 2 is Chapter 15), if applicable.
7. The ITS Bases are modified by moving descriptive information moved from the CTS specifications.
8. Editorial change made with the removal of the Reviewer's Note to be consistent with the ISTS writers' guide.

ITS 3.8.5 DC Sources – Shutdown Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. Section / Chapter references are changed to reflect a unit specific reference (i.e., Accident analysis for Unit1 is Chapter 14 and for Unit 2 is Chapter 15), if applicable.
2. Changes to the ITS Bases are made to reflect changes in the ITS Specifications.
3. Editorial change made to be consistent with the ISTS writers' guide.
4. Changes are made (additions, deletion, and or changes) to the ISTS, which reflect the plant specific nomenclature, number reference, system description, analysis, or licensing basis description.
5. Bracketed information appropriate to the Specification is selected.
6. The ITS Bases are modified by moving descriptive information moved from the CTS specifications.

ITS 3.8.6 Battery Parameters Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. Section / Chapter references are changed to reflect a unit specific reference (i.e., Accident analysis for Unit1 is Chapter 14 and for Unit 2 is Chapter 15), if applicable.
2. Changes are made (additions, deletion, and or changes) to the ISTS, which reflect the plant specific nomenclature, number reference, system description, analysis, or licensing basis description.
3. Editorial change made with the removal of the Reviewer's Note to be consistent with the ISTS writers' guide.
4. Changes to the ITS Bases are made to reflect changes in the ITS Specifications.
5. Editorial change made to be consistent with the ISTS writers' guide.
6. Information stated could not be confirmed and is therefore deleted.

ITS 3.8.7 Inverters – Operating Bases

<u>JUSTIFICATION FOR DEVIATION (JFD)</u>

1. Changes are made (additions, deletion, and or changes) to the ISTS, which reflect the plant specific nomenclature, number reference, system description, system design, analysis, or licensing basis description. This includes the BVPS system capability to provide the inverters with power from the battery chargers.
2. Section / Chapter references are changed to reflect a unit specific reference (i.e., Accident analysis for Unit1 is Chapter 14 and for Unit 2 is Chapter 15), if applicable.
3. Changes to the ITS Bases are made to reflect changes in the ITS Specifications.
4. Editorial change made with the removal of the Reviewer's Note to be consistent with the ISTS writers' guide.

ITS 3.8.8 Inverters – Shutdown Bases

<u>JUSTIFICATION FOR DEVIATION (JFD)</u>

1. Changes are made (additions, deletion, and or changes) to the ISTS, which reflect the plant specific nomenclature, number reference, system description, system design, analysis, or licensing basis description.
2. Section / Chapter references are changed to reflect a unit specific reference (i.e., Accident analysis for Unit1 is Chapter 14 and for Unit 2 is Chapter 15), if applicable.
3. Changes to the ITS Bases are made to reflect changes in the ITS Specifications.
4. Editorial change made to be consistent with the ISTS writers' guide.

ITS 3.8.9 Distribution Systems – Operating Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. Changes are made (additions, deletion, and or changes) to the ISTS, which reflect the plant specific nomenclature, number reference, system description, analysis, or licensing basis description.
2. Section / Chapter references are changed to reflect a unit specific reference (i.e., Accident analysis for Unit1 is Chapter 14 and for Unit 2 is Chapter 15), if applicable.
3. Editorial change made to be consistent with the ISTS writers' guide.
4. Specific bus nomenclature is moved from the CTS requirements to the Bases.
5. Changes are made to reflect specific listings in ITS 3.8.9 – 1 Table.
6. Changes to the ITS Bases are made to reflect changes in the ITS Specifications.

ITS 3.8.10 Distribution Systems – Shutdown Bases

<u>JUSTIFICATION FOR DEVIATION (JFD)</u>

1. Changes are made (additions, deletion, and or changes) to the ISTS, which reflect the plant specific nomenclature, number reference, system description, analysis, or licensing basis description.
2. Section / Chapter references are changed to reflect a unit specific reference (i.e., Accident analysis for Unit1 is Chapter 14 and for Unit 2 is Chapter 15), if applicable.
3. Changes to the ITS Bases are made to reflect changes in the ITS Specifications.
4. Editorial change made to be consistent with the ISTS writers' guide.

ENCLOSURE 3

CHANGES TO THE CTS

CURRENT TECHNICAL SPECIFICATION (CTS) MARKUP
&
DISCUSSION OF CHANGES (DOCs)

Introduction

This enclosure contains the markup of the current BVPS Unit 2 Technical Specifications (TS), and where necessary to show a change to a BVPS Unit 1 TS that is not addressed by the associated Unit 2 markup and DOCs, a BVPS Unit 1 TS page is included. If a Unit 1 page is included it will be marked to show the change to the Unit 1 specific difference, and will not typically contain markups that repeat the applicable changes already addressed in the corresponding Unit 2 markup. Therefore, unless otherwise stated, each DOC applies to both Units 1 and 2 even though the change may only be marked on the Unit 2 TS.

The CTS is marked-up to show the changes necessary to convert to the Improved Standard Technical Specifications (ISTS) in NUREG-1431, Revision 2. The marked-up CTS result in the BVPS specific Improved Technical Specifications (ITS) contained in Enclosure 1.

In order to facilitate the review of the changes to the CTS, the marked-up CTS are presented in their original numerical order, not ISTS numerical order. The new ITS number is marked at the top of the first page of each CTS and the disposition of each CTS and ISTS is summarized in the Table included at the beginning of Enclosure 1 for each TS Section.

The marked-up TS are followed by the applicable DOCs. Each technical change and more complex administrative change marked on the TS has a unique alpha-numeric designator that corresponds to a specific DOC. Due to the large number of format, editorial and presentation differences between the CTS and the new standard TS, not all of these changes are identified in the marked-up CTS pages. The single generic A.1 administrative change DOC designated on the first page of each marked-up CTS addresses all the marked and unmarked editorial, format, and presentation changes necessary to convert that entire CTS to the corresponding new standard TS. Only the more complex (less obvious) administrative type changes made to the CTS are identified with individual administrative DOCs (i.e., A.2, A.3, etc.).

The DOCs are grouped by the category of the change (i.e., less restrictive, more restrictive, administrative, etc). Each category of change is also associated with a No Significant Hazards Consideration (NSHC) for that change in Enclosure 4.

Certain categories of change also have a sub-category or change type associated with the DOC. The sub-category or change type is used to further group the CTS changes in more specific sub-categories that utilize a common NSHC or DOC.

Each CTS change marked as "Less Restrictive", with no subcategory identified in the associated DOC to reference a generic NSHC, will have a "Specific" NSHC included in Enclosure 4. A description of the categories and types of changes follows.

ENCLOSURE 3 (continued)

Categories and Types of Changes to the CTS

I. The major categories utilized to group changes to the CTS are as follows:

A - Administrative

L - Less Restrictive

M - More Restrictive

LA - Removed Detail (Sections of Tech Spec text removed from CTS)

R - Relocated (Entire Tech Spec requirement removed from CTS)

II. The subcategories of Less Restrictive "L" changes are as follows: (1)

1. Relaxation of LCO Requirements
2. Relaxation of Applicability
3. Relaxation of Completion Time
4. Relaxation of Required Action
5. Deletion of Surveillance Requirement
6. Relaxation of Surveillance Requirement Acceptance Criteria
7. Relaxation of Surveillance Frequency
8. Deletion of Reporting Requirement

III. The types of Removed Detail "LA" changes are as follows: (2)

1. Removing Details of System Design and System Description, Including Design Limits
2. Removing Descriptions of System Operation
3. Removing Procedural Details for Meeting Tech Spec Requirements and Related Reporting Requirements
4. Removing Administrative Requirements Redundant to Regulations
5. Removing Performance Requirements for Indication-Only Instruments and Alarms

(1) Each subcategory of Less Restrictive change is associated with a corresponding NSHC in Enclosure 4.

(2) The types of Removed Detail changes all share a common "LA" NSHC in Enclosure 4.

DRAFT PAGE FROM UNIT 2 LAR # 176
(UNIT 1 LAR # 306)

3/4.8.1 A.C. SOURCES

OPERATING

A1

ITS 3.8.1 & 3.8.3

LIMITING CONDITION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

qualified — A5 — A22 — and sequencer timer(s)

a. Two ~~physically independent~~ circuits between the offsite transmission network and the onsite Class 1E distribution system, and

LA3 — A4 — (DGs) capable of supplying the onsite Class 1E power distribution subsystem(s)

b. Two ~~separate and independent~~ diesel generators each with:

SR 3.8.1.4.2 — A2 — ~~1.~~ Separate day tank containing a minimum of 350 ~~usable~~ gallons of fuel,

LA1

SR 3.8.3.1 — A3 — 2. A separate fuel ~~storage~~ system containing a minimum of 53,225 ~~usable~~ gallons of fuel,

SR 3.8.1.6 — ~~3.~~ A separate ~~fuel~~ transfer pump, L4

330

SR 3.8.3.2 — A7 — 4. Lubricating oil storage containing a minimum total volume of ~~504~~ gallons of lubricating oil, and

~~5. Capability to transfer lubricating oil from storage to the diesel generator unit.~~ LA12

LCO part c

M16

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION: Insert LCO part c — A22 — L1 — Insert Condition A.2 — Insert 2nd Completion Time

---

Specification 3.0.4.b is not applicable to diesel generators.

ITS 3.8.1 Condition A

a. With one offsite circuit inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing ~~Surveillance Requirement 4.8.1.1.1.a~~ within 1 hour and at least once per 8 hours thereafter. Restore the offsite circuit to OPERABLE status within 72 hours ~~or be in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.~~ A14

SR 3.8.1.1 — Insert Condition B.2

ITS 3.8.1 Condition B

b. With one diesel generator[(1)] inoperable, demonstrate the OPERABILITY of the A.C. offsite sources by performing Surveillance Requirement ~~4.8.1.1.1.a~~ within 1 hour and at least once per 8 hours thereafter; and if the diesel L2

LA11 — SR 3.8.1.1

ITS 3.8.3 Cond C

(1) Required actions ~~may~~ be delayed for up to 7 days if the diesel generator(s) is inoperable solely due to the fuel oil contained in the storage tanks not meeting ~~the properties in accordance with 4.8.1.1.2.d.2 or 4.8.1.1.2.e.~~ particulates limit A8

ITS 3.8.1

A23

LIMITING CONDITION FOR OPERATION

ACTION (Continued) L3 Insert Condition B.3.1 Insert Condition B.3.2

ITS 3.8.1 Condition B

generator became inoperable ~~due to any cause other than an independently testable component, testing or preplanned preventative maintenance, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.5~~ within 24 hours~~(2)~~ ~~unless the absence of any potential common mode failure for the remaining diesel generator is demonstrated.~~ Restore the diesel generator to OPERABLE status within 14 days~~, or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.~~ A14 Insert 2nd Completion Time M16

ITS 3.8.1 Condition D

c. With one offsite circuit and one diesel generator~~(1)~~ inoperable, ~~demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; and if the diesel generator became inoperable due to any cause other than an independently testable component, testing or preplanned preventative maintenance, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.5 within 8 hours(2) unless the absence of any potential common mode failure for the remaining diesel generator is demonstrated.~~ Restore one of the inoperable sources to OPERABLE status within 12 hours ~~or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore the other A.C. power source (offsite circuit or diesel generator) to OPERABLE status in accordance with the provisions of Action Statement a or b, as appropriate with the time requirement of that Action Statement based on the time of initial loss of the remaining inoperable A.C. power source. A successful test of diesel OPERABILITY per Surveillance Requirement 4.8.1.1.2.a.5 performed under this Action Statement for an OPERABLE diesel or a restored to OPERABLE diesel satisfies the diesel generator test requirement of Action Statement b.~~

A15 Insert Note Action D A9 ITS 3.8.1 Condition D A14 A10 A8

~~(1) Required actions may be delayed for up to 7 days if the diesel generator(s) is inoperable solely due to the fuel oil contained in the storage tanks not meeting the properties in accordance with 4.8.1.1.2.d.2 or 4.8.1.1.2.e.~~ LA11

(2) ~~This action is required to be completed regardless of when the inoperable diesel generator is restored to OPERABILITY.~~ L3

DRAFT PAGE FROM UNIT 2 LAR # 176 (Unit 1 LAR # 306)

ITS 3.8.1

LIMITING CONDITION FOR OPERATION

ACTION (Continued)

L5 Insert Required Action C.1

ITS 3.8.1 Condition C

d. With two of the required offsite A.C. circuits inoperable, restore one of the inoperable offsite sources to OPERABLE status within 24 hours ~~or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.~~ A14 A11 ~~Following restoration of one offsite source, follow Action Statement a with the time requirement of that Action Statement based on the time of initial loss of the remaining inoperable offsite A.C. circuit.~~

e. With two of the required diesel generators~~(1)~~ inoperable, A13 ~~demonstrate the OPERABILITY of two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter;~~ restore one of the inoperable diesel generators to OPERABLE status within 2 hours ~~or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.~~ A14 A12 ~~Following restoration of one diesel generator unit, follow Action Statement b with the time requirement of that Action Statement based on the time of initial loss of the remaining inoperable diesel generator. A successful test of diesel OPERABILITY per Surveillance Requirement 4.8.1.1.2.a.5 performed under this Action Statement for a restored to OPERABLE diesel satisfies the diesel generator test requirement of Action Statement b.~~

ITS 3.8.1 Condition F

L8 Insert Action F

Insert Action G

A14

Insert Action H

SURVEILLANCE REQUIREMENTS

A16

4.8.1.1.1 Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be:

SR 3.8.1.1 a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignment, indicated power availability, and

SR 3.8.1.7 b. Demonstrated OPERABLE at least once per 18 months by transferring (manually and automatically) unit power supply from the unit circuit to the system circuit.

A8

~~(1) Required actions may be delayed for up to 7 days if the diesel generator(s) is inoperable solely due to the fuel oil contained in the storage tanks not meeting the properties in accordance with 4.8.1.1.2.d.2 or 4.8.1.1.2.e.~~ LA11

DRAFT PAGE FROM UNIT 2 LAR # 176 (Unit 1 LAR # 306)

ITS 3.8.1 & 3.8.3

SURVEILLANCE REQUIREMENTS (Continued) L23

4.8.1.1.2 Each diesel generator shall be demonstrated OPERABLE: A2

a. At least once per 31 days on a ~~STAGGERED TEST BASIS~~ by:

SR 3.8.1.4.2 1. Verifying the fuel level in the day tank, contains ≥ 350 gallons of fuel oil.

SR 3.8.3.1 2. Verifying the fuel level in the fuel storage tank,

3. ~~(Deleted)~~ contains ≥ 53,225 gallons of fuel oil. A3

SR 3.8.1.6 4. Verifying the fuel transfer pump can be started and transfers fuel from the storage system to the ~~day~~ tank, L17 every 92 days L19

Insert SR notes A17

SR 3.8.1.2 5. Verifying the diesel starts from standby conditions,~~(4)~~ and achieves steady state voltage~~(3)~~ of ≥ 3994 volts and ≤ 4368 volts and frequency~~(3)~~ of ≥ 59.9 Hz and ≤ 60.3 Hz, M12

Insert SR notes

SR 3.8.1.3 6. Verifying L6 the generator is synchronized, loaded(5) ~~to ≥ 4,238 kw~~, and operates for ≥ 60 minutes, Insert limits

7. ~~Verifying the diesel generator is aligned to provide standby power to the associated emergency busses, and~~ LA4

SR 3.8.3.2 8. Verifying the lubricating oil inventory ~~in storage~~. ≥ 330 gallons

A7 b. At least once per 18 months ~~during shutdown~~ by: A21

1. (Deleted) M11 Insert SR notes L14

SR 3.8.1.8 2. Verifying the generator capability to reject ~~a~~ load ~~≥ 825 kw~~ without tripping and without exceeding 64.4 Hz~~(7)~~. LA2 single largest post-accident Insert time, V, & Hz limits M15

LA6 (3) The values for voltage and frequency are analysis values. These value bands shall be appropriately reduced to account for measurement uncertainties.

A17 (4) All diesel generator starts may be preceded by an engine prelube period and followed by a warmup period prior to loading.

(5) Diesel generator loadings may include gradual loading as recommended by the manufacturer. or based on operating experience L19

(7) ~~The value for frequency shall be appropriately reduced to account for measurement uncertainties.~~ LA7

actual or simulated L7 Insert SR note L13

SR 3.8.1.14

3\. ~~Simulating~~ a loss of offsite power in conjunction with a safety injection signal, and:

a) Verifying de-energization of the emergency busses and load shedding from the emergency busses.

b) Verifying the diesel starts from standby conditions~~(6)~~ on the auto-start signal, energizes the emergency busses with permanently connected loads in ≤ 10 seconds, energizes the auto-connected emergency loads through the load sequencer and operates for ≥ 5 minutes while its generator is loaded with the emergency loads. After energization of these loads, the steady state voltage~~(3)~~ and frequency~~(3)~~ shall be maintained at ≥ 3994 volts and ≤ 4368 volts, and ≥ 59.9 Hz and ≤ 60.3 Hz.

L12 Insert SR note

voltage

SR 3.8.1.9

4\. Verifying that on ~~a~~ loss of ~~power~~ to the emergency busses, all ~~diesel~~ generator trips, except engine overspeed, backup phase fault detection, generator differential current, and generator overexcitation are automatically disabled,

L7 an actual or simulated

L11 M4

SR 3.8.1.10

5\. Verifying the diesel generator operates ~~for ≥ 60 minutes while loaded to ≥ 4,238 kw,~~

Insert times, loads, & notes

LA8

6\. ~~Verifying that the auto-connected loads to each diesel generator do not exceed the 2000 hour rating of 4,535 kw, and~~

Insert SR note L10

SR 3.8.1.13

7\. Verifying that the automatic load sequence timer is OPERABLE with each load sequence time within ±10% of its required value.

c\. Check for and remove accumulated water:

SR 3.8.1.5.2

1\. From the day tank, at least once per 31 days ~~and after each operation of the diesel where the period of operation was greater than 1 hour, and~~

L9

SR 3.8.3.5

2\. From the fuel oil storage tank, at least once per 92 days.

LA6 (3) ~~The values for voltage and frequency are analysis values. These value bands shall be appropriately reduced to account for measurement uncertainties.~~

A17 (6) All diesel generator starts may be preceded by an engine prelube period.

A25

ITS 3.8.3 and ITS 5.5.9

INSERT ITS SR 3.8.3.3
replaces CTS DG fuel oil SRs

Acceptability of | for use | by determining that the fuel oil has:

LA13

SURVEILLANCE REQUIREMENTS (Continued)

5.5.9.a ~~d.~~ ~~By sampling~~ new fuel oil in accordance with ASTM D4057-81 prior to addition to the storage tanks ~~and:~~ SR 3.8.3.3 Bases

1. By ~~verifying in accordance with the test specified in ASTM D975-81 prior to addition to the storage tanks that the sample has:~~

LA13 SR 3.8.3.3 Bases

5.5.9.a.1 ~~a)~~ An API Gravity of within 0.3 degrees at 60°F or a specific gravity of within 0.0016 at 60/60°F, when compared to the supplier's certificate or an absolute specific gravity at 60/60°F of greater than or equal to 0.83 but less than or equal to 0.89 or an API gravity at 60°F of greater than or equal to 27 degrees but less than or equal to 39 degrees, LA13 SR 3.8.3.3 Bases

and | within limits | A24

5.5.9.a.2 ~~b)~~ ~~A~~ kinematic viscosity at 40°C of greater than or equal to 1.9 centistokes, but less than or equal to 4.1 centistokes, if gravity was not determined by comparison with the supplier's certification. A24 within limits for ASTM 2D fuel oil.

~~c)~~ A flash point equal to or greater than 125°F,

5.5.9.a.3 ~~d)~~ A water and sediment content of less than or equal to 0.05% when tested in accordance with ASTM D1796-83, and SR 3.8.3.3 Bases

L24 e) ~~A total particulate contamination level of less than 10 mg/liter when tested in accordance with ASTM D2276-78, Method A.~~ LA13

5.5.9.b ~~2.~~ ~~By verifying~~ within 31 days ~~of obtaining the sample that the other properties~~ specified in Table 1 of ASTM D975-81 ~~are met~~ when tested in accordance with ASTM D975-81 except that the analysis for sulfur may be performed in accordance with ASTM D1552-79 or ASTM D2622-82.

LA13 SR 3.8.3.3 Bases

5.5.9.c ~~e.~~ At least once every 31 days by obtaining a sample of fuel oil from the storage tanks and day tanks in accordance with ASTM D2276-78, and verifying that total particulate ~~contamination~~ is less than 10 mg/liter when ~~checked~~ in accordance with ASTM D2276-78, Method A.

SR 3.8.3.3 Bases | or equal to | tested | following addition of the new fuel oil to storage tanks, verify that the properties of the new fuel oil, other than those addressed in a., above, are within limits for ASTM 2D fuel oil, and

LA13 | concentration of the fuel | L25 | A24

A26 **INSERT FROM ITS 5.5.9 PROGRAM:**
"The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Diesel Fuel Oil Testing Program test frequencies."

SURVEILLANCE REQUIREMENTS (Continued)

Note: Only applicable to Unit 2

L16

SR 3.8.1.15

f. At least once per 10 years ~~or after any modifications which could affect diesel generator interdependence~~ by starting from standby conditions~~(6)~~ both diesel generators simultaneously, during shutdown, and verifying that each diesel generator achieves:

1. in ≤ 10 seconds, voltage~~(8)~~ ≥ 3994 volts and frequency~~(8)~~ ≥ 59.9 Hz, and

2. steady state, voltage~~(3)~~ ≥ 3994 volts and ≤ 4368 volts, and frequency~~(3)~~ ≥ 59.9 Hz and ≤ 60.3 Hz.

g. ~~At least once per 10 years by draining each main fuel oil storage tank, removing the accumulated sediment, and cleaning the tank using a sodium hypochlorite solution or other appropriate cleaning solution.~~

LA10

LCO 3.8.3 Condition D ← Insert Condition D ← L22

LCO 3.8.3 Condition B ← Insert Condition B ← L21

LCO 3.8.3 Condition A ← Insert Condition A ← L20

SR 3.8.1.12 ← Insert surveillance and frequency ← M10

SR 3.8.1.11 ← Insert surveillance and frequency ← M9

LA6

(3) ~~The values for voltage and frequency are analysis values. These value bands shall be appropriately reduced to account for measurement uncertainties.~~

A17

(6) All diesel generator starts may be preceded by an engine prelube period.

(8) ~~The values for voltage and frequency are analysis values. These values shall be appropriately increased to account for measurement uncertainties.~~

3.8.3 Condition F ← 3.8.3 Condition F ← A19

LCO 3.8.3 ← Insert LCO, Condition, and SR for DG starting air ← M14

3.8.3 Condition E

SR 3.8.3.4

A20

3.8.3 Actions note

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

ITS 3.8.1 & 3.8.3

UNIT 1 PAGE

LIMITING CONDITION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

a. Two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system, and

b. Two separate and independent diesel generators each with:

Note that changes to this portion of the Unit 1 TS are addressed in the markup of the Unit 2 TS.

SR 3.8.1.4.1 A2

1. Separate day and engine-mounted fuel tanks containing a minimum of 900 ~~usable~~ gallons of fuel, LA1

M1

SR 3.8.3.1 A3

2. A separate fuel ~~storage system~~ containing a minimum of 17,500 ~~usable~~ gallons of fuel, and

Insert lube oil requirements

3. A separate fuel transfer pump.

Note that changes to this portion of the Unit 1 TS are addressed in the markup of the Unit 2 TS.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

a. With one offsite circuit inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter. Restore the offsite circuit to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.

b. With one diesel generator(1) inoperable, demonstrate the OPERABILITY of the A.C. offsite sources by performing Surveillance Requirement 4.8.1.1.1.a within 1 hour and at least once per 8 hours thereafter; and if the diesel generator became inoperable due to any cause other than an independently testable component, testing or preplanned preventative maintenance, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing

(1) Required actions may be delayed for up to 7 days if the diesel generator(s) is inoperable solely due to the fuel oil contained in the storage tanks not meeting the properties in accordance with 4.8.1.1.2.d.2 or 4.8.1.1.2.e.

SURVEILLANCE REQUIREMENTS (Continued)

4.8.1.1.2 Each ~~diesel generator~~ shall be ~~demonstrated~~ OPERABLE:

~~a. At least once per 31 days on a STAGGERED TEST BASIS by:~~

SR 3.8.1.4.1 1. Verifying the fuel level in the day and engine-mounted fuel tank, contain a combined total of ≥ 900 gallons of fuel oil. A2

SR 3.8.3.1 2. Verifying the fuel level in the fuel storage tank, contains ≥ 17,500 gallons of fuel oil. A3

3. ~~(Deleted)~~

SR 3.8.1.6 4. Verifying the fuel transfer pump can be started and transfers fuel from the storage system to the day ~~and engine-mounted~~ tank, every 92 days L17 Insert SR notes A17

SR 3.8.1.2 5. Verifying ~~(4)~~ the diesel starts from ~~standby~~ conditions, and can be gradually accelerated to synchronous speed with generator voltage ~~(3)~~ ≥ 4106 volts and ≤ 4368 volts and frequency ~~(3)~~ ≥ 58.8 Hz and ≤ 61.2 Hz, Insert limits M2 Insert SR notes M12

SR 3.8.1.3 6. Verifying the generator is ~~synchronized~~, loaded ~~(5)~~ to ≥ ~~1425 kw~~, and operates for ≥ 60 minutes, ~~and~~ L6

~~7. Verifying the diesel generator is aligned to provide standby power to the associated emergency busses.~~

~~b. At least once per 18 months during shutdown by:~~

~~1. (Deleted)~~ M11 Insert SR notes L14

SR 3.8.1.8 2. Verifying the generator capability to reject ~~a~~ single largest post-accident load ~~of ≥ 615 kw~~ without tripping and without exceeding 66.2 Hz, ~~(7)~~ LA2 Insert time, V, & Hz M15 LA2

~~(3) The values for voltage and frequency are analysis values. These value bands shall be appropriately reduced to account for measurement uncertainties.~~

~~(4) All diesel generator starts may be followed by a warmup period prior to loading.~~

~~(5) Diesel generator loadings may include gradual loading as recommended by the manufacturer.~~

~~(7) The value for frequency shall be appropriately reduced to account for measurement uncertainties~~

Note: Changes to this portion of the Unit 1 TS are addressed in the markup of the Unit 2 TS.

SURVEILLANCE REQUIREMENTS (Continued)

3. ~~Simulating a loss of offsite power in conjunction with a safety injection signal, and:~~

Note that changes to this portion of the Unit 1 TS are addressed in the markup of the Unit 2 TS.

~~...nergization of the emergency busses ...ing from the emergency busses.~~

~~...e diesel starts from standby ... the auto-start signal, energizes the emergency busses with permanently connected loads in ≤ 10 seconds, energizes the auto-connected emergency loads through the load sequencer and operates for ≥ 5 minutes while its generator is loaded with the emergency loads.~~

L13

Insert SR note

SR 3.8.1.14

After energization of these loads, the steady state voltage~~(3)~~ and frequency~~(3)~~ shall be maintained at ≥ 4106 volts and ≤ 4368 volts, and ≥ 60.0 Hz and ≤ 60.4 Hz.

voltage

L12

SR 3.8.1.9

4. Verifying that on a loss of ~~power~~ to the emergency busses, all ~~diesel~~ generator trips, except engine overspeed, generator differential and overcurrent, are automatically disabled,

L7

actual or simulated signals

Insert SR note

SR 3.8.1.10

5. Verifying the diesel generator operates ~~for ≥ 60 minutes while loaded to ≥ 2750 kw,~~

L11

6. ~~Verifying that the auto-connected loads to each diesel generator do not exceed the 2000 hour rating of 2850 kw, and~~

LA8

Insert times, loads, and notes

7. ~~Verifying that the automatic load sequence timer is OPERABLE with each load sequence time within ± 10% of its required value.~~

M4

SR 3.8.1.5.1

c. Check for and remove accumulated water:

engine mounted

L18

1. From the ~~day tank~~, at least once per 31 days ~~and after each operation of the diesel where the period of ...ration was greater than 1 hour, and~~

Note that changes to this portion of the Unit 1 TS are addressed in the markup of the Unit 2 TS.

~~...m the fuel oil storage tank, at least once per ... days.~~

~~(3) The values for voltage and frequency are analysis values. These value bands shall be appropriately reduced to account for measurement uncertainties.~~

Required Action A.2 and Completion Time

Required Action	Completion Time
Declare required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable.	24 hours from discovery of no offsite power to one train concurrent with Inoperable of redundant required feature(s)

Required Action B.2 and Completion Time

Required Action	Completion Time
Declare required feature(s) supported by the inoperable DG inoperable when its redundant required feature(s) is inoperable.	4 hours from discovery of Condition B concurrent with inoperable of redundant required feature(s)

Required Action B.3.1 and Completion Time

Required Action	Completion Time
Determine OPERABLE DG is not inoperable due to common cause failure. OR	24 hours

Required Action B.3.2 and Completion Time

Required Action	Completion Time
Perform SR 3.8.1.2 for OPERABLE DG.	24 hours

Note to Required Action D

- NOTE -

Enter applicable Condition and Required Actions of LCO 3.8.9, "Distribution Systems – Operating," when Condition D is entered with no AC power source to any train.

Inserts 3.8.1 (continued)

Required Action C.1 and Completion Time

Required Action	Completion Time
Declare required feature(s) Inoperable when its redundant required feature(s) is inoperable.	12 hours from discovery of Condition C concurrent with inoperable of redundant required feature(s)

Condition F, Required Action F.1 and F.2, and Completion Times

Condition	Required Action	Completion Time
- NOTE - Separate Condition entry is allowed for each sequence timer. F. One or more required sequence timer(s) Inoperable.	F.1.1 Place the component(s) with the inoperable sequence timer(s) in a condition where it can not be automatically loaded to associated emergency bus. AND	Immediately
	F.1.2 Enter appropriate Condition and Required Actions for any component that can not be automatically loaded to associated emergency bus.	Immediately
	OR F.2 Declare the associated DG inoperable.	Immediately

Condition G, Required Action G.1 and G.2, and Completion Times

Condition	Required Action	Completion Time
G. Required Action and associated Completion Time of Condition A, B, C D, E, or F not met.	G.1 Be in MODE 3. AND	6 hours
	G.2 Be in MODE 5.	36 hours

Condition H, Required Action H.1, and Completion Times

Condition	Required Action	Completion Time
H. Three or more required AC sources inoperable.	H.1 Enter LCO 3.0.3.	Immediately

Inserts 3.8.1 (continued)

Load limits for SR 3.8.1.3

at a load ≥ 2340 kW and ≤ 2600 kW (Unit 1).

at a load ≥ 3814 kW and ≤ 4238 kW (Unit 2).

Time, load, and Note requirements for SR 3.8.1.10

for ≥ 1 hour loaded ≥ 2750 kW and ≤ 2850 kW (Unit 1)

for ≥ 1 hour loaded ≥ 4238 kW and ≤ 4535 kW (Unit 2).

Note 1	Momentary transients outside the load and power factor ranges do not invalidate the test.

Note 2	This surveillance shall not normally be performed in MODE 1 or 2. However, the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.

Note 3	If performed with DG synchronized with offsite power, it shall be performed at a power factor ≤ 0.9. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as possible.

SR 3.8.1.9 surveillance note

SR 3.8.1.9

- NOTE -

This surveillance shall not normally be performed in MODE 1 or 2. However, portion of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.

Inserts 3.8.1 (continued)

SR 3.8.1.11 surveillance and frequency

SR 3.8.1.11 ——— **- NOTE -** This surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. ——— Verify each DG: a. Synchronizes with offsite power source while loaded with emergency loads upon a simulated restoration of offsite power, b. Transfer loads to offsite power source, and c.1 Proceed through its shutdown sequence for Unit 1, c.2 Returns to ready-to-load operation for Unit 2.	18 months

SR 3.8.1.12 surveillance and frequency

Surveillance Requirement	Frequency
SR 3.8.1.12 ——— **- NOTES -** 1. Only applicable to Unit 2. 2. This surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR. ——— Verify with a DG operating in test mode and connected to its bus, an actual or simulated ESF actuation signal overrides the test mode by returning DG to ready-to-load operation.	18 months

SR 3.8.1.13 surveillance note

> SR 3.8.1.13 ———
>
> **- NOTE -**
>
> This surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.

SR 3.8.1.14 surveillance note

> SR 3.8.1.14 ———
>
> **- NOTE -**
>
> This surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portion of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.

Inserts 3.8.1 (continued)

SR 3.8.1.8 surveillance notes

SR 3.8.1.8

- NOTES –

1 This surveillance shall not normally be performed in MODE 1 or 2. However, the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR.

2 If performed with DG synchronized with offsite power, it shall be performed at a power factor ≤ 0.9. However, if grid conditions do not permit, the power factor limit is not required to be met. Under this condition the power factor shall be maintained as close to the limit as practicable.

SR 3.8.1.3 surveillance notes

SR 3.8.1.3

- NOTES -

1 DG loading may include gradual loading as recommended by the manufacturer or based on operating experience.
2 Momentary transients outside the load range do not invalidate this test.
3 This Surveillance shall be conducted on only one DG at a time.
4 This SR shall be preceded by and immediately follow without shutdown a successful performance of SR 3.8.1.2.

SR 3.8.1.2 surveillance notes

SR 3.8.1.2

- NOTES –

1 All DG starts may be preceded by an engine prelube period and followed by a warmup period prior to loading.

2 A modified DG start involving idling and gradual acceleration to synchronous speed may be used for this SR as recommended by the manufacturer or based on operating experience.

LCO Sequence Timers

c. Automatic load sequencer timer(s) for each required DG.

Inserts 3.8.1 and 3.8.3 (continued)

Lube oil LCO, Condition, and SR for Unit 1

LCO
The lube oil subsystem shall be within limits for each required diesel generator(DG).

Condition	Required Action	Completion Time
B. One or more DGs lube oil inventory < 330 gal and ≥ 283 gal	B.1 Restore lube oil inventory within limits.	48 hours

Surveillance Requirement	Frequency
SR 3.8.3.2 Verify lubricating oil inventory is ≥ 330 gal.	31 days

SR 3.8.3.3 surveillance and frequency

Surveillance Requirement	Frequency
SR 3.8.3.3 Verify fuel oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.	In accordance with the Diesel Fuel Oil Testing Program

Starting Air LCO, Condition, and SR

LCO
The starting air subsystem shall be within limits for each required diesel generator (DG).

Condition	Required Action	Completion Time
E. One or more DGs starting air receiver pressure < 165 psig and ≥ 125 psig (Unit 1), < 394 psig and ≥ 285 psig (Unit 2).	E.1 Restore starting air receiver pressure to ≥ 165 psig (Unit 1), ≥ 394 psig (Unit 2).	48 hours

Surveillance Requirement	Frequency
SR 3.8.3.4 Verify DG air start receiver pressure is ≥ 165 psig (Unit 1), ≥ 394 psig (Unit 2).	31 days

Inserts 3.8.1 and 3.8.3 (continued)

Condition F for LCO 3.8.3

Condition	Required Action	Completion Time
F. Required Action and Associated Completion Time not met. <u>OR</u> One or more DGs with diesel fuel oil, lube oil, or starting air subsystem not within limits for reasons other than Condition A, B, C, D, or E.	F.1 Declare associated DG inoperable.	Immediately

Actions note for LCO 3.8.3

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

Limits for SR 3.8.1.8 part b and c

	Surveillance Requirement
b.	Within 3 seconds following load rejection, the voltage is ≥ 4106 V and ≤ 4368 V for Unit 1, ≥ 3994 V and ≤ 4368 V for Unit 2, and
c.	Within 3 seconds following load rejection, the frequency is ≥ 58.8 Hz and ≤ 61.2 for Unit 1, ≥ 59.9 Hz and ≤ 60.3 Hz for Unit 2

Insert Second Completion Time for LCO 3.8.1 Action A.3 and Action B.4

COMPLETION TIME
<u>AND</u> 17 days from discovery of failure to meet LCO

Insert Condition A LCO 3.8.3

	CONDITION	REQUIRED ACTION	COMPLETION TIME
A.	One or more DGs with fuel inventory: ≤ 17,500 and ≥ 15,000 gal (Unit 1) ≤ 53,225 and ≥ 45,625 gal (Unit 2)	Restore fuel oil inventory to within limits.	48 hours

Inserts 3.8.3 (continued)

Condition B LCO 3.8.3 for Unit 2

	CONDITION	REQUIRED ACTION	COMPLETION TIME
B.	One or more DGs with lube oil Inventory < 330 gal and ≥ 283 gal.	Restore lube oil inventory to within limits.	48 hours

Condition D LCO 3.8.3

	CONDITION	REQUIRED ACTION	COMPLETION TIME
D.	One or more DGs with new fuel oil properties not within limits.	Restore stored fuel oil properties to within limits.	30 days

ITS 3.8.2

SHUTDOWN

A1

LIMITING CONDITION FOR OPERATION

A3

3.8.1.2 ~~As a minimum~~, the following ~~A.C. electrical power sources~~ shall be OPERABLE:

qualified — A4 — AC electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution System – Shutdown,"

a. One circuit between the offsite transmission network and the onsite Class 1E ~~distribution system~~, and

SR 3.8.1.4

b. One diesel generator ~~with:~~ (DG) capable of supplying one train of the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.10.

1. Day tank containing a minimum of 350 usable gallons of fuel,

SR 3.8.3.1

2. A fuel storage system containing a minimum of 53,225 usable gallons of fuel,

SR 3.8.1.6

3. A fuel transfer pump.

A2

APPLICABILITY: MODES 5 and 6, and

A5

During movement of recently irradiated fuel assemblies, and

During movement of fuel assemblies over recently irradiated fuel assemblies.

A7

ACTION: **Insert Required Action note**

Declare affected required feature(s) with no offsite power available inoperable, or

L1

With less than the above minimum required A.C. electrical power sources OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity ~~changes~~, movement of recently irradiated fuel assemblies, and movement of fuel assemblies over recently irradiated fuel assemblies until the minimum required A.C. electrical power sources are restored to OPERABLE status.

A6

Action Note: LCO 3.0.3 is not applicable.

additions that could result in loss of required SDM or boron concentration.

L2

SURVEILLANCE REQUIREMENTS

L5

4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 except for requirement 4.8.1.1.2.a.6.

Insert SR list

L4

Insert SR Notes

L3

ITS 3.8.2 | UNIT 1 PAGE

LIMITING CONDITION FOR OPERATION

Note that changes to this portion of the Unit 1 TS are addressed in the markup of the Unit 2 TS.

3.[...] sh[...] ~~the following A.C. electrical power sources~~ [...]

~~[...]tween the offsite transmission network and [...]s 1E distribution system, and~~

A2

~~b.~~ One diesel generator with:

SR 3.8.1.4 — 1. Day and engine-mounted fuel tanks containing a minimum of 900 usable gallons of fuel,

SR 3.8.3.1 — 2. A fuel storage system containing a minimum of 17,500 usable gallons of fuel, and

SR 3.8.1.6 — 3. A fuel transfer pump.

~~APPLICABILITY: MODES 5 and 6, and~~

A5

During movement of irradiated fuel assemblies, and

During movement of fuel assemblies over irradiated fuel assemblies.

ACTION:

A6

~~With less than the above minimum required A.C. electrical power sources OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes,~~ movement of irradiated fuel assemblies, and movement of fuel assemblies over irradiated fuel assemblies ~~until the minimum required A.C. electrical power sources are restored to OPERABLE status.~~

~~SURVEILLANCE REQUIREMENTS~~

~~4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 except for requirement 4.8.1.1.2.a.6.~~

Note that changes to this portion of the Unit 1 TS are addressed in the markup of the Unit 2 TS.

Inserts 3.8.2

Required Action note

> ---
> **- NOTE -**
> Enter applicable Condition and required Actions of LCO 3.8.10, with one required train de-energized as a result of Condition A.
> ---

SR 3.8.2.1 Notes

> ---
> **- NOTES -**
> 1. The following SRs are not required to be performed: SR 3.8.1.3, SR 3.8.1.8, SR 3.8.1.9, SR 3.8.1.10, and SR 3.8.1.11, SR 3.8.1.13, and SR 3.8.1.14.
> 2. The verification of load sequencer functions in SR 3.1.8.13 and SR 3.8.1.14 is only required to be met for those loads required in the Applicable MODES of LCO 3.8.2.
> 3. SR 3.8.1.14 is only required to be met with the use of an actual or simulated loss of offsite power signal.
> ---

SR 3.8.2.1 list of associated 3.8.1 SRs

:

SR 3.8.1.1	SR 3.8.1.4.2	SR 3.8.1.9
SR 3.8.1.2	SR 3.8.1.5.1	SR 3.8.1.10
SR 3.8.1.3	SR 3.8.1.5.2	SR 3.8.1.11
SR 3.8.1.4.1	SR 3.8.1.6	SR 3.8.1.13
	SR 3.8.1.8	SR 3.8.1.14

ITS 3.8.7 & 3.8.9

ELECTRICAL POWER SYSTEMS A1

3/4.8.2 ONSITE POWER DISTRIBUTION ~~SYSTEM~~ Insert LCO 3.8.7 note L1

A.C. DISTRIBUTION - OPERATING Insert LCO 3.8.7 A2

OPERABLE

LIMITING CONDITION FOR OPERATION

~~3.8.2.1~~ The following electrical busses shall be ~~energized in the specified manner with tie breakers open between redundant busses within the unit.~~ LA2

a. Train A A.C. Emergency Busses ~~consisting of:~~ ITS 3.8.9 Insert LCO 3.8.9 A6

~~1. 4160-Volt Emergency Bus #2AE, and~~

~~2. 480-Volt Emergency Bus #2N.~~

b. Train B A.C. Emergency Busses ~~consisting of:~~ LA1

~~1. 4160-Volt Emergency Bus #2DF and~~ LA3

~~2. 480-Volt Emergency Bus #2P~~

ITS 3.8.7

~~c.~~ 120-Volt A.C. Vital Bus ~~#I energized from its associated~~ inverter ~~connected to D.C. Bus # 2-1~~

~~d.~~ 120-Volt A.C. Vital Bus ~~#II energized from its associated~~ inverter ~~connected to D.C. Bus # 2-2~~

M1 Insert ITS 3.8.9 Actions 2nd Completion Time

e. 120-Volt A.C. Vital Bus ~~#III energized from its associated~~ inverter ~~connected to D.C. Bus # 2-3~~

~~f.~~ 120-Volt A.C. Vital Bus ~~#IV energized from its associated~~ inverter ~~connected to D.C. Bus # 2-4~~

APPLICABILITY: MODES 1, 2, 3, and 4 L2 Insert ITS 3.8.9 Action E

ACTION: or more AC electrical power distribution subsystem inoperable restore the inoperable subsystem to OPERABLE status Insert LCO 3.8.9 Action A note A7

ITS 3.8.9 Action A

ITS 3.8.9 Action B

a. With one ~~of the required trains of A.C. emergency busses not fully energized, re-energize the train~~ within 8 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. LA5

ITS 3.8.9 Action D

b. With one A.C. Vital Bus ~~not energized, re-energize~~ the A.C. Vital Bus within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Insert LCO 3.8.7 Required Action A note A5 LA4

ITS 3.8.7 Action A

ITS 3.8.7 Action B

c. With one ~~A.C. Vital Bus either not energized from its associated inverter, or with the inverter not connected to its associated D.C. Bus, re-energize the A.C. Vital Bus from its associated inverter connected to its associated D.C. Bus~~ within 24 hours or ~~be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.~~ inoperable return to OPERABLE status LA4

SURVEILLANCE REQUIREMENTS

~~4.8.2.1~~ The specified busses shall be determined energized in the required manner at least once per 7 days by verifying correct breaker alignment and ~~indicated~~ voltage on the busses. correct

SR 3.8.7.1 M2 SR 3.8.9.1 M3

ELECTRICAL POWER SYSTEMS

3/4.8.2 ONSITE POWER DISTRIBUTION SYSTEMS

ITS 3.8.7 & 3.8.9

A.C. DISTRIBUTION - OPERATING

UNIT 1 PAGE

LIMITING CONDITION FOR OPERATION

~~3.8.2.1 The following electrical busses shall be energized in the specified manner with tie breakers open between redundant busses within the unit.~~

~~a. Train A A.C. Emergency Busses consisting of:~~

~~1) 4160-Volt Emergency Bus #1AE, and~~
~~2) 480-Volt Emergency Bus #8N.~~

~~b. Train B A.C. Emergency Busses consisting of:~~

~~1) 4160-Volt Emergency Bus #1DF, and~~
~~2) 480-Volt Emergency Bus #9P~~

~~c. 120-Volt A.C. Vital Bus #I energized from its associated inverter connected to D.C. Bus # 1-1~~

~~d. 120-Volt A.C. Vital Bus #II energized from its associated inverter connected to D.C. Bus # 1-2~~

~~e. 120-Volt A.C. Vital Bus #III energized from its associated inverter connected to D.C. Bus # 1-3~~

~~f. 120-Volt A.C. Vital Bus #IV energized from its associated inverter connected to D.C. Bus # 1-4~~

~~APPLICABILITY: MODES 1, 2, 3, and 4.~~

Note that changes to this Unit 1 material are addressed in the markup of the Unit 2 TS.

~~a. With one of the required trains of A.C. emergency busses not fully energized, re-energize the train within 8 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.~~

~~b. With one A.C. Vital Bus not energized, re-energize the A.C. Vital Bus within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.~~

~~c. With one A.C. Vital Bus either not energized from its associated inverter, or with the inverter not connected to its associated D.C. Bus, re-energize the A.C. Vital Bus from its associated inverter connected to its associated D.C. Bus within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.~~

Inserts 3.8.7 and 3.8.9

Inverter LCO 3.8.7

The required Train A and Train B inverters shall be OPERABLE.

3.8.7 Action A note

- NOTE -
Enter applicable Conditions and Required Actions of LCO 3.8.9, "Distribution Systems – Operating" with any AC vital bus de-energized.

LCO 3.8.7 note

- NOTE -
One inverter may disconnected from its associated DC bus for ≤ 24 hours to perform an equalizing charge on its associated battery, provided:

a. The associated AC vital bus is energized from its Class 1E constant voltage source transformer or inverter using internal AC source, and
b. All other AC vital buses are energized from their associated OPERABLE inverters.

Distribution Systems LCO 3.8.9

Train A and Train B AC, DC, and AC vital bus electrical power distribution subsvstems shall be OPERABLE.

LCO 3.8.9 Action A note

- NOTE -
Enter applicable Conditions and Required Actions of LCO 3.8.4, "DC Sources – Operating" for DC trains made inoperable by inoperable dower distribution subsystems.

Inserts 3.8.7 and 3.8.9 (continued)

LCO 3.8.9 Action E

Condition	Required Action	Completion Time
E. Two or more electrical power distribution subsystems inoperable that results in a loss of safety function.	E.1 Enter LCO 3.0.3.	Immediately

LCO 3.8.9 Action A and B additional Completion Time

Completion Time
AND 16 hours from discovery of failure to meet LCO

A1

ITS 3.8.8 & 3.8.10

L3

LIMITING CONDITION FOR OPERATION

3.8.2.2 ~~As a minimum, one of~~ the following trains of A.C. Busses shall be OPERABLE ~~and energized in the specified manner:~~

L3 LA1 LA2

ITS LCO 3.8.10

A6

ITS LCO 3.8.8

a. ~~Train "A" A.C. Emergency Busses consisting of:~~

~~1.~~ 4160-Volt Emergency Bus ~~#2AE,~~
2. 480-Volt Emergency Bus ~~#2N,~~
3. 120-Volt A.C. Vital Bus ~~#I energized from its~~ associated inverter ~~connected to D.C. Bus #2-1,~~ and
4. 120-Volt A.C. Vital Bus ~~#III energized from its~~ ~~associated inverter connected to D.C. Bus #2-3.~~

b. ~~Train "B" A.C. Emergency Busses consisting of:~~

1. 4160-Volt Emergency Bus ~~#2DF~~,
2. 480-Volt Emergency Bus ~~#2P,~~
3. 120-Volt A.C. Vital Bus ~~#II energized from its~~ associated inverter ~~connected to D.C. Bus #2-2~~, and
4. 120-Volt A.C. Vital Bus ~~#IV energized from its~~ ~~associated inverter connected to D.C. Bus #2-4.~~

APPLICABILITY: MODES 5 and 6, and

L4 A2

During movement of recently irradiated fuel assemblies, and

During movement of fuel assemblies over recently irradiated fuel assemblies.

Action Note: LCO 3.0.3 is not applicable.

ACTION:

LA2 L2

Declare affected required feature(s) inoperable, or

A3

With less than the above required train of A.C. Emergency Busses not ~~fully energized in the required manner~~, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity ~~changes~~, ~~movement of recently irradiated fuel assemblies, and movement of fuel assemblies over recently irradiated fuel assemblies.~~ Initiate corrective action ~~to energize~~ the required electrical busses ~~in the specified manner~~ as soon as possible.

L3 L1

additions that could result in loss of required SDM or boron concentration.

SURVEILLANCE REQUIREMENTS

4.8.2.2 The specified busses shall be determined energized ~~in the required manner~~ at least once per 7 days by verifying correct breaker alignment and ~~indicated~~ voltage on the busses.

correct

A7 M2 M1

SR 3.8.8.1

SR 3.8.10.1

LCO 3.8.10 Required Action A.2.5 Declare associated required residual heat removal subsystem(s) inoperable and not in operation.

ELECTRICAL POWER SYSTEMS

A.C. DISTRIBUTION - SHUTDOWN

ITS 3.8.8 & 3.8.10

UNIT 1 PAGE

LIMITING CONDITION FOR OPERATION

3.8.2.2 As a minimum, one of the following trains of A.C. Busses shall be OPERABLE and energized in the specified manner:

a. Train "A" A.C. Emergency Busses consisting of:

1. 4160-Volt Emergency Bus #1AE,
2. 480-Volt Emergency Bus #8N,
3. 120-Volt A.C. Vital Bus #I energized from its ...d inverter connected to D.C. Bus #1-1, and
... A.C. Vital Bus #III energized from its ...d inverter connected to D.C. Bus #1-3.

Note that changes to this portion of the Unit 1 TS are addressed in the markup of the Unit 2 TS.

... Emergency Busses consisting of:

1. 4160-Volt Emergency Bus #1DF,
2. 480-Volt Emergency Bus #9P,
3. 120-Volt A.C. Vital Bus #II energized from its associated inverter connected to D.C. Bus #1-2, and
4. 120-Volt A.C. Vital Bus #IV energized from its associated inverter connected to D.C. Bus #1-4.

APPLICABILITY: MODES 5 and 6, and

A2

During movement of irradiated fuel assemblies, and

During movement of fuel assemblies over irradiated fuel assemblies.

A3

ACTION:

With the ~~above required train of~~ A.C. Emergency Busses not fully energized in ~~the required~~ manner, ~~immediately~~ suspend all operations ~~involving CORE ALTERATIONS, positive reactivity changes,~~ movement of irradiated fuel assemblies and movement of fuel assemblies over irradiated fuel assemblies. ~~Initiate corrective action to energize the required electrical busses in the specified manner as soon as possible.~~

Note that changes to this portion of the Unit 1 TS are addressed in the markup of the Unit 2 TS.

S ... S

4... busses shall be ~~determined~~ energized in the ~~required manner at least~~ once per 7 days by verifying ~~correct~~ breaker ~~alignment~~ and indicated voltage on the busses.

LCO 3.8.6, App. Note

ITS 3.8.4, 3.8.6, & 3.8.9

A1 A8

ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

A4 Insert LCO, Applicability, and Action Note for 3.8.6

3.8.2.3 The ~~following~~ D.C. ~~bus trains~~ shall be ~~energized and~~ OPERABLE: LA1 3.8.4 Bases and 3.8.9 Bases

electrical power subsystems

A2 LCO 3.8.4

TRAIN "A" ~~(orange) consisting of 125-volt D.C. busses No. 2-1 & 2-3, 125-volt D.C. battery banks 2-1 & 2-3 & charger 2-1 and rectifier 2-3.~~

TRAIN "B" ~~(purple) consisting of 125-volt D.C. busses No. 2-2 & 2-4, 125-volt D.C. battery banks 2-2 & 2-4 and charger 2-2 and rectifier 2-4.~~

LCO 3.8.9

APPLICABILITY: MODES 1, 2, 3 and 4. or two L4 on the same train M1

ACTION: A5 A6 Insert LCO 3.8.9 Condition C.1 second Completion Time

LCO 3.8.4 Actions B, C, & D

LCO 3.8.9 Actions C & D

a. With one ~~of~~ the required battery banks inoperable, restore the inoperable battery bank to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and ~~in~~ COLD SHUTDOWN within the following 30 hours.

b. With LA7 one or two L5 on the same train ~~of the required full capacity~~ chargers ~~or rectifiers~~ inoperable, ~~demonstrate the OPERABILITY of its associated battery bank by performing Surveillance Requirement 4.8.2.3.2.a.1 within one hour.~~ ~~Within 4 hours place in service spare charger 2-7 or continue the Surveillance Requirement of 4.8.2.3.2.a.1 at least once per 8 hours thereafter. If any Category A limit in Table 3.8-1 is not met, declare the battery inoperable.~~ M2 L6

LCO 3.8.4 Action A

M5 Insert Required Actions A.1, A.2, & A.3 and Completion Times

SURVEILLANCE REQUIREMENTS

correct voltage LA3 electrical power distribution subsystem

4.8.2.3.1 Each D.C. ~~bus train~~ shall be determined OPERABLE and ~~energized~~ at least once per 7 days by verifying correct breaker alignment and ~~indicated power availability~~.

LA7

4.8.2.3.2 Each 125-volt battery bank and charger~~/rectifier~~ shall be demonstrated OPERABLE:

SR 3.8.9.1

a. At least once per 7 days by verifying that: M3 L9

L11 1. ~~The parameters in Table 3.8-1 meet the Category A limits, and~~

SR 3.8.4.1

2. The total battery terminal voltage is greater than or equal to ~~127.8 volts on float charge~~.

LA2

b. At least once per 92 days ~~and within 7 days after a battery discharge with battery terminal voltage below 110 volts, or battery overcharge with battery terminal voltage above 150 volts,~~ by verifying that: L8

the minimum established float voltage

L8 M4 L10 50 L18

1. ~~The parameters in Table 3.8-1 meet the Category B limits.~~

LA10 ~~2. There is no visible corrosion at either terminals or connectors, or the connection resistance of these items is less than 150 x 10^-6 ohms, and~~

each battery pilot L7

SR 3.8.6.4 3. ~~The~~ average electrolyte temperature of ~~every tenth cell of connected~~ cells ~~is~~ above ~~60°F~~

minimum established design limits

c. At least once per 18 months by verifying that:

LA8

LA10 ~~1. The cells, cell plates, and battery racks show no visual indication of physical damage or abnormal deterioration,~~

~~2. The cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material,~~

~~3. The resistance of each cell-to-cell and terminal connection is less than or equal to 150 x 10^-6 ohms; and~~

L3 greater than or equal to the minimum established float voltage LA4

SR 3.8.4.2 4. The battery charger will supply ~~at least 100 amperes at 140 volts for at least 4 hours~~.

Insert proposed note Insert 2nd test allowance L2

SR 3.8.4.3 d. At least ~~once per 18 months~~*, ~~during shutdown~~, by verifying that the battery capacity ~~is adequate to supply and maintain in OPERABLE status all of the actual or simulated emergency loads for the 2-hour~~ design duty cycle when the battery is subjected to a battery service test.

LA5 Note to SR 3.8.6.6

1st Frequency SR 3.8.6.6 e. At least once per 60 months ~~during shutdown~~ by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. Once per 60 month interval, this performance discharge test may be performed in lieu of the battery service test.

L1 SR 3.8.6.6 Note to SR 3.8.4.3 or a modified performance discharge test

2nd Frequency SR 3.8.6.6 f. At least once per 18 months, ~~during shutdown,~~ performance discharge tests of battery capacity shall be given to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. ~~Degradation is indicated when the battery capacity drops more than 10% of rated capacity from its average on previous performance tests, or is below 90% of the manufacturer's rating.~~

LA6

* ~~The specified 18-month surveillance interval during the first fuel cycle may be extended to coincide with completion of the first refueling outage.~~

A3

TABLE 3.8-1

BATTERY SURVEILLANCE REQUIREMENTS

L9 LA12 M4 LA11

Parameter	CATEGORY A[(1)] Limits for each designated pilot cell	CATEGORY B[(2)] Limits for each connected cell	Allowable~~(f)~~ value for each connected cell
Electrolyte Level	~~> Minimum level indication mark, and ≤ ¼" above maximum level indication mark~~	~~> Minimum level indication mark, and ≤ ¼" above maximum level indication mark~~	~~Above top of plates,~~ ~~and not overflowing~~
Float Voltage	~~≥ 2.13 volts~~	~~≥ 2.13 volts~~~~(c)~~	≥ 2.07 volts
~~Specific Gravity~~~~(a)~~	~~≥ 1.200~~~~(b)~~	~~≥ 1.195~~ ~~Average of all connected cells > 1.205~~	~~Not more than .020 below the average of all connected cells~~ ~~Average of all connected cells ≥ 1.195~~~~(b)~~

L12 L11 L10 L8 M3

Insert SR 3.8.6.1&Note

SR 3.8.6.1

~~(a) Corrected for electrolyte temperature and level.~~

~~(b) Or~~ battery charging current is less than (2) amps when on charge. Insert Condition F A7

~~(c) Corrected for average electrolyte temperature.~~ L8

(1) ~~For any Category A parameter(s) outside the limit(s) shown, the battery may be considered OPERABLE provided that within 24 hours all the Category B measurements are taken and found to be within their allowable values, and provided all Category A and B parameter(s) are restored to within limits within the next 6 days.~~ Insert Condition D L16 Insert Condition E L17

(2) ~~For any Category B parameter(s) outside the limit(s) shown, the battery may be considered OPERABLE provided that the Category B parameters are within their allowable values and provided the Category B parameter(s) are restored to within limits within 7 days.~~ Insert Condition A L13 Insert Condition B L14 Insert Condition C L15

(3) ~~Any Category B parameter not within its allowable value indicates an inoperable battery.~~ M3 L10 L12

Verify each battery connected cell electrolyte level is greater than or equal to minimum established design limits every 31 days. M4 L9 SR 3.8.6.3

Verify each battery pilot cell voltage is ≥ 2.07 V every 31 days. L8 SR 3.8.6.2

Verify each battery connected cell voltage is ≥ 2.07 V every 92 days. L10 SR 3.8.6.5

ITS 3.8.4, 3.8.6, & 3.8.9

UNIT 1 PAGE

LIMITING CONDITION FOR OPERATION

3.8.2.3 The following DC bus trains shall be energized and OPERABLE:

TRAIN "A" (orange) consisting of 125-volt DC busses No. 1-1 & 1-3, 125-volt DC battery banks 1-1 & 1-3 and chargers 1-1 & 1-3.

TRAIN "B" (purple) consisting of 125-volt D.C. busses No. 1-2 & 1-4, 125-volt DC battery banks 1-2 & 1-4 and chargers 1-2 & 1-4.

APPLICABILITY: MODES 1, 2, 3 and 4.

Note that changes to this portion of the Unit 1 TS are addressed in the markup of the Unit 2 TS.

a. With one of the required battery banks inoperable, restore the inoperable battery bank to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With one of the required full capacity chargers inoperable, demonstrate the OPERABILITY of its associated battery bank by performing Surveillance Requirement 4.8.2.3.2.a.1 within one hour, and at least once per 8 hours thereafter. If any Category A limit in Table 3.8-1 is not met, declare the battery inoperable.

SURVEILLANCE REQUIREMENTS

4.8.2.3.1 Each DC bus train shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.

4.8.2.3.2 Each 125-volt battery bank and charger shall be demonstrated OPERABLE:

a. At least once per 7 days by verifying that:

1. The parameters in Table 3.8-1 meet the Category A limits, and

SR 3.8.4.1

2. With the battery on float charge the total battery terminal volta ge is greater than or equal to:

a) ~~127.8 volts for 60 cell batteries 1-1 and 1-2, and~~

b) ~~125.67 volts for 59 cell batteries 1-3 and 1-4.~~

LA2

the minimum established float voltage

ITS 3.8.6

TABLE 3.8-1

BATTERY SURVEILLANCE REQUIREMENTS

UNIT 1 PAGE

	CATEGORY A[1]	CATEGORY B[2]	
Parameter	Limits for each designated pilot cell	Limits for each connected call	Allowable[3] value for each connected cell
Electrolyte Level	> Minimum level indication mark, and ≤ 1/4" above maximum level indication mark	> Minimum level indication mark, and ≤ 1/4" above maximum level indication mark	Above top of plates, and not overflowing
Float Voltage	≥ 2.13 volts	≥ 2.13 volts[c]	> 2.07 volts
Spe[illegible] Gra[illegible]		≥ 1.195 Average of all connected cells > 1.205	Not more than .020 below the average of all connected cells Average of all connected cells ≥ 1.195[b]

Note that changes to this portion of the Unit 1 TS are addressed in the markup of the Unit 2 TS.

(a) Corrected for electrolyte temperature and level.
(b) Or battery charging current is less than (2) amps when on charge.
(c) Corrected for average electrolyte temperature.
(1) For any Category A parameter(s) outside the limit(s) shown, the battery may be considered OPERABLE provided that within 24 hours all the Category B measurements are taken and found to be within their allowable values, and provided all Category A and B parameter(s) are restored to within limits within the next 6 days.
(2) For any Category B parameter(s) outside the limit(s) shown, the battery may be considered OPERABLE provided that the Category B parameters are within their allowable values and provided the Category B parameter(s) are restored to within limits within 7 days.
(3) Any Category B parameter not within its allowable value indicates an inoperable battery.

~~Numbers in parentheses assume a manufacturer's recommended full charge specific gravity of 1.215.~~

LA9

Inserts LCOs 3.8.4, 3.8.6 and 3.8.9

LCO 3.8.9 Action C additional Completion Time

Completion Time
AND 16 hours from discovery of failure to meet LCO

SR 3.8.4.2 alternate test allowance

Surveillance Requirement	
SR 3.8.4.2	OR Verify each battery charger can recharge the battery to the fully charged state within 24 hours while supplying the largest combined demands of the various continuous steady state loads, after a battery discharge to the bounding design basis event discharge state.

SR 3.8.4.3 second note

- NOTES - 2. This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced.

LCO 3.8.4 Action A Required Actions and Completion Times

Required Action	Completion Time
A.1 Restore battery terminal voltage to greater than or equal to the minimum established float voltage. AND A.2 Verify battery float current $\leq$ 2 amps. AND A.3 Restore battery charger(s) to OPERABLE status.	2 hours

Inserts LCOs 3.8.4, 3.8.6 and 3.8.9(continued)

SR 3.8.6.1 and note

Surveillance Requirement	Frequency
SR 3.8.6.1 - NOTE - Not required to be met when battery terminal voltage is less than the minimum established float voltage of SR 3.8.4.1 Verify each battery float current is ≤ 2 amps.	7 days

LCO 3.8.6 Action A Required Actions and Completion Times

Condition	Required Action	Completion Time
A. One or two batteries on one train with one or more battery cell float voltage < 2.07 V.	A.1 Perform SR 3.8.4.1	2 hours
	AND	
	A.2 Perform SR 3.8.6.1	2 hours
	AND	
	A.3 Restore affected cell voltage ≥ 2.07 V.	24 hours

LCO 3.8.6 Action B Required Actions and Completion Times

Condition	Required Action	Completion Time
B. One or two batteries on one train with float current > 2 amps.	B.1 Perform SR 3.8.4.1	2 hours
	AND	
	B.2 Restore battery float current ≤ 2 amps.	12 hours

LCO 3.8.6 Action D Required Action and Completion Time

Condition	Required Action	Completion Time
D. One or two batteries on one train with pilot cell electrolyte temperature less than minimum established design limits.	D.1 Restore battery pilot cell temperature to greater than or equal to minimum established design limits.	12 hours

LCO 3.8.6 Action C Required Actions and Completion Times

Condition	Required Action	Completion Time
- NOTE - Required Action C.2 shall be completed if electrolyte level was below the top of plates.	- NOTE - Required Action C.1 and C.2 are only applicable if electrolyte level was below the top of plates.	
C. One or two batteries on one train with one or more cells electrolyte level less than minimum established design limits.	C.1 Restore electrolyte level to above top of plates.	8 hours
	AND	
	C.2 Verify no evidence of leakage.	12 hours
	AND	
	C.3 Restore electrolyte level greater than or equal to minimum established design limits.	31 days

LCO 3.8.6 Action E Required Action and Completion Time

Condition	Required Action	Completion Time
E One or two batteries in redundant trains with battery parameters not within limits.	E.1 Restore battery parameters for batteries in one train to within limits.	2 hours

LCO 3.8.6 Action F Required Action and Completion Time

Condition	Required Action	Completion Time
F. Required Action and associated Completion Time of Condition A, B, C, D, or E not met. OR One or two batteries on one train with one or more battery cells float voltage < 2.07 V and float current > 2 amps.	F.1 Declare associated battery inoperable.	Immediately

3.8.6 LCO and Applicability

LCO 3.8.6 Battery parameters for Train A and Train B batteries shall be within limits.

Applicability When associated DC electrical power subsystems are required to be OPERABLE.

Action Note ----------------------NOTE------------------------
Separate Condition entry is allowed for each battery.

ELECTRIC POWER SYSTEMS

LCO 3.8.5

D.C. DISTRIBUTION - SHUTDOWN

A1

ITS 3.8.5 & 3.8.10

LIMITING CONDITION FOR OPERATION

subsystem

A2

3.8.2.4 ~~As a minimum,~~ one of the following trains of D.C. ~~electrical equipment and busses~~ shall be OPERABLE ~~and energized in the specified manner:~~

L1

LA1

a. Train "A" ~~(orange) consisting of the following:~~

A3

~~1. 125-volt D.C. Busses No. 2-1 & 2-3, and~~
~~2. 125-volt D.C. Battery Banks 2-1 & 2-3 and Charger 2-1* & Rectifier 2-3*.~~

b. Train "B" ~~(purple) consisting of the following:~~

LCO 3.8.10

~~1. 125-volt D.C. Busses No. 2-2 & 2-4, and~~
~~2. 125-volt D.C. Battery Banks 2-2 & 2-4 and Charger 2-2* & Rectifier 2-4*.~~

APPLICABILITY: MODES 5 and 6, and

Action Note: LCO 3.0.3 is not applicable.

During movement of recently irradiated fuel assemblies, and

During movement of fuel assemblies over recently irradiated fuel assemblies.

A4

L3

additions that could result in loss of required SDM or boron concentration.

ACTION:

L5

With the above required train of D.C. electrical equipment and busses not fully OPERABLE, immediately suspend all operation involving CORE ALTERATIONS, positive reactivity changes, movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies. ~~Initiate corrective action to restore the required train of D.C. electrical equipment and busses to OPERABLE status as soon as possible.~~

A5

L2

Declare affected required feature(s) inoperable, or

SR 3.8.10.1

A6

M1

SURVEILLANCE REQUIREMENTS

correct voltage

4.8.2.4.1 The above required 125-volt D.C. bus train shall be determined OPERABLE ~~and energized~~ at least once per 7 days by verifying correct breaker alignment and ~~indicated power availability~~.

4.8.2.4.2 The above required 125-volt battery bank and chargers/rectifiers shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

LA1

L4

~~* Spare Charger 2-7 may be substituted for any one charger or rectifier.~~

A7

SRs 3.8.4.1, 3.8.4.2, 3.8.4.3

Note to SR 3.8.5.1.The following SRs are not required to be performed: SR 3.8.4.2 and 3.8.4.3.

ITS 3.8.5 & 3.8.10

UNIT 1 PAGE

LIMITING CONDITION FOR OPERATION

3.8.2.4 As a minimum, one of the following trains of D.C. electrical equipment and busses shall be OPERABLE and energized in the specified manner:

a. Train "A" (orange) consisting of the following:

Note that changes to this portion of the Unit 1 TS are addressed in the markup of the Unit 2 TS.

D.C. Busses No. 1-1 & 1-3, and
D.C. Battery Banks 1-1 & 1-3 and Chargers 1-1

rple) consisting of the following:

1. 125-volt D.C. Busses No. 1-2 & 1-4, and
2. 125-volt D.C. Battery Banks 1-2 & 1-4 and Chargers 1-2 & 1-4.

APPLICABILITY: MODES 5 and 6, and

A4

During movement of irradiated fuel assemblies, and

During movement of fuel assemblies over irradiated fuel assemblies.

A5

ACTION:

~~With the above required train of D.C. electrical equipment and busses not fully OPERABLE, immediately suspend all operation involving CORE ALTERATIONS, positive reactivity changes,~~ movement of irradiated fuel assemblies and movement of fuel assemblies over irradiated fuel assemblies. ~~Initiate corrective action to restore the required train of D.C. electrical equipment and busses to OPERABLE status as soon as possible.~~

SURVEILLANCE REQUIREMENTS

Note that changes to this portion of the Unit 1 TS are addressed in the markup of the Unit 2 TS.

4 ... equired 125-volt D.C. bus train shall be d ... d energized at least once per 7 days by v ... r alignment and indicated power availability.

4 ... equired 125-volt battery bank and chargers shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

3.8 Electrical Power Systems

DISCUSSION OF CHANGES

CTS 3.8.1.1 AC Sources - Operating
ITS 3.8.1 AC Sources – Operating
ITS 3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

L.1 *(Category 3 – Relaxation of Completion Time)* CTS LCO 3.0.5 states when a system, subsystem, train, component or device is determined to be inoperable solely because its emergency power source is inoperable, or solely because its normal power source is inoperable, it may be considered OPERABLE for the purpose of satisfying the requirements of its applicable limiting Condition for Operation, provided: (1) its corresponding normal or emergency power source is OPERABLE; and (2) all of its redundant system(s), subsystem(s), train(s), component(s) and device(s) are OPERABLE, or likewise satisfy the requirements of this specification. Unless both conditions (1) and (2) are satisfied within 2 hours, action shall be initiated to place the unit in a MODE in which the applicable Limiting Condition for Operation does not apply, by placing it, as applicable, in at least HOT STANDBY within the next 6 hours, at least HOT SHUTDOWN within the following 6 hours, and at least COLD SHUTDOWN within the subsequent 24 hours. ITS 3.8.1 Required Action A.2 requires the declaration of required feature(s), with no offsite power available, inoperable when its redundant required feature(s) is inoperable. The Completion Time allowed by Required Action A.2 is 24 hours from discovery of no offsite power to one train concurrent with inoperability of redundant required feature(s). This changes the CTS to allow 24 hours before declaring a required feature inoperable, when an offsite source and a redundant required feature are inoperable.

This change is acceptable because the Completion Time is consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the allowed Completion Time. The Required Action and Completion Time only begin on discovery of both the inoperability of the offsite circuit to supply the emergency loads and the inoperability of the required feature on the other train. If at any time during the existence of ITS Condition A, a redundant required feature becomes inoperable, the Completion Time begins. The required feature with its emergency power supplies remain OPERABLE. Twenty-four hours is acceptable because it allows time for restoration before subjecting the unit to transients associated with shutting down. The required feature with its emergency power supply remains capable of providing 100% of that requirement for accident mitigation. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because additional time is allowed to restore parameters to within the LCO limits than was allowed in the CTS.

L.2 *(Category 3 – Relaxation of Completion Time)* CTS LCO 3.0.5 states when a system, subsystem, train, component or device is determined to be inoperable solely because its emergency power source is inoperable, or solely because its normal power source is inoperable, it may be considered OPERABLE for the purpose of satisfying the requirements of its applicable limiting Condition for Operation, provided: (1) its corresponding normal or emergency power source is OPERABLE; and (2) all of its redundant system(s), subsystem(s), train(s), component(s) and device(s) are OPERABLE, or likewise satisfy the requirements of this specification. Unless both conditions (1) and (2) are satisfied within 2 hours, action shall be initiated to place the unit in a MODE in which the applicable Limiting Condition for Operation does not apply, by placing it, as applicable, in at least HOT STANDBY within the next 6 hours, at least HOT SHUTDOWN within the following 6 hours, and at least COLD SHUTDOWN within the subsequent 24 hours. ITS Required Action B.2 requires the declaration of required feature(s), with no EDG available, inoperable when its redundant required feature(s) is inoperable. The Completion Time allowed by the Required Action B.2 is 4 hours from discovery of inoperable DG on one train concurrent with inoperability of redundant required feature(s). This changes the CTS to allow 4 hours before declaring a required feature inoperable, with a DG and a redundant required feature inoperable.

The purpose of this change is to allow the operator time to evaluate and repair a discovered inoperability. The Required Action and Completion Time only begin on discovery of both the inoperability of the DG and the required feature on the other train. If at any time during the existence of ITS Condition B (one DG inoperable) a redundant required feature becomes inoperable, the Completion Time begins to be tracked. This change is acceptable because the Completion Time is consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the allowed Completion Time. The required feature with its normal (offsite circuit) power supply remains capable of providing 100% of that requirement for accident mitigation. Four hours is acceptable because it allows time for restoration the DG or the redundant required feature before subjecting the unit to transients associated with shutting down. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because additional time is allowed to restore parameters to within the LCO limits than was allowed in the CTS.

L.3 *(Category 4 – Relaxation of Required Action)* CTS 3.8.1.1 Action b requires within 24 hours of a DG becoming inoperable, the OPERABLE DG must be started in accordance with CTS SR 4.8.1.1.2.a.5. This action is required due to any cause other than an independently testable component, testing or preplanned preventative maintenance and must be completed regardless of when the inoperable DG is restored to OPERABILITY. The surveillance requirement is not required to be performed if the absence of any potential for common mode failure can be demonstrated for the OPERABLE DG. ITS Action B.3.1 requires a determination that the OPERABLE DG is not inoperable due to a common cause failure. This determination is required to be completed or ITS SR 3.8.1.2, a DG start, must be performed within 24 hours. This changes the CTS requirements by modifying the potential common mode failure requirement and eliminating the requirement that the test be completed regardless of whether the inoperable EDG is restored to OPERABLE status.

This change is acceptable because the Completion Time is consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the allowed Completion Time. The determination of the OPERABLE DG is not inoperable due to common cause or successfully starting the

OPERABLE DG ensures it is capability to perform the required safety function. The requirement to perform the required testing regardless if the inoperable DG is returned to OPERABLE status is not necessary because the plant corrective action program will continue to evaluate any common cause possibility. This evaluation would not be limited to 24 hours if the inoperable DG were returned to OPERABLE status within that period of time. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because additional time is allowed to restore parameters to within the LCO limits than was allowed in the CTS.

L.4 *(Category 1 – Relaxation of LCO Requirements)* (Unit 2 only) The Unit 2 CTS 3.8.1.1 specifies a DG lube oil inventory of 504 gallons. Note: the Unit 1 CTS do not contain requirements for a DG lube oil inventory. The addition of lube oil requirements to the Unit 1 CTS is addressed by another DOC. The corresponding lube oil inventory requirement in proposed ITS 3.8.3 is 330 gallons for a 7-day supply and 283 gallons for a 6 day supply. This changes the CTS by reducing the lube oil inventory currently required for the Unit 2 DGs.

The purpose of the lube oil inventory requirement is to ensure each DG can operate at full load for a period of 7-days following a design basis event. Operating for that period of time near full load, a DG would consume lubricating oil and would require supplementing to the DG oil reserve. Maintaining an inventory of lube oil is essential for the DG to be considered OPERABLE so it may operate for the time and load assumed in the safety analyses. The Unit 2 CTS lube oil inventory requirement is overly conservative relative to the basis for the requirement specified in the ISTS (i.e., 7-days of operation).

The proposed change is acceptable because it continues to assure each DG will have a 7-day lube oil supply for continuous operation at full load conditions. The revised Unit 2 DG lube oil inventory requirement of 330 gallons is based on the manufacturers postulated maximum lube oil consumption rate of 1.55 gallons per hour. At this rate of consumption a Unit 2 DG would be expected to consume 260.4 gallons in a 7-day period (7x24=168x1.55). For additional conservatism, the required amount is rounded up to the nearest number of 55-gallon drums (i.e., 5 drums = 275 gallons) plus one extra drum for a total of (6) 55-gallon drums or 330 gallons. Although the Unit 1 DGs are smaller than the Unit 2 DGs with an expected lube oil consumption of less than 1 gallon per hour, the same required inventory is specified for the Unit 1 DGs. Specifying the same lube oil inventory for both units reduces the potential for error and conservatively assures the specified inventory will support the required 7-days of DG operation.

This change is designated as less restrictive because less stringent LCO requirements are specified in the ITS than in the Unit 2 CTS.

L.5 *(Category 3 – Relaxation of Completion Time)* CTS LCO 3.0.5 states when a system, subsystem, train, component or device is determined to be inoperable solely because its emergency power source is inoperable, or solely because its normal power source is inoperable, it may be considered OPERABLE for the purpose of satisfying the requirements of its applicable limiting Condition for Operation, provided: (1) its corresponding normal or emergency power source is OPERABLE; and (2) all of its redundant system(s), subsystem(s), train(s), component(s) and device(s) are OPERABLE, or likewise satisfy the requirements of this specification. Unless both conditions (1) and (2) are satisfied within 2 hours, action shall be initiated to place the unit in a MODE in which the applicable Limiting Condition for Operation does not apply, by placing it, as applicable, in at least HOT STANDBY within the next 6 hours, at least HOT SHUTDOWN within the following 6 hours, and at least COLD SHUTDOWN within the subsequent 24 hours. ITS 3.8.1 Condition C states with two required offsite circuits inoperable. Required Action C.1 requires the declaration of required feature(s), with no offsite power available, inoperable when its redundant required feature(s) is inoperable. The Completion Time allowed by Required Action C.1 is 12 hours from discovery of no offsite power to one train concurrent with inoperability of redundant required feature(s). This changes the CTS to allow 12 hours before declaring a required feature inoperable, when both offsite sources and a redundant required feature are inoperable.

This change is acceptable because the Completion Time is consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a DBA occurring during the allowed Completion Time. The Required Action and Completion Time only begin on discovery of both the inoperability of the offsite circuit to supply the emergency loads and the inoperability of the required feature on the other train. If at any time during the existence of ITS Condition C, a redundant required feature becomes inoperable, the Completion Time begins. The required feature with its emergency power supply remains OPERABLE. Twelve hours is acceptable because it allows time for restoration an offsite circuit or the redundant required feature before subjecting the unit to transients associated with shutting down. The required feature with its emergency power supply remains capable of providing 100% of that requirement for accident mitigation. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because additional time is allowed to restore parameters to within the LCO limits than was allowed in the CTS.

L.6 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* Unit 2 CTS surveillance requirement 4.8.1.1.a.6 states the diesel generator will be loaded to a rating of ≥ 4238 kW for ≥ 60 minutes. ITS SR 3.8.1.3 states that each DG for Unit 2 shall be loaded to ≥ 3814 kW and ≤ 4238 kW for ≥ 60 minutes. The SR is modified by note 2 that states, "Momentary transients outside the load range do not invalidate this test." This changes the CTS by decreasing the load limit from ≥ 4238 kW to a band of operation for the DG loading requirements from ≥ 90% to ≤ 100% (continuous rating of the DG) and the adds a note to the SR for both units.

The purpose of ITS SR 3.8.1.3 is to verify that the DGs are capable of synchronizing with the offsite electrical system and accepting loads greater than or equal to the equivalent of the maximum expected accident loads. The load band is provided to avoid routine overloading of the DG. Routine overloading may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY. This change is acceptable because the relaxed Surveillance Requirement acceptance criteria are adequate to verify that the equipment used to meet the LCO can perform its required functions. The elimination of the requirement to operate the DG at greater than its continuous rating and the establishment of an operating band from 90 to 100 % provides for a realistic test requirements that would ensure DG OPERABILITY without routinely overloading the machine. This is consistent with Regulatory Guide 1.9. The addition of the note to allow momentary transients outside the specified band is acceptable because the DG is loaded to the indicated range for the most of the required time. The DG load is outside the required range for only short periods of time. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.7 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS surveillance requirements 4.8.1.1.2.b.3 allows the start of the diesel on a simulated loss of offsite power in conjunction with a safety injection signal and 4.8.1.1.2.b.4 allows the start of the diesel on a loss of power signal. Corresponding ITS SR 3.8.1.14 states "Verify on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ESF actuation signal." Corresponding ITS SR 3.8.1.9 requires the verification that automatic trips are bypassed on actual or simulated loss of voltage signal emergency start of the DG. This changes the CTS by allowing these SRs to be performed with actual or simulated signals.

The purpose of the ITS allowance to use either an actual or simulated signal is to provide the SR with a capability to use either signal to start the DG. This change is acceptable because the relaxed Surveillance Requirement acceptance criteria are adequate to verify that the equipment used to meet the LCO can perform its required functions. Equipment can not discriminate between an actual or simulated signal and the tests are unaffected by the type of signal used for initiation. This change allows credit to be taken for unplanned actuation, if sufficient information is collected to satisfy the test requirements. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.8 *(Category 1 – Relaxation of LCO Requirements)* CTS surveillance requirement 4.8.1.1.2.b.7 states, "Verifying that the load sequence timer is OPERABLE with each load sequence timer within ± 10 % of its required value." If the requirement can not be met, the diesel generator is declared inoperable and the appropriate Actions are entered. ITS LCO 3.8.1.c requires the following AC electrical sources shall be OPERABLE with automatic load sequencers for each required DG. ITS Condition F states that with one load sequencer timer inoperable, Required Actions F.1 and F.2 must be completed immediately. A Note modifies the Condition. The Note states that separate condition entry is allowed for each sequence timer. Required Action F.1.1 specifies the affected component will be placed in a condition that prohibits the component from loading to the emergency bus. Required Action F.1.2 states enter appropriate Conditions and Required Actions for system, subsystem, or component made inoperable by the load sequencer timer(s). Required Action F.2 provides an option by allowing the DG to be declared inoperable. This changes the CTS requirements by allowing a component(s) served by an inoperable load sequence timer to be declared inoperable, instead of the DG.

This change is acceptable because the LCO requirements continue to ensure that the systems, subsystem, and components are maintained consistent with the safety analyses and licensing basis. Individual timers actuating breakers depending on the design basis accident provide the system, subsystem, or components with emergency bus electrical power. If the sequencing timer does not connect the device to the electrical bus, then the associated component will not provide its required safety function. Therefore, the individual system, subsystem, or components can only be affected by its own sequencing timing relays. By requiring the component with the inoperable load sequence timer to be placed in a condition where it can not automatically load to the emergency bus, the bus is protected from potential overload conditions. The electrical source will continue to provide emergency electrical power for the other required functions. The note that allows separate condition entry is acceptable because each sequence timer is independent from the other timers and each timer serves an independent component for a system. The ITS requirement is consistent with the ISTS format. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

L.9 (Category 5 – Deletion of Surveillance Requirement) CTS surveillance requirement 4.8.1.1.2.c.1 requires a check for and removal of accumulated water from each diesel generator day tank every 31 days. In addition, the check for and removal of water is required after each operation of a diesel that is greater than an hour in duration. ITS SR 3.8.1.5.1 states "Check for and remove accumulated water from each engine mounted tank" (Unit 1). ITS SR 3.8.1.5.2 states "Check for and remove accumulated water from each day tank" (Unit 2). These SRs must be performed every 31 days. This changes the CTS deleting the requirement to check for and remove water from the day tank when a DG is operated for more than an hour.

The purpose of CTS requirement for checking the day tank after the diesel has operated for an hour or more is to ensure that water is not collecting the day tank with makeup from the storage tank. This change is acceptable because the deleted Surveillance Requirement is not necessary to verify that the day tank used to meet the LCO can perform its required functions. Thus, appropriate fuel tank monitoring continues to be tested in a manner and at a frequency necessary to give confidence that the DG can perform its assumed safety function. The deletion of the requirement to monitor the DG's day tank after an hour run is not required because the appropriate fuel tank continues to be monitored for water accumulation every 31 days and the storage tank every 92 days. Operating experience has show that a frequency of 31 days for the day tank and 92 days for the storage tank is sufficient to prevent a significant amount of water reaching the DG. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because Surveillances which are required in the CTS will not be required in the ITS.

L.10 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS surveillance requirement 4.8.1.1.2.b.7 requires the verification of load sequence times to be within specified limits. This surveillance is required to be performed during shutdown (MODE 5 or 6). ITS SR 3.8.1.13 requires the verification of automatic load sequence timer is within plus or minus 10% of required value. A note modifies the SR that states the surveillance shall not normally be performed in MODE 1, 2, 3, and 4. The note allows the performance of the SR in MODE 1, 2, 3, or 4 to reestablish OPERABILITY for the DG provides an assessment can determine that the safety of the plant can be maintained or enhanced. The note also allows credit to be taken for unplanned events. This changes the CTS by allowing the performance of surveillance in MODE 1, 2, 3, or 4 if an assessment determines that plant safety is maintained or enhanced.

The purpose of ITS SR note is to allow the SR to be conducted if it does not reduce plant safety by its performance. This change is acceptable because the relaxed Surveillance Requirement acceptance criteria are adequate to verify that the equipment used to meet the LCO can perform its required functions. The allowance to perform the SR in MODE 1, 2, 3, or 4 will be evaluated will prior the its performance and the evaluation will ensure plant safety will not be decreased. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.11 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS surveillance requirement 4.8.1.1.2.b.5 requires each diesel to be tested every 18 months during shutdown to a specific kW load for ≥ 60 minutes. ITS SR 3.8.1.10 states that each DG is loaded for at least 1 hour within the specified load band. Unit 1 is required to run at a load of ≥ 2750 kW and ≤ 2850 kW. Unit 2 is required to run at a load of ≥ 4238 kW and ≤ 4535 kW. Three notes modify the SR. Note 3 is addressed by more restrictive change. Note 1 states "Momentary transients outside the load and power factor ranges do not invalidate this test. Note 2 allows the performance of the SR in MODE 1 or 2 to reestablish OPERABILITY for the DG provides an assessment can determine that the safety of the plant can be maintained or enhanced. This changes the CTS by allowing momentary transients to not invalidate the test. The SR may be performed in MODE 3 or 4 with no restrictions and in MODE 1 or 2 if an assessment evaluates that the performance of the SR does not reduce plant safety.

The purpose of ITS SR note 2 is to allow the SR to be conducted if it does not reduce plant safety by its performance. This change is acceptable because the relaxed Surveillance Requirement acceptance criteria are adequate to verify that the equipment used to meet the LCO can perform its required functions. The allowance to perform the SR in MODE 1, 2, 3, or 4 will be evaluated prior to its performance and the evaluation will ensure plant safety will not be decreased. The purpose of note 1 is to allow short-term transients of load or power factor to not invalidate the test. This allowance for these parameters is acceptable because the majority of the SR is performed within the stated limits. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.12 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS surveillance requirement 4.8.1.1.2.b.4 requires each diesel to be tested every 18 months during shutdown to verify specific non-vital trips are bypassed on an emergency start of the diesel. ITS SR 3.8.1.9 states that each DG automatic trips are bypassed on an actual or simulated loss of voltage signal on the emergency bus. A note modifies the SR. The note allows the performance of portions of the SR in MODE 1, 2, 3, or 4 to reestablish OPERABILITY for the DG provides an assessment can determine that the safety of the plant can be maintained or enhanced. This changes the CTS by allowing portions of the SR to be performed in MODE 1, 2, 3 or 4 if an assessment evaluates that the performance of the SR does not reduce plant safety.

The purpose of ITS SR note is to allow the SR to be conducted if it does not reduce plant safety by its performance. This change is acceptable because the relaxed Surveillance Requirement acceptance criteria are adequate to verify that the equipment used to meet the LCO can perform its required functions. The allowance to perform the SR in MODE 1, 2, 3, or 4 will be evaluated prior to its performance and the evaluation will ensure plant safety will not be decreased. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.13 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS surveillance requirement 4.8.1.1.2.b.3 requires each diesel to be tested every 18 months during shutdown to verify operation of the diesel with a start on a simulated signal a loss of offsite power in conjunction with a safety injection signal. ITS SR 3.8.1.14 requires the DG start with specific actions to be performed on an actual or simulated loss of offsite power in conjunction with an actual or simulated ESF actuation signal. A note modifies the SR. The note allows the performance of portions of the SR in MODE 1, 2, 3, or 4 to reestablish OPERABILITY for the DG provides an assessment can determine that the safety of the plant can be maintained or enhanced. The note also allows credit to be taken for unplanned events. This changes the CTS by allowing portions of the SR to be performed in MODE 1, 2, 3 or 4 if an assessment evaluates that the performance of the SR does not reduce plant safety.

The purpose of ITS SR note is to allow the SR to be conducted if it does not reduce plant safety by its performance. This change is acceptable because the relaxed Surveillance Requirement acceptance criteria are adequate to verify that the equipment used to meet the LCO can perform its required functions. The allowance to perform the SR in MODE 1, 2, 3, or 4 will be evaluated prior to its performance and the evaluation will ensure plant safety will not be decreased. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.14 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS SR 4.8.1.1.2.b.2 requires the verification of the diesel generator capability to reject a load. This surveillance is required to be performed every 18 months during shutdown. ITS SR 3.8.1.8 contains the requirement to verify that a DG has the capability to reject its associated single largest post-accident load. Two notes modify the SR. Note 1 allows the performance of the SR in MODE 1 or 2 to reestablish OPERABILITY for the DG provides an assessment can determine that the safety of the plant can be maintained or enhanced. Note 2 is addressed in a more restrictive change. This changes the CTS by allowing the performance of the SR in MODE 1 or 2.

The purpose of ITS SR note is to allow the SR to be conducted if it does not reduce plant safety by its performance. This change is acceptable because the relaxed Surveillance Requirement acceptance criteria are adequate to verify that the equipment used to meet the LCO can perform its required functions. The allowance to perform the SR in MODE 1 or 2 will be evaluated prior to its performance and the evaluation will ensure plant safety will not be decreased. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.15 Not used.

L.16 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* Unit 2 surveillance requirement 4.8.1.1.2.f requires after any modifications which could affect diesel generator interdependence by starting from standby conditions both diesel generators to start simultaneously once every 10 years. ITS SR 3.8.1.15 requires the Unit 2 DG to start simultaneously every 10 years. Note number one modifies the SR that states "Only applicable to Unit 2." This changes the CTS by deleting the requirement to be performed after any modifications which could affect diesel generator interdependence.

The purpose of ITS SR 3.8.1.15 is to ensure the capability of a unit's DGs to start simultaneously. This change is acceptable because the relaxed Surveillance Requirement acceptance criteria are adequate to verify that the equipment used to meet the LCO can perform its required functions. This change eliminates the portion of the surveillance requirement that requires after any modifications which could affect diesel generator interdependence by starting from standby conditions both diesel generators to start simultaneously. The DGs continue to be tested at least once per 10 years. The design change program controls any modification that could challenge the DG independence and would require appropriate testing. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.17 *(Category 7 – Relaxation Of Surveillance Frequency)* CTS LCO 3.8.1.1.b.3 states for the DGs to be OPERABLE, each DG must have a separate fuel transfer pump. CTS SR 4.8.1.1.2.a.4 states that at least once per 31 days the fuel transfer pump can start and transfer fuel from the storage tank to the day tank. CTS SR 4.8.1.1.2.a.4 for Unit 1 additionally specifies this requirement includes the transfer of fuel to the engine mounted tank. ITS SR 3.8.1.6 states, "Verify the fuel oil transfer system operates to transfer fuel oil from storage tank to the day tank." The SR must be performed every 92 days. This changes the CTS by requiring the SR to be performed every 92 days in the ITS where the CTS required it to be performed every 31 days. This change also deletes the requirement for the engine mounted tank for Unit 1.

The purpose of ITS SR 3.8.1.6 is to ensure the fuel oil transfer system is tested at a frequency consistent with ASME Section XI test requirements. This change is acceptable because the new Surveillance Frequency provides an acceptable level of equipment reliability. The change in surveillance frequency from 31 to 92 days is acceptable because the SR corresponds to the frequency required by ASME inservice testing of pumps. Operating experience has shown that the surveillance requirement is performed with a satisfactory result. The deletion of the engine mounted tank for Unit 1 is acceptable because the fuel oil transfer pump only directly transfers fuel oil to the day tank. The day tank is above the engine-mounted tank and supplies the engine-mounted tank by gravity. Thus, this change clarifies the intent of the surveillance requirement. In addition, the elimination of the reference to the Unit 1 engine mounted tank helps to make the Unit 1 and Unit 2 requirements more consistent. The proposed ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

L.18 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* Unit 1 surveillance requirement 4.8.1.1.2.c.1 states "Check for and remove accumulated water from the day tank." ITS SR 3.8.1.5.1 requires "Check and remove accumulated water from each engine mounted tank." A Note modifies the SR that states "Only applicable to Unit 1." This changes the CTS by requiring the engine mounted tank to checked and water removed for Unit 1 DGs.

The purpose of ITS SR 3.8.1.5.1 is to ensure the verification of fuel oil for the DG does not contain water. The engine mounted tank is located at a lower elevation than the day tank and is supplied with fuel oil from the day tank by gravity feed. This change is acceptable because the relaxed Surveillance Requirement acceptance criteria are adequate to verify that the equipment used to meet the LCO can perform its required functions. This change ensures the proper tank is checked for water and any water is removed periodically. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.19 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS surveillance requirements 4.8.1.1.2.a.5 is modified by note 4 and 3.8.1.1.2.a.6 modified by note 5. Note 4 states "All diesel generator starts may be followed by a warmup period prior to loading." Note 5 states "Diesel generator loadings may include gradual loading as recommended by the manufacturer." ITS SR 3.8.1.2 requires the verification of each DG start from standby conditions and achieves specified steady state voltage and frequency requirements. ITS SR 3.8.1.3 requires the verification of each DG is synchronized and loaded and operates for ≥ 60 minutes at a specific load requirement. SR 3.8.1.2 is modified by note 2 that states "A modified DG start involving idling and gradual acceleration to synchronous speed may be used for this SR as recommended by the manufacturer or based on operating experience." SR 3.8.1.3 is modified by note 1 that states "DG loading may include gradual loading as recommended by the manufacturer or based on operating experience." This changes the CTS surveillance requirements by allowing starting or loading procedures to include lessons from operating experience to be incorporated.

The purpose of ITS Notes is to allow operating experience to be included in starting and loading of the DGs. This change is acceptable because the relaxed Surveillance Requirement acceptance criteria are adequate to verify that the equipment used to meet the LCO can perform its required functions. This change allows the incorporation of experience gained from operating the DGs or from the industry to modify starting or loading of the DGs to also be acceptable. The remaining ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.20 *(Category 4 – Relaxation of Required Action)* CTS LCO 3.8.1.1 requires each diesel generator to have a separate fuel oil storage system with a minimum number of gallons of fuel oil. Unit 1 is 17,500 gallons and Unit 2 is 53,225 gallons. ITS LCO 3.8.3 Condition A states "One or more DGs with fuel oil inventory < 17,500 gal and ≥ 15,000 gal (Unit 1) or < 53,225 gal and ≥ 45,625 gal (Unit 2)." The Required Action of the ITS states that the fuel oil inventory to be restored within limits in 48 hours. This changes the CTS by allowing the fuel oil inventory to less than the minimum number of gallons for 48 hours.

The purpose of ITS Condition A is to allow for a decrease in DG fuel oil inventory for a short period of time. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a design basis accident occurring during the repair period. The fuel oil inventory must remain above the six day limit for the required DGs. The Required Action ensures the DG remains capable of performing its safety function while allowing the replacement of fuel oil. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.21 *(Category 4 – Relaxation of Required Action)* Unit 2 CTS LCO 3.8.1.1 requires each diesel generator to have a separate lube oil storage inventory within the specified volume. ITS LCO 3.8.3 Condition B allows less than the specified volume of lube oil (if the remaining supply is sufficient for 6-days of continuous operation) for up to 48 hours. This changes the CTS by allowing less than the total required lube oil inventory for 48 hours.

The purpose of ITS Condition B is to allow for a decrease in DG lube oil inventory for a short period of time. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a design basis accident occurring during the repair period. The lube oil inventory must remain above the 6-day limit for the required DGs. The Required Action ensures the DG remains capable of performing its safety function while allowing the replacement of lube oil. The proposed ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.22 *(Category 4 – Relaxation of Required Action)* CTS surveillance requirement 4.8.1.1.2.d.2 requires that within 31 days of obtaining a new fuel oil sample that certain fuel oil properties be verified within required limits. Failure to meet the requirements of CTS 4.8.1.1.2.d.2 results in the application of CTS Action footnote 1. The CTS Action footnote provides a 7 day delay time before the Action for an inoperable DG must be applied when fuel oil is found outside the required limits. ITS LCO 3.8.3 Condition D states for one or more DGs with new fuel oil properties not within limits, restore the fuel oil properties to within limits in 30 days. This changes the CTS by allowing 30 days (instead of 7 days) to restore the stored fuel oil properties to within specified limits.

The purpose of ITS Condition D is to allow fuel oil properties other than particulates to be outside specified limits for a limited period of time. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a design basis accident occurring during the repair period. The fuel oil properties must be restored within limits within 30 days. In this condition, the DG fuel oil is degraded but remains capable of supporting the DG OPERABILITY. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.23 *(Category 7 – Relaxation Of Surveillance Frequency)* CTS surveillance requirement 4.8.1.1.2 requires each diesel generator shall be demonstrated OPERABLE. Part a of the requirement states "At least once per 31 days on a STAGGERED TEST BASIS." ITS LCO 3.8.1 SRs 3.8.1.2, 3.8.1.3, 3.8.1.4, and 3.8.1.5 requires the test to be performed every 31 days. This changes the CTS by eliminating the STAGGERED TEST BASIS for testing of the DGs.

This change is acceptable because the new Surveillance Frequency provides an acceptable level of equipment reliability. The elimination of the STAGGERED TEST

BASIS requirement is acceptable because the DG will continued to be tested on a monthly basis. The routine surveillance testing scheduling process will continue to ensure that the required montly surveillance testing of the DGs is conducted on a staggered basis. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as less restrictive because the Surveillance will be performed less frequently under the ITS than under the CTS.

L.24 *(Category 7 - Relaxation of Surveillance Frequency)* CTS 4.8.1.1.2.d.1.e) requires verification that new fuel oil particulate contaminants are < 10 mg/liter prior to adding the new fuel oil to the storage tanks. ITS 5.5.9 does not include a requirement to verify particulate contamination levels are < 10 mg/liter prior to addition of the new fuel oil to the storage tanks. However, the ITS continues to specify the periodic verification of particulate contamination similar to the CTS. Therefore, this change effectively relaxes the CTS requirements to verify particulate contamination is within limits by eliminating the requirement for prior to adding new fuel oil to the storage tanks.

The purpose of the fuel oil analyses is to ensure proper long term fuel oil quality is maintained to support the operation of the emergency Diesel Generators (DGs). The proposed change is acceptable because the "new" fuel oil requirements in ITS 5.5.9.a (prior to addition to the storage tanks) continue to ensure the fuel oil is of the appropriate grade (API gravity or absolute specific gravity, kinematic viscosity, flash point, and water and sediment content). Therefore, the remaining ITS requirements for "new" fuel oil and the normal quality control associated with new purchases continue to provide adequate assurance that new fuel may be added to the stored fuel without concern for contaminating the entire stored fuel volume. The proposed change is also acceptable because excessive contamination levels are typically associated with fuel oil degradation as a result of long term storage. In addition, the ITS requirements continue to include requirements for the periodic verification that particulate contamination levels remain within the required limit. As such, the subsequent verifications required by ITS 5.5.9.b (31 days after new fuel oil addition) and the normal 31 day sampling frequency of ITS 5.5.9.c provide adequate assurance that the emergency generator fuel oil is maintained within the required limits. It should also be noted that a failure to satisfy these criteria does not mean the fuel oil will not burn properly in the DG. This fact is reflected in the allowed outage time applicable when the allowable limits are not met. The proposed change does not adversely impact the safe operation of the plant and is consistent with RG 1.137, Rev. 1, and the applicable industry standards (ASTM). This change is designated as less restrictive because the Surveillance will be performed less frequently under the ITS than under the CTS.

L.25 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS surveillance 4.8.1.1.2.e requires verification that fuel oil particulate contaminants are <10 mg/liter. The corresponding ITS 5.5.9.c requires that fuel oil particulate contaminants be verified to be ≤10 mg/liter. The CTS is revised to conform to the ITS. This changes the CTS limit for particulate contamination to ≤10 mg/liter from <10 mg/liter.

The proposed change is acceptable because it conforms to the industry standard limit for particulate contamination and continues to provide adequate assurance that sufficient fuel oil of acceptable quality is available for the required diesel engine. The proposed change allows a slightly higher level of particulate contamination than the CTS. However, the increased level of contamination permitted in the ITS is not significant or sufficient to affect the operation of the required diesel engine. Therefore, the proposed change does not adversely impact the safe operation of the plant and makes the BVPS fuel oil requirements more consistent with the applicable industry standards. This change is designated as less restrictive because the surveillance acceptance criteria is relaxed.

More Restrictive Changes (M)

M.1 Unit 1 CTS LCO 3.8.1.1 and surveillances do not contain any requirements for DG lubricating oil. ITS LCO 3.8.3 states the stored diesel lube subsystem shall be within limits for each required DG. ITS Condition B allows less than the 7-day supply of lube oil for 48 hours. ITS SR 3.8.3.2 requires verification that the lubricating oil inventory is ≥ the specified volume every 31 days. This changes the Unit 1 CTS by adding requirements to maintain a DG lube oil inventory (ITS 3.8.3 LCO, Action and Surveillance).

This change is acceptable because a DG could be required to operate at full load for a period of 7 days following a design basis event. Operating for that period of time near full load, a DG would consume lubricating oil and would require supplementing to the DG oil reserve. Maintaining an inventory of lube oil is essential for the DG to be considered OPERABLE so it may operate for the time and load assumed by the safety analyses.

The proposed lube oil inventory requirement of 330 gallons for a 7-day supply and 283 gallons for a 6-day supply is based on the Unit 2 DG lube oil consumption (with additional conservatism included for Unit 2) and therefore, results in a very conservative inventory requirement for the smaller Unit 1 DGs. Although the Unit 1 DGs consume less lube oil than the Unit 2 DGs (0.98 gallons per hour vs 1.55 gallons per hour for the Unit 2 DGs) the lube oil inventory requirements are made the same for each unit to minimize minor technical specification differences that could increase the potential for errors.

The addition of Condition B that allows less than the 7-day inventory is acceptable because 6 days of lube oil remains and additional oil may be obtained within 48 hours. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as more restrictive because it adds an LCO, Required Action, and Surveillance Requirement that are not specified in the Unit 1 CTS.

M.2 Unit 1 CTS surveillance requirement 4.8.1.1.2.a.6 states that the generator is capable of being synchronized to the bus, loaded to ≥ 1425 kW, and operated for ≥ 60 minutes. ITS SR 3.8.1.3 states that the DG is capable of being synchronized to the bus, operated for ≥ 60 minutes at a load of ≥ 2340 kW and ≤ 2600 kW. This changes the CTS loading requirement for the DG to a greater value.

This change is acceptable because the DG could be required to operate a full load for a significant period of time. The ≥ 2340 kW and ≤ 2600 kW loading requirement is 90 to 100% of the DG continuous load capability. The ITS requirements are consistent with the ISTS requirement for this SR. This change is designated as more restrictive because it revises Surveillance Requirement acceptance criteria to require the DG to be tested at a greater minimum load than is currrently specified in the Unit 1 CTS.

M.3 Not used.

M.4 CTS surveillance requirement 4.8.1.1.2.b.5 requires each diesel to be tested every 18 months during shutdown to a specific kW load for ≥ 60 minutes. The loading for Unit 1 is 2750 kW and Unit 2 load is 4238 kW. ITS SR 3.8.1.10 states that each DG is loaded. Unit 1 is required to run for ≥ 1 hour at a load of ≥ 2750 kW and ≤ 2850 kW. Unit 2 is required to run for ≥ 1 hour at a load of ≥ 4238 kW and ≤ 4535 kW. Three notes modify the SR. Notes 1 and 2 are addressed by a less restrictive discussion of change. Note 3 states if the SR is performed with the DG synchronized with offsite power, it shall be performed at a power factor of ≤ 0.9. Additionally, the note states that if grid conditions do not permit, the power factor limit is not required to be met. The note goes on to state that under this condition, the power factor shall be maintained as close to the limit as possible. This changes the CTS by specifying a loading band, and specifying a power factor limit for each DG for this test.

This change is acceptable because the test requires the DGs to start and load to required values. The minimum of 2750 kW is the assumed accident loading value for Unit 1. The maximum of 2850 kW is the 2000-hour limit for Unit 1. The 2750 kW value is greater than the continuous duty rating and is specified by the CTS requirement. The Unit 2 range for kW varies from the continuous duty rating to the 2000-hour limit. A load band is provided to avoid routine overloading of the DG during the monthly test requirement, but the 18-month test ensures the capability of the DG to provide an extended capacity. Routine overloading may result in more frequent teardown inspections in accordance with vendor recommendations in order to maintain DG OPERABILITY. The addition of a power factor limit is acceptable because the load on the DG with a loss of offsite power is inductive and creates volt-amp reactive loading of the DG. This is represented in the limit of the power factor requirement. Therefore, the testing of the DG at this rating is only required every 18 months. The ITS requirements are consistent with the ISTS wording for this requirement (i.e. specifying a load band). This change is designated as more restrictive because it adds additional test conditions that the CTS does not require.

M.5 – M.8 Not used.

M.9 CTS surveillance requirements for LCO 3.8.1.1 do not require a test of the diesel generator capability to carry emergency loads, transfer those loads to offsite source upon a simulated restoration of the offsite power, transfer loads to offsite power source, and return to the specified position. ITS SR 3.8.1.11 requires verification for each DG that it is capable of synchronizing with the offsite power source while carrying emergency loads. Upon a simulated restoration of offsite power, the emergency loads would be transferred to the offsite source and the DG would return to a specified condition. The Unit 2 DGs would return to a ready-to-load position and the Unit 1 DGs would be required to proceed through the shutdown sequence. The surveillance is required to be performed every 18 months. A note modify the SR. The note states this surveillance shall not normally be performed in MODE 1, 2, 3, and 4. The note allows the performance of the SR in MODES 1, 2, 3, and 4 to reestablish OPERABILITY for the DG provides an assessment can determine that the safety of the plant can be maintained or enhanced. This changes the CTS by requiring each DG demonstrate the described requirements every 18 months.

The purpose for the SR is to ensure the DG is capable of performing the required operations. This change is acceptable because the SR ensures that the manual synchronization load transfer from the DG to the offsite source can be made and the DG can be returned to a specific status when offsite power is restored. The SR also ensures that the autostart logic is reset to allow the DG to reload if a subsequent loss of offsite power occurs. The DG is considered to be in ready to load status when the DG is at nominal speed and voltage, the output breaker is open and can receive an autoclose signal on bus undervoltage, and the load sequence timers are reset. This is not the case for Unit 1 DGs. Unit 1's design requires the DGs to proceed through its normal shutdown sequence. The Frequency of 18 months provides adequate assurance of DG OPERABILITY, while minimizing degradation resulting from testing. The ITS requirements are consistent with the ISTS wording for this requirement for Unit 2. The Unit 1 requirements are modified to account for plant design differences. This change is designated as more restrictive because it adds additional surveillance requirement that the CTS does not require.

M.10 Unit 2 CTS surveillance requirements for LCO 3.8.1.1 do not require a diesel generator, while operating in a test mode and connected to its emergency bus, to override the test mode, return the DG to a ready-to-load. ITS SR 3.8.1.12 requires verification that with a DG operating in a test mode and connected to its bus, an actual or simulated ESF actuation signal overrides the test mode. The actual or simulated signal would cause the DG to return to the ready-to-load condition. The surveillance is required to be performed every 18 months. Two notes modify the SR. Note 1 states that the SR is only applicable to Unit 2 only. The second note states this surveillance shall not normally be performed in MODE 1, 2, 3, and 4. The note allows portions of the SR to be performed in MODES 1, 2, 3, and 4 to reestablish OPERABILITY for the DG provides an assessment can determine that the safety of the plant can be maintained or enhanced. This changes the CTS by requiring each Unit 2 DG to demonstrate the described requirements every 18 months.

The purpose for the SR is to ensure each Unit 2 DG is capable of performing the required operations. This change is acceptable because this demonstration ensures that the DG availability under accident conditions will not be compromised. As the result of being in the test mode, the DG will automatically reset to ready to load operation if a SI actuation signal is received during this condition. Ready to load operation is defined as the DG running at nominal speed and voltage with the DG output breaker open. In lieu of actual demonstration of connection and loading of loads, testing that adequately shows the capability of the emergency loads to perform these functions is acceptable. The Frequency of 18 months provides adequate assurance of DG OPERABILITY, while minimizing degradation resulting from testing. The ITS requirements are consistent with the ISTS wording for this requirement for Unit 2. The SR is not applicable to Unit 1 because of plant design does not incorporate this feature. This change is designated as more restrictive because it adds additional surveillance requirement that the CTS does not require.

M.11 CTS SR 4.8.1.1.2.b.2 requires the verification of the diesel generator capability to reject a load. This surveillance is required to be performed every 18 months during shutdown. ITS SR 3.8.1.8 contains the requirement to verify that a DG has the capability to reject its associated single largest post-accident load. Two notes modify the SR. Note 1 is addressed in a less restrictive change. Note 2 requires the performance of the SR with the DG synchronized with offsite power with a power factor of ≤ 0.9. The note allows, if grid conditions do not permit, the power factor limit to not be met, be maintained as close as possible to the limit. This changes the CTS by requiring the performance of the SR with a power factor limit.

The purpose of the power factor is to ensure the DG is tested under load conditions that are as close to design basis conditions as possible. This change is acceptable because the power factor is representative of the actual inductive loading a DG would see under design basis accident conditions. Under certain conditions, however, Note 2 allows the surveillance to be conducted at a power factor other than the limit. These conditions occur when grid voltage is high, and the additional field excitation needed to get the power factor to the limit. Under these conditions, the power factor should be maintained as close as practicable to the limit while still maintaining acceptable voltage limits on the emergency busses. In other circumstances, the grid voltage may be such that the DG excitation levels needed to obtain a power factor of the limit may not cause unacceptable voltages on the emergency busses, but the excitation levels are in excess of those recommended for the DG. In such cases, the power factor shall be maintained as close as practicable to the limit without exceeding the DG excitation limits. The ITS requirements are consistent with the ISTS wording for this requirement. This change is designated as more restrictive because it adds additional surveillance requirement that the CTS does not require.

M.12 CTS surveillance requirement 4.8.1.1.2.a.6 requires the verification that the generator is synchronized, loaded to the bus at a specific kW rating, and operated for 60 minutes or longer. ITS SR 3.8.1.3 requires the verification that each DG is synchronized and load and operates for ≥ 60 minutes within a given load band. Four notes modify the SR. Note 1 is addressed by an administrative change and note 2 is addressed by a less restrictive change. Note 3 states that the surveillance shall be conducted on only one DG at a time. Note 4 requires the SR shall be preceded by and immediately follow without shutdown a successful performance of SR 3.8.1.2. This changes the CTS by allowing only one DG at a time to be tested and the loading of the DG shall only be conducted after specific start requirements.

The purpose of the ITS notes are to set specific limitations for testing of a DG. These changes are acceptable because they place limitations on testing of the DGs that are currently practiced. The ITS requirements are consistent with the ISTS wording for this requirement. This change is designated as more restrictive because it adds additional surveillance requirement that the CTS does not require.

M.13 Not used

M.14 CTS 3.8.1.1 does not require specific limits or requirements for starting air system for DG OPERABILITY. ITS LCO 3.8.3 adds a requirement for starting air system to be OPERABLE when an associated DG is required to be OPERABLE. ITS 3.8.3 Condition E is added. Condition E specifies one or more DGs with starting air receiver pressure < 165 psig and ≥ 125 psig, the receiver pressure must be restored to ≥ 165 psig within 48 hours. These requirements are for Unit 1. For Unit 2, the Condition specifies one or more DGs with starting air receiver pressure < 394 psig and ≥ 285 psig restore the receiver pressure to ≥ 394 within 48 hours. Failure to comply with the specified Actions results in declaring the associated DG inoperable. ITS SR 3.8.3.4 is added and requires the verification that DG air start receiver pressure is ≥ 165 psig for Unit 1 and ≥ 394 psig for Unit 2 every 31 days. This changes the CTS by adding the appropriate requirements for starting air system to ensure DG OPERABILITY.

The purpose of the ITS LCO, Action, and surveillance requirements are to ensure the DG air start capacity is maintained within the design requirements for 5 start attempts. The addition of these requirements is acceptable because they provide additional assurance the DG is capable of starting within the time limit assumed by the safety analysis for analyzed events. The proposed ITS requirements are consistent with the ISTS for these requirements. This change is designated as more restrictive because it adds additional technical specification requirements that the CTS does not specify.

M.15 CTS surveillance requirement 4.8.1.1.2.b.2 requires a verification that the generator (DG) is capable of rejecting a load ≥ 825 kw without tripping and without exceeding 64.4 Hz for Unit 2. Unit 1 surveillance requirement states; verify the generator capability to reject a load of ≥ 615 kw without tripping and without exceeding 66.2 Hz. ITS SR 3.8.1.8 states Verify each DG rejects a load greater than or equal to its associated single largest post-accident load, and following load rejection, the frequency is ≤ 66.2 Hz (Unit 1) or ≤ 64.4 Hz (Unit 2). The SR additionally requires that within 3 seconds following load rejection, the voltage is ≥ 4106 V and ≤ 4368 V for (Unit 1), or ≥ 3994 V and ≤ 4368 V for (Unit 2), and within 3 seconds following load rejection, the frequency is ≥ 58.8 Hz and ≤ 61.2 Hz (Unit 1) or ≥ 59.9 Hz and ≤ 60.3 Hz (Unit 2). This changes the CTS by adding additional requirements to the surveillance requirement.

The purpose of the ITS SR 3.8.1.8 limitation on voltage and frequency after the transient is to ensure the response of the DG is within a specific band. The addition of these requirements is acceptable because they ensure the DG is capable of responding to a transient within specified limits. The ITS requirements are consistent with the ISTS wording for this requirement. This change is designated as more restrictive because it adds additional surveillance requirement that the CTS does not require.

M.16 CTS Action a requires with one offsite circuit inoperable, it must be restored to OPERABLE status within 72 hours. CTS Action b states with one diesel generator inoperable, it must be restored to OPERABLE status within 14 days. The corresponding ITS Action A requires with one offsite circuit inoperable, the circuit must be restored to OPERABLE status within 72 hours and within 17 days from discovery of failure to meet the LCO. Corresponding ITS Action B states with one DG inoperable, the DG must be restored to OPERABLE status within 14 days and within 17 days from discovery of failure to meet the LCO. The CTS is revised to conform to the ITS. This changes the CTS by adding an additional restriction for an inoperable offsite circuit or DG that limits the total time for not meeting the LCO.

The purpose of the additional Completion Times for Action A and B is to provide a total time limit for the LCO not being met. The proposed change prevents multiple Actions from being entered in series such that the requirements of the LCO may not be met for an unlimited period of time. The change is acceptable because the proposed restrictions provide a reasonable time to restore the electrical system to a fully OPERABLE status while limiting the total time operation may continue with the LCO not met. The proposed ITS requirements are consistent with the intent of the ISTS wording for this requirement but incorporate the CTS specific Action times. This change is designated as more restrictive because it adds an additional operational restriction that is not in the CTS.

Removed Detail Changes (LA)

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.8.1.1.b.1 requires tanks for containing a minimum "usable" volume of fuel oil. CTS LCO 3.8.1.1.b.2 requires a separate fuel storage system containing a minimum "usable" volume for stored fuel oil. ITS SRs 3.8.1.4 and 3.8.3.1 contain the requirements for DG and stored fuel oil inventories. This changes the CTS by moving the word "usable" from the Specifications to the TS Bases for the specified ITS SRs.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the inventory requirements for fuel oil for the DG and the fuel oil storage system. Also, this change is acceptable because the removed information will be adequately controlled in the Technical Specification Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Section 5 of the Technical Specifications. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.2 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS SR 4.8.1.1.2.b.2 requires the verification of the diesel generator capability to reject a load. The load rejection values are 615 kW for Unit 1 and Unit 2 is 825 kW. ITS SR 3.8.1.8 contains the requirement to verify that a DG has the capability to reject its associated single largest post-accident load. This changes the CTS by moving the specific kW requirement for the load rejection from the Specifications to the TS Bases. The ISTS Bases for SR 3.8.1.8 has a bracketed sentence where the specified kW load(s) may be inserted.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the requirements for the load rejection ≥ of the single largest post-accident load. Also, this change is acceptable because the removed information will be adequately controlled in the Technical Specification Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Section 5 of the Technical Specifications. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.3 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.8.1.1.b.2 states "Two separate and independent diesel generators." ITS LCO 3.8.1 b states "Two diesel generators (DGs) capable of supplying the onsite Class 1E AC Electrical Power Distribution System." This changes the CTS by moving the phrase "separate and independent" that describes the DGs from the Specification to the ITS Bases. This phrase "separate and independent diesel generators" is included in the ISTS LCO Bases.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the requirements for two DGs to be OPERABLE and capable of supplying the required onsite distribution subsystems. Also, this change is acceptable because the removed information will be adequately controlled in the Technical Specification Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Section 5 of the Technical Specifications. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.4 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS surveillance requirement 4.8.1.1.2.a.7 states verify the diesel generator is aligned to provide standby power to the associated emergency busses. ITS SRs do not require the verification of the DG to the associated bus. This changes the CTS by moving the TS requirement from the specification to ITS Bases in the Background section.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the requirements to start (both normal and emergency) and supply the necessary voltage, frequency, and power to the emergency bus. Also, this change is acceptable because the removed information will be adequately controlled in the Technical Specification Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Section 5 of the Technical Specifications. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.5 Not used.

LA.6 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS surveillance for both units 4.8.1.1.2.a.5 and 4.8.1.1.2.b.3.b), and for Unit 2 only, 4.8.1.1.2.f, have notes that modify the requirements. The notes 3 and 8 states that the values for voltage and frequency are analysis values. These value bands shall be appropriately modified (increased or decreased) to account for measurement uncertainties. ITS SRs that contain voltage and frequency limits do not specify that the numbers are analysis values or modified to account for measurement uncertainties. This changes the CTS by moving the CTS notes from the specification to ITS Bases in the appropriate SR section.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the requirements to start (both normal and emergency) and supply the necessary ranges for voltage, frequency, and power to the emergency bus to support the required safety features. Also, this change is acceptable because the removed information will be adequately controlled in the Technical Specification Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Section 5 of the Technical Specifications. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.7 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS surveillance requirement 4.8.1.1.2.b.2 has a note that modify the requirement. The surveillance verified the generator capability to withstand a load rejection of a specific value without tripping or exceeding a specific frequency. The frequency limit is modified by note 7. The note states that the value for frequency is decreased to account for measurement uncertainties. ITS SR 3.8.1.8 requires the verification of each DG capability to reject a specific load without the frequency exceeding a specific frequency. This changes the CTS by moving the CTS note that states that the frequency is reduced to account for measurement uncertainties from the specification to ITS Bases in the appropriate SR section.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the requirements for the DG to be capable of rejecting a specified load while maintaining a specific frequency limit. Also, this change is acceptable because the removed information will be adequately controlled in the Technical Specification Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Section 5 of the Technical Specifications. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.8 *(Type 3 – Removing Procedural Details for Meeting TS Requirements and Related Reporting Requirements)* CTS surveillance requirement 4.8.1.1.2.b.6 states that every 18 months during shutdown each diesel will be verified that the auto-connected loads do not exceed the 2000 hour rating of the machine. ITS LCO 3.8.1 SRs do not include this requirement. This changes the CTS by moving the requirement from specification to the Update Final Safety Analysis Report (UFSAR).

The removal of these details for performing actions from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the requirements to ensure each DG can be started and loaded to the values assumed by the safety analysis for a design basis event. The remaining ITS SRs include: the capability of offsite sources, DG starting and loading, DG fuel oil (inventory, quality, and transfer capability), DG capability of rejecting load, the ability to prevent tripping of the DG on specified automatic trips with an emergency start signal present, and the OPERABILITY of the sequenced load blocks. These requirements continue to ensure AC sources OPERABILITY and provide assurance protection of the public health and safety with the DGs capability to adequately support ESF systems that mitigate design basis accidents. Also, this change is acceptable because these types of procedural details will be adequately controlled in the UFSAR. Any changes to the UFSAR are made under 10 CFR 50.59, which ensures changes are properly evaluated. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LA.9 Not used.

LA.10 *(Type 3 – Removing Procedural Details for Meeting TS Requirements and Related Reporting Requirements)* Unit 2 only. Unit 2 CTS surveillance requirement 4.8.1.1.2.g states at least once per 10 years each main fuel oil storage tank will be drained, the accumulated sediment will be removed, and the tank cleaned using a sodium hypochlorite solution or other appropriate cleaning solution. ITS SRs for 3.8.3 do not contain this requirement. This changes the CTS by moving the tank-cleaning requirement for Unit 2 from the specification to the Licensing Requirements Manual (LRM).

The removal of these details for performing surveillance requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the requirement to monitor storage tank for water accumulation every 92 days and verifies fuel oil properties in accordance with the fuel oil testing program on a periodic basis. These SRs ensure the DG fuel oil remains capable of supporting the DGs and their safety functions, which will continue to assure the protection of the public health and safety. Also, this change is acceptable because these types of procedural details will be adequately controlled in the LRM. The LRM is incorporated by reference into the UFSAR and any changes to the LRM are made under 10 CFR 50.59, which ensures changes are properly evaluated. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LA.11 *(Type 3 – Removing Procedural Details for Meeting TS Requirements and Related Reporting Requirements)* CTS Actions Note 1 refers to CTS surveillance requirement 4.8.1.1.2.d and 4.8.1.1.2.e for the testing requirements for stored and new fuel oil, including the specific testing standards. This Note appears three times in the CTS as it is used for the different DG Actions. However, the corresponding ITS SR 3.8.3.3, that addresses fuel oil properties, requires new and stored fuel oil be tested and maintained within the limits of, and performed at a frequency in accordance with the Diesel Fuel Oil Testing Program. The ITS program in turn requires testing of diesel fuel oil in accordance with the applicable industry standards, but does not specify the same level of procedural detail for each required test as the CTS surveillances. As such, the applicable limits are retained in the ITS SR 3.8.3.3 Bases. This changes the CTS by moving the procedural details (limits, standards, and guidance) of diesel fuel oil testing to the Bases for ITS SR 3.8.3.3.

The removal of these details for performing surveillance requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the surveillance requirement for the DG fuel oil, both new and stored, to be tested in accordance with the Diesel Fuel Oil Testing Program as required by SR 3.8.3.3. The Diesel Fuel Oil Testing Program is defined in Section 5.0 of the TS. The movement of the details to the TS Bases is acceptable because the Bases control program will adequately control these types of procedural details. The Bases control program is controlled by Section 5 of the Technical Specifications. The Bases control program provides for the evaluation of changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from this section of the Technical Specifications.

LA.12 *(Type 3 – Removing Procedural Details for Meeting TS Requirements and Related Reporting Requirements)* Unit 2 CTS LCO 3.8.1.1.b.4 and b.5 require the lubricating oil storage system to contain a specified volume of lube oil and the capability to transfer lube oil from the storage to the DGs. Unit 2 CTS surveillance requirement 4.8.1.1.2.a.8 requires the verification that lubricating oil inventory in storage every 31 days. ITS LCO 3.8.3 states the stored diesel lube subsystem shall be within limits for each required DG. ITS SR 3.8.3.2 requires the verification of lubricating oil inventory is ≥ the specified volume every 31 days. This changes the Unit 2 CTS requirements by moving the requirement for the capability to transfer lube oil from the storage to the DGs from the specification to the ITS Bases.

The removal of these details for performing surveillance requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the surveillance requirement for the DG lube oil volume in ITS SR 3.8.3.2. The movement of the details to the TS Bases is acceptable because the Bases control program will adequately control these types of procedural details. The Bases control program is controlled by Section 5 of the Technical Specifications. The Bases control program provides for the evaluation of changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from this section of the Technical Specifications.

LA.13 *(Type 3 – Removing Procedural Details for Meeting TS Requirements)* CTS 4.8.1.1.2.d and 4.8.1.1.2.e contain procedural details (limits, standards, and guidance) for meeting the TS requirement related to diesel fuel oil testing. The corresponding ITS requirements are contained in ITS 5.5.9, Diesel Fuel Oil Testing Program. ITS SR 3.8.3.3 requires testing in accordance with the program. The ITS program in turn requires testing of diesel fuel oil in accordance with the applicable industry standards, but does not specify the same level of procedural detail for each required test as the CTS surveillances. This changes the CTS by moving the procedural details (limits, standards, and guidance) of diesel fuel oil testing to the Bases for ITS SR 3.8.3.3.

The removal of this detail for meeting the TS requirements from the TS is acceptable because this type of information is not necessary to be in the TS in order to provide adequate protection of the public health and safety. The ITS diesel fuel oil testing program and ITS SR 3.8.3.3 retain the requirement for performance of diesel fuel oil testing in accordance with the accepted industry standards. Therefore, the ITS continues to provide adequate assurance that the diesel fuel oil is maintained consistent with the applicable industry standards. Also, this change is acceptable because this type of procedural detail (limits, standards, and guidance) will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Bases Control Program which is specified in Chapter 5 of the TS. The Bases Control Program assures that changes to the Bases are evaluated and that prior NRC review and approval is obtained when required by 10 CFR 50.59. This change is designated as a less restrictive removal of detail change because a procedural detail for meeting TS requirements is being removed from the TS.

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 CTS LCO 3.8.1.1.b.1 requires a separate day and engine mounted tanks for Unit 1 containing a minimum of 900 gallons of fuel oil. Unit 2 LCO 3.8.1.1.b.1 requires a separate day tank containing a minimum of 350 usable gallons of fuel oil. Surveillance requirement 4.8.1.1.2.a.1 for both units requires the verification of level in the day tank and engine-mounted tank for Unit 1. ITS SR 3.8.1.4.1 and 3.8.1.4.2 require verification each DG day tank (and engine mounted tank on Unit 1 only) contains the required inventory of fuel oil. The inventory for Unit 1 day tank and engine mounted tank contain a combined total of ≥ 900 gal and for Unit 2 day tank ≥ 350 gal. Each SR is modified by a Note that states which unit the SR applies. This changes the CTS by stating the DG fuel oil requirements in the ISTS SR format.

This change is acceptable because the ITS SR reflects the technical limit of the CTS for DG fuel oil inventory requirement. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.3 Unit 1 LCO 3.8.1.1 requirement 3.8.1.1.b.2 requires a separate fuel storage system containing a minimum of 17,500 usable gallons of fuel. Unit 2 LCO 3.8.1.1 requirement 3.8.1.1.b.2 for fuel storage system requires 53,225 gallons of fuel. Surveillance requirement 4.8.1.1.2.a.2 for each unit requires the verification of fuel level in the fuel storage tank. ITS SR 3.8.3.1 states "Verify each fuel oil storage tank contains: for Unit 1 ≥ 17,500 gal and for Unit 2 ≥ 53,225 gal." This changes the CTS by stating the DG fuel oil requirements in the ISTS SR format.

This change is acceptable because the ITS SR reflects the technical limit of the CTS for fuel oil storage requirement. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.4 LCO 3.8.1.1.b requires two separate and independent diesel generators to be OPERABLE. ITS LCO 3.8.1 b.2 states "Two diesel generators (DGs) capable of supplying the onsite Class 1E power distribution subsystem(s)," shall be OPERABLE. This changes the CTS by stating that the DGs are capable of supplying the required electrical power to the distribution subsystems that they serve.

This change is acceptable because the ITS technical requirement for DGs remains unchanged from the CTS requirement. The addition of the ISTS wording "capable of supplying the onsite Class 1E power distribution subsystem(s)" provides a clarifying statement for the CTS requirements with no addition or deletion of technical requirements. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.5 LCO 3.8.1.1.a states two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be OPERABLE. ITS LCO 3.8.1.a states two qualified circuits between the offsite transmission network and the onsite Class 1E AC Electrical Power Distribution System shall be OPERABLE. This changes the CTS requirement by modifying the description of the offsite circuits from "physically independent" to the ITS requirement for the circuits description of "qualified."

This change is acceptable because the ITS technical requirement for offsite circuits remains unchanged from the CTS requirement. The CTS requirement for the required circuits as being "physically independent" is descriptive in nature. The ITS requirement of being "qualified" provides a clarification for the offsite circuits requirements. The change in wording does not modify the technical requirement for the CTS. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.6 Not used.

A.7 Unit 2 CTS LCO 3.8.1.1.b.4 and b.5 require lubricating oil storage system contain a specified volume and to have the capability to transfer lube oil from storage to the DGs. Unit 2 CTS surveillance requirement 4.8.1.1.2.a.8 requires the verification of the lubricating oil inventory in storage every 31 days. ITS LCO 3.8.3 states the stored diesel lube subsystem shall be within limits for each required DG. ITS SR 3.8.3.2 requires the verification of lubricating oil inventory every 31 days. This changes the Unit 2 CTS requirements by reformatting the technical requirements of the LCO and surveillance requirements and move them to ITS LCO 3.8.3 and SR.3.8.3.2. The change in lube oil volume required in the Unit 2 CTS is discussed in another DOC.

This change is acceptable because the ITS requirements continue to assure a required lube oil inventory is maintained. The ITS LCO and SR act to clarify the requirements in the CTS for the lube oil system inventory in a separate LCO. The proposed ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the change addressed by this DOC only involve a reformat of the CTS requirements.

A.8 CTS 3.8.1.1 Actions b, c, and e specify that the diesel generator requirement is modified by Note [(1)]. Note 1 states "Required actions may be delayed for up to 7 days if the diesel generator(s) is inoperable solely due to the fuel oil contained in the storage tanks not meeting the properties in accordance with 4.8.1.1.2.d.2 or 4.8.1.1.2.e." The corresponding ITS requirement is contained in Action Condition C in the new ITS LCO 3.8.3. This new ITS Actions states; with one or more DGs with stored fuel oil total particulates not within limit, restore the total particulates within limit in 7 days. Failure to meet the ITS Action within 7 days results in the requirement to declare the affected diesel generator inoperable. The CTS is revised to conform to the ITS. This changes the CTS by moving the requirements of the CTS footnote into an ITS Action. The removal of the references to specific surveillance requirements from the CTS footnote is addressed separately by a less restrictive removal of detail DOC. This DOC addresses the reformat of the CTS note into an ITS Action requirement in the new ITS 3.8.3.

The purpose of the CTS requirement is to provide a limited time to restore stored fuel oil to within specified limits for particulates without having to declare the DG inoperable. This change is acceptable because the ITS technical requirements for the stored fuel oil remains unchanged from the CTS requirements. The proposed change continues to provide the same 7 day delay before a diesel generator must be declared inoperable due to fuel oil not within the required limits. The presentation of the affected CTS footnote as an Action is a change in format only. The ITS presentation of this provision of the CTS clarifies the requirements applicable to the fuel oil without introducing any technical changes to the intent of the CTS footnote. The proposed ITS Action requirements remain consistent with the purpose of the CTS footnote and conform to the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the affected specifications have not changed.

A.9 CTS LCO 3.8.1.1 Action c states that if one offsite circuit and one diesel generator became inoperable, and the diesel generator inoperability is due to any cause other than an independently testable component, testing or preplanned preventative maintenance, demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.5 within 8 hours unless the absence of any potential common mode failure for the remaining diesel generator is demonstrated. Additionally, the Action requires the restoration of one of the inoperable sources (offsite or DG) to OPERABLE status within 12 hours. ITS Condition Required Actions D.1 and D.2 requires the restoration of a source (offsite or DG) within 12 hours. The Required Actions are modified by a note, which states, "Enter applicable Condition and Required Actions of LCO 3.8.9, "Distribution Systems – Operating," when Condition D is entered with no AC power source to any train." This changes the CTS by eliminating the specific requirements for an inoperable DG and adding a note that references the requirements for ITS LCO 3.8.9.

These changes are acceptable because they to do not change the technical requirements of the CTS. The ITS rules of usage require all conditions for a system, subsystem, train, component, or device to be entered when a system, subsystem, train, component, or device become inoperable. ITS Condition B is for one required DG inoperable and must be entered if the DG alone or an offsite circuit and the DG become inoperable. ITS Condition B Required Actions provide the necessary requirements and time limitations. Therefore, the CTS requirements for the DG are redundant and are eliminated. The ITS Condition D note provides no specific technical requirements and acts only as a reminder to entered LCO 3.8.9 if a bus has become de-energized. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.10 CTS Action c states that the other A.C. power source (offsite circuit or diesel generator) must be restored to OPERABLE status in accordance with the provisions of Action Statement a or b, as appropriate with the time requirement of that Action Statement based on the time of initial loss of the remaining inoperable A.C. power source. Additionally, a successful test of diesel OPERABILITY per Surveillance Requirement 4.8.1.1.2.a.5 must be performed under this Action Statement for an OPERABLE diesel or a restored to OPERABLE diesel satisfies the diesel generator test requirement of Action Statement b. ITS Condition D does not contain these required actions. This changes the CTS by eliminating the specific requirements for an inoperable offsite circuit or DG.

These changes are acceptable because they do not change the technical requirements of the CTS. The ITS rules of usage require all conditions for a system, subsystem, train, component, or device to be entered when a system, subsystem, train, component, or device become inoperable. ITS Condition B is for one required DG inoperable and must be entered if one DG or an offsite circuit and a DG become inoperable. ITS Conditions A or B Required Actions provide the necessary requirements and time limitations. Therefore, the CTS requirements for the offsite circuit or DG are redundant and are eliminated. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.11 CTS Action d states that following restoration of one offsite source, Action Statement a with the time requirement of that Action Statement based on the time of initial loss of the remaining inoperable offsite A.C. circuit. ITS Condition C does not specific these required actions to be performed. This changes the CTS by deleting the stated requirement.

This change is acceptable because it does not change the technical requirements of the CTS. The ITS rules of usage require all conditions for a system, subsystem, train, component, or device to be entered when a system, subsystem, train, component, or device become inoperable. ITS Condition A is for one required offsite circuit inoperable and must be entered if one circuit is inoperable and re-entered when a second offsite circuit becomes inoperable. ITS Condition A Required Actions provide the necessary requirements and time limitations for an inoperable offsite circuit. Therefore, the CTS requirement for restoration of two offsite circuits is redundant and is eliminated. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.12 CTS Action e states that following restoration of one diesel generator unit, follow Action Statement b with the time requirement of that Action Statement based on the time of initial loss of the remaining inoperable diesel generator. A successful test of diesel OPERABILITY per Surveillance Requirement 4.8.1.1.2.a.5 performed under this Action Statement for a restored to OPERABLE diesel satisfies the diesel generator test requirement of Action Statement b. ITS Condition E does not contain these required actions. This changes the CTS by eliminating the specific requirements for two inoperable DGs.

These changes are acceptable because they do not change the technical requirements of the CTS. The ITS rules of usage require all conditions for a system, subsystem, train, component, or device to be entered when a system, subsystem, train, component, or device become inoperable. ITS Condition B is for one required DG inoperable and must be re-entered if the other DG becomes inoperable. ITS Conditions B Required Actions provide the necessary requirements and time limitations as each DG as it is becomes inoperable and returned to OPERABLE status. Therefore, the CTS stated requirements for two DGs being inoperable are redundant and are eliminated. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.13 CTS Action e requires a demonstration of the OPERABILITY for two offsite A.C. circuits by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter. ITS Condition E does not contain these required actions. This changes the CTS by eliminating the specific requirements for two inoperable DGs.

These changes are acceptable because they do not change the technical requirements of the CTS. The ITS rules of usage require all conditions for a system, subsystem, train, component, or device to be entered when a system, subsystem, train, component, or device become inoperable. ITS Condition B is for one required DG inoperable and must be re-entered if the other DG becomes inoperable. ITS Conditions B Required Actions provide the necessary requirements and time limitations for each DG as it is becomes inoperable and returned to OPERABLE status. This includes the verification offsite circuits OPERABILITY by SR 3.8.1.1. Therefore, the CTS stated requirements for two DGs being inoperable are redundant and are eliminated. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.14 CTS LCO 3.8.1.1 Actions a, b, c, d, and e provide an action to restoring an inoperable offsite circuit(s) and diesel generator(s) within specified times. If the required equipment can not be returned to OPERABLE status within the Action's allowed outage time, the unit is required to be in at least HOT STANDBY within the next six hours and in COLD SHUTDOWN within the following 30 hours. ITS 3.8.1 Action G states that the Required Action and associated Completion Time of Condition A, B, C, D, E, and F are not met the unit must be placed in MODE 3 in 6 hours and MODE 5 in 36 hours. This changes the CTS by collecting all of the shutdown requirements into a single Action.

These changes are acceptable because they do not change the technical requirements of the CTS. This change provides for the same technical requirements in the ITS format. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.15 CTS LCO 3.8.1.1 Action c states that if one offsite circuit and one diesel generator are inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a within one hour and at least once per 8 hours thereafter; Additionally, the Action requires the restoration one of the inoperable sources (offsite or DG) to OPERABLE status within 12 hours. ITS Condition Required Actions D.1 and D.2 requires the restoration of a source (offsite or DG) within 12 hours. This changes the CTS by eliminating the requirement for verifying the remaining A.C. sources within an hour and at least 8 hours thereafter.

These changes are acceptable because they to do not change the technical requirements of the CTS. The ITS rules of usage require all conditions for a system, subsystem, train, component, or device to be entered when a system, subsystem, train, component, or device become inoperable. ITS Condition A is for one required offsite circuit inoperable and must be entered if the offsite circuit alone or an offsite circuit and the DG become inoperable. ITS Condition A Required Actions provide the necessary requirements and time limitations. Therefore, the cited portions of CTS Action c for the offsite circuit are redundant and are eliminated. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.16 CTS LCO 3.8.1.1 Actions a, b, c, d, and e provide an action to restoring an inoperable offsite circuit(s) and diesel generator(s) within specified times. The Actions limit the inoperable AC sources to a total of two. CTS LCO 3.0.3 states when a Limiting Condition for Operation is not met except as provided in the associated Action requirements, within one hour action shall be initiated to place the unit in a MODE in which the specification does not apply by placing it, as applicable, in at least HOT STANDBY within the next 6 hours, at least HOT SHUTDOWN within the following 6 hours, and at least COLD SHUTDOWN within the subsequent 24 hours. ITS Condition H states that with three or more required AC sources inoperable LCO 3.0.3 must be entered immediately. This change the CTS by specifically stating that LCO 3.0.3 must be entered for when 3 or more AC sources are inoperable.

These changes are acceptable because they to do not change the technical requirements of the CTS. The CTS and ITS require the entry into LCO 3.0.3 if a LCO can not be met. ITS Condition H provides a clarification for the CTS requirements. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.17 Unit 2 CTS Notes 4 and 6 for surveillance requirements 4.8.1.1.2.a.5, 4.8.1.1.2.b.3.b) and 4.8.1.1.2.f allow all diesel generator starts to be preceded by an engine prelube period (and warmup in Note 4 for the monthly start requirement). ITS SRs 3.8.1.2, 3.8.1.14, and 3.8.1.15 are modified by a Note that allows all Unit 2 DG starts may be preceded by an engine prelube period and warmup (for the monthly start requirement). The Corresponding Unit 1 Note 4 only allows for a warmup. The Unit 1 DGs do not have additional prelube steps that can be performed. As such Unit 1 does not have a corresponding Note 6 for prelube only. The Unit 1 provision for DG warmup is also retained in the applicable ITS surveillance Note. This changes the CTS by revising the CTS Notes to conform to the ISTS format in individual surveillance requirements.

These changes are acceptable because they do not change the technical requirements of the CTS. This change provides for the same technical requirements in the ITS format. The ITS SRs maintain the allowance to prelube (and warmup as applicable) a DG before a required start. As Unit 1 does not have this capability, and it is optional in the ITS SRs, it is not necessary to identify the prelube as a Unit 2 only provision of the ITS Note. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.18 Not used.

A.19 CTS 3.8.1.1 does not contain an Action statement with a Required Action or associated Completion Time not met for DG fuel oil inventory, lube oil inventory, and starting air receiver pressure. ITS LCO 3.8.3 Condition F specifies for a Required Action and associated Completion Time not met or one or more DGs with diesel fuel oil, lube oil or starting air subsystem not within limits for reasons other than Conditions A, B, C, D, or E, the associated DG is declared inoperable immediately. This changes the CTS by specifically stating an associated DG must be declared inoperable.

These changes are acceptable because they do not change the technical requirements of the CTS. This change provides a clarification of the CTS in the ITS format. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.20 CTS 3.8.1.1 does not contain a note that specifies that each diesel generator may enter an Action separately. A Note modifies ITS LCO 3.8.3 Actions. The Note states, "Separate Condition entry is allowed for each DG." This changes the CTS by specifically stating that a Condition may be entered for each required DG.

These changes are acceptable because they do not change the technical requirements of the CTS. This change provides a clarification of the CTS in the ITS format. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.21 CTS 4.8.1.1.2.b states various surveillance requirements to be tested during shutdown. ITS SRs for LCO 3.8.1 addresses the MODE in which the requirement may be performed by a Note. This changes the CTS by incorporating the MODE restriction into a Note in the ITS SRs.

These changes are acceptable because they do not change the technical requirements of the CTS. Any technical change to the specific SR is addressed by a separate discussion of change. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.22 LCO 3.8.1.1 does not contain a requirement for the sequence timers associated with surveillance requirement 4.8.1.1.2.b.7. ITS LCO states "The following AC electrical sources and sequencer timer(s) shall be OPERABLE." ITS LCO 3.8.1 part c requires the automatic load sequence timer(s) for each required DG. This change the CTS by specifically stating the LCO requirement for the sequence timer(s).

This changes is acceptable because they do not change the technical requirements of the CTS. The CTS requires the sequence timer(s) to be OPERABLE, but does not provide an LCO or Action requirements. The addition of the sequence timer(s) does not add or delete any technical requirements to the CTS. The Action for the sequence timer(s) is addressed in these discussion of changes. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.23 CTS Action b states "demonstrate the OPERABILITY of the remaining OPERABLE diesel generator by performing Surveillance Requirement 4.8.1.1.2.a.5." ITS Action B.3.2 states "Perform SR 3.8.1.2 for the OPERABLE DG." This changes the CTS by stating the surveillance in ITS terms.

This change is acceptable because ITS SR 3.8.1.2 requires the start of the OPERABLE DG to prove OPERABILITY. This change maintains the technical requirements with only format changes. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.24 CTS 4.8.1.1.2.d and 4.8.1.1.2.e contain the requirements related to diesel fuel oil testing. The CTS surveillances specify the applicable limits and standards for the required testing. The corresponding ITS requirements are contained in ITS 5.5.9, Diesel Fuel Oil Testing Program. ITS SR 3.8.3.3 requires testing in accordance with the program. The ITS program in turn requires testing of diesel fuel oil in accordance with the applicable industry standards, and simply requires the results of specific surveillances to be within the required limit(s). The limits are contained in the applicable standards or have been moved to the Bases for ITS SR 3.8.3.3. The movement of detail from the TS to the Bases is addressed by DOC LA.13. This DOC is only intended to address the simplification of the CTS surveillances by referring to the required "limits" in lieu of stating each limit in the TS.

The proposed change is acceptable because the required limits are not changed. Due to other changes made to the CTS requirements, the limits are moved to the SR Bases. The proposed change serves only to simplify the text without reducing the level of assurance provided by the TS that the diesel fuel oil remains within the industry standard accepted limits. Therefore, the proposed change continues to assure the diesel fuel oil is maintained within the required limits in a similar manner as the CTS. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.25 CTS surveillances 4.8.1.1.2.d and 4.8.1.1.2.e contain the requirements related to diesel fuel oil testing. The CTS surveillances specify the applicable limits and standards for the required testing. The corresponding ITS SR 3.8.3.3 requires testing in accordance with ITS 5.5.9, Diesel Fuel Oil Testing Program. The details contained in the CTS surveillances are moved to ITS 5.5.9 or the Bases for ITS SR 3.8.3.3. The movement of requirements to the Bases of ITS SR 3.8.3.3 and other technical changes identified in the markup of CTS surveillances 4.8.1.1.2.d and 4.8.1.1.2.e are addressed by the DOCs associated with these changes. This DOC is only intended to address the consolidation of the two CTS Surveillances into a single ITS surveillance that references an administrative controls program in Section 5.0 of the TS.

The proposed change conforms to the ISTS presentation and format for these surveillance requirements. The proposed change is acceptable because it does not introduce a technical change to the CTS. The single ITS surveillance (SR 3.8.3.3) and the ITS program (5.5.9) continue to require the diesel fuel oil to be routinely tested and provides adequate assurance that the diesel fuel oil is maintained with the required limits in a similar manner as the CTS. This change is designated as administrative because the technical requirements of the surveillance have not changed.

A.26 The ITS 5.5.9, Diesel Fuel Oil Testing Program contains the requirements applicable to testing the diesel fuel oil, including the frequency of the required testing. These requirements were previously part of CTS surveillances 4.8.1.1.2.d and 4.8.1.1.2.e. As such, the diesel fuel oil testing requirements in CTS surveillances 4.8.1.1.2.d and 4.8.1.1.2.e were subject to the provisions of CTS 4.0.2 and CTS 4.0.3 that govern the use and application of surveillance requirements. In the ITS, SR 3.0.2 and SR 3.0.3 are the corresponding ITS specifications that govern the use and application of surveillance requirements. The diesel fuel oil surveillance requirements moved to ITS 5.5.9 are modified by a provision that states, "The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Diesel Fuel Oil Testing Program test frequencies." The CTS surveillances are revised to show the inclusion of this ITS 5.5.9 provision consistent with the standard requirements in the ISTS.

The proposed change is acceptable because it is necessary to assure the provisions of ITS SR 3.0.2 and SR 3.0.3 continue to be applicable to the surveillance requirements moved to ITS 5.5.9. The corresponding general rules of CTS 4.0.2 and 4.0.3 are automatically applicable to all surveillance requirements. However, the CTS diesel fuel oil surveillance requirements are moved into a program in the Administrative Controls section of the TS (ITS 5.5.9). The general rules of use for surveillance requirements are not normally applied to programs in the Administrative Controls section of the TS. Therefore, the ISTS includes specific provisions in the Administrative Controls section of the TS to clarify that the general rules of use applicable to surveillances still apply to those surveillances moved into a program. As such, the inclusion of the ITS provision referring to the applicability of the rules governing surveillance requirements (SR 3.0.2 and SR 3.0.3) is necessary to maintain the same provisions as in the CTS for the surveillance requirements moved to ITS 5.5.9. The proposed change does not introduce a technical change to the CTS requirements and is necessary due to the format changes introduced by the ISTS presentation of the affected surveillance requirements (i.e., the surveillance requirements are now contained in the Administrative Controls section of the TS). This change is designated as administrative because the technical requirements of the affected surveillances have not changed.

CTS 3.8.1.2 AC Sources – Shutdown
ITS 3.8.2 AC Sources – Shutdown
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

L.1 *(Category 4 – Relaxation of Required Action)* CTS 3.8.1.2 Action Statement in part states "With less than the above minimum required A.C. electrical power sources OPERABLE," perform specific actions until the required minimum equipment is restored. ITS 3.8.2 Action A.1 states "Declare affected required feature(s) with no offsite power available inoperable." This must be performed immediately, or the Required Actions for suspending CORE ALTERATIONS, movement of irradiated fuel assemblies or recently irradiated fuel assembles, and reactivity changes must be followed. This changes the CTS by allowing CORE ALTERATIONS, movement of irradiated fuel assemblies, and reactivity changes with less than the minimum AC source being OPERABLE.

The purpose of ITS Required Action A.1 is to provide an alternative to stopping CORE ALTERATIONS, movement of fuel assemblies, and reactivity changes with the required offsite source inoperable. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a design basis accident occurring during the repair period. The addition of the Required Action to declare the affected required features with no offsite power available inoperable instead of immediately suspending CORE ALTERNATION, moving of fuel assemblies, and stopping of reactivity changes is acceptable because the resulting Actions applicable for the required features declared inoperable provide additional remedial measures appropriate for the plant condition. Thus the proposed alternate Action will continue to assure the plant is operated in a safe manner consistent with the TS requirements for the affected equipment. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.2 *(Category 4 – Relaxation of Required Action)* CTS 3.8.1.2 Action statement specifies with less than the required AC electrical sources OPERABLE, operations involving positive reactivity changes shall be immediately suspended. ITS 3.8.2 Required Actions B.2.3 and C.3 modify this requirement and state, "Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration." This changes the CTS requirement by allowing operations that are a positive reactivity change.

This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions with continued operation while providing time to ensure the SDM or refueling boron concentration are within limits. Maintaining SDM or refueling boron concentration requirements ensures the unit will remain within analyzed conditions on the safety analyses. Small changes in

SDM or refueling boron concentration provided the parameters are maintained within limits ensure safe operations. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.3 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS surveillance 4.8.1.2 specifies the surveillance requirements applicable to AC sources during shutdown conditions. CTS 4.8.1.2 states, "The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 except for requirement 4.8.1.1.2.a.6." The CTS shutdown surveillance refers to the surveillances required by the AC sources operating specification and only contains a single exception to the surveillances required for AC sources operating. The single exception is CTS surveillance 4.8.1.1.2.a.6 that corresponds to ITS SR 3.8.1.3. Similar to CTS 4.8.1.2, ITS SR 3.8.2.1 specifies the surveillance requirements applicable to AC sources during shutdown conditions. However, SR 3.8.2.1 contains three notes that modify the AC source surveillances required during shutdown conditions and effectively relax the surveillance acceptance criteria applicable to AC sources during shutdown conditions. A discussion describing how each note modifies the surveillance criteria applicable to AC sources shutdown follows:

ITS SR 3.8.2.1 Note 1 states, "The following SRs are not required to be performed...." The Note lists ITS SRs 3.8.1.3, 3.8.1.8, 3.8.1.9, 3.8.1.10, 3.8.1.11, 3.8.1.13, and 3.8.1.14.

The Note changes the CTS by not requiring specific surveillances to be performed on the operable AC sources during the time that only one offsite source and one DG are required to be operable. The surveillances specified in Note 1 must be met (i.e., current for the affected AC sources) but are not required to be performed on the AC Sources when they are the only sources available. All the surveillances listed in Note 1 would require testing the operable DG or associated sequencing capability in a manner that increases the potential for a loss of one or both of the required AC sources. The reason for Note 1 is to preclude requiring the operable DG from being paralleled with the offsite power network or otherwise rendered inoperable during performance of the listed SRs, and to preclude de-energizing a required emergency bus or disconnecting a required offsite circuit during performance of an SR. With limited AC sources available, a single event could compromise both the required circuit and the DG. It is the intent of Note 1 that these SRs must still be capable of being met, but actual performance is not required during periods when the DG and offsite circuit is required to be OPERABLE. Therefore, the addition of ITS Note 1 is acceptable because it continues to provide adequate assurance the required AC sources are maintained operable as well as providing additional assurance the required surveillances are performed with less risk and in a manner that enhances the safe operation of the unit during shutdown conditions. ITS Note 1 modifies the CTS surveillances applicable to the AC sources shutdown by relaxing the CTS performance requirements for the affected surveillances.

ITS SR 3.8.2.1 Note 2 states, "The verification of load sequencer functions in SR 3.1.8.13 and SR 3.8.1.14 is only required to be met for those loads required in the Applicable MODES of LCO 3.8.2".

The SRs affected by Note 2 address the capability to automatically sequence loads on the DG. During the shutdown conditions for which ITS 3.8.2.1 is applicable the number of loads required to maintain the unit in a safe shutdown condition is small compared to the total number of loads normally required to be sequenced on the emergency bus. The BVPS specific Note 2 clarifies that the load sequencer function surveillance requirements only include the verification of loads applicable (necessary for operability) in the shutdown Modes of operation addressed by ITS 3.8.2. The Bases for the proposed Note explains that the required loads referred to in the Note consist of the equipment required operable by the Technical Specifications and the equipment required to support the operability of the Technical Specification required equipment. The proposed note is consistent with the intent of ISTS Note 2 that it replaces. Both notes clarify the fact that the equipment associated with many ESF functions are not required operable in shutdown Modes. During shutdown Modes only a small subset of the equipment capable of being automatically sequenced on the emergency bus is required operable. As such, the proposed change more clearly defines the scope of the load sequence capability verification required for the shutdown Modes addressed by ITS 3.8.2. The proposed change confines the load sequence functions that must be verified to those associated with the equipment necessary to maintain the plant in a safe condition during the specific Modes of operation addressed by ITS 3.8.2. The proposed change is necessary to avoid failing an SR (and declaring the associated DG inoperable) due to the inability to automatically sequence a load within the specified timing that is not required during shutdown conditions and does not contribute to the safe operation of the plant in shutdown Modes. Therefore, the addition of ITS Note 2 is acceptable because it provides adequate assurance that the capability to sequence loads (required for the safe operation of the unit during shutdown conditions) continues to be verified. ITS Note 2 modifies the CTS surveillances applicable to the AC sources shutdown by relaxing the CTS performance requirements for the affected surveillances.

ITS SR 3.8.2.1 is revised by the addition of a third note. Note 3 states, "SR 3.8.1.14 is only required to be met with the use of an actual or simulated loss of offsite power signal". SR 3.8.1.14 verifies the response of the emergency bus and DG to an ESF signal in conjunction with a loss of offsite power. The corresponding CTS surveillance is required to be met as written using the ESF signal actuation of the DG.

Proposed Note 3 clarifies that in the shutdown Modes addressed by SR 3.8.2.1 there are no required ESF actuation signals. The ESF actuation instrumentation (specified in ITS 3.3.2) is only required operable in Modes 1-4 and ITS 3.8.2, "AC Sources Shutdown" is applicable in Modes 5 and 6 and during fuel movement. Therefore, no ESF actuation (i.e., SI) for the emergency bus or DG are required during shutdown conditions. The only applicable actuation signal specified in SR 3.8.1.14 is the loss of voltage (offsite power) actuation signal. The proposed change continues to assure that the required system response to a loss of voltage is verified. The change only serves to clarify that the verification of the system response to an ESF signal is not necessary to confirm system operability during the shutdown conditions addressed by ITS 3.8.2. The addition of ITS Note 3 is acceptable because it continues to assure the required under voltage start capability of the DG is verified to ensure a reliable source of emergency backup power remains available during shutdown conditions. Note 3 also modifies the CTS acceptance criteria for surveillances applicable to the AC sources during shutdown conditions.

The addition of ITS SR 3.8.2.1 Notes 1 through 3 is designated less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.4 *(Category 5 – Deletion Of Surveillance Requirement)* CTS Surveillance requirement 4.8.1.2 states, "The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 except for requirement 4.8.1.1.2.a.6."

The CTS excepted surveillance 4.8.1.1.2.a.6 requires the verification of the generator to synch, load to ≥ 1425 kw (Unit 1) and ≥ 4,238 kw (Unit 2), and operate for ≥ 60 minutes. The corresponding ITS SR 3.8.1.3 represents this requirement and consistent with the intent of the CTS exception for this surveillance is also not required to be performed (per ITS 3.8.2.1 Note 1).

ITS SR 3.8.2.1 corresponds to CTS 4.8.1.2 and specifies the applicable surveillances for the AC Sources shutdown. ITS SR 3.8.2.1 lists the following SRs as applicable: 3.8.1.1, 3.8.1.2, 3.8.1.3, 3.8.1.4(.1 and .2), 3.8.1.5(.1 and .2), 3.8.1.6, 3.8.1.8, 3.8.1.9, 3.8.1.10, 3.8.1.11, 3.8.1.13, and 3.8.1.14. The effect of this revised list of required SRs is to change the CTS by eliminating the requirement to meet or perform CTS surveillances 4.8.1.1.1.b (ITS SR 3.8.1.7) and 4.8.1.1.1.f (ITS SR 3.8.1.15) (Unit 2 only) to confirm AC Source shutdown operability. Thus the proposed change relaxes the CTS surveillance 4.8.1.2 by eliminating the requirement for certain surveillances.

The proposed change is acceptable because the deleted Surveillance Requirements are not necessary to verify that the equipment used to meet the LCO can perform its required functions. Excluded CTS surveillance 4.8.1.1.1.b (ITS SR 3.8.1.7) requires the transfer of power supply from the unit circuit to an offsite circuit. This surveillance is not required because only the offsite circuit is supplying power in the applicable shutdown Modes. Therefore, transferring from a unit circuit to an offsite circuit is not required to confirm operability of the single required source. In addition, transferring circuits introduces the potential to interrupt or lose the single required offsite power source. Therefore, the ITS excludes this surveillance from the requirements to confirm AC source operability during shutdown conditions.

Unit 2 CTS surveillance 4.8.1.1.1.f (ITS SR 3.8.1.15) is also excluded by ITS SR 3.8.2.1. This Unit 2 surveillance requires the simultaneous start of both emergency DGs. The intent of the surveillance is to confirm that the independence of the DGs is not comprised. The verification of DG independence is not required when only a single DG is required operable during shutdown conditions. In addition, this SR would limit the ability to schedule and perform necessary maintenance on the DG not required to be operable.

This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.5 (Category 4 – Relaxation of Required Action) LCO 3.8.1.2 does not list an exception to LCO 3.0.3. A Note modifies ITS LCO 3.8.2 ACTIONS that states "LCO 3.0.3 is not applicable." This changes the CTS by allowing an exception to LCO 3.0.3 requirements.

The purpose of ITS Note is to prevent the unit from unnecessarily requiring a shutdown when operating in MODE 1, 2, 3, or 4. Irradiated fuel assembly movement can occur in MODE 1, 2, 3, or 4 and therefore ITS LCO 3.8.1.2 would be applicable. Fuel assembly movement in MODE 1, 2, 3, or 4 is independent of reactor operations. Entering LCO 3.0.3, while in MODE 1, 2, 3, or 4 would require the unit to be shutdown unnecessarily. This is acceptable because the movement of fuel assemblies does not affect the safe operation of the unit in MODE 1, 2, 3, or 4.The proposed requirements continue to ensure that the systems are maintained or appropriate actions taken in the MODES and other specified conditions assumed in the safety analyses and licensing basis. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because the LCO requirements are applicable in fewer operating conditions than in the CTS.

More Restrictive Changes (M)

None

Removed Detail Changes (LA)

None

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 CTS LCO 3.8.2.1 part b for the diesel generator list the requirements for the day tank, fuel oil storage system, and fuel oil transfer pump. These are the same requirements for diesel generator OPERABILITY as required by CTS LCO 3.8.1.1. CTS surveillance requirement 4.8.1.2 states that 4.8.1.1.2 (surveillance requirements for AC Sources – Operating) is applicable for the required diesel generator in a shutdown condition. ITS SR 3.8.1.4.1 (Unit1) and ITS SR 3.8.1.4.2 (Unit 2) addresses the requirement for the day tank and engine mounted tanks (Unit 1) / day tank (Unit 2) and ITS SR 3.8.1.6 provides the requirement for fuel oil transfer pump. ITS LCO 3.8.3 provides the requirements for the DG support systems. ITS SR 3.8.3.1 ensures a sufficient supply of fuel oil is available for the DG when it is required to be OPERABLE. This changes the CTS by requiring the surveillance requirements for the DGs to be stated in the appropriate ITS SR.

This change is acceptable because the ITS technical requirements for the DG support systems remain technically unchanged from the CTS requirements. The ITS SRs act to clarify the requirements without any technical changes to the CTS for the DG. Specific changes to the CTS requirements are addressed in CTS 3.8.1.1 discussion of changes. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.3 LCO 3.8.1.2.b requires one diesel generator to be OPERABLE. ITS LCO 3.8.2 b states "One diesel generator (DG) capable of supplying one train of the onsite Class 1E AC electrical power distribution subsystem(s)required by LCO 3.8.10," shall be OPERABLE. This changes the CTS by stating that the DG is capable of supplying the required electrical power to the distribution subsystem(s) that are required by LCO 3.8.10.

This change is acceptable because the ITS requirement for DG remains consistent with the intent of the less explicit CTS requirement. The addition of the ISTS wording "capable of supplying the onsite Class 1E power distribution subsystem(s) required by LCO 3.8.10." provides a clarifying statement for the CTS requirements that is consistent with the DG operability requirements in these Modes. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.4 CTS 3.8.1.2.a states one circuit between the offsite transmission network and the onsite Class 1E distribution system shall be OPERABLE. ITS 3.8.2.a states one qualified circuit between the offsite transmission network and the onsite Class 1E AC Electrical Power Distribution System shall be OPERABLE. This changes the CTS requirement by modifying the description of the offsite circuit to the ITS requirement for the circuit description of "qualified."

This change is acceptable because the ITS requirement for the offsite circuit remains consistent with the intent of the CTS requirement. The ITS requirement of being "qualified" provides a clarification for the offsite circuit requirements consistent with the existing design requirements for these circuits. The change in wording does not modify the technical requirement for the CTS. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.5 Unit 1 LCO 3.8.1.2 applicability states MODES 5 and 6 and, "During movement of irradiated fuel assemblies and, During movement of fuel assemblies over irradiated fuel assemblies." Unit 2 LCO 3.8.1.2 applicability states MODES 5 and 6 and, "During movement of recently irradiated fuel assemblies and, During movement of fuel assemblies over recently irradiated fuel assemblies." ITS LCO 3.8.2 Applicability states MODES 5 and 6, "During movement of irradiated fuel assemblies and, during movement of fuel assemblies over irradiated fuel assemblies for Unit 1, During movement of recently irradiated fuel assemblies and, during movement of fuel assemblies over recently irradiated fuel assemblies for Unit 2." This changes the CTS by combining the applicability of LCO 3.8.2 into a requirement for each unit.

This change is acceptable because the ITS technical requirement for LCO applicability remains unchanged from the CTS requirement. The ITS requirement retains the specific requirements for each unit. The change in wording does not modify the technical requirement for the CTS. The ITS requirement is consistent with the ISTS wording for this requirement with unit specific difference noted. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.6 Unit 1 LCO 3.8.1.2 Action in part states, "movement of irradiated fuel assemblies and movement of fuel assemblies over irradiated fuel assemblies." Unit 2 LCO 3.8.1.2 Action in part states, "movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies." ITS LCO 3.8.2 Actions A.2.2 and B.2 state "Suspend movement of irradiated fuel assemblies and movement of fuel assemblies over irradiated fuel assemblies" for Unit 1. ITS LCO 3.8.2 Actions A.2.3 and B.3 state "Suspend movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies" for Unit 2." This changes the CTS by combining the Actions of LCO 3.8.2 into a requirement for each unit.

This change is acceptable because the ITS technical requirement for LCO Actions remains unchanged from the CTS requirement. The ITS requirement retains the specific requirements for each unit. The change in wording does not modify the technical requirement for the CTS. The ITS requirement is consistent with the ISTS wording for this requirement with unit specific difference noted. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.7 CTS LCO 3.8.1.2 Action states with required AC sources inoperable, immediately suspend operations involving CORE ALTERATIONS, positive reactivity changes, and movement of fuel assemblies until the required AC sources are restored to OPERABLE status. A Note modifies ITS 3.8.2 Required Action A. The Note states "Enter applicable Conditions and Required Actions of LCO 3.8.10, with one required train de-energized as a result of Condition A." This changes the CTS by adding a Note for the Required Actions that would required Conditions and Required Actions of LCO 3.8.10 to be entered if a bus becomes de-energized.

The purpose of the Note is to specifically require the applicable Actions of ITS LCO 3.8.10 to be entered. The addition of this type of Note is consistent with stated exceptions to ITS 3.0.6 which would otherwise not require this action. The change is acceptable because the requirements of the CTS do not include general exceptions like ITS 3.0.6 and would require the potential Actions for inoperable buses and equipment to be entered if applicable. Therefore the addition of the ITS Note does not result in a technical change to the CTS requirements. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as administrative because the technical requirements of the specifications have not changed.

CTS 3.8.2.1 DC Distribution - Operating
ITS 3.8.7 Inverters - Operating
ITS 3.8.9 Distribution Systems - Operating
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

L.1 *(Category 1 – Relaxation of LCO Requirements)* CTS 3.8.2.1 for the Onsite Power Distribution Systems lists A.C. Distribution – Operating requirements. CTS LCO 3.8.2.1 states, "The following electrical busses shall be energized in the specified manner with tie breakers open between redundant busses within the unit." The requirement specifies four 120-volt AC electrical buses are energized from their associated inverter. The inverter receives its power from the associated DC bus. ITS LCO 3.8.7, "Inverters – Operating" requires the A and B Train inverters to be OPERABLE. A Note is added to the LCO requirements. The Note states "One inverter may disconnected from its associated DC bus for ≤ 24 hours to perform an equalizing charge on its associated battery, provided: The associated AC vital bus is energized from its Class 1E constant voltage source transformer, or inverter using internal AC source, and all other AC vital buses are energized from their associated OPERABLE inverters." This changes the CTS by an inverter to be disconnected from the DC bus for up to 24 hours during a battery equalize charge without entry into a Condition.

The purpose of ITS LCO Note is to allow required maintenance on a battery without entry into a specified Condition with Required Actions and limited Completion Times. This change is acceptable because the LCO requirements continue to ensure that the electrical systems are energized and in this case only part of one train may be affected by a loss of A.C.. The allowance provides 24 hours to perform an equalize change on an associated battery without entry into a Condition for an inoperable inverter. In this situation, the exception to the LCO can be utilized. An equalize charge may produce a voltage condition that could damage an inverter. A battery may periodically require an equalize charge to ensure its continued OPERABILITY. The allowance provides a limited time for the required maintenance on the battery and prevents possible damage to the inverter. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

L.2 *(Category 4 – Relaxation of Required Action)* CTS 3.8.2.1 Action a, in part, states "With one of the required trains of A.C. emergency busses not fully energized, re-energize the train within 8 hours." ITS LCO 3.8.9 Action A states "One or more AC electrical power distribution subsystems inoperable, restore the AC electrical power distribution subsystem(s) to OPERABLE status," within 8 hours. ITS Condition E provides the Required Action if 2 or more distribution subsystem become inoperable and a loss of safety function occurs. This changes the CTS by allowing more than one subsystem to be inoperable.

The purpose of ITS 3.8.9 Condition A is to ensure required safety features have the required electrical power to perform their safety function. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a design basis accident occurring during the repair period. The distribution subsystems are composed of the AC 4160 V emergency buses, and 480 V emergency bus load centers. More than one of the subsystems may be inoperable, yet the ESF functions may be able to provide the safety function. ITS Condition E provides the Required Action if 2 or more distribution subsystem become inoperable and a loss of safety function occurs. Condition E requires an entry into LCO 3.0.3. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

More Restrictive Changes (M)

M.1 CTS LCO 3.8.2.1 provides the requirements for the AC 4160 volt and AC 120 volts buses. CTS LCO 3.8.2.1 Actions a requires for the AC 4160 volt buses, "With one of the required trains of A.C. emergency busses not fully energized, re-energize the train within 8 hours." CTS LCO 3.8.2.1 Action b states for the AC 120 volts buses, "With one A.C. Vital Bus not energized, re-energize the A.C. Vital Bus within 2 hours." ITS LCO 3.8.9 provides the requirements for the distributions subsystems for the AC 4160 volts and AC 120 volts buses. ITS 3.8.9 Action A states with one or more AC electrical power distributions subsystems inoperable, restore AC electrical power distribution subsystem(s) to OPERABLE status within 8 hours and 16 hours from discovery of failure to meet LCO. ITS 3.8.9 Action B requires with one or more AC vital buses inoperable, restore AC vital bus subsystem(s) to OPERABLE status within 2 hours and 16 hours from discovery of failure to meet LCO. This changes the CTS by adding the requirement, "and 16 hours from discovery of failure to meet LCO."

The purpose of the ITS Completion Time addition, "and 16 hours from discovery of failure to meet LCO," is to limit the total time of non-compliance with the electrical power distribution requirements. This change is acceptable because the total time allowed to not fully meet the electrical distribution system requirements is limited to 16 hours with each of the Actions limiting the time for the individual subsystem inoperability. The ITS requirements are consistent with the ISTS wording for this requirement. This change is designated as more restrictive because it adds additional requirements that the CTS does not require.

M.2 CTS surveillance requirement 4.8.2.1 states "The specified busses shall be determined energized in the required manner at least once per 7 days by verifying correct breaker alignment and indicated voltage on the busses." ITS SR 3.8.7.1 requires verification of the correct inverter voltage and alignment to required AC vital buses. This changes the CTS by specifying each inverter is supplying the correct voltage instead of simply indicating voltage.

The purpose of ITS SR 3.8.7.1 is to specify the required alignment and correct voltage for each inverter. This change is acceptable because the ITS SR 3.8.7.1 maintains the requirements for correct voltage and alignment to the associated AC Vital bus. The ITS SR specifies correct voltage which indicates a specified range. The CTS requirement of "indicated voltage" could be met with any voltage indication on the bus. The CTS requirement of indicated is interpreted as an expected voltage. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as more restrictive because the ITS specifies correct voltage and the CTS does not.

M.3 CTS surveillance requirement 4.8.2.1 states "The specified busses shall be determined energized in the required manner at least once per 7 days by verifying correct breaker alignment and indicated voltage on the busses." ITS SR 3.8.9.1 requires the verification of correct breaker alignments and voltage to AC and AC vital bus electrical power distribution subsystems. This changes the CTS by specifying the correct voltage instead of indicated voltage.

The purpose of ITS SR 3.8.9.1 is to specify correct voltage is supplied for each AC and AC Vital bus. This change is acceptable because the ITS SR 3.8.9.1 maintains the requirements for correct voltage and alignment to the associated AC Vital bus. The ITS SR specifies correct voltage which indicates a specified range. The CTS requirement of "indicated voltage" could be met with any voltage indication on the bus. The CTS requirement of indicated is interpreted as an expected voltage. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as more restrictive because the ITS specifies correct voltage and the CTS does not.

Removed Detail Changes (LA)

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.8.2.1 requires the electrical busses to energized with each of the 4160, 480, and 120 VAC buses specified. Each bus has a specific nomenclature. ITS LCO 3.8.9 states, "AC, DC, and AC vital bus electrical power distribution subsystems shall be OPERABLE." This changes the CTS by moving the specific names of the buses from the Specification to the ITS Bases for LCO 3.8.9 Table.

The removal of these details, which are related to system design, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. ITS LCO 3.8.9 still retains the requirement for the required buses to be OPERABLE. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.2 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.8.2.1 states the electrical busses shall be energized in the specified manner with tie breakers open between redundant busses within the unit. ITS LCO 3.8.7 states "The required Train A and Train B inverters shall be OPERABLE." ITS LCO 3.8.9 states, "AC, DC, and AC vital bus electrical power distribution subsystems shall be OPERABLE." This changes the CTS by replacing the requirement that the electrical busses are energized in a specific manner with tie breakers open between redundant buses with the requirement that the required buses are OPERABLE. The buses being energized in a specific manner with tie breakers opened is moved from the Specification to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. ITS LCOs 3.8.7 and 3.8.9 retain the requirements for the required buses to be OPERABLE. The associated Bases specify that buses are electrically separate and independent with any cross-tie breakers opened. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.3 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.8.2.1 states the electrical busses shall be energized in the specified manner with tie breakers open between redundant busses within the unit. Items c, d, e, and f requires the four 120-volt AC Vital buses to be energized from its associated inverter which is connected to the associated DC bus. ITS LCO 3.8.7 states "The required Train A and Train B inverters shall be OPERABLE." ITS LCO 3.8.9 requires the Distribution Systems, including the AC Vital buses are OPERABLE. This changes the CTS by moving the description of the AC Vital buses from the Specification to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. ITS LCO 3.8.9 retains the requirements for the AC Vital buses to be OPERABLE. The Bases specify that the AC Vital bus is normally powered by the associated DC bus through the inverter and requires cross- tie breakers to be open. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.4 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.8.2.1 Action c states, in part, that with one A.C. Vital Bus either not energized from its associated inverter, or with the inverter not connected to its associated D.C. Bus, re-energize the A.C. Vital Bus from its associated inverter connected to its associated D.C. Bus within 24 hours. ITS LCO 3.8.7 Action A states with one inverter inoperable, restore the inverter to OPERABLE status within 24 hours. This changes the CTS by describing the requirement for an inoperable inverter and moving the description of the AC Vital buses from the Specification to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. ITS LCOs 3.8.7 and 3.8.9 retain the requirements for the inverters and AC Vital buses to be OPERABLE. The Bases specify that the inverter normally powers the associated AC Vital bus. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.5 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.8.2.1 Action a requires with one of the required trains of A.C. emergency busses not fully energized, re-energize the train 8 hours. Action b requires With one A.C. Vital Bus not energized, re-energize the A.C. Vital Bus within 2 hours. ITS LCO 3.8.9 Action A states with one or more AC electrical power distribution subsystem inoperable restore the AC distribution subsystem to OPERABLE status with 8 hours. Action B states with one or more AC vital buses inoperable, restore the AC vital bus to OPERABLE status within 2 hours. The ITS Bases describes the operability requirement as being energized. This changes the CTS by moving the operability description of the buses (i.e., energized) from the Specification to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. ITS LCO 3.8.9 retains the requirements for the AC and AC Vital buses to be OPERABLE. The Bases specify that the AC and AC Vital buses are OPERABLE if energized. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 CTS 3.8.2.1 for the Onsite Power Distribution Systems lists A.C. Distribution – Operating requirements. CTS LCO 3.8.2.1 states, "The following electrical busses shall be energized in the specified manner with tie breakers open between redundant busses within the unit." The requirement specifies 4 120-volt AC electrical buses are energized from their associated inverter. The inverter receives its power from the associated DC bus. ITS LCO 3.8.7, "Inverters – Operating" requires the A and B Train inverters to be OPERABLE. This changes the CTS by dividing the onsite AC power system into sources and distribution systems and specifying the inverters are to be OPERABLE.

This change is acceptable because the ITS divides the requirements for the electrical sources from the electrical sources and power distribution systems. The division does not change the technical requirements. The inverters provide the regulated 120-volt AC electrical source(s) for the 120 VAC distribution systems. The 120 VAC distribution systems are addressed by ITS LCO 3.8.9, "Distribution Systems – Operating." This change retains the technical requirements for the inverters. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as administrative because it does not result in a technical change to the CTS.

A.3 - A.4 Not used.

A.5 CTS LCO 3.8.2.1 Action c states, in part, that with one A.C. Vital Bus either not energized from its associated inverter, or with the inverter not connected to its associated D.C. Bus, re-energize the A.C. Vital Bus from its associated inverter connected to its associated D.C. Bus within 24 hours. ITS LCO 3.8.7 Action A states with one inverter inoperable, restore the inverter to OPERABLE status within 24 hours. Required Action A modified by a note that states, "Enter applicable Condition and Required Actions of LCO 3.8.9, "Distribution Systems – Operating," with any AC vital bus de-energized." This changes the CTS by adding a note that references the requirements for ITS LCO 3.8.9.

This change is acceptable because it does not change the technical requirements of the CTS. The ITS rules of usage require all conditions for a system, subsystem, train, component, or device to be entered when a system, subsystem, train, component, or device become inoperable. ITS LCO 3.8.7 Condition A is for one required inverter inoperable and LCO 3.8.9 must be entered if an AC Vital bus is inoperable. The ITS Condition A note provides no specific technical requirements and acts only as a reminder to entered LCO 3.8.9 if an AC Vital bus has become de-energized. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.6 CTS 3.8.2.1 for the Onsite Power Distribution Systems lists A.C. Distribution – Operating requirements. CTS LCO 3.8.2.1 states, "The following electrical busses shall be energized in the specified manner with tie breakers open between redundant busses within the unit." The requirement specifies two AC and four AC vital electrical buses. ITS LCO 3.8.9, "Distribution Systems – Operating" requires the A and B Train of the AC and AC vital bus electrical power distribution subsystems to be OPERABLE. This changes the CTS by dividing the onsite AC power system into sources and distribution systems and specifying the distribution systems for the AC and AC vital are to be OPERABLE.

This change is acceptable because the ITS divides the requirements for the electrical sources from the electrical sources and power distribution systems. The division does not change the technical requirements. The inverters are addressed by ITS LCO 3.8.7, "Inverters – Operating." This change retains the technical requirements for the AC and AC vital distribution systems in LCO 3.8.9. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as administrative because it does not result in a technical change to the CTS.

A.7 CTS LCO 3.8.2.1 Action a states, in part, that with one of the required trains of A.C. emergency busses not fully energized, re-energize the train within 8 hours. ITS LCO 3.8.9 Action A states with one or more AC electrical power distribution subsystems inoperable, restore the AC electrical power distribution subsystem(s) to OPERABLE status within 8 hours. Required Action A modified by a note that states, "Enter applicable Condition and Required Actions of LCO 3.8.4, "DC Sources – Operating," with any DC trains made inoperable by inoperable power distribution subsystems." This changes the CTS by adding a note that references the requirements for ITS LCO 3.8.4.

This change is acceptable because it does not change the technical intent of the CTS. The ITS rules of usage require all conditions for a system, subsystem, train, component, or device to be entered when a system, subsystem, train, component, or device become inoperable. ITS LCO 3.8.9 Condition A is for one or more electrical power distribution subsystems are inoperable and LCO 3.8.4 must be entered if an DC bus is made inoperable by the AC distributions bus being de-energized. The ITS Condition A note provides a specific requirement to enter LCO 3.8.4 if an DC bus has become inoperable. The ITS requirement is necessary due to the general exception provided by ITS 3.0.6 which would otherwise not require this action. The CTS does not include a general exception like ITS 3.0.6 and would require the applicable DC bus Actions to be applied. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

CTS 3.8.2.2 AC Distribution - Shutdown
ITS 3.8.8 Inverters - Shutdown
ITS 3.8.10 Distribution Systems - Shutdown
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

L.1 *(Category 4 – Relaxation of Required Action)* CTS 3.8.2.2 Action specifies with less than the required train of A.C. Emergency Busses not fully energized in the required manner, immediately suspend all operations involving positive reactivity changes shall be immediately suspended. ITS 3.8.8 and 3.8.10 Required Actions A.2.4 modify the requirements and state, "Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration." This changes the CTS requirement by allowing operations that are a positive reactivity change.

This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions with continued operation while providing time to ensure the SDM or refueling boron concentration are within limits. Maintaining SDM or refueling boron concentration requirements ensures the unit will remain within analyzed conditions on the safety analyses. Changes in SDM or refueling boron concentration are acceptable, provided the parameters are maintained within the required limits to ensure safe plant operation. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.2 *(Category 4 – Relaxation of Required Action)* CTS 3.8.2.2 in part states "With less than the above minimum required A.C. electrical power sources OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of irradiated fuel assemblies and movement of fuel assemblies over irradiated fuel assemblies for Unit 1, and movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies for Unit 2," perform specific actions until the required minimum equipment is restored. ITS 3.8.8 and 3.8.10 Action A.1 state "Declare affected required feature(s) inoperable." This must be performed immediately, or other specific Required Actions must be followed. This changes the CTS by allowing CORE ALTERATIONS, movement of irradiated fuel assemblies, and reactivity changes with less than the minimum AC source being OPERABLE.

The purpose of ITS Required Action A.1 is to provide an alternative to stopping CORE ALTERATIONS, movement of irradiated fuel assemblies and movement of fuel assemblies over irradiated fuel assemblies for Unit 1, and movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies for Unit 2, and reactivity changes with the required inverters or AC distribution systems inoperable. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a design basis accident occurring during the repair period. The addition of the allowance provides for declaring affected features with electrical power inverters or distribution systems inoperable instead of immediately suspending CORE ALTERATIONS, movement of irradiated fuel assemblies and movement of fuel assemblies over irradiated fuel assemblies for Unit 1, and movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies for Unit 2, and stopping of reactivity changes. Required safety features that are made inoperable with the loss of the required inverters or distribution systems must enter Conditions that allow continued operations prohibited above. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.3 *(Category 1 – Relaxation of LCO Requirements)* CTS 3.8.2.2 states as a minimum, one of the following trains of A.C. Busses shall be OPERABLE and energized in the specified manner. The LCO specifies that either Train A or Train B equipment be OPERABLE. Each train consists of one 4160 VAC bus, one 480 VAC bus, and two 120 VAC buses. The 120 VAC bus must be powered through associated inverter from associated DC bus. CTS Action requires if the train of A.C. Emergency Busses not fully energized in the required manner, specific limitations are required. CTS surveillance requirement 4.8.2.2 requires the specified buses be energized in the required manner. ITS LCO 3.8.8 states two inverters shall be OPERABLE. LCO 3.8.10 states the necessary portion of AC and AC vital bus electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE. This changes the CTS by allowing combinations of AC for 4160 and 480 VAC buses that are necessary to support equipment to provide required safety functions.

The purpose of ITS LCO 3.8.10 is to ensure the necessary equipment is powered from OPERABLE electrical power systems. This change is acceptable because the LCO requirements continue to ensure that the required systems and components are maintained consistent with the safety analyses and licensing basis. This change allows a combination of OPERABLE electrical power subsystems to supply the electrical power to the necessary safety systems and equipment. During the movement of irradiated fuel assemblies or movement of fuel assemblies over irradiated fuel assemblies for Unit 1, and movement of recently irradiated fuel assemblies or movement of fuel assemblies over recently irradiated fuel assemblies for Unit 2, or with the unit in MODE 5 or 6, the electrical sources and the electrical distribution systems are limited to one train. Required equipment may be electrically power from other than its normal source by cross connections of trains. This change is acceptable under the stated conditions because assuming a single failure and concurrent loss of all offsite or all onsite power is not required. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

L.4 (Category 4 – Relaxation of Required Action*)* LCO 3.8.2.2 does not list an exception to LCO 3.0.3. A Note modifies ITS LCOs 3.8.8 and 3.8.10 ACTIONS that states "LCO 3.0.3 is not applicable." This changes the CTS by allowing an exception to LCO 3.0.3 requirements.

The purpose of ITS Note is to prevent the unit from unnecessarily requiring a shutdown when operating in MODE 1, 2, 3, or 4. Irradiated fuel assembly movement can occur in MODE 1, 2, 3, or 4 and therefore ITS LCOs 3.8.8 and 3.8.10 would be applicable. Fuel assembly movement in MODE 1, 2, 3, or 4 is independent of reactor operations. Entering LCO 3.0.3, while in MODE 1, 2, 3, or 4 would require the unit to be shutdown unnecessarily. This is acceptable because the movement of fuel assemblies does not affect the safe operation of the unit in MODE 1, 2, 3, or 4.The proposed requirements continue to ensure that the systems are maintained or appropriate actions taken in the MODES and other specified conditions assumed in the safety analyses and licensing basis. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because the LCO requirements are applicable in fewer operating conditions than in the CTS.

More Restrictive Changes (M)

M.1 CTS surveillance requirement 4.8.2.2 states "The specified busses shall be determined energized in the required manner by verifying correct breaker alignment and indicated voltage on the busses." ITS SR 3.8.8.1 requires verification of correct inverter voltage and alignments to required AC vital buses. This changes the CTS by specifying each inverter supplies the correct voltage.

The purpose of ITS SR 3.8.8.1 is to specify the required alignment and proper voltage for each inverter. This change is acceptable because the ITS SR 3.8.8.1 maintains the requirements for proper voltage and alignment to the associated AC Vital bus. The ITS SR specifies correct voltage which indicates a specified range. The CTS only requires a voltage be present on the bus. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as more restrictive because the ITS specifies correct voltage and the CTS does not.

M.2 CTS surveillance requirement 4.8.2.2 states "The specified busses shall be determined energized in the required manner by verifying correct breaker alignment and indicated voltage on the busses." ITS SR 3.8.10.1 requires the verification of correct breaker alignments and voltage to required AC and AC vital bus electrical power distribution subsystems. This changes the CTS by specifying each inverter supplies the correct voltage.

The purpose of ITS SR 3.8.10.1 is to specify the required alignment and proper voltage for each inverter. This change is acceptable because the ITS SR 3.8.10.1 maintains the requirements for proper voltage and alignment to the associated AC Vital bus. The ITS SR specifies correct voltage which indicates a specified range. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as more restrictive because the ITS specifies correct voltage and the CTS does not.

Removed Detail Changes (LA)

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.8.2.2 requires the electrical busses to energized with each of the 4160, 480, and 120 VAC buses specified. Each bus has a specific nomenclature. ITS LCO 3.8.10 states, "The necessary portion of AC, DC, and AC vital bus electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE." This changes the CTS by moving the specific names of the buses from the Specification to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. ITS LCO 3.8.10 still retains the requirement for the required buses to be OPERABLE. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.2 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.8.2.2 states as a minimum, one of the following trains of A.C. Busses shall be OPERABLE and energized in the specified manner. Items A.3, A.4, B.3 and B.4 specify the required 120-volt AC Vital buses be energized from its associated inverter connected to the DC bus. CTS 3.8.2.2 Action specifies corrective action to restore the required busses to an energized state. ITS LCO 3.8.8 states "Two Inverters shall be OPERABLE." ITS LCO 3.8.10 specifies the required Distribution Systems, including the AC Vital buses are OPERABLE. This changes the CTS by moving the description of the AC Vital buses being "energized "from the Specification to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. ITS LCO 3.8.8 specifies two inverters to be OPERABLE. ITS LCO 3.8.10 retains the requirements for the AC Vital buses to be OPERABLE by being energized. The Bases specify that the AC Vital bus is power by a DC bus through an inverter. Also, this change is acceptable because the removed information will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Chapter 5. This program provides for the evaluation of changes to ensure the Bases are properly controlled. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 Unit 1 LCO 3.8.2.2 applicability states MODES 5 and 6 and, "During movement of irradiated fuel assemblies and, During movement of fuel assemblies over irradiated fuel assemblies." Unit 2 LCO 3.8.2.2 applicability states MODES 5 and 6 and, "During movement of recently irradiated fuel assemblies and, During movement of fuel assemblies over recently irradiated fuel assemblies." ITS LCO 3.8.8 Applicability states MODES 5 and 6 and, "During movement of irradiated fuel assemblies and, During movement of fuel assemblies over irradiated fuel assemblies (Unit 1) and, During movement of recently irradiated fuel assemblies and, During movement of fuel assemblies over recently irradiated fuel assemblies (Unit 2)." This changes the CTS by combining the applicability of ITS LCO 3.8.8 into a requirement for each unit.

This change is acceptable because the ITS technical requirement for LCO applicability remains unchanged from the CTS requirement. The ITS requirement retains the specific requirements for each unit. The change in wording does not modify the technical requirement for the CTS. The ITS requirement is consistent with the ISTS wording for this requirement with unit specific difference noted. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.3 Unit 1 LCO 3.8.2.2 Action in part states, "Suspend movement of irradiated fuel assemblies and movement of fuel assemblies over irradiated fuel assemblies." Unit 2 LCO 3.8.2.2 Action in part states, "Suspend movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies." ITS LCO 3.8.8 Action A.2.2 states to suspend "movement of irradiated fuel assemblies and movement of fuel assemblies over irradiated fuel assemblies" (Unit 1). ITS LCO 3.8.8 Action A.2.3 states to suspend "movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies" (Unit 2). This changes the CTS by combining the Action of LCO 3.8.8 into a requirement for each unit.

This change is acceptable because the ITS technical requirement for LCO Actions remains unchanged from the CTS requirement. The ITS requirement retains the specific requirements for each unit. The change in wording does not modify the technical requirement for the CTS. The ITS requirement is consistent with the ISTS wording for this requirement with unit specific difference noted. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.4 - A.5 Not used.

A.6 CTS LCO 3.8.2.2 states in part that at a minimum, one of the following trains of A.C. Busses shall be OPERABLE. Each train requires specific 4160, 480, and 120 VAC buses to be OPERABLE. The 120 VAC buses required inverter to supply the required electrical power. ITS LCOs 3.8.8, "Inverters – Shutdown," requires two inverters to be OPERABLE and 3.8.10, "Distribution Systems – Shutdown," requires the distribution systems necessary to support the necessary equipment to provide the required safety functions. This changes the CTS by dividing the AC distribution requirement during shutdown into the ITS LCOs for Inverters and Power Distribution System requirements.

The purpose of the ITS LCOs 3.8.8 and 3.8.10 is to divide the requirement for electrical power into sources and distribution systems during shutdown conditions. LCO 3.8.2 provides the requirements for the AC Source – Shutdown. LCO 3.8.5 specifies the requirements for the DC Sources – Shutdown. LCO 3.8.8 requires the Inverter – Shutdown provides the source for the 120 vital AC buses. These LCOs represent all of the required electrical sources. The electrical distribution systems during shutdown are specified by LCO 3.8.10. This change retains the technical requirements for the required electrical power subsystems. The ITS requirements are consistent with the ISTS wording for this requirement. This change is designated as administrative because it does not result in a technical change to the CTS.

A.7 CTS 3.8.2.2 Action, in part, states "With less than the above required train of A.C. Emergency Busses not fully energized in the required manner, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes." CTS LCO 3.9.8.1 requires one RHR loop to be OPERABLE (for Unit 2 only) and in operation. CTS LCO 3.9.8.2 requires 2 RHR loops to be OPERABLE. ITS LCO 3.8.10 Required Action A.2.6 states "Declare associated required residual heat removal subsystem(s) inoperable and not in operation." The Completion Time for this requirement is immediate. This changes the CTS by specifically stating this required Action.

The purpose of Required Action A 2.6 is to ensure that the RHR LCO is entered for an inoperable (de-energized) bus. In this case, the other Required Actions of LCO 3.8.10 do not address the concerns relating to coolant circulation and heat removal. Pursuant to ITS LCO 3.0.6, the RHR Actions would not be entered. Therefore, Required Action A.2.6 is provided to direct declaring RHR inoperable, which results in taking the appropriate RHR actions. LCO 3.0.6 states" When a supported system LCO is not met solely due to a support system LCO not being met, the Conditions and Required Actions associated with this supported system are not required to be entered. Only the support system LCO ACTIONS are required to be entered." This change is acceptable because the CTS and ITS requirements would require the RHR train with no electrical power to be declared inoperable. Therefore, the technical requirements for the electrical and RHR remain unchanged. The ITS requirements are consistent with the ISTS wording for this requirement. This change is designated as administrative because it does not result in a technical change to the CTS.

CTS 3.8.2.3 DC Distribution – Operating
ITS 3.8.4 DC Sources – Operating
ITS 3.8.6 Battery Parameters
ITS 3.8.9 Distribution Systems - Operating
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

L.1 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS surveillance requirement 4.8.2.3.2.e and 4.8.2.3.2.f require the performance of a discharge tests verifying battery capacity at least every 18 months during shutdown. ITS SR 3.8.6.6 in part requires the verification of battery capacity when subjected to a performance discharge test. A Note modifies the ITS SR. The Note states "This Surveillance shall not be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR". This changes the CTS by allowing portions of the surveillance to be performed in Modes 1, 2, 3, or 4 (to confirm operability) when an assessment determines safe plant operation can be maintained.

The purpose of the CTS requirement to perform the required surveillance during shutdown conditions is to assure plant safety. The ITS SR note allows the SR to be conducted during power operation but only if the performance of the SR does not reduce plant safety. The proposed change is acceptable because it continues to adequately verify that the equipment used to meet the LCO can perform its required functions while assuring the plant is operated safely. The allowance to perform the SR in MODE 1, 2, 3, or 4 is accompanied by the requirement to assess the impact on safety prior to performing the SR. The requirement to assess the impact on the safe operation of the plant provides additional assurance that plant safety will not be decreased. Thus, the proposed ITS relaxation for performing this SR at power is balanced by the additional requirement to assure safe plant operation. The proposed ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.2 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS surveillance requirement 4.8.2.3.2.c.4 states that the battery charger will supply at least 100 amps at 140 volts for at least 4 hours. ITS SR 3.8.4.2 requires a verification of each battery charger supplying ≥ 100 amps at greater than or equal to the minimum established float voltage for ≥ 4 hours. In addition, the SR provides an alternative test method that allows a verification of each battery charger can recharge the battery to the fully charged state within 24 hours while supplying the largest combined demands of the various continuous steady state loads, after a battery discharge to the bounding design basis event discharge state. This changes the CTS by allowing an alternate test that is not currently allowed.

The purpose of the ITS alternate test method is to provide a method that can demonstrate the charger capability to supply a recharge to a battery after a battery discharge test has been performed. This change is acceptable because the relaxed

Surveillance Requirement acceptance criteria are adequate to verify that the equipment used to meet the LCO can perform its required functions. The alternate test provides an acceptable method for determining charger capability by actually recharging a discharged battery within 24 hours while supplying required loads. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.3 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS surveillance requirement 4.8.2.3.2.d states that battery capacity is verified by subjecting the battery to a service test every 18 months during shutdown. ITS SR 3.8.4.3 requires a service test to be performed to verify the battery capacity. The test must be performed every 18 months. A Note modifies the SR that states "This Surveillance shall not normally be performed in MODE 1, 2, 3, or 4. However, portions of the Surveillance may be performed to reestablish OPERABILITY provided an assessment determines the safety of the plant is maintained or enhanced. Credit may be taken for unplanned events that satisfy this SR." This revises the CTS by allowing portions of the SR to be performed in MODES 1, 2, 3, or 4 and allowing credit for unplanned events.

The purpose of ITS SR 3.8.4.3 Note is to allow portions of the requirement to be performed to ensure OPERABILITY of the batteries. These portions of the SR may only be performed in MODE 1, 2, 3, or 4 if the safety of the plant is maintained or enhanced. This change is acceptable because the relaxed Surveillance Requirement acceptance criteria are adequate to verify that the equipment used to meet the LCO can perform its required functions. The change allows the performance of portions of the SR in MODE 1, 2, 3, or 4 provided plant safety is maintained or enhanced. Normally, the SR is conducted when the battery is not required to be OPERABLE. Under limited conditions, battery OPERABILITY may have to be demonstrated with the plant operating. Verification of battery OPERABILITY under these conditions is infrequent and the plant's safety is always maintained or enhanced by the performance of this requirement. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.4 *(Category 4 – Relaxation of Required Action)* CTS LCO 3.8.2.3 Action a, in part states with one of the battery banks inoperable, restore the inoperable battery bank to OPERABLE status within 2 hours. ITS LCO 3.8.4 Required Action B requires with one or two batteries on one train inoperable restore the inoperable batteries to OPERABLE status in 2 hours. This changes the CTS by allowing more than one battery to be inoperable if the batteries are on the same train.

The purpose of ITS LCO Required Action B is to limit one train of batteries to be inoperable for only 2 hours. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a design basis accident occurring during the repair period. This change allows both batteries on the same train to be inoperable for up to two hours. The remaining train of batteries ensures accident analysis assumptions are met for the limited time that the train of batteries is allowed to be inoperable. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.5 *(Category 4 – Relaxation of Required Action)* CTS LCO 3.8.2.3 Action b, in part states with one of the battery charger/rectifier inoperable, restore the inoperable battery charger/rectifier to OPERABLE status with specific limitations. ITS LCO 3.8.4 Required Action A requires with one or two battery chargers on one train inoperable restore the inoperable battery changers to OPERABLE status within specific limitations. This changes the CTS by allowing more than one battery charger to be inoperable if the battery chargers are on the same train.

The purpose of ITS LCO Required Action A is to limit one train of battery chargers to be inoperable. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a design basis accident occurring during the repair period. This change allows both battery chargers on the same train to be inoperable with specific limitations. The remaining train of batteries and battery chargers ensure accident analysis assumptions are met for the limited time that the train of battery chargers is allowed to be inoperable. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.6 *(Category 4 – Relaxation of Required Action)* CTS 3.8.2.3 Action b in part states with one of the required full capacity chargers or rectifiers inoperable, demonstrate the OPERABILITY of its associated battery bank by performing Surveillance Requirement 4.8.2.3.2.a.1 within one hour. The requirement goes on to state that the action requires the Surveillance Requirement of 4.8.2.3.2.a.1 to be continued for at least once per 8 hours thereafter and if any Category A limit in Table 3.8-1 is not met, declare the battery inoperable. ITS LCO 3.8.4 Condition A states with one or two battery chargers on one train inoperable, restore battery terminal voltage to greater than or equal to the minimum established float voltage with 2 hours is specified by Required Action A.1. Required Action A.2 states a verification of float current of ≤ 2 amps is required once per 12 hours. Required Action A.3 specifies that the inoperable charger(s) must be restored to OPERABLE status within 7 days. This changes the CTS by allowing the battery terminal voltage to be restored to the minimum established float voltage with float current to be ≤ 2 amps and restoring the charger(s) to OPERABLE status within 7 days.

The purpose of ITS Required Actions A.1, A.2, and A.3 is to allow appropriate correct actions with appropriate time limitations to restore inoperable battery chargers to OPERABLE status. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a design basis accident occurring during the repair period. This change establishes the appropriate actions to be taken with inoperable battery charger(s). The current requirement specifies that all Category A parameters listed in Table 3.8-1 be within limits. The battery charger affect on the associated battery is directly related to the terminal voltage and the charging current in a float condition. With the charger supplying the minimum float voltage and less than 2 amps of charging current indicates the battery is capable of performing design requirements and should be considered OPERABLE. Twelve hours is acceptable for the verification of the charging current because it provides a limited time and the charger must be returned to OPERABLE within 7 days. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.7 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS surveillance requirement 4.8.2.3.2.b.3 states the average electrolyte temperature of every tenth cell of connected cells is above 60 °F. ITS SR 3.8.6.4 states "Verify each battery pilot cell temperature is greater than or equal to minimum established design limits." This changes the CTS by replacing the "average" temperature requirement of "every tenth connected cell" with the requirement that "each battery pilot cell temperature is greater than or equal to minimum established design limits." The change of 60 °F to minimum established design limits is discussed in a less restrictive change removal of details in these discussion of changes.

The purpose of ITS SR 3.8.6.4 is to ensure the temperature of the batteries is within design requirements. This change is acceptable because the relaxed Surveillance Requirement acceptance criteria are adequate to verify that the equipment used to meet the LCO can perform its required functions. The change allows pilot cells (representative cells) to accurately reflect the temperature of the battery as a whole. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.8 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 4.8.2.3.2.b.1 states the battery cell parameters in Table 3.8-1 meet the Category B limits every 92 days and within 7 days after a battery discharge or overcharge condition. Category B parameters applies to each connected cell. The cell minimum voltage is stated as 2.13 volts with notation (c) listed. Notation (c) states "Corrected for average electrolyte temperature." ITS SR 3.8.6.2 states "Verify each battery pilot cell voltage is ≥ 2.07 V" and must be performed every 31 days. This changes the CTS surveillance requirement from each connected cell to the pilot cells. Its also changes the voltage requirement from 2.13 to 2.07 V with no electrolyte temperature correction required. This change also eliminates the requirement to verify the Category B parameters within 7 days of a battery overcharge or discharge.

The purpose of ITS SR 3.8.6.2 is to ensure that the battery's cells are maintained above the minimum required cell voltage. The pilot cells are representative of all connected cells. This change is acceptable because the relaxed Surveillance Requirement acceptance criteria are adequate to verify that the equipment used to meet the LCO can perform its required functions. ITS SR 3.8.4.1 verifies the minimum battery terminal voltage is maintained. The terminal voltage represents the average cell's voltage times the number of cells. ITS SRs 3.8.6.2 and 3.8.4.1 provide assurance that the battery remains OPERABLE. These SRs apply under normal conditions and under a condition of a battery discharge or overcharge. The batteries continue to be tested in a manner and at a frequency necessary to ensure that they can perform their assumed safety functions. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.9 *(Category 7 – Relaxation Of Surveillance Frequency)* CTS surveillance requirement 4.8.2.3.2.a.1 specifies for each battery bank's pilot cells meet the Category A limits for the parameters listed in Table 3.8 – 1 at least once per 7 days. The pilot cell requirements include electrolyte level, with the level required to be greater than the minimum level indication mark and ≤ ¼ " above the maximum level indication mark. ITS SR 3.8.6.3 states "Verify each battery connected cell electrolyte level is greater than or equal to minimum established design limits," every 31 days. The information for electrolyte level is addressed by a less restrictive removal of detail change in these discussion of changes. This change the CTS by requiring each battery connected cell electrolyte level to be verified every 31 days instead of every 7 days.

The purpose of ITS SR 3.8.6.3 is to periodically verify that each battery cell has sufficient electrolyte fluid to perform its required function. This change is acceptable because the new Surveillance Frequency continues to ensure an acceptable level of equipment reliability. This changes the CTS by only requiring electrolyte level to be verified every 31 days. This SR ensures that sufficient electrolyte level is available for the battery plates to prevent physical damage and maintains adequate electron transfer capability. A frequency of 31 days is consistent with the recommendations of the IEEE standard. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because surveillances will be performed less frequently under the ITS than under the CTS.

L.10 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS surveillance requirement 4.8.2.3.2.b.1 in part requires every 92 days the parameters in Table 3.8–1 to meet the Category B limits. The limit for float voltage is listed as 2.13 volts per connected cell with an allowable value for voltage of > 2.07 volts. If a cell voltage is less than 2.13 volts but above the 2.07 volts, the cell may be considered OPERABLE provided the voltage is restored to ≥ 2.13 volts within 7 days. ITS SR 3.8.6.5 requires a verification of each battery connected cell voltage every 92 days. The minimum cell voltage requirement is ≥ 2.07 volts. This changes the CTS by decreasing the required voltage for each connected cell from 2.13 to 2.07 volts.

The purpose of ITS SR 3.8.6.5 is to ensure each connect cell is periodically verified to meet the minimum voltage requirement. This change is acceptable because the relaxed Surveillance Requirement acceptance criteria are adequate to verify that the equipment used to meet the LCO can perform its required functions. A required connected cell voltage of ≥ 2.07 ensures the absolute minimum battery voltage is maintained while the battery terminal voltage, verified every 7 days, ensures capacity of the battery is adequate (ITS SR 3.8.4.1). The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.11 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS surveillance requirement 4.8.2.3.2.a specifies each battery bank be demonstrated OPERABLE by requires every 7 days that the battery parameters listed in Table 3.8-1

Category A are within limits and the battery terminal voltage is greater than a specific value while on float charge. The Category A limit is specified in a minimum voltage per pilot cell is 2.13 V. ITS SR 3.8.4.1 specifies the battery terminal voltage is greater than or equal to the minimum established float voltage and is determined every 7 days. This changes the CTS by replacing the pilot cell voltage requirement with the battery terminal voltage requirement.

The purpose of ITS SR 3.8.4.1 is to ensure the overall battery voltage is sufficient to perform the design function. This change is acceptable because the relaxed Surveillance Requirement acceptance criteria are adequate to verify that the equipment used to meet the LCO can perform its required functions. The terminal voltage evaluates the overall capability of the battery bank. The verification of terminal voltage ensures the average cell minimum voltage is maintained. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.12 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS surveillance requirement 4.8.2.3.2.b.1 requires the parameters in Table 3.8 – 1 to meet the Category B limits. CTS in Table 3.8 – 1 lists the allowable value for electrolyte level as "above the top of plates." ITS SR 3.8.6.3 states "Verify each battery connected cell electrolyte level is greater than or equal to minimum established design limits." This changes the CTS by deleting the requirement for electrolyte level is not overflowing.

The purpose of ITS SR 3.8.6.3 is to ensure electrolyte level is above the minimum level. This change is acceptable because the relaxed Surveillance Requirement acceptance criteria are adequate to verify that the equipment used to meet the LCO can perform its required functions. The requirement for the electrolyte level is not overflowing is not required because the minimum level ensures the electrolyte fluid covers the battery plates. If the electrolyte overflows, other parameters, such as charging current or terminal voltage, will show changes in the electrolyte properties and battery OPERABILITY requirements. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.13 *(Category 4 – Relaxation of Required Action)* CTS Table 3.8 – 1 lists the allowable value for each connected cell float voltage as 2.07 volts. Note 2 to the table provides the actions for any Category B limits that exceeds its allowable value. The note states "For any Category B parameter(s) outside the limit(s) shown, the battery may be considered OPERABLE provided that the Category B parameters are within their allowable values and provided the Category B parameter(s) are restored to within limits within 7 days." ITS 3.8.6 Action A requires with one or two batteries on one train with one or more battery cells float voltage < 2.07 V, perform SR 3.8.4.1 and SR 3.8.6.1 within 2 hours. The Action requires the affected cell(s) to be restored to ≥ 2.07 V within 24 hours. This changes the CTS by allowing the cell float voltage to be less than 2.07 V for 24 hours.

The purpose of ITS 3.8.6 Action A is to provide reasonable Required Actions and associated Completion Times to restore battery cell(s) to the minimum float voltage. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a design basis accident occurring during the repair period. The change requires that battery terminal voltage (SR 3.8.4.1) and battery float current (SR 3.8.6.1) to be verified within 2 hours. These SRs provide assurance that the battery can perform its safety function. The change requires the restoration of the cell(s) to the minimum voltage within 24 hours. This provides a limited period to return the affected cell(s) to the minimum requirement. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.14 *(Category 4 – Relaxation of Required Action)* CTS Table 3.8 – 1 lists the requirements for specific gravity under the Category A, Category B, and allowable value columns. Note (b) to the table allows charging current of less than 2 amp to satisfy the specific gravity requirements. If Category A or Category B limits are not met, Notes (1) and (2) provide Actions and allowed outage times for restoring the parameter to within limits. Note 1 states "For any Category A parameter(s) outside the limit(s) shown, the battery may be considered OPERABLE provided that within 24 hours all the Category B measurements are taken and found to be within their allowable values, and provided all Category A and B parameter(s) are restored to within limits within the next 6 days." Note 2 states "For any Category B parameter(s) outside the limit(s) shown, the battery may be considered OPERABLE provided that the Category B parameters are within their allowable values and provided the Category B parameter(s) are restored to within limits within 7 days." ITS 3.8.6 Action B requires with one or two batteries on one train with float current > 2 amps, perform SR 3.8.4.1 within 2 hours and restore battery float current to ≤ 2 amps within 12 hours. This changes the CTS by allowing float current to be > 2 amps for 12 hours.

The purpose of ITS Action B is to provide reasonable Required Actions and associated Completion Times to restore battery float current to less than 2 amps. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a design basis accident occurring during the repair period. The change requires that battery terminal voltage (SR 3.8.4.1) to be verified within 2 hours. The SR provides assurance that the battery can perform its safety function. The change requires the restoration of the current to ≤ 2 amps within 12 hours. This provides a limited period to return the affected battery below the maximum current requirement. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.15 *(Category 4 – Relaxation of Required Action)* CTS Table 3.8 – 1 lists the requirements for electrolyte level under the Category A, Category B, and allowable value columns. If Category A or Category B limits are not met, Notes (1) and (2) provide Actions and allowed outage times for restoring the parameter to within limits. Note 1 states "For any Category A parameter(s) outside the limit(s) shown, the battery may be considered

OPERABLE provided that within 24 hours all the Category B measurements are taken and found to be within their allowable values, and provided all Category A and B parameter(s) are restored to within limits within the next 6 days." Note 2 states "For any Category B parameter(s) outside the limit(s) shown, the battery may be considered OPERABLE provided that the Category B parameters are within their allowable values and provided the Category B parameter(s) are restored to within limits within 7 days." ITS 3.8.6 Action C requires with one or two batteries on one train with one or more cells electrolyte level less than the minimum established design limits, restore the electrolyte level to above the top of the plates within 8 hours. Required Action C.2 requires the verification that there is no evidence of leakage within 12 hours. Required Action C.3 requires the electrolyte level to be restored to the minimum established design limits within 31 days. A Note modifies Condition C. The Note states "Required Action C.2 shall be completed if electrolyte level was below the top of plates." A Note modifies Action C Required Action. The Note states "Required Actions C.1 and C.2 are only applicable if electrolyte level was below the top of plates." This changes the CTS by allowing electrolyte level to be lower than the top of the plates for 8 hours and less than the minimum established design limit for 31 days.

The purpose of ITS Action C is to provide reasonable Required Actions and associated Completion Times to restore electrolyte level to above the top of the plates and above the minimum design limit within reasonable Completion Times. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a design basis accident occurring during the repair period. The change allows restoration of electrolyte level above the top of the plates in 8 hours. This action is reasonable because it limits the potential for dryout and plate degradation and assurance that the battery can continue to perform its safety function. To ensure the cell is not leaking, Note to Condition C and Required Action C.2 specifies a verification of no evidence of leakage is observed from the cell(s) with reduced electrolyte level. If leakage from the cell is observed, than the cell(s) must be tested and if the battery do not meet the manufacturer's recommendations the battery would be declared inoperable and the leaking cell(s) would be replaced. With the electrolyte level above the top of the plates, the 31 days is a reasonable period of time to allow restoration of level above the minimum design limit. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.16 *(Category 4 – Relaxation of Required Action)* CTS surveillance requirement 4.8.2.3.2.b.3 requires the average electrolyte temperature of every tenth cell of connected cells is above 60 °F. If the battery electrolyte temperature is ≤ 60 °F, Action a requires with one of the required battery banks inoperable, restore the inoperable battery bank to OPERABLE status within 2 hours. ITS 3.8.6 Action D requires with one or two batteries on one train with pilot cell electrolyte temperature less than minimum established design limits, restore the pilot cell temperature to greater than or equal to the minimum design limits within 12 hours. This changes the CTS by requiring the pilot cell temperature to be monitored and allowing an additional 10 hours to restore the temperature to above or equal to the minimum established design limit.

The purpose of ITS Action D is to allow a reasonable period to restore cell electrolyte temperature to the minimum temperature. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a design basis accident occurring during the repair period. The additional 10 hours is acceptable because a battery is sized with margin, while battery capacity is degraded, sufficient capacity exists to perform the intended function and the affected battery is not required to be considered inoperable solely as a result of the pilot cell temperature not met. The pilot cell are representative of all connected cells. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.17 *(Category 4 – Relaxation of Required Action)* CTS LCO 3.8.2.3 Action a, in part states with one of the battery banks inoperable, restore the inoperable battery bank to OPERABLE status within 2 hours. ITS 3.8.6 Action E states one or more batteries in redundant trains with battery parameters not within limits, restore battery parameters for batteries in one train to within limits in 2 hours. This changes the CTS by allowing more than one train of battery parameters to be not within limits.

The purpose of ITS 3.8.6 Action E is to allow more than one train of battery parameter to be outside specified limits for up to 2 hours. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. With one or more batteries in redundant trains with battery parameters not within limits there is not sufficient assurance that battery capacity has not been affected to the degree that the batteries can still perform their required function, given that redundant batteries are involved. With redundant batteries involved this potential could result in a total loss of function on multiple systems that rely upon the batteries. Therefore, the parameters must be restored to within limits on at least one train within the limited time of 2 hours. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.18 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS surveillance requirement 4.8.2.3.2.b.3 states "The average electrolyte temperature of every tenth cell of connected cells is above 60 °F." ITS SR 3.8.6.4 states "Verify each battery pilot cell temperature is greater than or equal to minimum established design limits." The average electrolyte temperature is changed from 60 °F to 50 °F and moved to the ITS Bases. The movement of the temperature from the surveillance requirement to the Bases is addressed by a separate LA discussion of change. This changes the CTS by decreasing the average electrolyte temperature of every tenth cell from 60 °F to the minimum established design temperature limit which is 50 °F. The specific temperature limit is decreased from 60 °F to 50 °F.

The purpose of ITS SR 3.8.6.4 minimum established design temperature limit is to ensure the battery can function as designed and required to mitigate the consequences of analyzed event. This change is acceptable because the relaxed Surveillance Requirement acceptance criteria are adequate to verify that the equipment used to meet the LCO can perform its required functions. The change from 60 °F to 50 °F is acceptable because the design temperature stated in the Unit 1's UFSAR for the cell's electrolyte temperature is 50 °F. For Unit 2 the proposed change is also aceptable because it is consistent with the design limits of the Unit 2 battery. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

More Restrictive Changes (M)

M.1 CTS LCO 3.8.2.3 Action a specifies with one of the required battery banks inoperable, restore the inoperable battery bank to OPERABLE status within 2 hours. ITS LCO 3.8.9 Condition C requires with one or more DC electrical power subsystems inoperable, restore the DC electrical power subsystem to OPERABLE status within 2 hours. ITS LCO 3.8.9 Condition C provides an additional limitation on the Completion Time. This specifies the two-hour requirement and 16 hours from discovery of failure to meet the LCO. This changes the CTS by requiring an additional limitation that is not currently required.

This purpose of the additional ITS Completion Time is to ensure the overall electrical distribution systems do not remain in a degraded state for more than 16 total hours. This change is acceptable because the additional requirement provides a reason limit for a degraded electrical distribution subsystem. The ITS requirements are consistent with the ISTS wording for this requirement. This change is designated as more restrictive because it adds additional surveillance requirement that the CTS does not require.

M.2 Unit 2 CTS LCO 3.8.2.3 Action b in part states with one of the required full capacity chargers or rectifiers inoperable, demonstrate the OPERABILITY of its associated battery bank by performing Surveillance Requirement 4.8.2.3.2.a.1 within one hour. The action allows with an inoperable charger in Unit 2, the spare 2 – 7 charger to be substituted for an inoperable charger within 4 hours with no additional requirements specified. ITS LCO 3.8.4 Condition A states with one or two battery chargers on one train inoperable, restore battery terminal voltage to greater than or equal to the minimum established float voltage within 2 hours is specified by Required Action A.1. Required Action A.2 states a verification of float current of ≤ 2 amps is required once per 12 hours. Required Action A.3 specifies that the inoperable charger(s) must be restored to OPERABLE status within 7 days. This changes the Unit 2 CTS by deleting the allowance to substitute the 2-7 charger within 4 hours for a required charger.

The purpose of ITS 3.8.4 Required Actions A.1, A.2 and A.3 is to provide the appropriate actions to be taken when a charger becomes inoperable. This change is acceptable because the substitution of the spare charger within 4 hours may not ensure the OPERABILITY of the battery. Action A.2 requires the restoration of the battery terminal voltage to greater than or equal to the minimum established float voltage within 2 hours.

The additional requirements are appropriate to ensure the battery is returned to a condition that it can provide the required safety functions. The ITS requirements are consistent with the ISTS wording for this requirement. This change is designated as more restrictive because it deletes an allowance provided by the CTS that is not allowed in the ITS.

M.3 CTS surveillance requirement 4.8.2.3.2.a.1 requires once per 7 days that the battery bank be demonstrated OPERABLE by verifying all Category A parameters, listed in Table 3.8-1, are within specified limits for each pilot cell. The Category A parameters are electrolyte level, float voltage, and specific gravity. Two notes modify specific gravity requirements in CTS Table. Note (a) modifies the general requirement for specific gravity and states "Corrected for electrolyte temperature and level." Note (b) modifies the Category A and the allowable values of the Category B limits and states "Or battery charging current is less than (2) amps when on charge." The Category B limits apply to each connected cell. ITS SR 3.8.6.1 states each battery is verified that float current is ≤ 2 amps every 7 days. A Note modifies the SR. The Note states "Not required to be met when battery terminal voltage is less than the minimum established float voltage of SR 3.8.4.1" This changes the CTS by eliminating a method for determining specific gravity requirements.

The purpose of ITS SR 3.8.6.1 is to provide the method used to determine if the battery specific gravity requirements are acceptable provided the minimum battery voltage is met. This change is acceptable because the charging current is the method used to determine specific gravity requirements. Taking electrolyte from each required cell, determining temperature and correcting for temperature and level is a complex procedure. Therefore, the charging current method is normally used. If the minimum voltage is not met, the charging current will be greater that 2 amps to increase the voltage. The addition of the Note to the SR is acceptable because if the voltage is less than the minimum and charging current will be raised to increase the voltage. The minimum voltage requirements not being met requires the battery to be declared inoperable and only two hours is allowed for it to be restored to OPERABLE status. Therefore, the addition of the Note to the SR is acceptable. The ITS requirements are consistent with the ISTS wording for this requirement. This change is designated as more restrictive because it deletes an allowance provided by the CTS that is not allowed in the ITS.

M.4 CTS 4.8.2.3.2.b.1 states the parameters in Table 3.8-1 meet the Category B limits every 92 days and within 7 days after a battery discharge or overcharge condition. Category B parameters applies to each connected cell. ITS SR 3.8.6.3 states "Verify each battery connected cell electrolyte level is greater than or equal to minimum established design limits," every 31 days. This changes the CTS by requiring each connected cell electrolyte level be verified every 31 days instead of 92 days.

The purpose of ITS SR 3.8.6.3 is to periodically verify that each battery cell has sufficient electrolyte fluid to perform its required function. This change is acceptable because the limit specified for electrolyte level ensures that the plates suffer no physical damage and maintains adequate electron transfer capability. The frequency of the SR is consistent with the recommendations of the IEEE standard. The ITS requirements are consistent with the ISTS wording for this requirement. This change is designated as more restrictive because the surveillance requirement is more frequency in the ITS than in the CTS.

M.5 CTS surveillance requirement 4.8.2.3.1 requires the specified busses to be determined operable and energized by verifying correct breaker alignment and indicated power availability. ITS SR 3.8.9.1 requires verification of correct voltage and breaker alignments for the required buses. This changes the CTS by specifying the indicated bus voltage is the correct voltage.

The purpose of ITS SR 3.8.9.1 is to specify the required alignment and proper voltage for each required bus. This change is acceptable because the ITS SR 3.8.9.1 maintains the requirements for proper voltage and alignment for the required buses. The ITS SR specifies correct voltage which indicates a specified range. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as more restrictive because the ITS specifies correct voltage and the CTS does not.

Removed Detail Changes (LA)

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.8.2.3 requires the DC electrical equipment and busses to be OPERABLE. Each train of DC is specified in terms in DC busses, battery banks, chargers and rectifiers. CTS Surveillance requirement 4.8.2.3.1 requires each of the DC trains to be OPERABLE and energized. The CTS LCO includes a list of the specific busses and equipment required OPERABLE. ITS LCO 3.8.4 simply states "The Train A and Train B DC electrical power subsystems shall be OPERABLE." ITS LCO 3.8.9 requires the Train A and B DC busses to be OPERABLE. The corresponding ITS LCOs do not include the CTS details describing the required busses or equipment. The CTS is revised to conform to the ITS. This changes the CTS by moving the details describing each train (orange and purple bus) including the specific DC busses, battery banks, chargers, and rectifiers) from the CTS LCO to the ITS 3.8.4 and 3.8.9 Bases as applicable.

The removal of these details, which are related to system design, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the requirement for the Train A and B DC equipment to be OPERABLE in LCOs 3.8.4 and 3.8.9. These requirements ensure that the required DC buses (ITS 3.8.9), batteries, chargers, and rectifiers (ITS 3.8.4) are OPERABLE to support the required features. This change is acceptable because the removed information will be adequately controlled in the Technical Specification Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Section 5 of the Technical Specifications. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.2 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* Unit 1 CTS surveillance requirement 4.8.2.3.2.a.2 states that each 125 volt battery bank and charger shall be demonstrated OPERABLE every 7 days with the battery on float charge the total battery terminal voltage is greater than or equal to 127.8 volts for 60 cell batteries 1-1 and 1-2 and 125.67 volts for 59 cell batteries 1-3 and 1-4. Unit 2 CTS surveillance requirement 4.8.2.3.2.a.2 requires that each 125-volt battery bank and charger/rectifier shall be demonstrated OPERABLE every 7 days with the total battery terminal voltage greater than or equal to 127.8 volts on float charge. ITS SR 3.8.4.1 states "*Verify battery terminal voltage is greater than or equal to the minimum* established float voltage." The Frequency of the SR is every 7 days. This changes the CTS by moving the battery terminal voltage requirements from the specifications to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the surveillance requirement to verify battery terminal voltage is ≥ the minimum established float voltage. This change is acceptable because the removed information will be adequately controlled in the Technical Specification Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Section 5 of the Technical Specifications. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.3 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS surveillance requirement 4.8.2.3.1 states that each D.C. bus train shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability. ITS SR 3.8.9.1 states "Verify correct breaker alignments and voltage to DC electrical power distribution subsystems." The Frequency of the SR is every 7 days. This changes the CTS by moving the term "energized" from the specification to the ITS Bases and changing the term "bus train" to the electrical power distribution subsystem.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still require the DC electrical power distribution subsystem to be OPERABLE. The surveillance requirement continues to verify correct breaker alignments and voltage to the DC electrical power distribution subsystems. The Bases for LCO 3.8.9 defines OPERABLE for the distribution systems as being "energized." This change is acceptable because the removed information will be adequately controlled in the Technical Specification Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Section 5 of the Technical Specifications. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.4 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS surveillance requirement 4.8.2.3.2.c.4 states "The battery charger will supply at least 100 amperes at 140-volts for at least 4 hours." ITS SR 3.8.4.2 in part requires the verification of each battery charger can provide ≥ 100 amps at greater than or equal to the minimum established float voltage for ≥ 4 hours. This changes the CTS by moving the voltage requirement from the specification to the ITS Bases and replacing the requirement with the term "minimum established float voltage."

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the requirement to test each battery charger can provide 100 amps for 4 hours at the minimum established float voltage. The ITS Bases for the SR defines the minimum established float voltage as 140 volts. This change is acceptable because the removed information will be adequately controlled in the Technical Specification Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Section 5 of the Technical Specifications. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.5 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS surveillance requirement 4.8.2.3.2.d states "At least once per 18 months, during shutdown, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status all of the actual or simulated emergency loads for the 2-hour design duty cycle when the battery is subjected to a battery service test." ITS SR 3.8.4.3 requires verification of the battery capacity is adequate by supplying, and maintaining in OPERABLE status, the required emergency loads for the design duty cycle when subjected to a battery service test. The SR must be performed during shutdown and every 18 months. This changes the CTS by moving the requirement of the design duty cycle time and the emergency loads being actual or simulated from the specification to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the requirement to test each battery by a service test performed with the design duty cycle and the required emergency loads. This change is acceptable because the removed information will be adequately controlled in the Technical Specification Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Section 5 of the Technical Specifications. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.6 *(Type 3 – Removing Procedural Details for Meeting TS Requirements and Related Reporting Requirements)* CTS surveillance requirement 4.8.2.3.2.f requires the performance of a discharge tests verifying battery capacity and to detect signs of degradation. Degradation is indicated when the battery capacity drops more than 10% of rated capacity from its average on previous performance tests, or is below 90% of the manufacturer's rating. ITS SR 3.8.6.6 in part requires the verification of battery capacity when subjected to a performance discharge test. This changes the CTS by moving the definition of degradation from the specification to the ITS Bases.

The removal of these details for performing surveillance requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the requirement to perform a battery discharge test and the detection of battery degradation. This change is acceptable because these types of procedural details will be adequately controlled in the ITS Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Section 5 of the Technical Specifications. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LA.7 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* Unit 2 CTS LCO 3.8.3.2 Action b requires with one of the required charger or rectifier inoperable specific actions to be taken. Surveillance requirement 4.8.2.3.2 states that each battery bank and charger/rectifier shall be demonstrated OPERABLE by several specific requirements. ITS LCO 3.8.4 Condition A states with one or two battery chargers on one train inoperable specific required actions must be taken. ITS SR 3.8.4.2 states that specific requirements be demonstrated by the battery charger. The ITS Bases describes the requirement for a battery charger as including a rectifier. This changes the CTS for Unit 2 by describing the requirement for the rectifier in the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the requirement for the battery charger. This change is acceptable because the removed information will be adequately controlled in the Technical Specification Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Section 5 of the Technical Specifications. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.8 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS surveillance requirement 4.8.2.3.2.b.3 states the average electrolyte temperature of every tenth cell of connected cells is above 60 °F. ITS SR 3.8.6.4 states "Verify each battery pilot cell temperature is greater than or equal to minimum established design limits." This changes the CTS by moving the temperature requirement from the surveillance to the ITS Bases and stating the temperature requirement as "the minimum established design limits." Other changes to the surveillance are discussed in a less restrictive change in these discussion of changes.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the temperature requirement for the batteries as the minimum established design limits. This change is acceptable because the removed information will be adequately controlled in the Technical Specification Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Section 5 of the Technical Specifications. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.9 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* Unit 1 CTS Table 3.8 – 1 Note b states "Or battery charging current is less than (2) amps when on charge." A notation to the bottom of the table states" Numbers in parentheses assume a manufacturer's recommended full charge specific gravity of 1.215." ITS LCO 3.8.6 does not contain this information. This changes the CTS by moving the manufacturer's recommended full charge specific gravity from the specification to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the 2-amp limit for the batteries to provide assurance of specific gravity requirements. This change is acceptable because the removed information will be adequately controlled in the Technical Specification Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Section 5 of the Technical Specifications. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.10 *(Type 3 – Removing Procedural Details for Meeting TS Requirements and Related Reporting Requirements)* CTS surveillance requirement 4.8.2.3.2.b.2 requires there is no visible corrosion at either terminals or connectors, or the connector resistance of these items is less and than 150 micro-ohms. CTS surveillance requirement 4.8.2.3.2.c.1 states that the cell, cell plates, and battery racks show no visual indication of physical damage or abnormal deterioration. CTS surveillance requirement 4.8.2.3.2.c.2 requires the cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material. CTS surveillance requirement 4.8.2.3.2.c.3 states that the resistance of each cell-to-cell and terminal connection is less than or equal to 150 micro-ohms. ITS LCO 3.8.6 does not contain these surveillance requirements. This changes the CTS by moving these requirements from the specifications to the Licensing Requirements Manual (LRM).

The removal of these details for performing surveillance requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the requirements for the battery cell requirements and battery terminal voltage. These will ensure the batteries will be

OPERABLE and capable of providing their required safety functions. This change is acceptable because these types of procedural details will be adequately controlled in the LRM. The LRM is incorporated by reference into the UFSAR and any changes to the LRM are made under 10 CFR 50.59, which ensures changes are properly evaluated. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

LA.11 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS surveillance requirement 4.8.2.3.2.b.1 requires the parameters in Table 3.8–1 to meet the Category B limits. CTS in Table 3.8 – 1 lists the allowable value for electrolyte level as "above the top of plates." ITS SR 3.8.6.3 states "Verify each battery connected cell electrolyte level is greater than or equal to minimum established design limits." The ITS Bases for Action Condition C discusses electrolyte level operability requirements. This changes the CTS by moving the details regarding electrolyte level from the specification to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the requirement for electrolyte level. This ensure battery will remain OPERABLE. This change is acceptable because the removed information will be adequately controlled in the Technical Specification Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Section 5 of the Technical Specifications. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

LA.12 *(Type 3 – Removing Procedural Details for Meeting TS Requirements and Related Reporting Requirements)* CTS Table 3.8-1lists the surveillance requirements for the battery. The Category A and Category B limits list electrolyte level with specify requirement. ITS SR 3.8.6.3 states the requirement for electrolyte level is greater than or equal to minimum established design limits. This changes the CTS by moving information from the specification to the Battery Monitoring and Maintenance Program implementing document.

The removal of these details for performing surveillance requirements from the Technical Specifications is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the requirement for electrolyte level for the batteries. This change is acceptable because these types of procedural details will be adequately controlled by the requirements of a program required by ITS Section 5. The Battery Monitoring and Maintenance program is controlled by Section 5 of the Technical Specifications. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as a less restrictive removal of detail change because procedural details for meeting Technical Specification requirements are being removed from the Technical Specifications.

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS). Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 CTS LCO 3.8.2.3 states "The following D.C. bus trains shall be energized and OPERABLE:" with Train "A" and Train "B" components specified. ITS LCO 3.8.4, "DC Sources – Operating" states "The A Train and B Train DC electrical power subsystems shall be OPERABLE. This changes the CTS by classifying the "trained" components into a subsystem.

The purpose of the ITS LCO is to group the parts of the DC trains into a category or subsystem. This change is acceptable because a DC subsystem contains all required components that are required for a Train of DC. The subsystem is described in the Bases and lists the components that are required to function for it to be considered OPERABLE. The technical requirements are not modified by this change. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.3 Unit 2 surveillance requirement 4.8.2.3.2.d requires a battery service test to be performed at least every 18 months*. The "*" specifies that the 18 month surveillance interval during the first fuel cycle may be extended to coincide with completion of the first refueling outage. ITS SR 3.8.4.3 states that a battery service test will be performed for each battery every 18 months. This changes the CTS by deleting the allowance for the first refueling period.

This change is acceptable because the first Unit 2 refueling outage was completed in 1989. Therefore, the allowance has expired and is no longer required in the Technical Specifications. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.4 CTS LCO 3.8.2.3 states the D.C. bus Train A and Train B shall be energized and OPERABLE. ITS LCO 3.8.9 requires the Train A and Train B DC electrical power distribution subsystems shall be OPERABLE. This changes the CTS by describing the DC bus train as the DC electrical power distribution subsystem.

This change is acceptable because a change in how the DC is described does not change the technical requirements for the system. The ITS Bases describe how the DC buses are arranged. The distribution system requirements define for the DC subsystem that being OPERABLE is being in an energized state. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.5 CTS LCO 3.8.2.3 Action a states "With one of the required battery banks inoperable, restore the inoperable battery bank to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours." ITS LCO 3.8.4 Condition B requires with one or two batteries on one train inoperable, restore the inoperable batteries to OPERABLE status within 2 hours. ITS LCO 3.8.4 Condition C states that with one DC electrical power subsystem inoperable for reasons other than Condition A or B, restore the DC subsystem to OPERABLE status within two hours. ITS LCO 3.8.4 Condition D specifies when the Required Action and associated Completion Time are not met, the unit will be in MODE 3 in six hours and MODE 5 in 36 hours. This changes the CTS by dividing the batteries requirements into specific requirements for the batteries and the DC subsystems.

This change is acceptable because the technical requirements for the DC systems remain unchanged. The CTS requirements for the DC batteries are provided with limits. The ITS requirements divides the requirements for the batteries into the requirements for the batteries and the electrical power subsystem. This change provides a clarification to the technical requirements for the DC system in the ITS format. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.6 CTS LCO 3.8.2.3 Action a states "With one of the required battery banks inoperable, restore the inoperable battery bank to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours." ITS LCO 3.8.9 Condition C requires with one or more DC electrical power subsystems inoperable, restore the DC electrical power distribution subsystem to OPERABLE status within 2 hours. ITS LCO 3.8.9 Condition D specifies with the Required Action and associated Completion Time not met, the unit must be placed in MODE 3 within six hours and in MODE 5 within 36 hours. This changes the CTS by stating the requirements for the DC sources in ITS terms.

This change is acceptable because the technical requirements for the DC systems remain unchanged. The CTS requirements for the DC batteries are provided with limits. The ITS requirements specifies the requirements for electrical power distribution subsystem. This change provides a clarification to the technical requirements for the DC system in the ITS format. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.7 CTS LCO 3.8.2.3 Action a in part states with one of the required battery banks inoperable, restore the inoperable battery bank to OPERABLE status within 2 hours. CTS surveillance requirements 4.8.2.3.2 requires the battery bank to meet the requirements listed in Table 3.8 – 1 for the battery cells. ITS 3.8.6 Action F states if the Required Action and associated Completion Time of Condition A, B, C, D, or E not met, or if one or two batteries on one train with one or more battery cells float voltage < 2.07 V and float current > 2 amps, declare associated battery inoperable immediately. This changes the CTS by stating the requirements in an ITS format.

The purpose of ITS Action F is to coordinate the battery cell and DC Source requirements. This change is acceptable because the technical requirements for the battery cell remain unchanged. Any technical changes to the battery cell parameters of DC Source requirements are addressed in separate discussion of changes. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.8 CTS LCO 3.8.2.3 states that DC bus trains (Train A and Train B) shall be energized and OPERABLE in MODES 1, 2, 3, and 4. ITS LCO 3.8.6 states "Battery parameters for Train A and Train B batteries shall be within limits." The Applicability for the LCO is stated as "When associated DC electrical power subsystems are required to be OPERABLE." A Note modifies the ITS Actions and states "Separate Condition entry is allowed for each battery." This changes the CTS by stating the requirements in an ITS format.

The purpose of 3.8.6 LCO and Applicability is to ensure the batteries are OPERABLE to support the required DC sources when the sources are required to be OPERABLE. The purpose of the Note to the Actions is to allow separate entry for each battery. This change is acceptable because the technical requirements for the battery cell remain unchanged. ITS LCO 3.8.4 is applicable in MODES 1, 2, 3 and 4 and requires two trains of DC power subsystems. The ITS requirements are consistent with the ISTS wording for these requirements. This change is designated as administrative because the technical requirements of the specifications have not changed.

CTS 3.8.2.4 AC Distribution – Shutdown
ITS 3.8.5 DC Sources – Shutdown
ITS 3.8.10 Distribution Systems – Shutdown
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

L.1 *(Category 1 – Relaxation of LCO Requirements)* CTS 3.8.2.4 states as a minimum, one of the following trains of D.C. electrical equipment and busses shall be OPERABLE and energized in the specified manner. The LCO specifies Train A or Train B equipment be OPERABLE. Each train consists of two DC buses, batteries, chargers and (for Unit 2 only) rectifiers. ITS LCO 3.8.5 states one DC subsystem shall be OPERABLE. LCO 3.8.10 states the necessary portion of DC electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE. This changes the CTS by allowing DC buses that are necessary to support equipment to provide required safety functions.

The purpose of ITS LCO 3.8.10 is to ensure the necessary equipment is powered from OPERABLE electrical power systems. This change is acceptable because the LCO requirements continue to ensure that the required systems and components are maintained consistent with the safety analyses and licensing basis. This change allows a combination of OPERABLE electrical power subsystems to supply the electrical power to the necessary safety systems and equipment. During the movement of irradiated fuel and During movement of fuel over irradiated fuel assemblies for Unit 1, During the movement of recently irradiated fuel and During the movement of fuel over recently irradiated fuel assemblies for Unit 2, or with the unit in MODES 5 and 6, the electrical sources and the electrical distribution systems are limited. Required equipment may be electrically power from other than its normal source by cross connections of trains. This change is acceptable under the stated conditions because assuming a single failure and concurrent loss of all offsite or all onsite power is not required. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

L.2 *(Category 4 – Relaxation of Required Action)* CTS 3.8.2.4 Action in part states: With the above required train of D.C. electrical equipment and busses not fully OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of irradiated fuel assemblies and movement of fuel assemblies over irradiated fuel assemblies for Unit 1, and movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies for Unit 2," perform specific actions until the required minimum equipment is restored. ITS 3.8.5 and 3.8.10 Action A.1 state "Declare affected required feature(s) inoperable." This must be performed immediately, or other specific Required Actions must be followed. This changes the CTS by providing alternative actions to suspending CORE ALTERATIONS, movement of irradiated fuel assemblies and movement of fuel assemblies over irradiated fuel assemblies for Unit 1, and movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel assemblies for Unit 2, and reactivity changes with less than the minimum DC source being OPERABLE.

The purpose of ITS Required Action A.1 is to provide an alternative to stopping CORE ALTERATIONS, movement of irradiated (or recently irradiated) fuel or movement of fuel assemblies over irradiated (or recently irradiated) fuel for Unit 1 (Unit 2), and reactivity changes with the required DC source or DC distribution systems inoperable. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to repair inoperable features. The Required Actions are consistent with safe operation under the specified Condition, considering the OPERABLE status of the redundant systems or features. This includes the capacity and capability of remaining systems or features, a reasonable time for repairs or replacement, and the low probability of a design basis accident occurring during the repair period. The addition of the allowance provides for declaring affected features with DC electrical power or distribution systems inoperable instead of immediately suspending CORE ALTERATIONS, movement of irradiated (or recently irradiated) fuel or movement of fuel assemblies over irradiated (or recently irradiated) fuel for Unit 1 (Unit 2), and stopping of reactivity changes. Required safety features that are made inoperable with the loss of the required DC electrical power or distribution systems must enter Conditions and appropriate actions taken for the equipment inoperability which may include suspending the activities described above.. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.3 *(Category 4 – Relaxation of Required Action)* CTS 3.8.2.4 Action in part states: With the above required train of D.C. electrical equipment and busses not fully OPERABLE, immediately suspend all operations involving positive reactivity changes. ITS 3.8.5 and 3.8.10 Required Actions A.2.4 modify the requirements and state, "Suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration." This changes the CTS requirement by allowing operations that are a positive reactivity change.

This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions with continued operation while providing time to ensure the SDM or refueling boron concentration are within limits. Maintaining SDM or refueling boron concentration requirements ensures the unit will remain within analyzed conditions on the safety analyses. Changes in SDM or refueling boron concentration are acceptable provided the parameters are maintained within the required limits to ensure safe operation of the plant. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.4 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS surveillance requirement 4.8.2.4.2 states, "The above required 125-volt battery bank and chargers/rectifiers shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2." Surveillance requirement 4.8.2.3.2 represents the requirement for the DC sources in an operating condition. ITS SRs 3.8.4.1, 3.8.4.2, and 3.8.4.3 represent the required surveillance requirements of the CTS. A Note modifies SR 3.8.5.1 states, "The following SRs are not required to be performed: SR 3.8.4.2 and SR 3.8.4.3. This changes the CTS to allow specific surveillance requirements to not be performed on the required equipment during the time that only one DC subsystem is required to be OPERABLE.

This change is acceptable because the relaxed Surveillance Requirement acceptance criteria are adequate to verify that the equipment used to meet the LCO can perform its required functions. The intent of the required testing for DC sources in a condition of limited resource is to ensure the source remain OPERABLE and performing required tests is undesirable in a condition when only one DC subsystem is required to be OPERABLE. The Note precludes the performance of the SRs that would cause the battery to become inoperable. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

L.5 *(Category 4 – Relaxation of Required Action)* LCO 3.8.2.4 does not list an exception to LCO 3.0.3. A Note modifies ITS LCOs 3.8.5 and 3.8.10 ACTIONS that states "LCO 3.0.3 is not applicable." This changes the CTS by allowing an exception to LCO 3.0.3 requirements.

The purpose of ITS Note is to prevent the unit from unnecessarily requiring a shutdown when operating in MODE 1, 2, 3, or 4. Irradiated fuel assembly movement can occur in MODE 1, 2, 3, or 4 and therefore ITS LCOs 3.8.5 and 3.8.10 would be applicable. Fuel assembly movement in MODE 1, 2, 3, or 4 is independent of reactor operations. Entering LCO 3.0.3, while in MODE 1, 2, 3, or 4 would require the unit to be shutdown unnecessarily. This is acceptable because the movement of fuel assemblies does not affect the safe operation of the unit in MODE 1, 2, 3, or 4.The proposed requirements continue to ensure that the systems are maintained or appropriate actions taken in the MODES and other specified conditions assumed in the safety analyses and licensing basis. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as less restrictive because the LCO requirements are applicable in fewer operating conditions than in the CTS.

More Restrictive Changes (M)

M.1 CTS surveillance requirement 4.8.2.4.1 requires the specified busses to be determined operable and energized by verifying correct breaker alignment and indicated power availability. ITS SR 3.8.10.1 requires verification of correct voltage and breaker alignments for the required buses. This changes the CTS by specifying the indicated bus voltage is the correct voltage.

The purpose of ITS SR 3.8.10.1 is to specify the required alignment and proper voltage for each required bus. This change is acceptable because the ITS SR 3.8.10.1 maintains the requirements for proper voltage and alignment for the required buses. The ITS SR specifies correct voltage which indicates a specified range. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as more restrictive because the ITS specifies correct voltage and the CTS does not.

Removed Detail Changes (LA)

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.8.2.4 requires the DC electrical equipment and busses to be OPERABLE and energized in a specific manner. Each train of DC is specified in terms in DC busses, battery banks, chargers and rectifiers. CTS Surveillance requirement 4.8.2.4.1 requires the DC train to be OPERABLE and energized. Unit 2 CTS LCO 3.8.2.4 states that charger and rectifier 2 – 7 may substitute for any one of the chargers/rectifiers. ITS LCO 3.8.5 states "One DC electrical power subsystem shall be OPERABLE." This changes the CTS by moving the requirements for the train, buses, battery banks, chargers, and rectifiers are OPERABLE and energized from the specifications to the ITS Bases.

The removal of these details, which are related to system design, from the Technical Specifications, is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. The Technical Specifications still retain the requirement for the DC subsystem to be OPERABLE in LCO 3.8.5 and LCO 3.8.10 ensures the required subsystem is energized. These requirements ensure that the required DC buses, batteries, chargers, and rectifiers are OPERABLE to support the required features. This change is acceptable because the removed information will be adequately controlled in the Technical Specification Bases. Changes to the Bases are controlled by the Technical Specification Bases Control Program in Section 5 of the Technical Specifications. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the Technical Specifications.

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 CTS LCO 3.8.2.4 requires the DC electrical equipment and busses to be OPERABLE and energized in a specific manner. Each train of DC is specified in terms in DC busses, battery banks, chargers and rectifiers. ITS LCO 3.8.5 states "One DC electrical power subsystem shall be OPERABLE." This changes the CTS by stating the requirement in terms of a subsystem instead of individual components.

The purpose of the ITS LCO requirement is to state the requirement in the term of a subsystem rather than the individual components. This change is acceptable because the technical requirements for the DC remains unchanged from the CTS requirements. The ITS LCO specification and Bases retain all specific technical requirements and ensure OPERABILITY of the required DC system and components. The ITS requirement is consistent with the ISTS wording for this requirement. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.3 CTS LCO 3.8.2.4 requires the DC electrical equipment and busses to be OPERABLE and energized in a specific manner. Each train of DC is specified in terms in DC busses, battery banks, chargers and rectifiers. ITS LCO 3.8.10 requires the necessary equipment to provide the required safety functions. This changes the CTS by addressing the DC distribution requirement into the Power Distribution System requirements.

The purpose of the ITS LCO 3.8.10 requirement is to state the requirement in the term of distribution system rather than the individual components. This change is acceptable because the technical requirements for the DC distribution system remain unchanged from the CTS requirements. The ITS LCOs 3.8.5 and 3.8.10 specifications and Bases retain all specific technical requirements and ensure OPERABILITY of the required DC system. The ITS requirement is consistent with the ISTS wording for this requirement. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.4 CTS LCO 3.8.2.4 requires the DC electrical equipment and busses to be OPERABLE and energized in a specific manner. The Unit 1 applicability states "During movement of irradiated fuel assemblies, and During movement of fuel assemblies over irradiated fuel assemblies." The Unit 2 applicability states "During movement of recently irradiated fuel assemblies, and During movement of fuel assemblies over recently irradiated fuel assemblies." ITS LCOs 3.8.5 "DC Sources – Shutdown," and 3.8.10, "Distribution Systems – Shutdown," state the Applicability as "During movement of irradiated fuel assemblies and During movement of fuel assemblies over irradiated fuel for Unit 1, and During movement of recently irradiated fuel assemblies and During movement of fuel assemblies over recently irradiated fuel for Unit 2." This changes the CTS by combining the applicability of ITS into a requirement for each unit.

This change is acceptable because the ITS technical requirement for LCO applicability remains unchanged from the CTS requirement. The ITS requirement retains the specific requirements for each unit. The change in wording does not modify the technical requirement for the CTS. The ITS requirement is consistent with the ISTS wording for this requirement with unit specific difference noted. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.5 Unit 1 LCO 3.8.2.4 Action in part states, "during movement of irradiated fuel assemblies and, during movement of fuel assemblies over irradiated fuel assemblies." Unit 2 LCO 3.8.2.4 Action in part states, "During movement of recently irradiated fuel assemblies and, During movement of fuel assemblies over recently irradiated fuel assemblies." ITS LCOs 3.8.5 and 3.8.10 Action A.2.2 states "During movement of irradiated fuel assemblies and, During movement of fuel assemblies over irradiated fuel assemblies" for Unit 1. ITS LCOs 3.8.5 and 3.8.10 Action A.2.3 states "During movement of recently irradiated fuel assemblies and, During movement of fuel assemblies over recently irradiated fuel assemblies" for Unit 2. This changes the CTS by combining the Actions of LCOs 3.8.5 and 3.8.10 into a requirement for each unit.

This change is acceptable because the ITS technical requirement for LCO Actions remains unchanged from the CTS requirement. The ITS requirement retains the specific requirements for each unit. The change in wording does not modify the technical requirement for the CTS. The ITS requirement is consistent with the ISTS wording for this requirement with unit specific difference noted. This change is designated as administrative because the technical requirements of the specifications have not changed.

A.6 CTS surveillance requirement 4.8.2.4.1 states "The above required 125-volt D.C. bus train shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability." ITS SR 3.8.10.1 requires the verification of correct breaker alignments and voltage to required DC electrical power distribution subsystems. This changes the CTS by specifying for each required DC subsystem has the correct voltage for each of the required buses.

The purpose of ITS SR 3.8.10.1 is to specify proper voltage is supplied for each required DC subsystem. This change is acceptable because the ITS SR 3.8.10.1 maintains the requirements for proper voltage for each required DC subsystem. This change retains the technical requirements for the required electrical power distribution subsystems. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as administrative because it does not result in a technical change to the CTS.

A.7 CTS 4.8.2.4.2 states the required 125-volt battery bank and chargers/rectifiers shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2. ITS SR 3.8.5.1 requires for the DC sources that must be OPERABLE, the following SRs are applicable. The SRs listed are: SR 3.8.4.1, SR 3.8.4.2, and SR 3.8.4.3. The Frequency of the required SRs is in accordance with applicable of the SRs. This changes the CTS by stating the applicable surveillance requirements in terms of the ITS surveillance requirements and frequency.

The purpose of ITS SR 3.8.5.1 is to specify associated SRs that are applicable to the DC subsystem in a shutdown condition. This change is acceptable because the ITS SR 3.8.5.1 maintains the requirements for the DC subsystem. Changes to the ITS SRs for DC Sources – Operating are address in another CTS section. The ITS requirement is consistent with the ISTS wording for this requirement. This change is designated as administrative because it does not result in a technical change to the CTS.

ENCLOSURE 4

DETERMINATIONS OF
NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC)
FOR
CHANGES MADE TO THE BVPS
CURRENT TECHNICAL SPECIFICATIONS (CTS)

Introduction

The determinations of NSHC contained within this Enclosure consist of two general types. This enclosure contains "Generic" NSHC developed for the categories of change identified in Enclosure 3 (Changes to the CTS) and "Specific" NSHC for those "Less Restrictive" changes that do not fit within one of the generic determinations of NSHC listed below. Each specific NSHC is identified by the associated Technical Specification and discussion of change (DOC) number from Enclosure 3.

Enclosure Contents

NO SIGNIFICANT HAZARDS DETERMINATION
FOR

ADMINISTRATIVE CHANGES

The Beaver Valley Power Station (BVPS) is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve reformatting, renumbering, and rewording of Technical Specifications with no change in intent. These changes, since they do not involve technical changes to the Technical Specifications, are administrative.

This type of change is associated with the movement of requirements within the Technical Specifications, or with the modification of wording or format that does not affect the technical content of the current Technical Specifications. In addition, these changes include all non-technical modifications of requirements to provide consistency with the ISTS in NUREG-1431. Administrative changes do not add, delete, or relocate any technical requirements of the current Technical Specifications.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change involves reformatting, renumbering, and rewording the existing Technical Specifications. The reformatting, renumbering, and rewording process involves no technical changes to the existing Technical Specifications. As such, this change is administrative in nature and does not affect initiators of analyzed events or assumed mitigation of accident or transient events. Therefore, this change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or changes in methods governing normal plant operation. The proposed change will not impose any new or eliminate any old requirements. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

   The proposed change will not reduce a margin of safety because it has no effect on any safety analyses assumptions. This change is administrative in nature. Therefore, the change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR

MORE RESTRICTIVE CHANGES

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve adding more restrictive requirements to the existing Technical Specifications by either making current requirements more stringent or by adding new requirements that currently do not exist.

These changes include such things as additional commitments that decrease allowed outage times, increase the frequency of surveillances, impose additional surveillances, increase the scope of specifications to include additional plant equipment, increase the applicability of specifications, or provide additional actions. These changes are generally made to conform to the ISTS in NUREG-1431 and are only included in the Technical Specifications when they serve to enhance the safe operation of the plant and are consistent with the applicable plant specific design basis and safety analysis assumptions.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change provides more stringent requirements for operation of the facility. These more stringent requirements do not result in operation that will increase the probability of initiating an analyzed event and do not alter assumptions relative to mitigation of an accident or transient event. The more restrictive requirements continue to ensure process variables, structures, systems, and components are maintained consistent with the safety analyses and licensing basis. Therefore, this change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or changes in methods governing normal plant operation. The proposed change does revise Technical Specification requirements. However, these changes are consistent with the assumptions in the safety analyses and licensing basis. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
MORE RESTRICTIVE CHANGES
(continued)

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

The imposition of more restrictive requirements either has no effect on or increases the margin of plant safety. Each change in this category is, by definition, providing additional restrictions to enhance plant safety. The change maintains requirements within the safety analyses and licensing basis. Therefore, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES -

REMOVED DETAIL

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve moving details out of the Technical Specifications and into the Technical Specifications Bases, the Updated Final Safety Analyses Report (UFSAR), the Licensing Requirements manual (LRM) or other documents under regulatory control such as the Quality Assurance Program. The removal of this information is considered to be less restrictive because the Technical Specification change process no longer controls the information. Typically, the affected information is descriptive detail and the removal of this information conforms to the NRC approved content and format of the ISTS in NUREG-1431.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change relocates certain details from the Technical Specifications to other documents under regulatory control. The Technical Specification Bases, UFSAR, and Licensing Requirement Manual will be maintained in accordance with 10 CFR 50.59. In addition to 10 CFR 50.59 provisions, the Technical Specification Bases are subject to the change control provisions in the Administrative Controls Chapter of the Technical Specifications. The UFSAR is subject to the change control provisions of 10 CFR 50.71(e). Other documents used to contain the removed information are subject to controls imposed by Technical Specifications or regulations. As such, the relocation of descriptive details will only affect the level of regulatory control applicable to changes to the information moved. Changes to the affected information will continue to be evaluated in accordance with 10 CFR 50.59. As such, no significant increase in the probability or consequences of an accident previously evaluated will result. Therefore, this change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operations. The proposed change will not impose or eliminate any requirements, and adequate control of the information will be maintained. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES - REMOVED DETAIL
(continued)

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

The proposed change will not reduce a margin of safety because it has no effect on any safety analysis assumptions. In addition, the descriptive details to be moved from the Technical Specifications to other documents are not being changed. Since any future changes to these details will be evaluated under the applicable regulatory change control mechanism, no significant reduction in a margin of safety will be allowed. A significant reduction in the margin of safety is not associated with the elimination of the 10 CFR 50.92 requirement for NRC review and approval of future changes to the relocated details. The proposed change provides consistency with the level of detail in the Westinghouse Standard Technical Specifications, NUREG-1431, issued and approved by the NRC Staff, which provides additional assurance that the proposed change has been evaluated and determined not to introduce a significant reduction in the margin of safety. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR

LESS RESTRICTIVE CHANGES
CATEGORY 1

RELAXATION OF LCO REQUIREMENTS

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve relaxation of the current Technical Specification (CTS) Limiting Conditions for Operation (LCOs) such as the elimination of specific items from the LCO or Tables referenced in the LCO, or the addition of exceptions to the LCO.

These changes reflect the ISTS approach to provide LCO requirements that specify the protective conditions that are required to meet safety analysis assumptions for required features. These conditions replace the lists of specific devices used in the CTS to describe the requirements needed to meet the safety analysis assumptions. The ISTS also includes LCO Notes that allow exceptions to the LCO for the performance of testing or other operational needs. The ISTS provides the protection required by the safety analysis and provides flexibility for meeting the conditions without adversely affecting operations since equivalent features are required to be OPERABLE. The proposed changes may also be consistent with the current licensing basis, as identified in the discussion of individual changes. These changes are generally made to conform to NUREG-1431 or more accurately reflect the current licensing basis and have been evaluated to not be detrimental to plant safety.

The proposed changes are acceptable because they have been determined to be applicable to the BVPS design and consistent with the assumptions of the BVPS safety analyses. The effect of each change relative to the safe operation of the plant was evaluated in the discussion associated with the change. In addition, the proposed changes that are consistent with the ISTS have been previously evaluated by Westinghouse Electric Corp., the Westinghouse Owners Group, NEI, and the NRC in developing the ISTS and found not to adversely affect the safe operation of Westinghouse plants. In the Final Policy Statement on Technical Specification Improvements for Nuclear Power Reactors (58 FR 39132, 7/22/93), the NRC encourages licensees to update their Technical Specifications consistent with their vendor-specific ISTS and endorses the implementation of these new Technical Specifications by stating that implementation of the ISTS is expected to produce an improvement in the safety of nuclear power plants. Furthermore, the provisions of the ISTS have been adopted by many Westinghouse plants over the last 10 years. The combined operating experience of the plants that have implemented the ISTS also serves to demonstrate that the provisions of the ISTS do not adversely affect the safe operation of Westinghouse plants.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 1
RELAXATION OF LCO REQUIREMENTS
(continued)

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

The proposed change provides less restrictive LCO requirements for operation of the facility. The effect of the change relative to the safe operation of the plant was evaluated in the discussion associated with the change. The change has been determined not to adversely affect the safe operation of the plant. In addition, changes that are consistent with the ISTS have been previously evaluated and found not to adversely affect the safe operation of Westinghouse plants. Based on the conclusions of the plant specific evaluation associated with the change and the evaluation performed in developing the ISTS, the proposed change does not result in operating conditions that will significantly increase the probability of initiating an analyzed event. In addition, the proposed change was evaluated to assure that it does not alter the safety analysis assumptions relative to mitigation of an accident or transient event and that the resulting requirements continue to ensure the necessary process variables, structures, systems, and components are maintained operable consistent with the safety analyses. As such the proposed change also does not result in operating conditions that will significantly increase the consequences of an analyzed event. Therefore, the change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. The proposed change does impose different requirements. However, the change is consistent with the assumptions in the safety analyses and licensing basis. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The effect of the change relative to the safe operation of the plant was evaluated in the discussion associated with the change. The change has been determined not to adversely affect the safe operation of the plant. In addition, changes that are consistent with the ISTS have been previously evaluated and found not to adversely affect the safe operation of Westinghouse plants. Based on the conclusions of the plant specific evaluation associated with each change and the evaluation performed in developing the ISTS, the change has been determined to maintain plant operation within the assumptions of the applicable safety analyses. As such, the change does not result in operating conditions that significantly reduce any margin of safety. Therefore, the change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 2

RELAXATION OF APPLICABILITY

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve relaxation of the applicability of current Technical Specification (CTS) Limiting Conditions for Operation (LCOs) by reducing the conditions under which the LCO requirements must be met.

Technical Specification Applicability can be specific defined terms of reactor conditions or more general (e.g., all MODES or any operating MODE). Such generalized applicability conditions are not contained in ISTS, therefore the ISTS eliminates such Applicability requirements replacing them with ISTS defined MODES or specific reactor or plant conditions that are consistent with the safety analysis assumptions for operability of the required features.

Applicability requirements may also be eliminated during conditions for which the safety function of the specified safety system is met because the feature is performing its intended safety function (e.g. actuation instrumentation may no longer be required for an isolation valve already in its required safety position). Deleting applicability requirements that are indeterminate or that are inconsistent with the application of accident analyses assumptions is acceptable because when LCOs cannot be met, the Technical Specifications may be satisfied by exiting the applicability which takes the plant out of the conditions that require the safety system to be OPERABLE.

These changes provide the protection required by the safety analysis and provide flexibility for meeting limits by restricting the application of the limits to the conditions assumed in the safety analyses. The proposed changes may also be consistent with the current licensing basis, as identified in the discussion of individual changes. These changes are generally made to conform to NUREG-1431 or more accurately reflect the current licensing basis and have been evaluated to not be detrimental to plant safety.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 2
RELAXATION OF APPLICABILITY
(continued)

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

   The proposed change relaxes the conditions under which the LCO requirements for operation of the facility must be met. These less restrictive applicability requirements for the LCOs do not result in operation that will increase the probability of initiating an analyzed event and do not alter assumptions relative to mitigation of an accident or transient event in that the requirements continue to ensure that process variables, structures, systems, and components are maintained in the MODES and other specified conditions assumed in the safety analyses and licensing basis. Therefore, this change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. The proposed change does impose different requirements. However, the requirements are consistent with the assumptions in the safety analyses and licensing basis. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

   The relaxed applicability of LCO requirements does not involve a significant reduction in the margin of safety. This change has been evaluated to ensure that the LCO requirements are applied in the MODES and specified conditions assumed in the safety analyses and licensing basis. Therefore, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 3

RELAXATION OF COMPLETION TIME

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve relaxation of the Completion Times for Required Actions in the current Technical Specifications (CTS).

Upon discovery of a failure to meet a Limiting Condition for Operation (LCO), the ISTS specifies times for completing Required Actions of the associated Technical Specification Conditions. Required Actions of the associated Conditions are used to establish remedial measures that must be taken within specified Completion Times (referred to as Allowed Outage Times (AOTs) in the CTS). These times define limits during which operation in a degraded condition is permitted. Adopting Completion Times from the ISTS is acceptable because the Completion Times take into account the operability status of the redundant systems of required features, the capacity and capability of remaining features, a reasonable time for repairs or replacement of required features, and the low probability of a design basis accident occurring during the repair period. In addition, the ISTS provides consistent Completion Times for similar conditions. These changes are generally made to conform to NUREG-1431 and have been evaluated to not be detrimental to plant safety.

The effect of each change relative to the safe operation of the plant was evaluated in the discussion associated with the change. In addition, the proposed changes that are consistent with the ISTS have been previously evaluated by Westinghouse Electric Corp., the Westinghouse Owners Group, NEI, and the NRC in developing the ISTS and found not to adversely affect the safe operation of Westinghouse plants. In the Final Policy Statement on Technical Specification Improvements for Nuclear Power Reactors (58 FR 39132, 7/22/93), the NRC encourages licensees to update their Technical Specifications consistent with their vendor-specific ISTS and endorses the implementation of these new Technical Specifications by stating that implementation of the ISTS is expected to produce an improvement in the safety of nuclear power plants. Furthermore, the provisions of the ISTS have been adopted by many Westinghouse plants over the last 10 years. The combined operating experience of the plants that have implemented the ISTS also serves to demonstrate that the provisions of the ISTS do not adversely affect the safe operation of Westinghouse plants.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 3
RELAXATION OF COMPLETION TIME
(continued)

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

The proposed change provides a less restrictive Completion Time for a Required Action. The effect of the change relative to the safe operation of the plant was evaluated in the discussion associated with the change. The change has been determined not to adversely affect the safe operation of the plant. Required Actions and their associated Completion Times are not initiating conditions for any accident previously evaluated. In addition, changes that are consistent with the ISTS have been previously evaluated and found not to adversely affect the safe operation of Westinghouse plants or the initiation of any accident previously evaluated. Based on the conclusions of the plant specific evaluation associated with the change and the evaluation performed in developing the ISTS, the proposed change does not result in operating conditions that will significantly increase the probability of initiating an analyzed event. In addition, the proposed change was evaluated to assure that it does not alter the safety analysis assumptions relative to mitigation of an accident or transient event and that the resulting requirements continue to ensure the necessary process variables, structures, systems, and components are maintained operable consistent with the safety analyses or that the plant is placed in an operating Mode where the process variable, structure, system, or component is no longer required operable. The consequences of an analyzed accident during the relaxed Completion Time are the same as the consequences during the existing Completion Time (i.e., initial plant conditions are the same). As a result, the consequences of any accident previously evaluated are not significantly increased. As such, the proposed change also does not result in operating conditions that will significantly increase the consequences of an analyzed event. Therefore, the change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the method governing normal plant operation. The Required Actions and associated Completion Times in the ISTS have been evaluated to ensure that no new accident initiators are introduced. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 3
RELAXATION OF COMPLETION TIME
(continued)

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

The effect of the change relative to the safe operation of the plant was evaluated in the discussion associated with the change. The change has been determined not to adversely affect the safe operation of the plant. In addition, changes that are consistent with the ISTS have been previously evaluated and found not to adversely affect the safe operation of Westinghouse plants. Based on the conclusions of the plant specific evaluation associated with each change and the evaluation performed in developing the ISTS, the change has been determined to maintain plant operation within the assumptions of the applicable safety analyses. As such, the change does not result in operating conditions that significantly reduce any margin of safety. Therefore, the change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 4

RELAXATION OF REQUIRED ACTION

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve relaxation of the Required Actions in the current Technical Specifications (CTS).

Upon discovery of a failure to meet a Limiting Condition for Operation (LCO), the ISTS specifies Required Actions to complete for the associated Conditions. Required Actions of the associated Conditions are used to establish remedial measures that must be taken in response to the degraded conditions. These actions minimize the risk associated with continued operation while providing time to repair inoperable features. Some of the Required Actions are modified to place the plant in a MODE in which the LCO does not apply. Adopting Required Actions from the ISTS is acceptable because the Required Actions take into account the operability status of redundant systems of required features, the capacity and capability of the remaining features, and the compensatory attributes of the Required Actions as compared to the LCO requirements. These changes are generally made to conform to NUREG-1431 and have been evaluated to not be detrimental to plant safety.

The effect of each change relative to the safe operation of the plant was evaluated in the discussion associated with the change. In addition, the proposed changes that are consistent with the ISTS have been previously evaluated by Westinghouse Electric Corp., the Westinghouse Owners Group, NEI, and the NRC in developing the ISTS and found not to adversely affect the safe operation of Westinghouse plants. In the Final Policy Statement on Technical Specification Improvements for Nuclear Power Reactors (58 FR 39132, 7/22/93), the NRC encourages licensees to update their Technical Specifications consistent with their vendor-specific ISTS and endorses the implementation of these new Technical Specifications by stating that implementation of the ISTS is expected to produce an improvement in the safety of nuclear power plants. Furthermore, the provisions of the ISTS have been adopted by many Westinghouse plants over the last 10 years. The combined operating experience of the plants that have implemented the ISTS also serves to demonstrate that the provisions of the ISTS do not adversely affect the safe operation of Westinghouse plants.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 4
RELAXATION OF REQUIRED ACTION
(continued)

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

The proposed change provides less restrictive Required Actions for operation of the facility. The effect of the change relative to the safe operation of the plant was evaluated in the discussion associated with the change. The change has been determined not to adversely affect the safe operation of the plant. Required Actions are not initiating conditions for any accident previously evaluated. In addition, changes that are consistent with the ISTS have been previously evaluated and found not to adversely affect the safe operation of Westinghouse plants. Based on the conclusions of the plant specific evaluation associated with the change and the evaluation performed in developing the ISTS, the proposed change does not result in operating conditions that will significantly increase the probability of initiating an analyzed event. The proposed change was also evaluated to assure that it does not alter the safety analysis assumptions relative to mitigation of an accident or transient event and that the resulting requirements continue to ensure the necessary process variables, structures, systems, and components are maintained operable consistent with the safety analyses or that the plant is placed in an operating Mode where the process variable, structure, system, or component is no longer required operable. In addition, the proposed change provides the appropriate remedial actions to be taken in response to the degraded condition considering the operability status of the redundant systems of required features, and the capacity and capability of remaining features while minimizing the risk associated with continued operation. As such the proposed change also does not result in operating conditions that will significantly increase the consequences of an analyzed event. Therefore, the change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. The Required Actions in the ISTS have been evaluated to ensure that no new accident initiators are introduced. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 4
RELAXATION OF REQUIRED ACTION
(continued)

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

The effect of the change relative to the safe operation of the plant was evaluated in the discussion associated with the change. The change has been determined not to adversely affect the safe operation of the plant. In addition, changes that are consistent with the ISTS have been previously evaluated and found not to adversely affect the safe operation of Westinghouse plants. Based on the conclusions of the plant specific evaluation associated with each change and the evaluation performed in developing the ISTS, the change has been determined to maintain plant operation within the assumptions of the applicable safety analyses. As such, the change does not result in operating conditions that significantly reduce any margin of safety. Therefore, the change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 5

DELETION OF SURVEILLANCE REQUIREMENT

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve deletion of Surveillance Requirements in the current Technical Specifications (CTS).

The CTS require safety systems to be tested and verified Operable prior to entering applicable operating conditions. The ISTS eliminates unnecessary CTS Surveillance Requirements that do not contribute to verification that the equipment used to meet the Limiting Condition for Operation (LCO) can perform its required functions. Therefore, appropriate equipment continues to be tested in a manner and at a frequency necessary to give confidence that the equipment can perform its assumed safety function. These changes are generally made to conform to NUREG-1431 and have been evaluated to not be detrimental to plant safety.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change deletes Surveillance Requirements. Surveillances are not initiators to any accident previously evaluated. Consequently, the probability of an accident previously evaluated is not significantly increased. The equipment specified in the LCO is still required to be OPERABLE and capable of performing the accident mitigation functions assumed in the accident analysis. As a result, the consequences of any accident previously evaluated are not significantly affected. Therefore, this change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. The remaining Surveillance Requirements are consistent with industry practice and are considered to be sufficient to prevent the removal of the subject Surveillances from creating a new or different type of accident. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 5
DELETION OF SURVEILLANCE REQUIREMENT
(continued)

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

The deleted Surveillance Requirements do not result in a significant reduction in the margin of safety. The change has been evaluated to ensure that the deleted Surveillance Requirements are not necessary for verification that the equipment used to meet the LCO can perform its required functions. Therefore, appropriate equipment continues to be tested in a manner and at a frequency necessary to give confidence that the equipment can perform its assumed safety function. Therefore, *this change does not involve a significant reduction in a margin of safety.*

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 6

RELAXATION OF SURVEILLANCE REQUIREMENT ACCEPTANCE CRITERIA

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve the relaxation of Surveillance Requirements acceptance criteria in the current Technical Specifications (CTS).

The CTS require safety systems to be tested and verified Operable prior to entering applicable operating conditions. The ISTS eliminates or relaxes the Surveillance Requirement acceptance criteria that do not contribute to verification that the equipment used to meet the Limiting Condition for Operation (LCO) can perform its required functions. For example, the ISTS allows some Surveillance Requirements to verify Operability under actual or test conditions. Adopting the ISTS allowance for "actual" conditions is acceptable because required features cannot distinguish between an "actual" signal and a "test" signal. Also included are changes to CTS requirements that are replaced in the ITS with separate and distinct testing requirements which, when combined, include Operability verification of all Technical Specification required components for the features specified in the CTS. Adopting this format preference in the ISTS is acceptable because Surveillance Requirements that remain include testing of all previous features required to be verified OPERABLE. Changes that provide exceptions to Surveillance Requirements to provide for variations that do not affect the results of the test are also included in this category. These changes are generally made to conform to NUREG-1431 and have been evaluated to not be detrimental to plant safety.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change relaxes the acceptance criteria of Surveillance Requirements. Surveillances are not initiators to any accident previously evaluated. Consequently, the probability of an accident previously evaluated is not significantly increased. The equipment being tested is still required to be OPERABLE and capable of performing the accident mitigation functions assumed in the accident analysis. As a result, the consequences of any accident previously evaluated are not significantly affected. Therefore, this change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 6
RELAXATION OF SURVEILLANCE REQUIREMENT ACCEPTANCE CRITERIA
(continued)

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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

   The relaxed acceptance criteria for Surveillance Requirements do not result in a significant reduction in the margin of safety. The relaxed Surveillance Requirement acceptance criteria have been evaluated to ensure that they are sufficient to verify that the equipment used to meet the LCO can perform its required functions. Therefore, appropriate equipment continues to be tested in a manner that gives confidence that the equipment can perform its assumed safety function. Therefore, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 7

RELAXATION OF SURVEILLANCE FREQUENCY

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve the relaxation of Surveillance Frequencies in the current Technical Specifications (CTS).

CTS and ISTS Surveillance Frequencies specify time interval requirements for performing surveillance testing. Increasing the time interval between Surveillance tests in the ISTS results in decreased equipment unavailability due to testing which also increases equipment availability. In general, the ISTS contain test frequencies that are consistent with industry practice or industry standards for achieving acceptable levels of equipment reliability. Adopting testing practices specified in the ISTS is acceptable based on similar design, like-component testing for the system application and the availability of other Technical Specification requirements which provide regular checks to ensure limits are met. Relaxation of Surveillance Frequency may also include changes such as the addition of Surveillance Notes which allow testing to be delayed until appropriate unit conditions for the test are established, or exempt testing in certain MODES or specified conditions in which the testing can not be performed.

Reduced testing can result in a safety enhancement because the unavailability due to testing is reduced and; in turn, reliability of the affected structure, system or component should remain constant or increase. Reduced testing is acceptable where operating experience, industry practice or the industry standards such as manufacturers' recommendations have shown that these components usually pass the Surveillance when performed at the specified interval, therefore the frequency is acceptable from a reliability standpoint. Surveillance Frequency changes to incorporate alternate train testing have been shown to be acceptable where other qualitative or quantitative test requirements are required which are established predictors of system performance. Surveillance Frequency extensions can be based on NRC-approved topical reports. The NRC staff has accepted topical report analyses that bound the plant-specific design and component reliability assumptions. These changes are generally made to conform to NUREG-1431 and have been evaluated to not be detrimental to plant safety.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change relaxes Surveillance Frequencies. The relaxed Surveillance Frequencies have been established based on achieving acceptable levels of equipment reliability.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 7
RELAXATION OF SURVEILLANCE FREQUENCY
(continued)

Consequently, equipment which could initiate an accident previously evaluated will continue to operate as expected and the probability of the initiation of any accident previously evaluated will not be significantly increased. The equipment being tested is still required to be OPERABLE and capable of performing any accident mitigation functions assumed in the accident analysis. As a result, the consequences of any accident previously evaluated are not significantly affected. Therefore, this change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

   The relaxed Surveillance Frequencies do not result in a significant reduction in the margin of safety. The relaxation in the Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. Thus, appropriate equipment continues to be tested at a Frequency that gives confidence that the equipment can perform its assumed safety function when required. Therefore, this change does not involve a significant reduction in a margin of safety.

BVPS CONVERSION TO IMPROVED STANDARD
TECHNICAL SPECIFICATIONS (ISTS)

SECTION 3.9 REFUELING OPERATIONS

ENCLOSURES

1. MARKUP OF THE ISTS TO SHOW THE BVPS DIFFERENCE AND JUSTIFICATION FOR THE DEVIATION (JFD) FROM THE STANDARD

2. MARKUP OF THE ISTS BASES TO SHOW THE BVPS DIFFERENCE AND JFD FROM THE STANDARD

3. MARKUP OF THE CURRENT BVPS TECHNICAL SPECIFICATIONS (CTS) TO SHOW CHANGES AND DISCUSSION OF CHANGES (DOCs)

4. NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC) FOR CHANGES MADE TO THE CTS

ENCLOSURE 1

CHANGES TO THE ISTS

MARKUPS TO SHOW BVPS PLANT SPECIFIC DIFFERENCES
&
JUSTIFICATION FOR DEVIATION (JFD)
FROM THE STANDARD TS

Introduction

This enclosure contains the markup of the Improved Standard Technical Specifications (ISTS) to show the changes necessary to make the ISTS document specific to BVPS Units 1 and 2. Changes to the ISTS are identified with a number. The number is associated with a JFD that describes the reason for the change. The markup of the ISTS is followed by a document containing the numbered JFDs for the changes made to each of the ISTS. Not every change to the ISTS is identified and explained by a JFD. Changes that simply insert current Technical Specification (CTS) information into bracketed (optional) ISTS text are not identified with a separate JFD. Bracketed ISTS text identifies specific text that is to be replaced with the corresponding CTS information. Therefore, such changes to the ISTS are self-explanatory and represent the simple transference of CTS requirements to the ISTS. Other changes to the ISTS (i.e., less obvious changes) are described by a JFD.

As the BVPS Unit 1 & 2 Technical Specifications (TS) are being combined into a single set of TS, one markup of each ISTS is usually provided for both Units 1 and 2. In cases where significant Unit differences make separate Unit 1 and 2 TS desirable to preserve the presentation and clarity of the TS requirements, separate Unit specific TS are included. Unit differences are identified in each ISTS.

In addition, the ISTS in this enclosure are marked (where applicable) to show the changes to the standard text resulting from the Industry/NRC TS Task Force (TSTF) process. The TSTF revisions to the standard are marked-up and identified with the applicable TSTF number (i.e., TSTF-03, TSTF-19, etc.). Each TSTF change has its own justification associated with it as part of the Industry/NRC process. The TSTF justifications are not repeated in the BVPS ISTS conversion documentation.

The following Table contains the list of the ISTS and the corresponding BVPS CTS for this section along with the resulting BVPS specific ITS for the section. The Table provides a summary disposition of the ISTS and the CTS for this Section.

SECTION 3.9 REFUELING OPERATIONS

ISTS	BVPS ITS	CTS
3.9.1 Boron Concentration	3.9.1 Boron Concentration	3.9.1 Boron Concentration
3.9.2 Unborated Water Source Isolation Valves	3.1.8 Unborated Water Source Isolation Valves (1)	3.1.2.9 Isolation of Unborated Water Sources – Shutdown (1)
3.9.3 Nuclear Instrumentation	3.9.2 Nuclear Instrumentation	3.9.2 Instrumentation
N/A	N/A	3.9.3 Decay Time (2)

2

SECTION 3.9 REFUELING OPERATIONS

ISTS	BVPS ITS	CTS
3.9.4 Containment Penetrations	3.9.3 Containment Penetrations	3.9.4 Containment Building Penetrations
N/A	N/A	3.9.5 – 3.9.7 Specification #s not used.
3.9.5 RHR and Coolant Circulation – High Water Level	3.9.4 RHR and Coolant Circulation – High Water Level	3.9.8.1 RHR and Coolant Circulation (all levels)
3.9.6 RHR and Coolant Circulation – Low Water Level	3.9.5 RHR and Coolant Circulation – Low Water Level	3.9.8.2 RHR and Coolant Circulation – Low Water Level
N/A	N/A	3.9.9 Containment Purge and Exhaust Isolation System(3)
3.9.7 Refueling Cavity Water Level	3.9.6 Refueling Cavity Water Level	3.9.10 Water Level
N/A	N/A	3.9.11 Storage Pool Water Level(4)
N/A	N/A	3.9.12 Fuel Building Ventilation System - Fuel Movement(4)
N/A	N/A	3.9.13 Specification # not used.
N/A	N/A	3.9.14 Spent Fuel Pool Storage(4)
N/A	N/A	3.9.15 Fuel Storage Pool Boron Concentration (Unit 2 only)(4)

1. The ISTS 3.9.2 "Unborated Water Source Isolation Valves" is applicable solely in Mode 6. The corresponding BVPS CTS is applicable in Modes 4, 5, and 6 and is located in Section 3.1 "Reactivity Control Systems". The ISTS refueling section contains only TS that are applicable solely in Mode 6. In the ISTS, TS applicable in Mode 6 and other Modes are placed in other TS sections (e.g., Fuel Storage Pool Level is located in the Plant Systems section). Consistent with the CTS, the BVPS ITS version of this TS will continue to be located in Section 3.1.
2. Consistent with the content of the ISTS the CTS Decay Time requirements are removed from the TS. These requirements will be contained within the Licensing Requirements Manual.
3. Consistent with the location of this TS in the ISTS, CTS 3.9.9 "Containment Purge and Exhaust Isolation System" is moved into Section 3.3 "Instrumentation".
4. Consistent with the location of these TS in the ISTS, they are moved into Section 3.7 "Plant Systems".

3.9 REFUELING OPERATIONS

3.9.1 Boron Concentration

(RCS)

LCO 3.9.1 Boron concentrations of the Reactor Coolant System, the refueling canal, and the refueling cavity shall be maintained within the limit specified in the COLR.

APPLICABILITY: MODE 6.

1

- NOTE -
Only applicable to the refueling canal ~~and refueling canal~~ and refueling cavity when connected to the RCS.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Boron concentration not within limit.	A.1 Suspend CORE ALTERATIONS.	Immediately
	<u>AND</u>	
	A.2 Suspend positive reactivity additions.	Immediately
	<u>AND</u>	
	A.3 Initiate action to restore boron concentration to within limit.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.1.1	Verify boron concentration is within the limit specified in the COLR.	72 hours

3.9 REFUELING OPERATIONS

3.9.2 [Unborated Water Source Isolation Valves]

- REVIEWER'S NOTE -
This Technical Specification is not required for units that have analyzed a boron dilution event in MODE 6. It is required for those units that have not analyzed a boron dilution event in MODE 6. For units which have not analyzed a boron dilution event in MODE 6, the isolation of all unborated water sources is required to preclude this event from occurring.

LCO 3.9.2 Each valve used to isolate unborated water sources shall be secured in the closed position.

APPLICABILITY: MODE 6.

ACTIONS

- NOTE -
Separate Condition entry is allowed for each unborated water source isolation valve.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. **- NOTE -** Required Action A.3 must be completed whenever Condition A is entered. One or more valves not secured in closed position.	A.1 Suspend CORE ALTERATIONS. <u>AND</u> A.2 Initiate actions to secure valve in closed position. <u>AND</u> A.3 Perform SR 3.9.1.1.	Immediately Immediately 4 hours

1

This TS moved to Section 3.1, "Reactivity Control". Changes to this TS are identified in Section 3.1.8

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.9.2.1	Verify each valve that isolates unborated water sources is secured in the closed position.	31 days

1

This TS moved to Section 3.1, "Reactivity Control". Changes to this TS are identified in Section 3.1.8

2

3.9 REFUELING OPERATIONS

3.9.3 Nuclear Instrumentation

2

LCO 3.9.3 Two source range neutron flux monitors shall be OPERABLE.

1

~~AND~~

~~[One source range audible [alarm] [count rate] circuit shall be OPERABLE.]~~

APPLICABILITY: MODE 6.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One {required} source range neutron flux monitor inoperable.	A.1 Suspend CORE ALTERATIONS. AND A.2 Suspend operations that would cause introduction of coolant into the RCS~~, coolant~~ with boron concentration less than required to meet the boron concentration of LCO 3.9.1.	Immediately Immediately
B. Two {required} source range neutron flux monitors inoperable.	B.1 Initiate action to restore one source range neutron flux monitor to OPERABLE status. AND B.2 Perform SR 3.9.1.1.	Immediately Once per 12 hours

Rev 3

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
- REVIEWER'S NOTE - Condition C is included only for plants that assume a boron dilution event is mitigated by operator response to an audible source range indication. C. [Required source range audible [alarm] [count rate] circuit inoperable.	C.1 Initiate action to isolate unborated water sources.	Immediately]

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.3.1	Perform CHANNEL CHECK.	12 hours
SR 3.9.3.2 2	- NOTE - Neutron detectors are excluded from CHANNEL CALIBRATION. Perform CHANNEL CALIBRATION.	[18] months

3.9 REFUELING OPERATIONS

3.9.4 3 Containment Penetrations

LCO 3.9.4 The containment penetrations shall be in the following status:

a. The equipment is hatch closed and held in place by {four} bolts, 2

b. One door in each air lock is ~~{capable of being}~~ closed, and

Unit 2 only.

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere is either:

1. Closed by a manual or automatic isolation valve, blind flange, or equivalent or

2. Capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System.

3

, and

3. Unit 1 only. The Containment Purge and Exhaust System penetrations may be open when the system airflow is exhausted to an OPERABLE filtered Supplemental Leak Collection and Release System train.

5

~~- NOTE -~~
~~Penetration flow path(s) providing direct access from the containment atmosphere to the outside atmosphere may be unisolated under administrative controls.~~

APPLICABILITY: During movement of {recently} irradiated fuel assemblies within containment.

, and
During movement of fuel assemblies over recently irradiated fuel assemblies within containment.

1

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more containment penetrations not in required status.	A.1 Suspend movement of ~~{recently}~~ irradiated fuel assemblies within containment.	Immediately
	AND A.2 Suspend movement of fuel assemblies over recently irradiated fuel assemblies within containment.	Immediately

3

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.4.1 [2] [3]	Verify each required containment penetration is in the required status.	7 days
SR 3.9.4.2 [3]	- NOTE - [S] Not required to be met for containment purge and exhaust valve(s) in penetrations closed to comply with LCO 3.9.4.c.1. [3] Verify each required containment purge and exhaust valve actuates to the isolation position on an actual or simulated actuation signal.	[18] months

1. Only applicable to [Unit 2]
2.

3

SR 3.9.3.4	NOTES 1. Only applicable to Unit 2 2. Not required to be met for containment purge and exhaust valve(s) in penetrations closed to comply with LCO 3.9.3.c.1. Verify the isolation time of each containment purge and exhaust valve is within limit.	18 months

6

SR 3.9.3.1	NOTES 1. Only applicable to Unit 2. 2. Only required to be met when operating the Containment Purge and Exhaust System in accordance with LCO 3.9.3.c.2. Verify the containment purge exhaust flow rate is ≤ 7500 cfm.	24 hours

4

3.9 REFUELING OPERATIONS

3.9.5 4 Residual Heat Removal (RHR) and Coolant Circulation – High Water Level

LCO 3.9.5 One RHR loop shall be OPERABLE and in operation.

TSTF-438 removed from s (RCS)

3 INSERT NOTE 3

Rev 3 of coolant

-NOTE

1. The required RHR loop may be ~~not in~~ operation for ≤ 1 hour per 8 hour period, provided no operations are permitted that would cause introduction into the Reactor Coolant System~~, coolant~~ with boron concentration less than that required to meet the minimum required boron concentration of LCO 3.9.1.

2. The required RHR loop may be removed from operation for ≤ 4 hours per 8 hour period during the performance of Ultrasonic In-service Inspection inside the reactor vessel nozzles, provided no operations are permitted that would cause introduction into the RCS, coolant with boron concentration less than that required to meet the minimum required boron concentration of LCO 3.9.1.

1

APPLICABILITY: MODE 6 with the water level ≥ 23 ft above the top of reactor vessel flange.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. RHR loop requirements not met.	A.1	Suspend operations that would cause introduction into the RCS~~, coolant~~ with boron concentration less than required to meet the boron concentration of LCO 3.9.1.	Immediately
	AND		
	A.2	Suspend loading irradiated fuel assemblies in the core.	Immediately
	AND		
	A.3	Initiate action to satisfy RHR loop requirements.	Immediately
	AND		

of coolant Rev 3

4

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	A.4 Close equipment hatch and secure with {four} bolts.	4 hours
	<u>AND</u>	
	A.5 Close one door in each air lock.	4 hours
	<u>AND</u>	
	A.6.1 Close each penetration providing direct access from the containment atmosphere to the outside atmosphere with a manual or automatic isolation valve, blind flange, or equivalent.	4 hours
	<u>OR</u>	
	A.6.2 Verify each penetration is capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System.	4 hours

SURVEILLANCE REQUIREMENTS

2

4

	SURVEILLANCE	FREQUENCY
SR 3.9.5.1	Verify one RHR loop is in operation ~~and circulating reactor coolant at a flow rate of ≥ [2800] gpm~~.	12 hours

INSERT ITS 3.9.4 LCO NOTE 3

3. The RHR loop required to be in operation may be removed from operation to support draining of the reactor cavity when aligned to, and during realignment to and from, the refueling water storage tank provided the required RHR loop is capable of being realigned to the RCS.

3.9 REFUELING OPERATIONS

3.9.6 Residual Heat Removal (RHR) and Coolant Circulation – Low Water Level

5

LCO 3.9.6 Two RHR loops shall be OPERABLE, and one RHR loop shall be in operation.

TSTF-438

removed from operation

- NOTES -

Rev 3

1. All RHR pumps may be ~~de-energized~~ for ≤ 15 minutes when switching from one train to another provided:

   a. The core outlet temperature is maintained > 10 degrees F below saturation temperature,

introduction of coolant into the Reactor Coolant System (RCS) with boron concentration less than that required to meet the minimum required boron concentration of LCO 3.9.1

   b. No operations are permitted that would cause ~~a reduction of the Reactor Coolant System boron concentration~~, and

   c. No draining operations to further reduce RCS water volume are permitted.

3

INSERT NOTE 3

2. One required RHR loop may be inoperable for up to 2 hours for surveillance testing, provided that the other RHR loop is OPERABLE and in operation.

APPLICABILITY: MODE 6 with the water level < 23 ft above the top of reactor vessel flange.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Less than the required number of RHR loops OPERABLE.	A.1 Initiate action to restore required RHR loops to OPERABLE status. OR A.2 Initiate action to establish ≥ 23 ft of water above the top of reactor vessel flange.	Immediately Immediately

5

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. No RHR loop in operation.	B.1	Suspend operations that would cause introduction of coolant into the RCS~~,~~ ~~coolant~~ with boron concentration less than required to meet the boron concentration of LCO 3.9.1.	Immediately
	<u>AND</u>		
	B.2	Initiate action to restore one RHR loop to operation.	Immediately
	<u>AND</u>		
	B.3	Close equipment hatch and secure with [four] bolts.	4 hours
	<u>AND</u>		
	B.4	Close one door in each air lock.	4 hours
	<u>AND</u>		
	B.5.1	Close each penetration providing direct access from the containment atmosphere to the outside atmosphere with a manual or automatic isolation valve, blind flange, or equivalent.	4 hours
		<u>OR</u>	

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5

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
	B.5.2 Verify each penetration is capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System.	4 hours

SURVEILLANCE REQUIREMENTS

1

SURVEILLANCE		FREQUENCY
SR 3.9.6.1	Verify one RHR loop is in operation ~~and circulating reactor coolant at a flow rate of ≥ [2800] gpm~~.	12 hours
SR 3.9.6.2	Verify correct breaker alignment and indicated power available to the required RHR pump that is not in operation.	7 days

5

2

NOTE
Not required to be performed until 7 days after a required pump is removed from service.

5

16

INSERT ITS 3.9.5 LCO NOTE 3

3. The RHR loop required to be in operation may be removed from operation to support draining of the reactor cavity when aligned to, and during realignment to and from, the refueling water storage tank provided the required RHR loop is capable of being realigned to the RCS.

3.9 REFUELING OPERATIONS

3.9.~~7~~ 6 Refueling Cavity Water Level

LCO 3.9.~~7~~ 6 Refueling cavity water level shall be maintained ≥ 23 ft above the top of reactor vessel flange.

APPLICABILITY: During movement of irradiated fuel assemblies within containment~~.~~ ,and During movement of fuel assemblies over irradiated fuel assemblies within the containment.

1

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Refueling cavity water level not within limit.	A.1 Suspend movement of irradiated fuel assemblies within containment. **AND** A.2 Suspend movement of fuel assemblies over irradiated fuel assemblies within containment.	Immediately Immediately 1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.9.~~7~~ 6.1	Verify refueling cavity water level is ≥ 23 ft above the top of reactor vessel flange.	24 hours

3.9 Refueling Operations

JUSTIFICATIONS FOR DEVIATION

ITS 3.9.1 Boron Concentration

JUSTIFICATION FOR DEVIATION (JFD)

1. The Applicability note is revised to correct a typographical error consistent with TSTF-272, Rev. 1. The repetition of "refueling canal" is deleted from the note. This change was incorporated in NUREG-1431, Rev. 3.

ISTS [3.9.2] Unborated Water Source Isolation Valves
(Moved to Section 3.1)

JUSTIFICATION FOR DEVIATION (JFD)

1. This ISTS is intended for plants that preclude a Mode 6 boron dilution accident by isolating unborated water sources. However, BVPS utilizes isolation of unborated water sources to prevent dilution in Modes 4 and 5 in addition to Mode 6. The current BVPS Unit 1 and 2 Technical Specifications (CTS) 3/4.1.2.9, "Isolation of Unborated Water Sources – Shutdown" require that unborated water source isolation valves be secured closed in Modes 4, and 5, as well as Mode 6. Therefore, the BVPS specific version of this ISTS will be applicable in more than just Mode 6. In the ISTS, TS that are applicable in other Modes (in addition to Mode 6) are typically located outside of Section 3.9, "Refueling Operations". This includes such TS as refueling ventilation systems and fuel pool storage requirements. Therefore, in order to keep the unborated water isolation valve requirements in one TS (that will be applicable in Modes 4, 5, and 6) the BVPS version of this TS will be located in Section 3.1, "Reactivity Control Systems" consistent with the current location of the unborated water source isolation valve requirements in the CTS.

ITS 3.9.2 Nuclear Instrumentation

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS LCO requirement and corresponding Action for the audible alarm or count rate are deleted from the BVPS specific version of this TS. As stated in the ISTS, the TS requirements for audible neutron flux indication (alarm or count rate) are based on boron dilution accident analysis assumptions that rely on audible indication to initiate operator action to mitigate a dilution accident. BVPS does not analyze boron dilution accidents in Modes 4, 5, or 6. Instead of analyzing a boron dilution accident, BVPS requires that unborated water sources isolation valves be secured closed during these modes to prevent a boron dilution accident. Therefore, the ISTS requirements regarding audible neutron flux indication are not applicable to BVPS and have been deleted.

ITS 3.9.3 Containment Penetrations

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS applicability and Actions are revised to be consistent with the CTS by the addition of "During movement of fuel assemblies over recently irradiated fuel assemblies within containment". This addition is necessary based on the BVPS fuel handling accident analysis. The fuel drop analysis determined that damage to a struck fuel assembly would result in fuel rod failure. The movement of any fuel assembly could result in a radiological release that may require containment closure if that assembly was dropped and struck a recently irradiated fuel assembly. Therefore, consistent with the CTS requirements as previously approved by the NRC the ISTS applicability and corresponding Action are revised to address this situation.
2. The ISTS option (bracketed) for an air lock door to be "capable of being closed" instead of closed is deleted. The option to leave the air lock door open requires confirmatory radiological dose calculations for a design basis fuel handling accident that show acceptable radiological consequences with the air lock door open. This TS is only applicable when moving recently irradiated fuel assemblies and BVPS does not have a fuel handling accident analyses for recently irradiated fuel that supports leaving the air lock door open. Therefore, this option is not included in the BVPS specific implementation of this ISTS.
3. The ITS LCO requirement 3.9.3.c.2 that specifies each penetration providing direct access from the containment atmosphere to the outside atmosphere be capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System and the associated surveillance requirement (ITS SR 3.9.3.3) are revised to be consistent with the design and licensing bases associated with BVPS Units 1 and 2. The proposed revisions to the ISTS include the following additions to the LCO 3.9.3.c. requirement:

    a) The requirement to be capable of being closed by an operable Containment Purge and Exhaust System and the surveillance to verify isolation valve actuation are made applicable to Unit 2 only, and

    b) A provision is added for Unit 1 only (3.9.3.c.3) that allows the Purge and Exhaust System penetrations to be open when the system air is exhausted to an OPERABLE Supplemental Leak Collection and Release System (SLCRS) train.

    The most recent BVPS safety analysis for a fuel handling accident inside containment is based on moving irradiated fuel after 100 hours decay time. The most recent analysis show that no containment closure or filtration of purge exhaust is necessary to mitigate a design bases fuel handling accident that occurs after 100 hours of decay time. As such, the containment closure requirements of ITS 3.9.3 are only applicable when moving fuel with less than 100 hours decay time or "recently" irradiated fuel. No fuel handling accident analysis exists to support an open containment or unfiltered purge exhaust when moving irradiated fuel with less than 100 hours decay time. Therefore, the changes proposed to ITS 3.9.3 are based on the safety analyses and licensing bases documents that were applicable to BVPS before the most recent safety analysis and which require containment closure or purge exhaust filtration to mitigate a fuel handling accident inside containment.

BVPS Unit 2 credits Containment Purge and Exhaust System isolation when necessary to mitigate the consequences of a fuel handling accident inside containment. This is clearly identified and discussed in the licensing documentation applicable to Unit 2 when containment closure is required to mitigate a fuel handling accident inside containment. Unit 2 UFSAR, Revision 11, Section 15.7.4.1 and in Section 15.7.4 of NUREG 1057 (the initial NRC Safety Evaluation Report for BVPS Unit 2) both contain descriptions of a design basis fuel handling accident inside containment being mitigated by automatic isolation of the containment purge and exhaust system. The UFSAR, Revision 11, Section 15.7.4.1 states that "Environmental release from the containment is precluded by a design that automatically isolates the containment following the detection of radioactivity by the redundant containment purge monitors." Therefore, the proposed ITS LCO requirement 3.9.3.c.2 and SRs 3.9.3.1 and 3.9.3.3 are appropriate and applicable to Unit 2 when containment closure is required to mitigate a fuel handling accident inside containment.

BVPS Unit 1 does not credit Containment Purge and Exhaust System isolation to mitigate the consequences of a fuel handling accident in containment. Unit 1 relies on filtration of the effluent by SLCRS when it is necessary to mitigate the consequences of a fuel handling accident. Therefore, ITS requirement 3.9.3.c.2 and ITS SRs 3.9.3.1 and 3.9.3.3 are not applicable to Unit 1.

The addition of the new Unit 1 specific LCO requirement 3.9.3.c.3 to the ITS is based on the design of the Unit 1 Containment Purge and Exhaust System ductwork where the radiation monitors are located. This ductwork is not designed to withstand a seismic event. Although the radiation monitors provide an isolation signal to the purge and exhaust valves to close containment and prevent the escape of radioactivity, no credit may be taken in the design basis accident for purge and exhaust isolation on high radiation. As stated in the NRC Safety Evaluation Report (SER) for Amendment 23 dated 12/12/79 (which imposed the requirement for the containment air to be exhausted through SLCRS in the Unit 1 TS) "However, since the purge exhaust ductwork inside the containment containing the radiation monitors is non-seismic we have made dose calculations assuming the ductwork and monitors are damaged during a seismic event. In such an event we have assumed there is no containment isolation". The NRC SER is consistent with the fuel handling accident inside containment described in Unit 1 UFSAR, Revision 18, Section 14.2.1.4. The Unit 1 UFSAR description of a fuel handling accident inside containment (applicable when containment closure or filtration is required to mitigate a fuel handling accident inside containment) clearly states the purge and exhaust system isolation valves are not required to close since the containment purge exhaust duct is lined up to the seismically supported leak collection and filter train.

The changes proposed to the ISTS make the TS requirements for each BVPS unit consistent with the BVPS specific design and appropriate licensing bases for moving recently irradiated fuel when containment closure or filtration would be required.

4. The ISTS is revised by the addition of a Unit 2 only surveillance (SR 3.9.3.1) that verifies the containment purge and exhaust airflow is maintained ≤ 7500 cfm. The addition of this surveillance is consistent with the CTS LCO 3.9.4.c.2 operability requirements for the containment purge and exhaust isolation system. Maintaining less than or equal to the required air flow ensures that the time required for air to travel from the radiation monitors to the first containment isolation valve is greater than the closure time of the containment isolation valves and the radiation monitor response time. This provides assurance that the purge and exhaust system can be isolated before any radioactivity is released through the containment purge exhaust penetration. Consistent with the typical conventions of the ISTS format, the values verified to confirm system operability are contained within the surveillances. The addition of this requirement to the ISTS is consistent with the safety analysis assumptions for the Unit 2 containment purge and exhaust system when containment closure is required to mitigate a fuel handling accident inside containment. The surveillance is not applicable to Unit 1 as Unit 1 does not credit containment isolation to mitigate a fuel handling accident.

5. The note to ISTS 3.9.4 LCO allowing penetrations to be open under administrative controls is deleted from the BVPS specific version of this specification. As explained in the associated ISTS Bases reviewers note, this allowance is predicated on confirmatory dose calculations. BVPS does not have the required dose calculations to support this allowance, therefore it is eliminated from the proposed BVPS TS.

6. The ISTS is revised by the addition of a Unit 2 only surveillance (SR 3.9.3.4) that verifies the containment purge and exhaust valve isolation time is within the required limit. The addition of this surveillance is consistent with the CTS LCO 3.9.4.c.2 operability requirements for the containment purge and exhaust isolation system. As the BVPS Unit 2 containment purge and exhaust valves are only required to automatically isolate during fuel movement involving recently irradiated fuel inside containment, the requirement in ITS 3.6.3, "Containment Isolation Valves" for verification of valve actuation time is not applicable. ITS 3.6.3 requires the containment purge and exhaust valves to be deactivated in the closed positioned. and is only applicable in Modes 1-4. As such, ITS 3.6.3 does not address the requirement for these valves to automatically isolate during fuel movement involving recently irradiated fuel inside containment. Therefore, this BVPS Unit 2 specific surveillance is retained in ITS 3.9.3 consistent with the CTS requirements.

   Maintaining the valve isolation time less than or equal to the required limit ensures that the time required for air to travel from the radiation monitors to the first containment isolation valve is greater than the closure time of the containment isolation valves and the radiation monitor response time. This provides assurance that the purge and exhaust system can be isolated before any radioactivity is released through the containment purge exhaust penetration. Consistent with the CTS, the required isolation time is specified in the Unit 2 Licensing Requirements Manual (LRM). The addition of this requirement to the ISTS is consistent with the safety analysis assumptions for the Unit 2 containment purge and exhaust system when containment closure is required to mitigate a fuel handling accident involving recently irradiated fuel inside containment. The surveillance is not applicable to Unit 1 as Unit 1 does not credit containment isolation to mitigate a fuel handling accident.

ITS 3.9.4 RHR and Coolant Circulation – High Water Level

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS LCO requiring one RHR loop in operation is revised consistent with the CTS by the addition of the following allowance, " The required RHR loop may be removed from operation for ≤ 4 hours per 8 hour period during the performance of Ultrasonic In-service Inspection inside the reactor vessel nozzles, provided no operations are permitted that would cause introduction into the Reactor Coolant System, coolant with boron concentration less than that required to meet the minimum required boron concentration of LCO 3.9.1". The addition of this allowance is based on CTS 3/4.9.8.1 Action (c). The CTS Action has been modified by the addition of the ISTS condition that "no operations are permitted that would cause introduction into the Reactor Coolant System, coolant with boron concentration less than that required to meet the minimum required boron concentration of LCO 3.9.1" while the required RHR loop is not in operation. The addition of the ISTS condition to the CTS allowance provides additional assurance the plant is maintained in a safe condition when the RHR is removed from service. This change to the ISTS is consistent with the BVPS CTS and has been previously approved by the NRC.

2. The ISTS surveillance for verifying RHR operation is revised to make the ISTS more consistent with the BVPS CTS. The proposed change eliminates the specific RHR flow rate specified in the surveillances of ISTS Section 3.9. The proposed change would also make the operating RHR loop verification surveillances consistent with the corresponding RHR surveillances in ISTS Section 3.4, RCS. In Section 3.4, the bases for the operating RHR loop verification (SR 3.4.7.1) states that verification of operation includes verification of flow rate. The Bases for the corresponding Section 3.9 RHR loop verification surveillances is revised to be consistent with the Section 3.4 Bases and includes the requirement to verify the RHR flow. In addition, the proposed change is consistent with the corresponding CTS requirements applicable during normal operation (i.e., no dilution or reduced inventory operations). In conditions other than dilution or reduced inventory operations, the CTS does not specify a minimum flow rate for RHR.

   The BVPS safety analyses do not assume a boron dilution event occurs in Modes 4, 5, and 6. In these Modes, TS requirements assure the unborated water source isolation valves are secured closed and accidental dilution precluded. Therefore, the specific RHR flow needed during Mode 6 operations is not the assumption of any safety analysis but is dependent on plant conditions which may vary through Mode 6 operation.

   The minimum RHR flow is dependent on plant conditions, such as water level, decay heat load, and component cooling water temperature. In some plant conditions (i.e., reduced inventory) maintaining a fixed high rate of flow could increase the likelihood of pump cavitation and loss of RHR cooling. The proposed change would allow some operating flexibility in determining the RHR flow at various plant conditions without adversely affecting plant safety. As such, the proposed surveillance requirement will continue to adequately verify the required RHR loop is operating and able to provide forced RCS flow for heat removal and prevent thermal and boron stratification.

3. The proposed BVPS LCO Note for ITS 3.9.4, "RHR and Coolant Circulation – High Water Level" is based on the exception provided in approved TSTF-21, Rev 0, for ISTS 3.9.6, "RHR and Coolant Circulation-Low Water Level." The proposed change to ITS 3.9.4 is an expansion of the concept introduced by TSTF-21 for ISTS 3.9.6 and constitutes a beyond (ITS conversion) scope change. TSTF-21 has subsequently been incorporated into Revision 3 of NUREG-1431. TSTF-21, Rev. 0 included a bases statement in the LCO section of the ISTS 3.9.6 bases that allowed the required RHR pumps to be operable when aligned to the Refueling Water Storage Tank to support filling or draining the refueling cavity or for the performance of required testing. Due to the BVPS RHR design, the RHR pumps are normally used for draining the cavity (not filling). In addition, the BVPS RHR system is a dedicated heat removal system and is not part of the ECCS (like many other Westinghouse plants) and does not require the provision for realignment due to testing. Therefore, these provisions of the exception included in TSTF-21 are not implemented the BVPS specific ITS.

   However, an issue remains with the exception provided by TSTF-21 to realign RHR from their required function of circulating reactor coolant. Specifically, the bases exception introduced by TSTF-21, Rev. 0 can not be used to override the required operability function of the RHR pump in ISTS 3.9.6 (i.e., circulating reactor coolant). ISTS 3.9.6 specifies in both the Specification (SR 3.9.6.1) and the bases that the RHR pump is required to be circulating reactor coolant. An exception in the Specification's LCO statement would be required to avoid potential conflict with the ISTS 3.9.6 SR and bases that specify circulating reactor coolant. The same issue exists with both the RHR TS (high and low water level).

   In an NRC letter (from W. D. Beckner to J. Davis (NEI) dated 4/29/99), the NRC recommended TSTF-21, Rev.0 be revised to include an LCO exception Note in the Specification. The recommended Note provided a specific LCO exception to remove the RHR loop from operation to support fill and drain operations and to support required testing. However, the NRC recommended LCO Note was never incorporated in TSTF-21 and therefore, was not incorporated into Revision 3 of NUREG-1431. Therefore, BVPS has proposed the addition of a similar Note to the BVPS ITS. The LCO Note proposed by BVPS is similar to the Note recommended by the NRC (except for the BVPS plant specific design differences noted above).

   The change described in this JFD addresses the addition of the exception provided by TSTF-21, Rev. 0, as modified by the NRC recommendation, for the "Low Water Level" RHR requirements to the "High Water Level" RHR requirements. Although TSTF-21, Rev.0, and the NRC recommended LCO Note only applied to ISTS 3.9.6, "RHR and Coolant Circulation-Low Water Level" the flexibility provided by the exception is also justified for the BVPS ITS 3.9.4, "RHR and Coolant Circulation – High Water Level" specification. The "High Water Level" specification only requires a single RHR loop to be operable and operating. The proposed Note would allow a smooth transition from the high water level condition to the low water level condition (i.e., draining the cavity to the RWST) using the single required RHR loop. Upon entering the low water level specification applicability two RHR loops are required operable with one in operation. Considering that the low water Specification already contains the exception for the operating RHR loop to be aligned to the RWST, the low water specification may be met using the same operating RHR pump required in the high water level specification which was used to drain the cavity. The complication of shifting operation to multiple RHR loops and than back to one RHR loop to meet the Specification requirements when changing the reactor cavity water level would not be necessary.

The proposed change is acceptable because the proposed allowance is contingent on maintaining the capability to realign the RHR loop to the RCS if it is required. This requirement represents an additional conservatism beyond the requirements of TSTF-21 that assures the capability to remove decay heat is maintained. It should be noted that if the exception to align the required RHR pump to the RWST is acceptable for the low water level condition, it is also acceptable for the high water level condition where (due to the volume of water) more time exists to switch the alignment of the RHR loop back to circulating coolant if required. In addition, the operation of draining the reactor cavity to the RWST provides some flow near the top of the reactor vessel that continues to remove decay heat. Therefore, although not circulating coolant, the draining of the reactor cavity does maintain some decay heat removal function.

The proposed change provides a relaxation to the ITS 3.9.4 LCO requirement that is beyond the changes introduced by TSTF-21 but is based on the plant design and accounts for the way the RHR system is routinely used during refueling operations. The proposed relaxation simplifies the transition between refueling cavity water level requirements and minimizes complications that could result from shifting RHR loop operation from one loop to two loops and back to one loop when changing the reactor cavity water level.

ITS 3.9.5 RHR and Coolant Circulation – Low Water Level

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS surveillance for verifying RHR operation is revised to make the ISTS more consistent with the BVPS CTS. The proposed change eliminates the specific RHR flow rate specified in the surveillances of ISTS Section 3.9. The proposed change would make the operating RHR loop verification surveillances consistent with the corresponding RHR surveillances in ISTS Section 3.4, RCS. In Section 3.4, the bases for the operating RHR loop verification (SR 3.4.7.1) states that verification of operation includes verification of flow rate. The Bases for the corresponding Section 3.9 RHR loop verification surveillances is revised to be consistent with the Section 3.4 Bases and includes the requirement to verify the RHR flow. In addition, the proposed change is consistent with the corresponding CTS requirements applicable during normal operation (i.e., no dilution or reduced inventory operations). In conditions other than dilution or reduced inventory operations, the CTS does not specify a minimum flow rate for RHR.

   The BVPS safety analyses do not assume a boron dilution event occurs in Modes 4, 5, and 6. In these Modes, TS requirements assure the unborated water source isolation valves are secured closed and accidental dilution precluded. Therefore, the specific RHR flow needed during Mode 6 operations is not the assumption of any safety analysis but is dependent on plant conditions which may vary through Mode 6 operation.

   The minimum RHR flow is dependent on plant conditions, such as water level, decay heat load, and component cooling water temperature. In some plant conditions (i.e., reduced inventory) maintaining a fixed high rate of flow could increase the likelihood of pump cavitation and loss of RHR cooling. The proposed change would allow some operating flexibility in determining the RHR flow at various plant conditions without adversely affecting plant safety. As such, the proposed surveillance requirement will continue to adequately verify the required RHR loop is operating and able to provide forced RCS flow for heat removal and prevent thermal and boron stratification.

2. A Note is added to ISTS SR 3.9.6.2 that allows the surveillance to be considered met for an RHR pump that was just removed from operation such that the next required performance of the surveillance is 7 days after the pump is removed from service. The addition of this note is similar to the fix that TSTF-265 implemented for other surveillances with the same requirements as ISTS SR 3.9.6.2 in Revision 2 of NUREG-1431. However, TSTF-265 did not address ISTS SR 3.9.6.2 even though it is the same surveillance as the others addressed in TSTF-265.

   TSTF-265 recognized that some confusion could be introduced when RHR pumps are swapped under the current requirements of ISTS 3.9.6. The Surveillance that verifies the standby pump breaker alignment and power availability may be considered to be immediately not met for the RHR pump removed from operation. This interpretation is possible if a surveillance procedure must be performed in order to verify the standby RHR pump is available and this procedure can not be performed until the pump is removed from service. In this case, an Action entry would be required until the surveillance procedure was performed to verify the status of the standby RHR pump. TSTF-265 proposed a change that would allow 24 hours after a pump is removed from service to verify breaker alignment and power availability. The existing ISTS surveillance normally allows 7 days between verifications of breaker alignment and power availability. TSTF-265 justified this change in part by stating that "if a pump is verified to be in operation, this is also sufficient to verify the correct breaker alignment and indicated power availability". This statement was incorporated into the ISTS bases for the surveillances revised by TSTF-265.

Considering the normal surveillance interval of 7 days, the change proposed by TSTF-265 is overly conservative in requiring the standby status of a pump just removed from service to be verified within 24 hours. According to TSTF-265, verifying the operation of the pump is sufficient to verify correct breaker alignment and power availability. Therefore, if the 7-day surveillance interval is acceptable for the normal performance of the surveillance it should also be acceptable and applicable to a pump that has just been verified operating and removed from service. The fact that the pump was in operation is a better indication of operability than breaker alignment and power availability verifications. Therefore, the note proposed in TSTF-265 is revised to eliminate the 24-hour requirement to re-verify the pump status and to clarify that the 7-day surveillance interval starts at the time the pump is removed from operation.

In NUREG-1366, "Improvements to Technical Specification Surveillance Requirements", the NRC documented their comprehensive examination of all TS surveillance requirements to identify those that should be improved. The report documented estimates of the thousands of surveillance tests required to be performed every 18 month operating cycle and the potential burden any unnecessary testing placed on the plant staff. The results of NUREG-1366 provided specific recommendations to reduce the number and frequency of surveillances. The recommendations of NUREG-1366 were incorporated into the ISTS. One of the NUREG-1366 criteria used to screen surveillance requirements stated; "The surveillance places an unnecessary burden on plant personnel because the time required is not justified by the safety significance of the surveillance requirement. The additional surveillance verification of RHR pump operability added by TSTF-265 does not meet the screening criteria of NUREG-1366. The addition of the requirement to re-verify the breaker alignment and power available to a pump just removed from operation places an unnecessary burden on the operations staff with no significant safety benefit. The plant operations staff should not be burdened with any unnecessary distractions.

The change is acceptable because adequate assurance exists that the pump is aligned to the correct breaker with power available because, prior to being removed from operation, the pump was verified to be operating. Verification of pump operation is a better indicator of operability and readiness than simply verifying the breaker alignment and power available. In addition, the proposed change is consistent with the criteria in NUREG-1366 for reducing unnecessary surveillance requirements. Therefore, the proposed change is acceptable. ISTS SR 3.9.6.2 represents a new surveillance for BVPS.

3. The proposed BVPS LCO Note for ITS 3.9.5, "RHR and Coolant Circulation – Low Water Level" is based on the bases exception provided in approved TSTF-21, Rev 0, for ISTS 3.9.6, "RHR and Coolant Circulation-Low Water Level." TSTF-21 has subsequently been incorporated into Revision 3 of NUREG-1431. TSTF-21, Rev. 0 included a bases statement in the LCO section of the ISTS 3.9.6 bases that allowed the required RHR pumps to be operable when aligned to the Refueling Water Storage Tank to support filling or draining the refueling cavity or for the performance of required testing. Due to the BVPS RHR design, the RHR pumps are normally used for draining the cavity (not filling). In addition, the BVPS RHR system is a dedicated heat removal system and is not part of the ECCS (like many other Westinghouse plants) and does not require the provision for realignment due to testing. Therefore, these provisions of the exception included in TSTF-21 are not implemented in the BVPS specific ITS.

   However, an issue remains with the bases exception provided by TSTF-21 to realign RHR from the required function of circulating reactor coolant. Specifically, the bases exception introduced by TSTF-21, Rev. 0 can not be used to override the required operability function of the RHR pump in ISTS 3.9.6 (i.e., circulating reactor coolant). ISTS 3.9.6 specifies in both the Specification (SR 3.9.6.1) and the bases that the RHR pump is required to be circulating reactor coolant. An exception in the Specification's LCO statement would be required to avoid potential conflict with the ISTS 3.9.6 SR and bases that specify circulating reactor coolant. In a letter (from W. D. Beckner to J. Davis (NEI) dated 4/29/99), the NRC recommended TSTF-21, Rev.0 be revised to include an LCO exception Note in the Specification. The recommended Note provided a specific LCO exception to remove the RHR loop from operation to support fill and drain operations and to support required testing. However, the NRC recommended LCO Note was never incorporated in TSTF-21 and therefore, was not incorporated into Revision 3 of NUREG-1431. Therefore, BVPS has proposed the addition of a similar LCO Note to the BVPS ITS. The LCO Note proposed by BVPS is similar to the Note recommended by the NRC (except for the BVPS plant specific design differences noted above).

   The proposed change is acceptable because it is consistent with the intent of approved TSTF-21 and is necessary to ensure the provisions introduced by TSTF-21 can be implemented without potentially conflicting TS requirements (as described above). In addition, the proposed Note includes the conservatism of being contingent on maintaining the capability to realign the RHR loop to the RCS if it is required. This additional requirement was recommended by the NRC (in the letter dated 4/29/99) but not incorporated into the final version of TSTF-21. Thus, the proposed change provides additional assurance (beyond the simple TSTF-21 bases change) that the capability to remove decay heat is maintained and controlled when implementing the provisions introduced by TSTF-21. In addition, the operation of draining the reactor cavity to the RWST provides some flow near the top of the reactor vessel that continues to remove decay heat. Therefore, although not circulating coolant, the draining of the reactor cavity does maintain some decay heat removal function.

   The proposed change provides a relaxation to the ITS 3.9.5 LCO requirement that is consistent with the intent of TSTF-21. The proposed LCO Note eliminates potentially conflicting TS requirements, is based on the plant design, and accounts for the way the RHR system is routinely used during refueling operations. The proposed relaxation simplifies the transition between refueling cavity water level requirements and minimizes complications that could result from shifting RHR loop operation from one loop to two loops and back to one loop when changing the reactor cavity water level. The proposed change requires that the affected RHR loop be capable of being re-aligned to the RCS if necessary and therefore, continues to provide adequate assurance the plant is operated in a safe manner.

ITS 3.9.6 Refueling Cavity Water Level

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS applicability and Actions are revised to be consistent with the CTS by the addition of "During movement of fuel assemblies over irradiated fuel assemblies within containment". This addition is necessary based on the BVPS fuel handling accident analysis. The fuel drop analysis determined that damage to a struck fuel assembly would result in fuel rod failure. The movement of any fuel assembly could result in a radiological release if that assembly was dropped and struck an irradiated fuel assembly. The relèase from a struck fuel assembly may require the water level specified in this TS in order to mitigate the radiological consequences. Therefore, consistent with the CTS requirements as previously approved by the NRC the ISTS applicability and corresponding Action are revised to address this situation.

ENCLOSURE 2

CHANGES TO THE ISTS BASES

MARKUP TO SHOW BVPS PLANT SPECIFIC DIFFERENCES
&
JUSTIFICATION FOR DEVIATION (JFD)
FROM THE STANDARD BASES

Introduction

This enclosure contains the markup of the Improved Standard Technical Specifications (ISTS) Bases to show the changes necessary to make the ISTS Bases document specific to BVPS Units 1 and 2. Changes to the ISTS Bases are identified with a number. The number is associated with a JFD that describes the reason for the change. The markups of the ISTS Bases are followed by a document containing the numbered JFDs for the changes made to the ISTS Bases. Not every change to the ISTS Bases is identified and explained by a JFD. Changes that simply insert current Technical Specification (CTS) information into bracketed (optional) ISTS text are not typically identified with a separate JFD. Bracketed ISTS text identifies specific text that is to be replaced with the corresponding CTS information. Therefore, such changes to the ISTS Bases are self-explanatory and represent the simple transference of CTS requirements to the ISTS. Other changes to the ISTS (i.e., less obvious changes) are described by a JFD.

As the BVPS Unit 1 & 2 Technical Specifications (TS) are being combined into a single set of TS, one markup of each ISTS Bases is provided for both Unit 1 and 2. Unit differences are identified in each ISTS Bases.

In addition, the Bases in this enclosure are marked (where applicable) to show the changes to the standard text resulting from the Industry/NRC TS Task Force (TSTF) process. The TSTF revisions to the standard are marked-up and identified with the applicable TSTF number (i.e., TSTF-03, TSTF-19, etc.). Each TSTF change has its own justification associated with it as part of the Industry/NRC process. The TSTF justifications are not repeated in the BVPS ISTS conversion documentation.

B 3.9 REFUELING OPERATIONS

B 3.9.1 Boron Concentration

BASES

BACKGROUND

The limit on the boron concentrations of the Reactor Coolant System (RCS), the refueling canal, and the refueling cavity during refueling ensures that the reactor remains subcritical during MODE 6. Refueling boron concentration is the soluble boron concentration in the coolant in each of these volumes having direct access to the reactor core during refueling.

5

s

The soluble boron concentration offsets the core reactivity and is measured by chemical analysis of a representative sample of the coolant in each of the volumes. The refueling boron concentration limit is specified in the COLR. Plant procedures ensure the specified boron concentration ~~in order to~~ maintain an overall core reactivity of $k_{eff} \leq 0.95$ during fuel handling, with control rods and fuel assemblies assumed to be in the most adverse configuration (least negative reactivity) allowed by plant procedures.

GDC 26 of 10 CFR 50, Appendix A, requires that two independent reactivity control systems of different design principles be provided (Ref. 1). One of these systems must be capable of holding the reactor core subcritical under cold conditions. The Chemical and Volume Control System (CVCS) is the system capable of maintaining the reactor subcritical in cold conditions by maintaining the boron concentration.

from

Low Head Safety Injection

1

Residual Heat Removal (

The reactor is brought to shutdown conditions before beginning operations to open the reactor vessel for refueling. After the RCS is cooled and ~~depressurized~~ and the vessel head is unbolted, the head is slowly removed ~~to form~~ the refueling cavity. The refueling canal and the ~~refueling~~ cavity are then flooded with borated water from the refueling water ~~storage~~ tank through the open reactor vessel by gravity feeding or by the use of ~~the Residual Heat Removal (RHR)~~ System pumps.

)

4

The pumping action of ~~the~~ RHR System in the RCS and the natural circulation due to thermal driving heads in the reactor vessel and refueling ~~cavity~~ mix the added concentrated boric acid with the water in the refueling ~~canal~~. The RHR System is in operation during ~~refueling~~ (see LCO 3.9.~~5~~, "Residual Heat Removal ~~(RHR) and~~ Coolant Circulation - High Water Level," and LCO 3.9.~~6~~, "Residual Heat Removal (RHR) and Coolant Circulation - Low Water Level") to provide forced circulation in the RCS and assist in maintaining the boron concentrations in the RCS, the refueling canal, and the refueling cavity above the COLR limit.

5

controlled by isolating unborated water sources and maintaining the required refueling boron concentration in the RCS. The boron concentration specified in the COLR for MODE 6 is an operating restriction necessary to maintain at least a 5% Δk/k margin of safety during refueling. The resulting core reactivity

BASES

APPLICABLE SAFETY ANALYSES

During refueling operations, the reactivity condition of the core is ~~consistent with the initial conditions assumed for the boron dilution accident in the accident analysis and~~ is conservative for MODE 6. The boron concentration limit specified in the COLR is based on the core reactivity at the beginning of each fuel cycle (the end of refueling) and includes an uncertainty allowance.

2

The required boron concentration and the plant refueling procedures that verify the correct fuel loading plan (including full core mapping) ensure that the k_{eff} of the core will remain ≤ 0.95 during the refueling operation. Hence, at least a 5% Δk/k margin of safety is established during refueling.

During refueling, the water volume in the spent fuel pool, the transfer canal, the refueling canal, the refueling cavity, and the reactor vessel form a single mass. As a result, the soluble boron concentration is relatively the same in each of these volumes.

~~The limiting boron dilution accident analyzed occurs in MODE 5 (Ref. 2). A detailed discussion of this event is provided in Bases B 3.1.1, "SHUTDOWN MARGIN (SDM)."~~

The RCS boron concentration satisfies Criterion 2 of 10 CFR 50.36(c)(2)(ii).

LCO

The LCO requires that a minimum boron concentration be maintained in the RCS, the refueling canal, and the refueling cavity while in MODE 6. The boron concentration limit specified in the COLR ensures that a core k_{eff} of ≤ 0.95 is maintained during fuel handling operations. Violation of the LCO could lead to an inadvertent criticality during MODE 6.

APPLICABILITY

This LCO is applicable in MODE 6 to ensure that the fuel in the reactor vessel will remain subcritical. The required boron concentration ensures a k_{eff} ≤ 0.95. Above MODE 6, LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," ensures that an adequate amount of negative reactivity is available to shut down the reactor and maintain it subcritical.

The Applicability is modified by a Note. The Note states that the limits on boron concentration are only applicable to the refueling canal and the refueling cavity when those volumes are connected (hydraulically coupled) to the RCS ~~Reactor Coolant System~~. When the refueling canal and the refueling cavity are isolated from the RCS, no potential path for boron dilution exists.

ACTIONS

A.1 and A.2

Continuation of CORE ALTERATIONS or positive reactivity additions (including actions to reduce boron concentration) is contingent upon maintaining the unit in compliance with the LCO. If the boron concentration of any coolant volume in the RCS, the refueling canal, or the refueling cavity is less than its limit, all operations involving CORE ALTERATIONS or positive reactivity additions must be suspended immediately.

Suspension of CORE ALTERATIONS and positive reactivity additions shall not preclude moving a component to a safe position. Operations that individually add limited positive reactivity (e.g., temperature fluctuations from inventory addition or temperature control fluctuations), but when combined with all other operations affecting core reactivity (e.g., intentional boration) result in overall net negative reactivity addition, are not precluded by this action.

A.3

In addition to immediately suspending CORE ALTERATIONS and positive reactivity additions, boration to restore the concentration must be initiated immediately.

In determining the required combination of boration flow rate and concentration, no unique Design Basis Event must be satisfied. The only requirement is to restore the boron concentration to its required value as soon as possible. In order to raise the boron concentration as soon as possible, the operator should begin boration with the best source available for unit conditions.

Once actions have been initiated, they must be continued until the boron concentration is restored. The restoration time depends on the amount of boron that must be injected to reach the required concentration.

SURVEILLANCE REQUIREMENTS

SR 3.9.1.1

This SR ensures that the coolant boron concentration in the RCS, and connected portions of the refueling canal and the refueling cavity, is within the COLR limits. The boron concentration of the coolant in each required volume is determined periodically by chemical analysis. Prior to reconnecting portions of the refueling canal or the refueling cavity to the RCS, this SR must be met per SR 3.0.4. If any dilution activity has occurred while the cavity or canal were disconnected from the RCS, this

$\boxed{1}$ 3

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR ensures the correct boron concentration prior to communication with the RCS.

A minimum Frequency of once every 72 hours is a reasonable amount of time to verify the boron concentration of representative samples. The Frequency is based on operating experience, which has shown 72 hours to be adequate.

REFERENCES

1. ~~10 CFR 50, Appendix A, GDC 26.~~

~~2. FSAR, Chapter [15].~~

4

2

Unit 1 UFSAR, Appendix 1A, "1971 AEC General Design Criteria Conformance".
Unit 2 UFSAR, Section 3.1, "Conformance with NRC General Design Criteria".

B 3.9 REFUELING OPERATIONS

B 3.9.3 Nuclear Instrumentation 2

BASES

BACKGROUND

- REVIEWER'S NOTE -
Bracketed options are provided for source range OPERABILITY requirements to include audible alarm or count rate function. These options apply to plants that assume a boron dilution event that is mitigated by operator response to an audible indication. For plants that isolate all boron dilution paths (per LCO 3.9.2), the source range OPERABILITY includes only a visual monitoring function.

1

In addition to the primary source range monitors described above, alternate source range monitors may be used to meet the LCO requirement. The alternate monitors may be either installed spare detectors or portable monitors with sufficient sensitivity to adequately monitor reactivity changes in the core during refueling operations.

The source range neutron flux monitors are used during refueling operations to monitor the core reactivity condition. The installed or primary source range neutron flux monitors are part of the Nuclear Instrumentation System (NIS). These detectors are located external to the reactor vessel and detect neutrons leaking from the core.

The primary ~~installed~~ source range neutron flux monitors are boron-based ~~BF3~~ detectors operating in the proportional region of the gas filled detector characteristic curve. The detectors monitor the neutron flux in counts per second. The instrument range covers six decades of neutron flux (1E+6 cps) ~~with a [5]% instrument accuracy~~. The detectors also provide continuous visual indication in the control room ~~[and an audible [alarm] [count rate] to alert operators to a possible dilution accident]~~. The NIS is designed in accordance with the criteria presented in Reference 1.

APPLICABLE SAFETY ANALYSES

2

The Technical Specifications require that unborated water sources be isolated in MODES 4, 5, and 6. The requirement to isolate unborated water sources is considered to preclude a boron dilution accident. Therefore, no boron dilution accident analysis is necessary for these MODES.

Two OPERABLE source range neutron flux monitors (primary or alternate) are required to provide a signal to alert the operator to unexpected changes in core reactivity such as ~~with a boron dilution accident (Ref. 2) or~~ an improperly loaded fuel assembly. ~~[The audible count rate from the source range neutron flux monitors provides prompt and definite indication of any boron dilution. The count rate increase is proportional to the subcritical multiplication factor and allows operators to promptly recognize the initiation of a boron dilution event. Prompt recognition of the initiation of a boron dilution event is consistent with the assumptions of the safety analysis and is necessary to assure sufficient time is available for isolation of the primary water makeup source before SHUTDOWN MARGIN is lost (Ref. 2).]~~

BASES

APPLICABLE SAFETY ANALYSES (continued)

~~- REVIEWER'S NOTE -~~
~~The need for a safety analysis for an uncontrolled boron dilution accident is eliminated by isolating all unborated water sources as required by LCO 3.9.2, "Unborated Water Source Isolation Valves."~~

1

The LCO may be met by using any combination of primary or alternate source range monitors.

CTS

The source range neutron flux monitors satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

continuous

LCO

This LCO requires that two source range neutron flux monitors be OPERABLE to ensure that redundant monitoring capability is available to detect changes in core reactivity. To be OPERABLE, each monitor must provide visual indication [in the control room]. ~~[In addition, at least one of the two monitors must provide an OPERABLE audible [alarm] [count rate] function to alert the operators to the initiation of a boron dilution event.]~~

2

APPLICABILITY

1

the primary

In MODE 6, the source range neutron flux monitors must be OPERABLE to determine changes in core reactivity. There are no other direct means available to check core reactivity levels. In MODES 2, 3, 4, and 5, ~~these same installed~~ source range detectors and circuitry are also required to be OPERABLE by LCO 3.3.1, "Reactor Trip System (RTS) Instrumentation ~~[and LCO 3.3.9, "BDPS"]~~.

5

* In addition, one source range detector is required to be OPERABLE in MODES 3, 4, and 5 when all rods are fully inserted and without rod withdrawal capability by LCO 3.3.8, "Boron Dilution Detection Instrumentation."

ACTIONS

A.1 and A.2

With only one source range neutron flux monitor OPERABLE, redundancy has been lost. Since these instruments are the only direct means of monitoring core reactivity conditions, CORE ALTERATIONS and introduction of coolant into the RCS with boron concentration less than required to meet the minimum boron concentration of LCO 3.9.1 must be suspended immediately. Suspending positive reactivity additions that could result in failure to meet the minimum boron concentration limit is required to assure continued safe operation. Introduction of coolant inventory must be from sources that have a boron concentration greater than that ~~what~~ would be required in the RCS for minimum refueling boron concentration. This may result in an overall reduction in RCS boron concentration, but provides acceptable margin to maintaining subcritical operation. Performance of Required Action A.1 shall not preclude completion of movement of a component to a safe position.

which

BASES

ACTIONS (continued)

B.1

With no source range neutron flux monitor OPERABLE, action to restore a monitor to OPERABLE status shall be initiated immediately. Once initiated, action shall be continued until a source range neutron flux monitor is restored to OPERABLE status.

(as specified in Required Actions A.1 and A.2)

B.2

With no source range neutron ~~flux~~ monitor OPERABLE, there are no direct means of detecting changes in core reactivity. However, since CORE ALTERATIONS and positive reactivity additions are not to be made, the core reactivity condition is stabilized until the source range neutron flux monitors are OPERABLE. This stabilized condition is determined by performing SR 3.9.1.1 to ensure that the required boron concentration exists.

The Completion Time of once per 12 hours is sufficient to obtain and analyze a reactor coolant sample for boron concentration and ensures that unplanned changes in boron concentration would be identified. The 12 hour Frequency is reasonable, considering the low probability of a change in core reactivity during this time period.

2

~~[C.1~~

~~With no audible [alarm] [count rate] OPERABLE, prompt and definite indication of a boron dilution event, consistent with the assumptions of the safety analysis, is lost. In this situation, the boron dilution event may not be detected quickly enough to assure sufficient time is available for operators to manually isolate the unborated water source and stop the dilution prior to the loss of SHUTDOWN MARGIN. Therefore, action must be taken to prevent an inadvertent boron dilution event from occurring. This is accomplished by isolating all the unborated water flow paths to the Reactor Coolant System. Isolating these flow paths ensures that an inadvertent dilution of the reactor coolant boron concentration is prevented. The Completion Time of "Immediately" assures a prompt response by operations and requires an operator to initiate actions to isolate an affected flow path immediately. Once actions are initiated, they must be continued until all the necessary flow paths are isolated or the circuit is restored to OPERABLE status.]~~

BASES

SURVEILLANCE REQUIREMENTS

3

The calibration method for neutron detectors is specified in the Bases of LCO 3.3.1, "Reactor Trip System (RTS) Instrumentation."

SR 3.9.~~3~~.1 2

SR 3.9.~~3~~.1 is the performance of a CHANNEL CHECK, which is a comparison of the parameter indicated on one channel to a similar parameter on other channels. It is based on the assumption that the two indication channels should be consistent with core conditions. Changes in fuel loading and core geometry can result in significant differences between source range channels, but each channel should be consistent with its local conditions.

The Frequency of 12 hours is consistent with the CHANNEL CHECK Frequency specified similarly for the same instruments in LCO 3.3.1.

SR 3.9.~~3~~.2 2

SR 3.9.~~3~~.2 is the performance of a CHANNEL CALIBRATION every 18 months. This SR is modified by a Note stating that neutron detectors are excluded from the CHANNEL CALIBRATION. ~~The CHANNEL CALIBRATION for the source range neutron flux monitors consists of obtaining the detector plateau or preamp discriminator curves, evaluating those curves, and comparing the curves to the manufacturer's data. [The CHANNEL CALIBRATION also includes verification of the audible [alarm] [count rate] function.]~~ The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage. Operating experience has shown these components usually pass the Surveillance when performed at the 18 month Frequency.

However, this does not preclude performance of this surveillance at power when it can be accomplished in a safe manner.

6

2

REFERENCES

1. ~~10 CFR 50, Appendix A, GDC 13, GDC 26, GDC 28, and GDC 29.~~

~~2. FSAR, Section [15.2.4].~~

2

4

Unit 1 and Unit 2 UFSAR Section 7.

B 3.9 REFUELING OPERATIONS

B 3.9.4 Containment Penetrations

3

BASES

6 fuel involving

restricting the release of radioactivity from containment

BACKGROUND

During movement of [recently] irradiated fuel assemblies within containment, a release of fission product radioactivity within containment will be restricted from escaping to the environment when the LCO requirements are met. In MODES 1, 2, 3, and 4, ~~this~~ is accomplished by maintaining containment OPERABLE as described in LCO 3.6.1, "Containment." In MODE 6, the potential for containment pressurization as a result of an accident is not likely; therefore, requirements to isolate the containment from the outside atmosphere can be less stringent. The LCO requirements are referred to as "containment closure" rather than "containment OPERABILITY." Containment closure means that all potential escape paths are closed or capable of being closed. Since there is no potential for containment pressurization, the Appendix J leakage criteria and tests are not required.

1

50.67

The containment serves to contain fission product radioactivity that may be released from the reactor core following an accident, such that offsite ~~radiation~~ exposures are maintained well within the requirements of 10 CFR ~~100~~. Additionally, the containment provides radiation shielding from the fission products that may be present in the containment atmosphere following accident conditions.

fuel involving

The containment equipment hatch, which is part of the containment pressure boundary, provides a means for moving large equipment and components into and out of containment. During movement of [recently] irradiated fuel assemblies within containment, the equipment hatch must be held in place by at least four bolts. Good engineering practice dictates that the bolts required by this LCO be approximately equally spaced.

6

or the movement of fuel assemblies over recently irradiated fuel assemblies

The containment air locks, which are also part of the containment pressure boundary, provide a means for personnel access during MODES 1, 2, 3, and 4 unit operation in accordance with LCO 3.6.2, "Containment Air Locks." Each air lock has a door at both ends. The doors are normally interlocked to prevent simultaneous opening when containment OPERABILITY is required. During periods of unit shutdown when containment closure is not required, the door interlock mechanism may be disabled, allowing both doors of an air lock to remain open for extended periods when frequent containment entry is necessary. During movement of ~~[recently]~~ irradiated fuel assemblies within containment, containment closure is required; therefore, the door

BASES

2

BACKGROUND (continued)

d

interlock mechanism may remain disabled, but one air lock door must always remain ~~[capable of being]~~ close.

The requirements for containment penetration closure ensure that a release of fission product radioactivity within containment will be restricted to within regulatory limits.

3

The Containment Purge and Exhaust System is not

The Containment Purge and Exhaust System includes ~~two subsystems. The normal subsystem includes~~ a 42 inch purge penetration and a 42 inch exhaust penetration. ~~The second subsystem, a minipurge system, includes an 8 inch purge penetration and an 8 inch exhaust penetration.~~ During MODES 1, 2, 3, and 4, the two valves in each of the ~~normal~~ purge and exhaust penetrations are secured in the closed position. ~~The two valves in each of the two minipurge penetrations can be opened intermittently, but are closed automatically by the Engineered Safety Features Actuation System (ESFAS). Neither of the subsystems is~~ subject to a Specification in MODE 5.

3

the Containment Purge and Exhaust System is used for containment ventilation.

In MODE 6, ~~large air exchangers are necessary to conduct refueling operations. The normal 42 inch purge system is used for this purpose and all four valves are closed by the ESFAS in accordance with LCO 3.3.2, "Engineered Safety Feature Actuation System (ESFAS) Instrumentation."~~

3

Insert Unit 1 and Unit 2 Description

~~[The minipurge system remains operational in MODE 6, and all four valves are also closed by the ESFAS.~~

~~[or]~~

~~The minipurge system is not used in MODE 6. All four 8 inch valves are secured in the closed position.]~~

6

and the movement of fuel assemblies over recently irradiated fuel assemblies

Functionally

The other containment penetrations that provide direct access from containment atmosphere to outside atmosphere must be isolated ~~on at least one side~~. Isolation may be achieved by an OPERABLE automatic isolation valve, or by a manual isolation valve, blind flange, or equivalent. Equivalent isolation methods must be approved and may include use of a material that can provide a temporary, atmospheric pressure, ventilation barrier for the other containment penetrations during [recently] irradiated fuel movements (Ref. 1).

4

by an engineering evaluation

From CTS Bases

1 Insert BVPS specific Safety Analysis

BASES

APPLICABLE SAFETY ANALYSES

During CORE ALTERATIONS or movement of irradiated fuel assemblies within containment, the most severe radiological consequences result from a fuel handling accident [involving handling recently irradiated fuel]. The fuel handling accident is a postulated event that involves damage to irradiated fuel (Ref. 2). Fuel handling accidents, analyzed in Reference 3, include dropping a single irradiated fuel assembly and handling tool or a heavy object onto other irradiated fuel assemblies. The requirements of LCO 3.9.7, "Refueling Cavity Water Level," in conjunction with a minimum decay time of 100 hours prior to [irradiated fuel movement with containment closure capability or a minimum decay time of [X] days without containment closure capability], ensures that the release of fission product radioactivity, subsequent to a fuel handling accident, results in doses that are well within the guideline values specified in 10 CFR 100. Standard Review Plan, Section 15.7.4, Rev. 1 (Ref. 3), defines "well within" 10 CFR 100 to be 25% or less of the 10 CFR 100 values. The acceptance limits for offsite radiation exposure will be 25% of 10 CFR 100 values or the NRC staff approved licensing basis (e.g., a specified fraction of 10 CFR 100 limits).

Containment penetrations satisfy Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

- REVIEWER'S NOTE -

The allowance to have containment personnel air lock doors open and penetration flow paths with direct access from the containment atmosphere to the outside atmosphere to be unisolated during fuel movement and CORE ALTERATIONS is based on (1) confirmatory dose calculations of a fuel handling accident as approved by the NRC staff which indicate acceptable radiological consequences and (2) commitments from the licensee to implement acceptable administrative procedures that ensure in the event of a refueling accident (even though the containment fission product control function is not required to meet acceptable dose consequences) that the open air lock can and will be promptly closed following containment evacuation and that the open penetration(s) can and will be promptly closed. The time to close such penetrations or combination of penetrations shall be included in the confirmatory dose calculations.

This LCO limits the consequences of a fuel handling accident [involving handling recently irradiated fuel] in containment by limiting the potential escape paths for fission product radioactivity released within containment. The LCO requires any penetration providing direct access from the containment atmosphere to the outside atmosphere to be closed except for the OPERABLE containment purge and exhaust penetrations

3 Insert Unit 1 and 2 LCO Descriptions

BASES

LCO (continued)

3 — and for Unit 1 that the purge exhaust is lined up to an OPERABLE SLCRS train when moving recently irradiated fuel and during movement of fuel assemblies over recently irradiated fuel assemblies.

for Unit 2

3 — Unit 2

Licensing Requirements Manual

or for Unit 1, that the releases are filtered

~~[and the containment personnel air locks]~~. For the OPERABLE containment purge and exhaust penetrations, this LCO ensures that these penetrations are isolable by the Containment Purge and Exhaust Isolation System. The OPERABILITY requirements for this LCO ensure that the automatic purge and exhaust valve closure times specified in the ~~FSAR~~ can be achieved and, therefore, meet the assumptions used in the safety analysis to ensure that releases through the valves are ~~terminated~~, such that radiological doses are within the acceptance limit.

prevented 3

2

~~The LCO is modified by a Note allowing penetration flow paths with direct access from the containment atmosphere to the outside atmosphere to be unisolated under administrative controls. Administrative controls ensure that 1) appropriate personnel are aware of the open status of the penetration flow path during CORE ALTERATIONS or movement of irradiated fuel assemblies within containment, and 2) specified individuals are designated and readily available to isolate the flow path in the event of a fuel handling accident.~~

~~The containment personnel air lock doors many be open during movement of [recently] irradiated fuel in the containment and during CORE ALTERATIONS provided that one door is capable of being closed in the event of a fuel handling accident. Should a fuel handling accident occur inside containment, one personnel air lock door will be closed following an evacuation of containment.~~

Rev 3

, "Containment Operability" and LCO 3.6.3, " Containment Isolation Valves

APPLICABILITY

The containment penetration requirements are applicable ~~during~~ movement of [recently] irradiated fuel assemblies within containment because this is when there is a potential for the limiting fuel handling accident. In MODES 1, 2, 3, and 4, containment penetration requirements are addressed by LCO 3.6.1. In MODES 5 and 6, when movement of irradiated fuel assemblies within containment is not being conducted, the potential for a fuel handling accident does not exist. [Additionally, due to radioactive decay, a fuel handling accident ~~involving handling~~ recently irradiated fuel (i.e., fuel that ~~has occupied~~ part of a critical reactor core within the previous ~~[X] days~~) will result in doses that are well within the guideline values specified in 10 CFR ~~100~~ even without containment closure capability.] Therefore, under these conditions no requirements are placed on containment penetration status.

or the movement of fuel assemblies over recently irradiated fuel assemblies

6 — 100 hours

6 — that does not involve

1 — 50.67

Although movement of recently irradiated fuel is not currently permitted, the requirements for containment closure are retained in the Technical Specifications in case these requirements are necessary to support fuel movement involving recently irradiated fuel consistent with the guidance of Ref. 4.

BASES

APPLICABILITY

1

Rev 3

- REVIEWER'S NOTE –

The addition of the term "recently" associated with handling irradiated fuel in all of the containment function Technical Specification requirements is only applicable to those licensees who have demonstrated by analysis that after sufficient radioactive decay has occurred, off-site doses resulting from a fuel handling accident remain below the Standard Review Plan limits (well within 10 CFR 100).

Additionally, licensees adding the term "recently" must make the following commitment which is consistent with ~~draft~~ NUMARC 93-01, Revision ~~3~~ 4 Section ~~11.2.6~~ 11.3.6.5 "Safety Assessment for Removal of Equipment from Service During Shutdown Conditions," subheading "Containment - Primary (PWR)/Secondary (BWR)."

"The following guidelines are included in the assessment of systems removed from service during movement irradiated fuel:

- During fuel handling/core alterations, ventilation system and radiation monitor availability (as defined in NUMARC 91-06) should be assessed, with respect to filtration and monitoring of releases from the fuel. Following shutdown, radioactivity in the fuel decays away fairly rapidly. The basis of the Technical Specification OPERABILITY amendment is the reduction in doses due to such decay. The goal of maintaining ventilation system and radiation monitor availability is to reduce doses even further below that provided by the natural decay.

- A single normal or contingency method to promptly close primary or secondary containment penetrations should be developed. Such prompt methods need not completely block the penetration or be capable of resisting pressure.

The purpose of the "prompt methods" mentioned above are to enable ventilation systems to draw the release from a postulated fuel handling accident in the proper direction such that it can be treated and monitored."

BASES

7

ACTIONS

A.1 and A.2

3 Unit 2

Insert BVPS Unit 2 specific SR 3.9.3.1

If the containment equipment hatch, air locks, or any containment penetration that provides direct access from the containment atmosphere to the outside atmosphere is not in the required status, including the Containment Purge and Exhaust Isolation System not capable of automatic actuation when the purge and exhaust valves are open, or the Unit 1 purge exhaust not lined up to an OPERABLE SLCRS train the unit must be placed in a condition where the isolation or filtration function is not needed. This is accomplished by immediately suspending movement of [recently] irradiated fuel assemblies and the movement of any fuel assemblies over recently irradiated fuel assemblies within containment. Performance of these actions shall not preclude completion of movement of a component to a safe position.

SURVEILLANCE REQUIREMENTS

SR 3.9.~~4.1~~ 3.2

3 Unit 2

This Surveillance demonstrates that each of the containment penetrations ~~required~~ to be in its closed position is in that position. The Surveillance on the open purge and exhaust valves will demonstrate that the valves ~~are not~~ blocked from closing~~.~~ and ~~Also the Surveillance will demonstrate~~ that each valve ~~operator~~ has motive power, which will ensure that each valve is capable of being ~~closed by~~ an OPERABLE automatic containment purge and exhaust isolation signal~~.~~

The Surveillance on the open Unit 1 purge and exhaust valves will confirm that the purge exhaust is lined up to an OPERABLE SLCRS filtration train.

8

The Surveillance is performed every 7 days during movement of [recently] irradiated fuel assemblies within containment. The Surveillance interval is ~~selected to be commensurate with the normal duration of time to complete fuel handling operations. A surveillance before the start of refueling operations will provide two or three surveillance verifications during the applicable period for this LCO.~~ adequate considering the procedural and administrative controls in place to ensure the containment penetrations are maintained in the required status during refueling operations involving recently irradiated fuel. As such, this Surveillance ensures that a postulated fuel handling accident [involving handling recently irradiated fuel] that releases fission product radioactivity within the containment will not result in a release of significant fission product radioactivity to the environment in excess of those recommended by Standard Review Plan Section ~~15.7.4~~ 15.0.1 (Reference 3).

1

SR 3.9.~~4.2~~ 3.3

3 The Unit 2

This ~~Surveillance~~ demonstrates that each Unit 2 containment purge and ~~exhaust~~ valve actuates to its isolation position for manual initiation ~~or~~ and on an actual ~~or simulated~~ high radiation signal. The 18 month Frequency maintains consistency with other similar ESFAS instrumentation and valve testing requirements. ~~In~~ LCO 3.3.6, the Containment Purge and Exhaust Isolation instrumentation requires a CHANNEL CHECK every 12 hours and a COT every 92 days to ensure the channel OPERABILITY

BASES

involving recently irradiated fuel assemblies. It also requires that

SURVEILLANCE REQUIREMENTS (continued)

9

during refueling operations~~.~~ ~~E~~very 18 months a CHANNEL CALIBRATION is performed. ~~The system actuation response time is demonstrated every 18 months, during refueling, on a STAGGERED TEST BASIS. SR 3.6.3.5 demonstrates that the isolation time of each valve is in accordance with the Inservice Testing Program requirements.~~ These Surveillances ~~performed during MODE 6 will~~ ensure that the valves are capable of closing after a postulated fuel handling accident [involving handling recently irradiated fuel] to limit a release of fission product radioactivity from the containment.

3

two Notes

The Surveillance is not applicable to Unit 1 because Unit 1 does not credit purge and exhaust isolation and relies on filtration instead.

is only applicable to Unit 2 and that this Surveillance

The SR is modified by ~~a Note~~ stating that this Surveillance is not required to be met for valves in isolated penetrations. The LCO provides the option to close penetrations in lieu of requiring automatic actuation capability.

3

REFERENCES

1. GPU Nuclear Safety Evaluation SE-0002000-001, Rev. 0, May 20, 1988.
2. ~~FSAR, Section [15.4.5]~~.

Unit 1 UFSAR, Section 14.2.1.
Unit 2 UFSAR 15.7.4.

3. NUREG-0800, Section ~~15.7.4, Rev. 1, July 1981~~.

1

15.0.1, Rev.0, July 2000.

4. NUREG-1431, "Standard Technical Specifications for Westinghouse Plants," Rev. 2, April, 2001.

5

SR 3.9.3.4

The surveillance requires that the Unit 2 containment purge exhaust valve isolation time be verified within the limit. The required isolation time for the containment purge and exhaust valves is specified in the Licensing Requirements Manual (LRM). The surveillance is necessary to verify the Containment Purge and Exhaust Isolation System is OPERABLE. LCO 3.9.3.c.2 requires that the containment purge and exhaust penetrations are capable of being isolated by an OPERABLE Containment Purge and Exhaust Isolation System. Verifying the purge exhaust valve isolation time is within the limit provides assurance that, in the event of a limiting fuel handling accident, the purge and exhaust penetrations will be isolated prior to the resulting radioactivity being released from containment.

The surveillance is performed every 18 months during refueling operations inside containment involving recently irradiated fuel when an OPERABLE Containment Purge and Exhaust Isolation System is required by LCO 3.9.3.c.2. The Frequency of 18 months is adequate to verify the purge exhaust valve isolation time is maintained within the required limit.

The surveillance is modified by two notes that specify the surveillance is only applicable to Unit 2 and that the surveillance is only required to be met when the containment purge and exhaust is operating in accordance with LCO 3.9.3.c.2. The surveillance is only applicable to Unit 2 because Unit 1 does not credit purge and exhaust isolation and instead relies on filtration of the purge exhaust flow.

ITS 3.9.3 Containment Penetrations Bases Inserts

Unit 1 and 2 Containment Purge and Exhaust System Descriptions Insert

The radiation monitors associated with the Unit 1 Containment Purge and Exhaust System are not mounted in a seismically qualified ventilation duct. Therefore, Unit 1 can not credit containment isolation when necessary to mitigate the radiological consequences of a design bases fuel-handling accident. Unit 1 must rely on filtration of the purge exhaust by an OPERABLE Supplemental Leak Collection and Release System (SLCRS) filter train.

The Unit 2 Containment Purge and Exhaust System credits containment isolation when necessary to mitigate the radiological consequences of a design bases fuel-handling accident. The limit placed on the Containment Purge and Exhaust flow (7500 cfm) ensures the Unit 2 purge and exhaust isolation valves close before any radioactivity is released from containment.

Safety Analysis section insert

During refueling operations, the postulated event that results in the most severe radiological consequences is a fuel handling accident (Ref. 2). The limiting fuel handling accident analyzed in Reference 2, includes dropping a single irradiated fuel assembly and handling tool (conservatively estimated at 2500 pounds) directly onto another irradiated fuel assembly resulting in both assemblies being damaged. The analysis assumes a 100-hour decay time prior to moving irradiated fuel.

The applicable limits for offsite and control room dose from a fuel handling accident are specified in 10 CFR 50.67. Standard Review Plan, Section 15.0.1, Rev 0 (Ref. 3) provides an additional offsite dose criteria of 6.3 rem total effective dose equivalent (TEDE) for fuel handling accidents.

The water level requirements of LCO 3.9.6, "Refueling Cavity Water Level", in conjunction with a minimum decay time of 100 hours prior to irradiated fuel movement, ensure that the resulting offsite and control room dose from the limiting fuel handling accident is within the limits required by 10 CFR 50.67 and within the acceptance criteria of Reference 3 without the need for containment closure.

Therefore, the containment closure requirements of LCO 3.9.3, "Containment Penetrations," are only applicable during refueling operations involving recently irradiated fuel (i.e., fuel that has occupied part of a critical reactor core within the previous 100 hours). Current requirements based on the decay time of the fuel prevent the movement of recently irradiated fuel. However, the requirements for containment closure are retained in the Technical Specifications in case these requirements are necessary to support fuel movement involving recently irradiated fuel consistent with the guidance of Ref. 4.

(continued)

Unit 1 and 2 LCO Descriptions Insert

which may be open if the exhaust airflow is lined up to an OPERABLE SLCRS train (Unit 1) or capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System (Unit 2).

For Unit 2, an OPERABLE Containment Purge and Exhaust Isolation System includes purge and exhaust valves that isolate within the required time and a purge exhaust flow that is within the required limit. The Unit 2 purge and exhaust valve isolation time and purge exhaust flow requirements provide assurance that, in the event of a limiting fuel handling accident, the purge and exhaust penetrations will be isolated prior to the resulting radioactivity being released from containment.

Unit 2 SR 3.9.3.1 Bases Insert

SR 3.9.3.1

The surveillance requires that the Unit 2 containment purge exhaust flow rate be verified to be ≤ 7500 cfm. The surveillance is necessary to verify the Containment Purge and Exhaust Isolation System is OPERABLE. LCO 3.9.3.c.2 requires that the containment purge and exhaust penetrations are capable of being isolated by an OPERABLE Containment Purge and Exhaust Isolation System. Verifying the purge exhaust flow is within the limit provides assurance that, in the event of a limiting fuel handling accident, the purge and exhaust penetrations will be isolated prior to the resulting radioactivity being released from containment.

The surveillance is performed every 24 hours during refueling operations inside containment involving recently irradiated fuel when an OPERABLE Containment Purge and Exhaust Isolation System is required by LCO 3.9.3.c.2. The Frequency of 24 hours has been shown to be adequate by operating experience to verify the purge exhaust airflow is maintained within the required limit.

The surveillance is modified by two notes that specify the surveillance is only applicable to Unit 2 and that the surveillance is only required to be met when the containment purge and exhaust is operating in accordance with LCO 3.9.3.c.2. The surveillance is only applicable to Unit 2 because Unit 1 does not credit purge and exhaust isolation and instead relies on filtration of the purge exhaust flow.

B 3.9 REFUELING OPERATIONS

B 3.9.5 RHR and Coolant Circulation – High Water Level
4

BASES

BACKGROUND

The purpose of the RHR System in MODE 6 is to remove decay heat and sensible heat from the Reactor Coolant System (RCS), as required by GDC 34, to provide mixing of borated coolant and to prevent boron stratification (Ref. 1). Heat is removed from the RCS by circulating reactor coolant through the RHR heat exchanger(s), where the heat is transferred to the Component Cooling Water System. The coolant is then returned to the RCS via the RCS cold leg(s). Operation of the RHR System for normal cooldown or decay heat removal is manually accomplished from the control room. The heat removal rate is adjusted by controlling the flow of reactor coolant through the RHR heat exchanger(s) and the bypass. Mixing of the reactor coolant is maintained by this continuous circulation of reactor coolant through the RHR System.

APPLICABLE SAFETY ANALYSES

If the reactor coolant temperature is not maintained below 200°F, boiling of the reactor coolant could result. This could lead to a loss of coolant in the reactor vessel. Additionally, boiling of the reactor coolant could lead to a reduction in boron concentration in the coolant due to boron plating out on components near the areas of the boiling activity. The loss of reactor coolant and the reduction of boron concentration in the reactor coolant would eventually challenge the integrity of the fuel cladding, which is a fission product barrier. One train of the RHR System is required to be operational in MODE 6, with the water level ≥ 23 ft above the top of the reactor vessel flange, to prevent this challenge. The LCO does permit ~~de-energizing~~ the RHR pump for short durations, under the condition that the boron concentration is not diluted. This conditional ~~de-energizing~~ of the RHR pump does not result in a challenge to the fission product barrier.

to be removed from operation

stopping

TSTF-438

The RHR System satisfies Criterion 4 of 10 CFR 50.36(c)(2)(ii).

LCO

Only one RHR loop is required for decay heat removal in MODE 6, with the water level ≥ 23 ft above the top of the reactor vessel flange. Only one RHR loop is required to be OPERABLE, because the volume of water above the reactor vessel flange provides backup decay heat removal capability. At least one RHR loop must be OPERABLE and in operation to provide:

a. Removal of decay heat,

BASES

LCO (continued)

b. Mixing of borated coolant to minimize the possibility of criticality, and

c. Indication of reactor coolant temperature.

RCS

normal recirculation

An OPERABLE RHR loop includes an ~~RHR~~ pump, a heat exchanger, valves, piping, instruments, and controls to ensure an OPERABLE flow path and to determine the ~~low end~~ temperature. The flow path starts in one of the RCS hot legs and is returned to the RCS cold legs.

three Notes. Notes 1 and 2

2

removed from

TSTF-438

or up to 4 hours per 8 hour period

by the

The LCO is modified by ~~a Note that~~ allows the required operating RHR loop to ~~not~~ be ~~in~~ operation for up to 1 hour per 8 hour period, provided no operations are permitted that would dilute the RCS boron concentration introduction of coolant into the RCS with boron concentration less than required to meet the minimum boron concentration of LCO 3.9.1. Boron concentration reduction with coolant at boron concentrations less than required to assure the RCS boron concentration is maintained is prohibited because uniform concentration distribution cannot be ensured without forced circulation. ~~This~~ permits operations such as core mapping or alterations ~~in the vicinity~~ of the reactor vessel hot leg ~~nozzles~~ and RCS to RHR isolation valve testing. During ~~this 1 hour period~~, decay heat is removed by natural convection to the large mass of water in the refueling cavity.

The one-hour allowance

2

The four-hour allowance is used solely for the performance of ultrasonic inservice inspection inside the reactor vessel nozzles.

the time the RHR is not in operation

INSERT LCO NOTE 3 DESCRIPTION

1

APPLICABILITY

6

One RHR loop must be OPERABLE and in operation in MODE 6, with the water level ≥ 23 ft above the top of the reactor vessel flange, to provide decay heat removal. The 23 ft water level was selected because it corresponds to the 23 ft requirement established for fuel movement in LCO 3.9.~~7~~, "Refueling Cavity Water Level." Requirements for the RHR System in other MODES are covered by LCOs in Section 3.4, Reactor Coolant System (RCS)~~, and Section 3.5, Emergency Core Cooling Systems (ECCS)~~. RHR loop requirements in MODE 6 with the water level < 23 ft are located in LCO 3.9.~~6~~, "Residual Heat Removal (RHR) and Coolant Circulation - Low Water Level."

3

5

ACTIONS

RHR loop requirements are met by having one RHR loop OPERABLE and in operation, except as permitted in the Note to the LCO.

s

2

A.1

If RHR loop requirements are not met, there will be no forced circulation to provide mixing to establish uniform boron concentrations. Suspending positive reactivity additions that could result in failure to meet the

BASES

ACTIONS (continued)

minimum boron concentration limit is required to assure continued safe operation. *Introduction of coolant inventory must be from sources that have a boron concentration greater than ~~that~~ what would be required in the RCS for minimum refueling boron concentration. This may result in an overall reduction in RCS boron concentration, but provides acceptable margin to maintaining subcritical operation.*

A.2

If RHR loop requirements are not met, actions shall be taken immediately to suspend loading of irradiated fuel assemblies in the core. With no forced circulation cooling, decay heat removal from the core occurs by natural convection to the heat sink provided by the water above the core. A minimum refueling water level of 23 ft above the reactor vessel flange provides an adequate available heat sink. Suspending any operation that would increase decay heat load, such as loading a fuel assembly, is a prudent action under this condition.

A.3

If RHR loop requirements are not met, actions shall be initiated and continued in order to satisfy RHR loop requirements. With the unit in MODE 6 *and the refueling water level ≥ 23 ft above the top of the reactor* vessel flange, corrective actions shall be initiated immediately.

4

A.4, A.5, A.6.1, and A.6.2

installed

If no RHR is in operation, the following actions must be taken:

a. The equipment hatch must be closed and secured with [four] bolts,

b. One door in each air lock must be closed, and

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere must be either closed by a manual or automatic isolation valve, blind flange, or equivalent, or verified to be capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System.

The safety function of the Containment Purge and Exhaust Isolation System required for OPERABILITY of the system in order to satisfy Action A.6.2 consists of the capability to close at least one isolation valve in each penetration by either automatic actuation on high radiation or manually from the control room.

With RHR loop requirements not met, the potential exists for the coolant to boil and release radioactive gas to the containment atmosphere. Performing the actions described above ensures that all containment

BASES

ACTIONS (continued)

penetrations are either closed or can be closed so that the dose limits are not exceeded.

The Completion Time of 4 hours allows fixing of most RHR problems and is reasonable, based on the low probability of the coolant boiling in that time.

4

SURVEILLANCE REQUIREMENTS

SR 3.9.~~5~~.1

This Surveillance demonstrates that the RHR loop is in operation and circulating reactor coolant. ~~The flow rate is determined by the flow rate necessary to provide sufficient decay heat removal capability and to prevent thermal and boron stratification in the core. The Frequency of 12 hours is sufficient, considering the flow, temperature, pump control, and alarm indications available to the operator in the control room for monitoring the RHR System.~~

6

REFERENCES

1. ~~FSAR, Section [5.5.7].~~

5

Unit 1 UFSAR, Appendix 1A, "1971 AEC General Design Criteria Conformance".
Unit 2 UFSAR, Section 3.1, "Conformance with NRC General Design Criteria".

Verification includes flow rate, temperature, or pump status monitoring, which help ensure that forced flow is providing heat removal and to prevent thermal and boron stratification in the core. The Frequency of 12 hours is sufficient considering other indications and alarms available to the operator in the control room to monitor RHR loop performance.

INSERT ITS 3.9.4 BASES DESCRIPTION OF LCO NOTE 3

Note 3 allows the RHR loop required to be in operation to be removed from operation (i.e., circulating reactor coolant) and aligned to the refueling water storage tank. The RHR loop is considered OPERABLE during alignment to and from the refueling water storage tank and during operation with the RHR loop aligned to the refueling water storage tank provided the required RHR loop is capable of being realigned to the RCS.

B 3.9 REFUELING OPERATIONS

B 3.9.~~6~~ RHR and Coolant Circulation – Low Water Level

5

BASES

BACKGROUND	The purpose of the RHR System in MODE 6 is to remove decay heat and sensible heat from the Reactor Coolant System (RCS), as required by GDC 34, to provide mixing of borated coolant, and to prevent boron stratification (Ref. 1). Heat is removed from the RCS by circulating reactor coolant through the RHR heat exchangers where the heat is transferred to the Component Cooling Water System. The coolant is then returned to the RCS via the RCS cold leg(s). Operation of the RHR System for normal cooldown decay heat removal is manually accomplished from the control room. The heat removal rate is adjusted by controlling the flow of reactor coolant through the RHR heat exchanger(s) and the bypass lines. Mixing of the reactor coolant is maintained by this continuous circulation of reactor coolant through the RHR System.
APPLICABLE SAFETY ANALYSES	If the reactor coolant temperature is not maintained below 200°F, boiling of the reactor coolant could result. This could lead to a loss of coolant in the reactor vessel. Additionally, boiling of the reactor coolant could lead to a reduction in boron concentration in the coolant due to the boron plating out on components near the areas of the boiling activity. The loss of reactor coolant and the reduction of boron concentration in the reactor coolant will eventually challenge the integrity of the fuel cladding, which is a fission product barrier. Two trains of the RHR System are required to be OPERABLE, and one train in operation, in order to prevent this challenge. The RHR System satisfies Criterion 4 of 10 CFR 50.36(c)(2)(ii).
LCO	In MODE 6, with the water level < 23 ft above the top of the reactor vessel flange, both RHR loops must be OPERABLE. Additionally, one loop of RHR must be in operation in order to provide: a. Removal of decay heat, b. Mixing of borated coolant to minimize the possibility of criticality, and c. Indication of reactor coolant temperature. This LCO is modified by ~~a Note that~~ three Notes. Note 1 permits the RHR pumps to be ~~de-energized~~ removed from operation for ≤ 15 minutes when switching from one train to another.

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BASES

LCO (continued)

TSTF-21

Note 2

1

The circumstances for stopping both RHR pumps are to be limited to situations when the outage time is short [and the core outlet temperature is maintained > 10 degrees F below saturation temperature]. The Note prohibits boron dilution or draining operations when RHR forced flow is stopped.

~~This LCO is modified by a Note that~~ allows one RHR loop to be inoperable for a period of 2 hours provided the other loop is OPERABLE and in operation. Prior to declaring the loop inoperable, consideration should be given to the existing plant configuration. This consideration should include that the core time to boil is short, there is no draining operation to further reduce RCS water level and that the capability exists to inject borated water into the reactor vessel. This permits surveillance tests to be performed ~~on the inoperable loop during a time when these tests are safe and possible~~.

when the testing results in the required RHR loop being rendered inoperable. The remaining OPERABLE RHR loop is adequate to provide the required cooling during the time allowed by Note 2.

TSTF-21

INSERT NOTE 3 DESCRIPTION

RCS

normal recirculation

An OPERABLE RHR loop consists of an RHR pump, a heat exchanger, valves, piping, instruments and controls to ensure an OPERABLE flow path and to determine the ~~low end~~ temperature. The flow path starts in one of the RCS hot legs and is returned to the RCS cold legs.

APPLICABILITY

Two RHR loops are required to be OPERABLE, and one RHR loop must be in operation in MODE 6, with the water level < 23 ft above the top of the reactor vessel flange, to provide decay heat removal. Requirements for the RHR System in other MODES are covered by LCOs in Section 3.4, Reactor Coolant System (RCS)~~, and Section 3.5, Emergency Core Cooling Systems (ECCS)~~. RHR loop requirements in MODE 6 with the water level ≥ 23 ft are located in LCO 3.9.5, "Residual Heat Removal (RHR) and Coolant Circulation - High Water Level."

4

ACTIONS

A.1 and A.2

If less than the required number of RHR loops are OPERABLE, action shall be immediately initiated and continued until the RHR loop is restored to OPERABLE status and to operation or until ≥ 23 ft of water level is established above the reactor vessel flange. When the water level is ≥ 23 ft above the reactor vessel flange, the Applicability changes to that of LCO 3.9.5, and only one RHR loop is required to be OPERABLE and in operation. An immediate Completion Time is necessary for an operator to initiate corrective actions.

4

BASES

ACTIONS (continued)

B.1

If no RHR loop is in operation, there will be no forced circulation to provide mixing to establish uniform boron concentrations. Suspending positive reactivity additions that could result in failure to meet the minimum boron concentration limit is required to assure continued safe operation. Introduction of coolant inventory must be from sources that have a boron concentration greater than ~~that~~ what would be required in the RCS for minimum refueling boron concentration. This may result in an overall reduction in RCS boron concentration, but provides acceptable margin to maintaining subcritical operation.

B.2

If no RHR loop is in operation, actions shall be initiated immediately, and continued, to restore one RHR loop to operation. Since the unit is in Conditions A and B concurrently, the restoration of two OPERABLE RHR loops and one operating RHR loop should be accomplished expeditiously.

2

B.3, B.4, B.5.1, and B.5.2

installed

If no RHR is in operation, the following actions must be taken:

a. The equipment hatch must be closed and secured with {four} bolts,

b. One door in each air lock must be closed, and

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere must be either closed by a manual or automatic isolation valve, blind flange, or equivalent, or verified to be capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System.

The safety function of the Containment Purge and Exhaust Isolation System required for OPERABILITY of the system in order to satisfy Action B.5.2 consists of the capability to close at least one isolation valve in each penetration by either automatic actuation on high radiation or manually from the control room.

With RHR loop requirements not met, the potential exists for the coolant to boil and release radioactive gas to the containment atmosphere. Performing the actions stated above ensures that all containment penetrations are either closed or can be closed so that the dose limits are not exceeded.

The Completion Time of 4 hours allows fixing of most RHR problems and is reasonable, based on the low probability of the coolant boiling in that time.

BASES 5

SURVEILLANCE REQUIREMENTS

SR 3.9.~~6~~.1

This Surveillance demonstrates that one RHR loop is in operation and circulating reactor coolant. ~~The flow rate is determined by the flow rate necessary to provide sufficient decay heat removal capability and to prevent thermal and boron stratification in the core.~~ In addition, during operation of the RHR loop with the water level in the vicinity of the reactor vessel nozzles, the RHR pump suction requirements must be met. ~~The Frequency of 12 hours is sufficient, considering the flow, temperature, pump control, and alarm indications available to the operator for monitoring the RHR System in the control room.~~

4

Verification includes flow rate, temperature, or pump status monitoring, which help ensure that forced flow is providing heat removal and to prevent thermal and boron stratification in the core.

The Frequency of 12 hours is sufficient considering other indications and alarms available to the operator in the control room to monitor RHR loop performance.

SR 3.9.5.2

Verification that the required pump is OPERABLE ensures that an additional ~~RCS or~~ RHR pump can be placed in operation, if needed, to maintain decay heat removal and reactor coolant circulation. Verification is performed by verifying proper breaker alignment and power available to the required pump. The Frequency of 7 days is considered reasonable in view of other administrative controls available and has been shown to be acceptable by operating experience.

3

The Surveillance is modified by a note that allows credit to be taken for recent pump operation to meet the requirements of this Surveillance. The Note allows 7 days from the time the pump was removed from service before the surveillance is required to be performed for that pump. The Note acknowledges that recent pump operation adequately confirms breaker alignment and power availability.

REFERENCES

1. ~~FSAR, Section [5.5.7].~~

5

Unit 1 UFSAR, Appendix 1A, "1971 AEC General Design Criteria Conformance".
Unit 2 UFSAR, Section 3.1, "Conformance with NRC General Design Criteria".

INSERT ITS 3.9.5 BASES DESCRIPTION OF LCO NOTE 3

TSTF-21 (Rev. 3 text)

~~Both RHR pumps may be aligned to the Refueling Water Storage Tank to support filling or draining the refueling cavity or for performance of required testing.~~

Note 3 allows the RHR loop required to be in operation to be removed from operation (i.e., circulating reactor coolant) and aligned to the refueling water storage tank. The RHR loop is considered OPERABLE during alignment to and from the refueling water storage tank and during operation with the RHR loop aligned to the refueling water storage tank provided the required RHR loop is capable of being realigned to the RCS.

6

Text replacing the TSTF-21 text

B 3.9 REFUELING OPERATIONS

B 3.9.~~7~~ 6 Refueling Cavity Water Level

2 or the movement of any fuel assemblies over irradiated fuel assemblies

BASES

BACKGROUND

The movement of irradiated fuel assemblies within containment requires a minimum water level of 23 ft above the top of the reactor vessel flange. During refueling, this maintains sufficient water ~~level in the containment,~~ refueling canal, fuel transfer canal, and refueling cavity~~, and spent fuel pool~~. Sufficient water is necessary to retain iodine fission product activity in the water in the event of a fuel handling accident (Refs. 1 and 2). Sufficient iodine activity would be retained to limit offsite doses and the control room dose from the accident to within the limits of 10 CFR 50.67 ~~≤ 25% of 10 CFR 100 limits~~, as provided by the guidance of Reference 3.

1

APPLICABLE SAFETY ANALYSES

During movement of irradiated fuel assemblies, the water level in the refueling canal and the refueling cavity is ~~an initial~~ condition design parameter in the analysis of a fuel handling accident in containment, as postulated by Regulatory Guide ~~1.25~~ 1.183 (Ref. 1). A minimum water level of 23 ft ~~(Regulatory Position C.1.c of Ref. 1)~~ allows a decontamination factor of 200 ~~100 (Regulatory Position C.1.g~~ Appendix B of Ref. 1) to be used in the accident analysis for iodine. ~~This relates to the assumption that 99% of the total iodine released from the pellet to cladding gap of all the dropped fuel assembly rods is retained by the refueling cavity water. The fuel pellet to cladding gap is assumed to contain 10% of the total fuel rod iodine inventory (Ref. 1).~~

1

The fuel handling accident analysis inside containment is described in Reference 2. With a minimum water level of 23 ft and a minimum decay time of 100 ~~[X]~~ hours prior to fuel handling, the analysis and test programs demonstrate that the iodine release due to a postulated fuel handling accident is adequately captured by the water and offsite doses and the control room dose are maintained within allowable limits (Refs. 2 and 4 ~~4 and 5~~).

Refueling cavity water level satisfies Criterion 2 of 10 CFR 50.36(c)(2)(ii).

LCO

A minimum refueling cavity water level of 23 ft above the reactor vessel flange is required to ensure that the radiological consequences of a postulated fuel handling accident inside containment are within acceptable limits, as provided by the guidance of ~~Reference 3~~ References 3 and 4.

2 or when moving any fuel assemblies over irradiated fuel assemblies

BASES 6

APPLICABILITY LCO 3.9.~~7~~ is applicable when moving irradiated fuel assemblies within containment. The LCO minimizes the possibility of a fuel handling accident in containment that is beyond the assumptions of the safety analysis. If irradiated fuel assemblies are not present in containment, there can be no significant radioactivity release as a result of a postulated fuel handling accident. Requirements for fuel handling accidents in the spent fuel pool are covered by LCO 3.7.15, "Fuel Storage Pool Water Level."

and A.2

ACTIONS A.~~1~~

moving irradiated fuel assemblies or moving fuel assemblies over

2

With a water level of < 23 ft above the top of the reactor vessel flange, all operations involving ~~or movement of~~ irradiated fuel assemblies within the containment shall be suspended immediately to ensure that a fuel handling accident cannot occur.

The suspension of fuel movement shall not preclude completion of movement of a component to a safe position.

6

SURVEILLANCE REQUIREMENTS SR 3.9.~~7~~.1

Verification of a minimum water level of 23 ft above the top of the reactor vessel flange ensures that the design basis for the analysis of the postulated fuel handling accident during refueling operations is met. Water at the required level above the top of the reactor vessel flange limits the consequences of damaged fuel rods that are postulated to result from a fuel handling accident inside containment (Ref. 2).

The Frequency of 24 hours is based on engineering judgment and is considered adequate in view of the large volume of water and the normal procedural controls of valve positions, which make significant unplanned level changes unlikely.

1.183, July 2000

REFERENCES

1

1. Regulatory Guide ~~1.25, March 23, 1972~~.
2. ~~FSAR, Section [15.4.5]~~. Unit 1 UFSAR, Section 14.2.1 Unit 2 UFSAR, Section 15.7.4
3. NUREG-0800, Section ~~15.7.4~~. 15.0.1
4. 10 CFR ~~100.10~~. 50.67

BASES

REFERENCES (continued)

1

5. Malinowski, ~~D. D.,~~ Bell, M. J., Duhn, ~~E., and Locante~~, J., WCAP-7828, Radiological ~~Consequences~~ of a Fuel Handling ~~Accident~~, December 1971.

3.9 REFUELING OPERATIONS

JUSTIFICATIONS FOR DEVIATION

ITS 3.9.1 Boron Concentration Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS Bases is revised to reflect the plant specific design. In BVPS, the RHR pumps are dedicated to residual heat removal and are not used to inject RWST water into the core for ECCS purposes. Therefore, the RHR can not be used to flood the refueling cavity with RWST water. The low head SI pumps are used for this purpose.
2. The ISTS bases is revised to reflect the BVPS specific safety analysis. BVPS does not assume a boron dilution accident in Modes 4, 5, or 6. In these Modes, the unborated water sources are required by technical specifications to be isolated which is considered to preclude a dilution accident. The bases text and references are revised to eliminate the discussion of boron dilution accident analyses.
3. The reference to SR 3.0.4 in SR 3.9.1.1 is corrected to SR 3.0.1 to be consistent with the application of SR and LCO 3.0.4 in revision 2 of NUREG-1431. In revision 2 of NUREG-1431, LCO and SR 3.0.4 are not applicable in Mode 6. The provisions of SR 3.0.1 provide adequate assurance all surveillances are met when the affected LCO is applicable.
4. BVPS Unit 1 has been designed and constructed to comply with the General Design Criteria for Nuclear Power Plant Construction" published in July, 1967 by the AEC. BVPS Unit 2 was designed and constructed to be in compliance with 10 CFR 50, Appendix A, General Design Criteria (GDC). The BVPS Unit 1 and 2 UFSAR each contain a section that describes how the unit complies with the GDC. The ISTS Bases references to the GDC have been replaced with references to the appropriate section of each BVPS Unit's UFSAR that describes compliance with the GDC.
5. Editorial change to the generic bases text to improve clarity.

ITS 3.9.2 Nuclear Instrumentation Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS Bases describing the source range monitors used in Mode 6 is revised consistent with the CTS to differentiate between the primary and alternate monitors utilized at BVPS. The use of alternate source range monitors was previously approved by the NRC in Amendments 175 and 55 dated 8/20/93. The discussions added to the ISTS bases regarding the use of alternate source range monitors are consistent with the description of the alternate monitors included in the License Amendment Requests 193 and 58 sent to the NRC on 12/21/92 and approved by the NRC in Amendments 175 and 55.
2. The ISTS bases is revised to reflect the BVPS specific safety analysis and the associated changes made to the BVPS specific ITS. BVPS does not assume a boron dilution accident in Modes 4, 5, or 6. In these Modes, the unborated water sources are required by technical specifications to be isolated which is considered to preclude a dilution accident. The bases text and references are revised to eliminate the discussion of boron dilution accident in various places. This includes the deletion of references to an audible alarm requirement.
3. The ISTS Bases describing the calibration of neutron detectors is revised to reference the description included in the Channel Calibration Bases of LCO 3.3.1, "Reactor Trip System (RTS) Instrumentation." This change is consistent with a similar reference in the Bases of LCO 3.3.3, "Post Accident Monitoring." The proposed change provides a consistent method in the Bases for referencing the calibration requirements for neutron detectors and reduces the potential for future inconsistencies if the calibration requirements are ever changed. The requirements described in the Channel Calibration Bases in BVPS ITS LCO 3.3.1 are consistent with the existing plant practice for calibrating the neutron detectors.
4. The ISTS Reference for Source Range monitor design is replaced with a more BVPS specific reference to the applicable section of the UFSAR that describes the nuclear instrumentation. The ISTS reference applies to plants designed to the GDCs. BVPS Unit 1 was not designed to the GDCs. The proposed UFSAR reference is an adequate design source reference for the purpose of the TS bases.
5. The ISTS reference to LCO 3.3.9, BDPS, or Boron Dilution Protection System is revised to be consistent with the BVPS specific version of this specification. The BVPS design does not include the Westinghouse Boron Dilution Protection System. The corresponding BVPS specification is described in the Instrumentation section of the proposed BVPS specific ITS.
6. The ISTS surveillance bases discussion regarding "the need to perform the surveillance under conditions that apply during a plant outage" is revised to clarify the intent of the ISTS. The purpose of the ISTS bases discussion is to assure the surveillance is performed consistent with safe plant operation. However, the ISTS bases text could be interpreted to require all performances of the surveillance be conducted during shutdown conditions. The proposed change to the ISTS bases text is consistent with the NRC conclusions regarding shutdown restrictions on TS surveillances stated in Generic Letter 91-04. In Generic Letter 91-04, the NRC stated, "This restriction [performance only during shutdown] ensures that a surveillance would only be performed when it is consistent with safe plant

operation." The Generic Letter further stated that "The staff concludes that the TS need not restrict surveillances as only being performed during shutdown. Nevertheless, safety dictates that when refueling interval surveillances are performed during power operation, licensees give proper regard for their effect on the safe operation of the plant." As such, the proposed change to the ISTS bases incorporates a clarification to the bases that reflects the NRC guidance stated in Generic letter 91-04.

ITS 3.9.3 Containment Penetrations Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. BVPS previously licensed the use of an alternative source term for the fuel handling accident design basis radiological consequences consistent with 10 CRF 50.67 and Standard Review Plan 15.0.1. In addition, BVPS incorporated the applicability of "recently" irradiated fuel into the CTS. Amendments 241 and 121 issued by letter dated 8/30/01 provided the changes to the CTS to incorporate the revised radiological accident analyses using the alternate source term and "recently" irradiated fuel. Therefore, throughout the bases changes are made as necessary to reflect the requirements related to the use of an alternative source term, including replacing references to 10 CFR 100 with 10 CFR 50.67 and other related wording changes including standard review plan references and a revised safety analysis section that reflects the current licensing basis.
2. The ISTS Bases discussions regarding the LCO Note that allows containment penetrations or air lock doors to be open is deleted. ITS 3.9.3, Containment Penetrations is only applicable when moving recently irradiated fuel. Consistent with the ISTS reviewers note confirmatory dose analyses are required to support this allowance. BVPS does not have confirmatory dose analyses that support leaving containment penetrations or air lock doors open when moving recently irradiated fuel.
3. The ISTS bases discussions regarding the Containment Purge and Exhaust System are revised to be consistent with the BVPS design and safety analyses. BVPS does not have a "mini-purge" system. Text is added to describe the Unit 1 and Unit 2 differences in design and safety analyses. Unit 2 credits purge and exhaust isolation and Unit 1 credits purge exhaust filtration when necessary to mitigate a fuel handling accident inside containment. The differences affecting the LCO requirements for each unit are discussed in more detail in the JFDs for the changes made to the associated ITS 3.9.3 LCO requirements. However, these changes also affect other bases sections.
4. The ISTS is modified to retain the CTS descriptive term "functional" and the CTS Bases requirement for an approved engineering evaluation. These changes simply retain descriptive information from the CTS and do not change the intent or meaning of the ISTS.
5. The ISTS Bases is revised to include a discussion that addresses the BVPS Unit 2 Surveillance requirement to verify the isolation time of the containment purge and exhaust valves. This change maintains consistency with the proposed changes to corresponding ITS 3.9.3 and the CTS requirements for these valves.
6. The ISTS bases applicability discussions are revised to be consistent with the CTS applicability. These changes include the addition of references to fuel movement involving recently irradiated fuel and moving fuel assemblies over recently irradiated fuel assemblies and defining "recently" as 100 hours. These changes maintain the current licensing basis.
7. The ISTS Action A.1 is revised to incorporate the BVPS Unit differences discussed in a previous JFD and to incorporate the additional Action of suspending the movement of fuel over recently irradiated fuel consistent with the CTS.

8. The ISTS bases discussion concerning the SR frequency of 7 days, states that this frequency provides 2 or 3 performances of the surveillance during the applicability. This Bases statement is not true for plants when the applicability is confined to moving "recently" irradiated fuel. The movement of recently irradiated fuel will not last long enough for 2 or 3 performances of a surveillance that is required to be performed every 7 days. Therefore, the ISTS bases description is replaced with a more appropriate bases for this surveillance.

9. The ISTS bases for the purge and exhaust valve actuation verification is revised to be more consistent with the corresponding CTS requirements and the fact that the BVPS purge and exhaust valve isolation function is only required operable during operations involving recently irradiated fuel. The valves are deactivated in the closed position in Modes 1-4 in accordance with ITS 3.6.3. Therefore, both the requirements for valve actuation and isolation timing are retained in ITS 3.9.3 and not included in ITS 3.6.3 which is only applicable in Modes 1-4. The other surveillances that verify the operability of the Unit 2 purge and exhaust valve isolation system instrumentation will be in the dedicated instrumentation TS (ITS 3.3.6) which also has the same applicability as ITS 3.9.3 (i.e., fuel movement involving recently irradiated fuel).

ITS 3.9.4 RHR and Coolant Circulation – High Water Level Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS Bases was revised consistent with changes to the Specification. See the JFD associated with the change to the Specification for details.

2. The ISTS bases description of the note that allows RHR to be removed from service for 1 hour every 8 hours is revised to include the CTS option that allows the RHR to be removed from operation for up to 4 hours per 8 hour period for certain Inservice Inspection activities (as well as the addition of the new Note (#3) based on the LCO exception provided in TSTF-21 for the "Low Water Level" TS). The addition of the description of the BVPS CTS Note simply retains the current BVPS licensing basis requirements.

3. The ISTS reference to requirements for the RHR system being in Section 3.5, ECCS, is deleted. In the BVPS design, the RHR pumps are not used in the ECCS system. The BVPS RHR pumps are dedicated to the residual heat removal system.

4. The purpose of the ISTS Action A.6.2 is to ensure the capability to close the containment purge and exhaust penetrations is available to minimize the release of radioactive material should the RHR requirements continue to not be met and boiling occurs in the core. The proposed change recognizes that under these circumstances the closure of one valve in the purge and exhaust penetrations is sufficient and may be accomplished automatically by radiation monitor actuation or by manual action from the control room.

   Manual isolation of one valve in the purge and exhaust penetrations is acceptable considering that the potential release from heating up the RCS is not the same as the immediate and large release assumed in a design basis fuel handling accident. Therefore, considering the nature of the potential release from heating the RCS, the heightened awareness of the operations staff during a loss of RHR and the radiation monitor indications available to the control room, sufficient information and time would be available to enable the operators to manually isolate the purge and exhaust penetrations if it becomes necessary to prevent any significant radioactive release.

   As Action A.6.2 requires that the isolation capability to close the penetrations be verified within 4 hours and considering that the event being protected against is not a design basis accident, the ability to close each penetration with a single isolation valve is sufficient to perform the required safety function.

   Although not specified as an Action in the TS, the BVPS purge exhaust may also be lined up to the filtration system in the Supplemental Leak Collection and Release System (SLCRS) which could provide a defense in depth capability to mitigate any release.

5. BVPS Unit 1 has been designed and constructed to comply with the General Design Criteria for Nuclear Power Plant Construction" published in July, 1967 by the AEC. BVPS Unit 2 was designed and constructed to be in compliance with 10 CFR 50, Appendix A, General Design Criteria (GDC). The BVPS Unit 1 and 2 UFSAR each contain a section that describes how the unit complies with the GDC. The ISTS

Bases references to the GDC have been replaced with references to the appropriate section of each BVPS Unit's UFSAR that describes compliance with the GDC.

6. The ISTS Bases for the surveillance for verifying RHR operation is revised to to make the ISTS more consistent with the BVPS CTS. The proposed change eliminates the specific RHR flow rate specified in the surveillances of ISTS Section 3.9. The proposed change would make the operating RHR loop verification surveillance Bases consistent with the corresponding RHR surveillance Bases in ISTS Section 3.4, RCS. In Section 3.4, the Bases for the operating RHR loop verification (SR 3.4.7.1) states that verification of operation includes verification of flow rate. The Bases for the corresponding Section 3.9 RHR loop verification surveillances is revised to be consistent with the Section 3.4 Bases and includes the requirement to verify the RHR flow. In addition, the proposed change is consistent with the corresponding CTS requirements applicable during normal operation (i.e., no dilution or reduced inventory operations). In conditions other than dilution or reduced inventory operations, the CTS does not specify a minimum flow rate for RHR.

   The BVPS safety analyses do not assume a boron dilution event occurs in Modes 4, 5, and 6. In these Modes, TS requirements assure the unborated water source isolation valves are secured closed and accidental dilution precluded. Therefore, the specific RHR flow needed during Mode 6 operations is not the assumption of any safety analysis but is dependent on plant conditions which may vary through Mode 6 operation.

   The minimum RHR flow is dependent on plant conditions, such as water level, decay heat load, and component cooling water temperature. In some plant conditions (i.e., reduced inventory) maintaining a fixed high rate of flow could increase the likelihood of pump cavitation and loss of RHR cooling. The proposed change would allow some operating flexibility in determining the RHR flow at various plant conditions without adversely affecting plant safety. As such, the proposed surveillance requirement will continue to adequately verify the required RHR loop is operating and able to provide forced RCS flow for heat removal and prevent thermal and boron stratification.

ITS 3.9.5 RHR and Coolant Circulation – Low Water Level Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. The standard ISTS bases text discussing the allowance provided by Note 2 is revised to more accurately describe the intent of the Note and to clarify the surveillance testing that may be performed. The bases description implies that surveillance testing will render the RHR loop inoperable. Not all surveillance testing will render the RHR loop inoperable (e.g., flow verifications). As such, the Bases description is revised to describe that the Note is applicable when a required surveillance test results in the RHR loop being rendered inoperable. In addition, the Bases description of Note 2 implies that the surveillance testing allowed is limited only to testing performed on the affected RHR loop. Certain other required surveillance tests at BVPS may also affect the operability of an RHR loop. For example, as the BVPS RHR pumps are not designed for use in ECCS functions, the required verification of emergency diesel generator automatic loading results in the RHR pump associated with that train of electrical power being de-energized (i.e., rendered inoperable) during the performance of the diesel generator auto load test. This required emergency diesel generator testing must be accomplished during shutdown conditions when the RHR system is required operable. However, the required RHR pump affected by this testing can be restored to operable status within the two hours permitted by the Note 2 and the RHR loop served by the unaffected train of electrical power continues to be fully operable and in operation. Therefore, the Bases description of the Note is revised to encompass other required surveillance tests that render an RHR loop inoperable during the performance of the test. This change is acceptable because the safety basis for Note 2 remains applicable (i.e., the time allowed for an inoperable RHR loop is short, the performance of required surveillances is important to safety, and the other RHR loop remains operable and in operation).

   Additionally, the standard note implies the applicable Mode of this specification is the only time that RHR testing can be safely accomplished. However, in Mode 6 with the reactor cavity filled (water level ≥ 23 feet above the fuel) only one RHR loop is required operable and in operation and extended testing or maintenance is permissible on the other RHR loop. As such, this part of the bases description is deleted.

2. The purpose of the ISTS Action B.5.2 is to ensure the capability to close the containment purge and exhaust penetrations is available to minimize the release of radioactive material should the RHR requirements continue to not be met and boiling occurs in the core. The proposed change recognizes that under these circumstances the closure of one valve in the purge and exhaust penetrations is sufficient and may be accomplished automatically by radiation monitor actuation or by manual action from the control room.

   Manual isolation of one valve in the purge and exhaust penetrations is acceptable considering that the potential release from heating up the RCS is not the same as the immediate and large release assumed in a design basis fuel handling accident. Therefore, considering the nature of the potential release from heating the RCS, the heightened awareness of the operations staff during a loss of RHR and the radiation monitor indications available to the control room, sufficient information and time would be available to enable the operators to manually isolate the purge and exhaust penetrations if it becomes necessary to prevent any significant radioactive release.

As Action B.5.2 requires that the isolation capability to close the penetrations be verified within 4 hours and considering that the event being protected against is not a design basis accident, the ability to close each penetration with a single isolation valve is sufficient to perform the required safety function.

Although not specified as an Action in the TS, the BVPS purge exhaust may also be lined up to the filtration system in the Supplemental Leak Collection and Release System (SLCRS) which could provide a defense in depth capability to mitigate any release.

3. The ISTS Bases is revised by the addition of a Bases description of the Note that was added to the corresponding ISTS surveillance requirement. The JFD associated with the addition of the note to the surveillance requirements provides the justification for this change.

4. The ISTS Bases for the surveillance for verifying RHR operation is revised to make the ISTS more consistent with the BVPS CTS. The proposed change eliminates the specific RHR flow rate specified in the surveillances of ISTS Section 3.9. The proposed change would make the operating RHR loop verification surveillance Bases consistent with the corresponding RHR surveillance Bases in ISTS Section 3.4, RCS. In Section 3.4, the Bases for the operating RHR loop verification (SR 3.4.7.1) states that verification of operation includes verification of flow rate. The Bases for the corresponding Section 3.9 RHR loop verification surveillances is revised to be consistent with the Section 3.4 Bases and includes the requirement to verify the RHR flow. In addition, the proposed change is consistent with the corresponding CTS requirements applicable during normal operation (i.e., no dilution or reduced inventory operations). In conditions other than dilution or reduced inventory operations, the CTS does not specify a minimum flow rate for RHR.

   The BVPS safety analyses do not assume a boron dilution event occurs in Modes 4, 5, and 6. In these Modes, TS requirements assure the unborated water source isolation valves are secured closed and accidental dilution precluded. Therefore, the specific RHR flow needed during Mode 6 operations is not the assumption of any safety analysis but is dependent on plant conditions which may vary through Mode 6 operation.

   The minimum RHR flow is dependent on plant conditions, such as water level, decay heat load, and component cooling water temperature. In some plant conditions (i.e., reduced inventory) maintaining a fixed high rate of flow could increase the likelihood of pump cavitation and loss of RHR cooling. The proposed change would allow some operating flexibility in determining the RHR flow at various plant conditions without adversely affecting plant safety. As such, the proposed surveillance requirement will continue to adequately verify the required RHR loop is operating and able to provide forced RCS flow for heat removal and prevent thermal and boron stratification.

5. BVPS Unit 1 has been designed and constructed to comply with the General Design Criteria for Nuclear Power Plant Construction" published in July, 1967 by the AEC. BVPS Unit 2 was designed and constructed to be in compliance with 10 CFR 50,

Appendix A, General Design Criteria (GDC). The BVPS Unit 1 and 2 UFSAR each contain a section that describes how the unit complies with the GDC. The ISTS Bases references to the GDC have been replaced with references to the appropriate section of each BVPS Unit's UFSAR that describes compliance with the GDC.

6. The ISTS Bases text added by TSTF-21, Rev. 0 is revised to be more consistent with the corresponding LCO Note (#3) added to the BVPS ITS. The addition of this BVPS proposed LCO Note is not consistent with the ISTS. The proposed BVPS LCO Note for ITS 3.9.5, "RHR and Coolant Circulation – Low Water Level" is based on the exception provided in approved TSTF-21, Rev 0, for ISTS 3.9.6, "RHR and Coolant Circulation-Low Water Level." TSTF-21 has subsequently been incorporated into Revision 3 of NUREG-1431. TSTF-21, Rev. 0 included a bases statement in the LCO section of the ISTS 3.9.6 bases that allowed the required RHR pumps to be operable when aligned to the Refueling Water Storage Tank to support filling or draining the refueling cavity or for the performance of required testing. Due to the BVPS RHR design, the RHR pumps are normally used for draining the cavity (not filling). In addition, the BVPS RHR system is a dedicated heat removal system and is not part of the ECCS (like many other Westinghouse plants) and does not require the provision for realignment due to testing. Therefore, these provisions of the exception included in TSTF-21 are not implemented in the BVPS specific ITS.

However, an issue remains with the bases exception provided by TSTF-21 to realign RHR from the required function of circulating reactor coolant. Specifically, the bases exception introduced by TSTF-21, Rev. 0 can not be used to override the required operability function of the RHR pump in ISTS 3.9.6 (i.e., circulating reactor coolant). ISTS 3.9.6 specifies in both the Specification (SR 3.9.6.1) and the bases that the RHR pump is required to be circulating reactor coolant. An exception in the Specification's LCO statement would be required to avoid potential conflict with the ISTS 3.9.6 SR and bases that specify circulating reactor coolant. In a letter (from W. D. Beckner to J. Davis (NEI) dated 4/29/99), the NRC recommended TSTF-21, Rev.0 be revised to include an LCO exception Note in the Specification. The recommended Note provided a specific LCO exception to remove the RHR loop from operation to support fill and drain operations and to support required testing. However, the NRC recommended LCO Note was never incorporated in TSTF-21 and therefore, was not incorporated into Revision 3 of NUREG-1431.

The proposed BVPS ITS 3.9.5 LCO Note is similar to the Note recommended by the NRC (except for the BVPS plant specific design differences noted above). Therefore, the ISTS Bases text describing the exception to realign the RHR pumps is revised to more closely conform to the proposed BVPS ITS LCO 3.9.5 LCO Note. The proposed bases revision provides a description of the exception that is consistent with the LCO Note recommended by the NRC.

ITS 3.9.6 Refueling Cavity Water Level Bases

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS bases is revised to be consistent with the BVPS current licensing bases for a fuel handling accident. BVPS is currently licensed to use the alternative source term for a fuel handling accident in accordance with 10 CFR 50.67, Standard Review Plan 15.0.1, and Regulatory Guide 1.183. This JFD addresses all changes made to the ISTS Safety Analysis and Reference Sections of the Bases and includes various changes made to update other sections of the ISTS bases as well.
2. The ISTS Bases for Background, Applicability and Actions is revised consistent with the current BVPS TS requirements. The JFDs associated with the changes made to the ISTS Applicability and Actions in the corresponding Specification contain additional justification for these changes.

ENCLOSURE 3

CHANGES TO THE CTS

CURRENT TECHNICAL SPECIFICATION (CTS) MARKUP & DISCUSSION OF CHANGES (DOCs)

<u>Introduction</u>

This enclosure contains the markup of the current BVPS Unit 2 Technical Specifications (TS), and where necessary to show a change to a BVPS Unit 1 TS that is not addressed by the associated Unit 2 markup and DOCs, a BVPS Unit 1 TS page is included. If a Unit 1 page is included it will be marked to show the change to the Unit 1 specific difference, and will not typically contain markups that repeat the applicable changes already addressed in the corresponding Unit 2 markup. Therefore, unless otherwise stated, each DOC applies to both Units 1 and 2 even though the change may only be marked on the Unit 2 TS.

The CTS is marked-up to show the changes necessary to convert to the Improved Standard Technical Specifications (ISTS) in NUREG-1431, Revision 2. The marked-up CTS result in the BVPS specific Improved Technical Specifications (ITS) contained in Enclosure 1.

In order to facilitate the review of the changes to the CTS, the marked-up CTS are presented in their original numerical order, not ISTS numerical order. The new ITS number is marked at the top of the first page of each CTS and the disposition of each CTS and ISTS is summarized in the Table included at the beginning of Enclosure 1 for each TS Section.

The marked-up TS are followed by the applicable DOCs. Each technical change and more complex administrative change marked on the TS has a unique alpha-numeric designator that corresponds to a specific DOC. Due to the large number of format, editorial and presentation differences between the CTS and the new standard TS, not all of these changes are identified in the marked-up CTS pages. The single generic A.1 administrative change DOC designated on the first page of each marked-up CTS addresses all the marked and unmarked editorial, format, and presentation changes necessary to convert that entire CTS to the corresponding new standard TS. Only the more complex (not obvious) administrative type changes made to the CTS are identified with individual administrative DOCs (i.e., A.2, A.3, etc.).

The DOCs are grouped by the category of the change (i.e., less restrictive, more restrictive, administrative, etc). Each category of change is also associated with a No Significant Hazards Consideration (NSHC) for that change in Enclosure 4.

Certain categories of change also have a sub-category or change type associated with the DOC. The sub-category or change type is used to further group the CTS changes in more specific sub-categories that utilize a common NSHC or DOC.

Each CTS change marked as "Less Restrictive", with no subcategory identified in the associated DOC to reference a generic NSHC, will have a "Specific" NSHC included in Enclosure 4. A description of the categories and types of changes follows.

ENCLOSURE 3 (continued)

<u>Categories and Types of Changes to the CTS</u>

I. The major categories utilized to group changes to the CTS are as follows:

A - Administrative

L - Less Restrictive

M - More Restrictive

LA - Removed Detail (Sections of Tech Spec text removed from CTS)

R - Relocated (Entire Tech Spec requirement removed from CTS)

II. The subcategories of Less Restrictive "L" changes are as follows: [(1)]

1. Relaxation of LCO Requirements
2. Relaxation of Applicability
3. Relaxation of Completion Time
4. Relaxation of Required Action
5. Deletion of Surveillance Requirement
6. Relaxation of Surveillance Requirement Acceptance Criteria
7. Relaxation of Surveillance Frequency
8. Deletion of Reporting Requirement

III. The types of Removed Detail "LA" changes are as follows: [(2)]

1. Removing Details of System Design and System Description, Including Design Limits
2. Removing Descriptions of System Operation
3. Removing Procedural Details for Meeting Tech Spec Requirements and Related Reporting Requirements
4. Removing Administrative Requirements Redundant to Regulations
5. Removing Performance Requirements for Indication-Only Instruments and Alarms

(1) Each subcategory of Less Restrictive change is associated with a corresponding NSHC in Enclosure 4.

(2) The types of Removed Detail changes all share a common "LA" NSHC in Enclosure 4.

ITS 3.9.1

A1

~~3/4.9~~ REFUELING OPERATIONS

BORON CONCENTRATION

and refueling cavity

A2

LA1

within the limit specified in the COLR

LIMITING CONDITION FOR OPERATION

A3

A5

A4

3.9.1 ~~With the reactor vessel head unbolted or removed,~~ the boron concentration ~~of all filled portions~~ of the Reactor Coolant System and the refueling canal shall be maintained ~~uniform~~ and sufficient ~~to ensure that the more restrictive of the following reactivity conditions is met:~~

LA1

~~a. Either a K_{eff} of 0.95 or less, which includes a 1% $\Delta k/k$ conservative allowance for uncertainties, or~~

~~b. A boron concentration of greater than or equal to 2400 ppm, which includes a 50 ppm conservative allowance for uncertainties.~~

APPLICABILITY: MODE 6~~(1)~~.

NOTE
Only applicable to the refueling canal and refueling cavity when connected to the RCS.

A3

ACTION:

action to restore boron concentration to within the limit

L1

With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS or positive reactivity changes and initiate ~~and continue boration at ≥ 30 gpm of greater than or equal to 7000 ppm boric acid solution or its equivalent until K_{eff} is reduced to ≤ 0.95 or the boron concentration is restored to ≥ 2400 ppm, whichever is the more restrictive.~~ ~~The provisions of Specification 3.0.3 are not applicable.~~

A6

L2

SURVEILLANCE REQUIREMENTS

~~4.9.1.1 The more restrictive of the above two reactivity conditions shall be determined prior to:~~

~~a. Removing or unbolting the reactor vessel head, and~~

~~b. Withdrawal of any full length control rod in excess of 3 feet from its fully inserted position.~~

SR 3.9.1.1

~~4.9.1.2~~ The boron concentration ~~of the Reactor Coolant System and the refueling canal~~ shall be determined ~~by chemical analysis~~ at least ~~3 times per 7 days with a maximum time interval between samples of~~ 72 hours.

once per

Bases

LA2

A5

L3

~~(1) The reactor shall be maintained in MODE 6 when the reactor vessel head is unbolted or removed.~~

UNIT 1 PAGE

ITS 3.9.1

3/4.9.1 BORON CONCENTRATION

Changes to this Unit 1 material are addressed in the Unit 2 markup and DOCs

LIMITING CONDITION FOR OPERATION

3.9.1 With the reactor vessel head unbolted or removed, the boron concentration of all filled portions of the Reactor Coolant System and the refueling canal shall be maintained uniform and sufficient to ensure that the more restrictive of the following reactivity conditions is met:

a. Either a K_{eff} of 0.95 or less, which includes a 1% $\Delta k/k$ conservative allowance for uncertainties, or

b. A boron concentration of ≥ 2400 ppm, which includes a 50 ppm conservative allowance for uncertainties.

APPLICABILITY: MODE 6*.

ACTION:

action to restore boron ~~concentration to within the limit~~

L1

With the requirements of the above specification not satisfied, immediately suspend all operations involving CORE ALTERATIONS or positive reactivity changes and initiate ~~and continue boration at ≥ 30 gpm of 7000 ppm boric acid solution or its equivalent until K_{eff} is reduced to ≤ 0.95 or the boron concentration is restored to ≥ 2400 ppm, whichever is the more restrictive.~~ ~~The provisions of Specification 3.0.3 are not applicable.~~

A6

SURVEILLANCE REQUIREMENTS

Changes to this Unit 1 material are addressed in the Unit 2 markup and DOCs

4.9.1.1 The more restrictive of the above two reactivity conditions shall be determined prior to:

a. Removing or unbolting the reactor vessel head, and

b. Withdrawal of any full length control rod in excess of 3 feet from its fully inserted position.

4.9.1.2 The boron concentration of the reactor coolant system and the refueling canal shall be determined by chemical analysis at least 3 times per 7 days with a maximum time interval between samples of 72 hours.

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* The reactor shall be maintained in MODE 6 when the reactor vessel head is unbolted or removed.

Nuclear

ITS 3.9.2

REFUELING OPERATIONS

~~3/4.9.2~~ INSTRUMENTATION

A.1

LIMITING CONDITION FOR OPERATION

OPERABLE.

L1 LA1 Bases

3.9.2 ~~As a minimum,~~ two source range neutron flux monitors (primary or alternate) shall be operating, each with continuous visual indication in the control room ~~and one with audible indication in the containment and control room.~~ except ~~during upper internals installation when one monitor with continuous visual indication in the control room is required.~~

L2

M1

APPLICABILITY: MODE 6

and Suspend operations that would cause introduction of coolant into the RCS with boron concentration less than required to meet the boron concentration of LCO 3.9.1.

ACTION:

One required source range monitor inoperable

a. ~~With the requirements of the above specification not satisfied,~~ immediately suspend all operations involving CORE ALTERATIONS ~~or positive reactivity changes~~.

Two required

b. ~~With both of the above~~ monitors inoperable ~~or not operating, determine the boron concentration of the Reactor Coolant System at least~~ once per 12 hours.

A2

and perform SR 3.9.1.1

initiate action to restore one source range neutron flux monitor to OPERABLE status immediately

SURVEILLANCE REQUIREMENTS

M2

~~4.9.2 Each source range neutron flux monitor shall be demonstrated OPERABLE by performance of:~~

~~a. A CHANNEL FUNCTIONAL TEST at least once per 7 days, and~~

~~b. A CHANNEL FUNCTIONAL TEST within 8 hours prior to the initial start of CORE ALTERATIONS, and~~

~~c.~~ A CHANNEL CHECK at least once per 12 hours ~~during CORE ALTERATIONS~~.

SR 3.9.2.1 Perform

M3 M4 L3

SR 3.9.2.2 Note: Neutron detectors are excluded from the CHANNEL CALIBRATION
Perform CHANNEL CALIBRATION every 18 Months.

REFUELING OPERATIONS

DECAY TIME

LIMITING CONDITION OF OPERATION

3.9.3 The reactor shall be subcritical for at least 100 hours.

APPLICABILITY: During movement of irradiated fuel assemblies in the reactor pressure vessel.

ACTION:

With the reactor subcritical for less than 100 hours, suspend all operations involving movement of irradiated fuel assemblies in the reactor pressure vessel. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.3 The reactor shall be determined to have been subcritical for at least 100 hours by verification of the date and time of subcriticality prior to movement of irradiated fuel assemblies in the reactor pressure vessel.

LA1

The details contained in this Specification are moved out of the Tech Specs and into the LRM.

A.1

~~3/4.9.4~~ CONTAINMENT ~~BUILDING~~ PENETRATIONS

LCO 3.9.3

LIMITING CONDITION FOR OPERATION

~~3.9.4~~ The containment ~~building~~ penetrations shall be in the following status:

a. The equipment hatch closed and held in place by ~~a minimum of~~ four bolts;

b. ~~A minimum of~~ one door in each air lock is closed, ~~or both doors of the containment personnel air lock (PAL) may be open if:~~

M1

~~1. At least one of the PAL doors is capable of being closed,~~

~~2. A designated individual is available to close at least one PAL door,~~

~~3. The PAL area is being exhausted to at least one OPERABLE filtered Supplemental Leak Collection and Release System (SLCRS) train with all doors (except for the air lock doors) to the PAL area closed(1), and~~

~~4. SR 4.9.4.4 has been satisfied with both PAL doors open; and~~

c. Each penetration ~~(excluding the PAL)~~ providing direct access from the containment atmosphere ~~to the outside~~ atmosphere shall be either:

manual or automatic

M1

Bases

LA1

1. Closed by ~~an~~ isolation valve, blind flange, ~~manual valve,~~ or approved functional equivalent, or ~~the penetration may be open if:~~

~~a. The penetration is capable of being closed by an isolation valve, blind flange, manual valve, or approved functional equivalent,~~

~~b. The maximum equivalent containment penetration opening size for the associated plant area is not exceeded,~~

~~c. A designated individual is available to close the penetration, and~~

~~(1) Except for entry and exit.~~ M1

LIMITING CONDITION FOR OPERATION (Continued)

L1 M1

Unit 2 only.

d. ~~The~~ area(s) outside of containment, ~~where~~ the open ~~containment~~ penetration ~~piping~~ is located, is being ~~exhausted to at~~ least one OPERABLE filtered SLCRS ~~train with~~ all doors to the area(s) ~~required~~ to be ~~serviced~~ by SLCRS ~~closed~~(1); or

A4

SR 3.9.3.1

2. Capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System ~~with the~~ containment air being exhausted through this system at a flow rate of ≤ 7500 cfm ~~to at least one OPERABLE filtered SLCRS train~~ L1

APPLICABILITY: During movement of recently irradiated fuel assemblies within the containment, and

During movement of fuel assemblies over recently irradiated fuel assemblies within the containment.

ACTION: One or more containment penetrations not in required status

~~With the requirements of the above specification not satisfied~~, immediately suspend all operations involving movement of recently irradiated fuel assemblies within the containment and movement of fuel assemblies over recently irradiated fuel assemblies within the containment. ~~The provisions of Specification 3.0.3 are not applicable.~~

SR 3.9.3.2 A2

SURVEILLANCE REQUIREMENTS

~~4.9.4.1~~ Each of the above required containment penetrations shall be determined to be in its above required condition:

~~a.~~ At least once per 7 days, ~~and~~

b. ~~For all~~ areas located outside of containment ~~containing~~ open ~~containment penetrations~~, ~~including PAL~~ doors, verify at least once per 12 ~~hours that~~ these areas are being exhausted ~~to filtered~~ SLCRS and ~~that all~~ required area ~~doors~~ are closed.(1)

M1 L1

~~(1) Except for entry and exit.~~

, and
3. Unit 1 only. The Containment Purge and Exhaust System penetrations may be open when the system airflow is exhausted to an OPERABLE Supplemental Leak Collection and Release System train.

ITS 3.9.3

L.1 Only applicable to Unit 2, and

REFUELING OPERATIONS

SURVEILLANCE REQUIREMENTS (Continued)

NOTES: Only required to be met when operating the containment purge and exhaust system in accordance with LCO 3.9.3.c.2.

A4

~~4.9.4.2 The containment purge and exhaust system, shall be demonstrated OPERABLE by:~~

containment purge exhaust

is ≤ 7500 cfm

SR 3.9.3.1 ~~a.~~ Verifying the flow rate ~~to filtered SLCRS~~ at least once per 24 hours when the system is in operation, ~~and~~

A5

~~b. Testing the Containment Purge and Exhaust Isolation Valves per the applicable portions of Specification 4.9.9.~~

4.9.4.3 The required portions of filtered SLCRS shall be demonstrated OPERABLE per Specification 4.7.8.1 with exception to item 4.7.8.1.c.2.

4.9.4.4 For areas required to be exhausted to filtered SLCRS (except for the containment), verify at least once per 7 days that filtered SLCRS can maintain the area at a negative pressure of ≤ -0.125 inches of water gauge with respect to atmospheric pressure. The verification shall establish the maximum equivalent containment penetration opening size for each applicable plant area.

SLCRS TS A3

Unit 1 only. L1

1. Only applicable to Unit 2 L1

M1

SR 3.9.3.3

- NOTES -

2. Not required to be met for containment purge and exhaust valve(s) in penetrations closed to comply with LCO 3.9.3.c.1.

Verify each required containment purge and exhaust valve actuates to the isolation position on an actual or simulated actuation signal every 18 months.

A5

Moved from CTS SR 4.9.9

A6

SR 3.9.3.4

- NOTES -

2. Not required to be met for containment purge and exhaust valve(s) in penetrations closed to comply with LCO 3.9.3.c.1.

Verify the isolation time of each containment purge and exhaust valve is within the limit every 18 months.

3/4.9.4 CONTAINMENT BUILDING PENETRATIONS

Changes to the Unit 1 material on this page are addressed in the Unit 2 markups and DOCs.

LIMITING CONDITION FOR OPERATION

3.9.4 The containment building penetrations shall be in the following status:

a. The equipment hatch closed and held in place by a minimum of four bolts,

b. A minimum of one door in each air lock is closed, and

c. Each penetration providing direct access from the containment atmosphere to the outside atmosphere shall be either:

1. Closed by an isolation valve, blind flange, manual valve, or approved functional equivalent, or

~~2.~~ Capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System with the containment air being exhausted through this system at a flow rate of ≤ 7500 cfm to at least one OPERABLE filtered Supplemental Leak Collection and Release System (SLCRS) train.

APPLICABILITY: During movement of recently irradiated fuel assemblies within the containment, and

During movement of fuel assemblies over recently irradiated fuel assemblies within the containment.

ACTION:

With the requirements of the above specification not satisfied, immediately suspend all operations involving movement of recently irradiated fuel assemblies within the containment and movement of fuel assemblies over recently irradiated fuel assemblies within the containment. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.4.1 Each of the above required containment penetrations shall be determined to be in its above required condition at least once per 7 days.

4.9.4.2 The containment purge and exhaust system shall be demonstrated OPERABLE by:

a. Verifying the flow rate to the SLCRS at least once per 24 hours when the system is in operation,

b. Testing the Containment Purge and Exhaust Isolation Valves per the applicable portions of Specification 4.9.9, and

c. The required portions of SLCRS shall be demonstrated OPERABLE per Specification 4.7.8.1 with exception to item 4.7.8.1.c.2.

A1

3/4.9.5 - 3/4.9.7 (These Specification numbers are not used.)

Note:
This page is deleted.

Next Page is 3/4 9-8

ITS 3.9.4

A1

- High Water Level

REFUELING OPERATIONS

~~3/4.9.8~~ RESIDUAL HEAT REMOVAL AND COOLANT CIRCULATION

A2

LCO 3.9.4

L4

LIMITING CONDITION FOR OPERATION

INSERT LCO NOTE 3

~~3.9.8.1~~ ~~At least~~ one ~~residual~~ heat removal (RHR) loop shall be OPERABLE and ~~in operation~~.

LCO Notes

with the water level ≥ 23 ft above the top of reactor vessel flange.

APPLICABILITY: MODE 6.

ACTION:

Replace with Action A.2

A3

L1

Replace with Action A.1

M1

Add Action A.3

A4

Replace with Actions A.4, A.5 and A.6.1

Add Action A.6.2

~~a.~~ With less than one residual heat removal loop in operation, ~~except as provided below, suspend all operations involving~~ an increase in the reactor decay heat load or a reduction in boron concentration of the Reactor Coolant System. Close all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere within 4 hours.

L2

LA1

~~b.~~ The residual heat removal loop may be removed from operation for up to 1 hour per 8 hour period during the performance of CORE ALTERATIONS in the vicinity of the reactor pressure vessel hot legs.

Bases

A5

~~c.~~ The residual heat removal loop may be removed from operation for up to 4 hours per 8 hour period during the performance of Ultrasonic In-service Inspection inside the reactor vessel nozzles ~~provided there is at least 23 feet of water above the top of the reactor vessel flange.~~

A6

A7

M2

SR 3.9.4.1

~~d. The provisions of Specification 3.0.3 are not applicable.~~

, provided no operations are permitted that would cause introduction of coolant into the RCS with boron concentration less than that required to meet the minimum required boron concentration of LCO 3.9.1.

SURVEILLANCE REQUIREMENTS

LA3

~~4.9.8.1~~ Verify ~~at least~~ one residual heat removal loop is in operation ~~and circulating reactor coolant at:~~

every 12 hours

M3

L3

a. ~~A flow rate ≥ 1000 gpm twice per shift when the Reactor Coolant System is in a reduced inventory condition*.~~

b. A flow rate ≥ 3000 gpm prior to the start of and once per hour during a reduction in the Reactor Coolant System boron concentration.

Moved to LRM

LA2

~~* The reactor coolant system water level is lower than three feet below the reactor vessel flange.~~

ITS 3.9.4 LCO NOTE 3 INSERT

3. The RHR loop required to be in operation may be removed from operation to support draining of the reactor cavity when aligned to, and during realignment to and from, the refueling water storage tank provided the required RHR loop is capable of being realigned to the RCS.

ITS 3.9.4 ACTION INSERTS

A.1 Suspend operations that would cause introduction of coolant into the RCS with boron concentration less than required to meet the boron concentration of LCO 3.9.1 immediately, and

A.2 Suspend loading irradiated fuel assemblies in the core immediately, and

A.3 Initiate action to satisfy RHR loop requirements immediately, and

A.4 Close equipment hatch and secure with 4 bolts in 4 hours, and

A.5 Close one door in each airlock in 4 hours, and

A.6.1 Close each penetration providing direct access from the containment atmosphere to the outside atmosphere with a manual or automatic isolation valve, blind flange or equivalent in 4 hours, or

A.6.2 Verify each penetration is capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System in 4 hours.

3/4.9.8 RESIDUAL HEAT REMOVAL AND COOLANT CIRCULATION

M4

OPERABLE and

LIMITING CONDITION FOR OPERATION

3.9.8.1 At least one residual heat removal (RHR) loop shall be in operation.

APPLICABILITY: MODE 6#.

AC

Note that changes to this portion of the Unit 1 TS are addressed in the markup of the Unit 2 TS.

a. With less than one residual heat removal loop in operation, except as provided below, suspend all operations involving an increase in the reactor decay heat load or a reduction** in boron concentration of the Reactor Coolant System. Close all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere within 4 hours.

b. The residual heat removal loop may be removed from operation for up to 1 hour per 8 hour period during the performance of CORE ALTERATIONS in the vicinity of the reactor pressure vessel (hot) legs.

c. The residual heat removal loop may be removed from operation for up to 4 hours per 8 hour period during the performance of Ultrasonic In-service Inspection inside the reactor vessel nozzles provided there is at least 23 feet of water above the top of the reactor vessel flange.

d. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.8.1 Verify at least one residual heat removal loop is in operation and circulating reactor coolant at:

a. A flow rate ≥ 1000 gpm twice per shift when the Reactor Coolant System is in a reduced inventory condition*.

b. A flow rate ≥ 3000 gpm prior to the start of and once per hour during a reduction** in the Reactor Coolant System boron concentration.

---

* The Reactor Coolant System water level is lower than three feet below the reactor vessel flange.

** For purposes of this specification, the addition of borated water to the RCS does not constitute a reduction or dilution in RCS boron concentration provided the boron concentration of the borated water being added is greater than the minimum required to satisfy the requirements of Specification 3.9.1 for Mode 6.

A8

\# With fuel in the vessel.

Definition of MODE

LRM

LA4

ITS 3.9.5

A1

A.2

REFUELING OPERATIONS

RHR and Coolant Circulation -

LOW WATER LEVEL

L1

and one RHR loop shall be in operation

LCO 3.9.5

Insert LCO Notes 1 & 2

LIMITING CONDITION FOR OPERATION

~~3.9.8.2~~ Two Residual Heat Removal (RHR) loops shall be OPERABLE.~~*~~

APPLICABILITY: MODE 6 when the water level above the top of the reactor pressure vessel flange is less than 23 feet.

A3

L.4

OR A.2 Initiate action to establish ≥ 23 ft of water above the top of the reactor vessel flange immediately.

ACTION: Insert LCO Note 3 immediately

Action A.1 ~~a.~~ With less than the required RHR loops OPERABLE, immediately initiate corrective action to return the required RHR loops to OPERABLE status ~~as soon as possible~~.

~~b. The provisions of Specification 3.0.3 are not applicable.~~

A4

Insert Condition B "No RHR Loop in operation" and Actions B.1 through B.5.1

Insert Action B.5.2

L3

SURVEILLANCE REQUIREMENTS

A2

L2

~~4.9.8.2 The required Residual Heat Removal loops shall be determined OPERABLE per specification 4.0.5.~~

SR 3.9.5.1 Verify one RHR loop is in operation every 12 hours.

A2

M1

NOTE

Not required to be performed until 7 days after the required pump is removed from service.

SR 3.9.5.2 Verify correct breaker alignment and indicated power available to the required RHR pump that is not in operation every 7 days.

~~*The normal or emergency power source may be inoperable for each RHR loop.~~

A5

NOTES MODIFYING ITS LCO 3.9.5

- NOTES –

1. All RHR pumps may be removed from operation for ≤15 minutes when switching from one train to another provided:
   a. The core outlet temperature is maintained > 10 degrees F below saturation temperature,
   b. No operations are permitted that would cause introduction of coolant into the Reactor Coolant System (RCS) with boron concentration less than that required to meet the minimum required boron concentration of LCO 3.9.1, and
   c. No draining operations to further reduce RCS water volume are permitted.
2. One required RHR loop may be inoperable for up to 2 hours for surveillance testing, provided that the other RHR loop is OPERABLE and in operation.
3. The RHR loop required to be in operation may be removed from operation to support draining of the reactor cavity when aligned to, and during realignment to and from, the refueling water storage tank provided the required RHR loop is capable of being realigned to the RCS.

ITS 3.9.5 Condition B Actions

B.1	Suspend operations that would cause introduction of coolant into the RCS with boron concentration less than required to meet the boron concentration of LCO 3.9.1 immediately, and
B.2	Initiate action to restore one RHR loop to operation immediately, and
B.3	Close equipment hatch and secure with 4 bolts in 4 hours, and
B.4	Close one door in each airlock in 4 hours, and
B.5.1	Close each penetration providing direct access from the containment atmosphere to the outside atmosphere with a manual or automatic isolation valve, blind flange or equivalent in 4 hours, or
B.5.2	Verify each penetration is capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System in 4 hours.

A1

REFUELING OPERATIONS

CONTAINMENT PURGE AND EXHAUST ISOLATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.9.9 The Containment Purge and Exhaust isolation system shall be OPERABLE.

APPLICABILI ... fuel

... cently ... nt.

Note: This Specification is moved to the Instrumentation Section (ITS 3.3.6) consistent with the location of this information in the ISTS. All changes to the Unit 1 Specification will be discussed and documented in Section 3.3.6. Some Unit 2 Surveillance Requirements remain in Section 3.9 (ITS 3.9.3) and are discussed below as well as in ITS 3.3.6.

ACTION:

With the Containment Purge and Exhaust isolation system inoperable, close each of the purge and exhaust penetrations providing direct access from the containment atmosphere to the outside atmosphere. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

~~4.9.9~~ The Containment Purge and Exhaust isolation system shall be demonstrated OPERABLE at least once per 18 months ~~7 days~~ by verifying that containment Purge and Exhaust isolation occurs on an actual or simulated actuation signal on manual initiation and on a high radiation signal ~~from each of the containment radiation~~ monitoring instrumentation channels and the isolation time for each system isolation valve is within limits.

L1

Unit 2 valve actuation and isolation time verifications moved to ITS 3.9.3, as SR 3.9.3.3 and SR 3.9.3.4. on CTS page 3/4 9-4b.

Manual initiation and radiation monitoring channel instrument requirements are moved to ITS 3.3.6

A2

on an actual or simulated actuation signal

L2

Bases for ITS SR 3.9.3.3

LA1

ITS 3.9.6

A1

3/4.9.10 WATER LEVEL ~~— REACTOR VESSEL~~

LCO 3.9.6

Refueling Cavity

LIMITING CONDITION FOR OPERATION

~~3.9.10~~ At least 23 feet of water shall be maintained over the top of the reactor pressure vessel flange.

APPLICABILITY: During movement of irradiated fuel assemblies within the containment, and

During movement of fuel assemblies over irradiated fuel assemblies within the containment.

immediately

M1

ACTION:

With the requirements of the above specification not satisfied, suspend all operations involving movement of irradiated fuel assemblies within the containment and movement of fuel assemblies over irradiated fuel assemblies within the containment. ~~The provisions of Specification 3.0.3 are not applicable.~~

A.2

SURVEILLANCE REQUIREMENTS

~~4.9.10~~ The water level shall be determined to be at least its minimum required depth at least once per 24 hours.

SR 3.9.6.1

REFUELING OPERATIONS

STORAGE POOL WATER LEVEL

LIMITING CONDITION FOR OPERATION

3.9.11 As a minimum, 23 feet of water shall be maintained over the top of irradiated fuel assemblies seated in the storage racks.

APPLICABILITY: During movement of irradiated fuel assemblies within the fuel storage pool, and

During movement of fuel assemblies over irradiated fuel assemblies within the fuel storage pool.

ACTION:

With the requirement of the specification not satisfied, suspend all movement of irradiated fuel assemblies within the fuel storage pool and movement of fuel assemblies over irradiated fuel assemblies within the fuel storage pool. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.11 The water level in the fuel storage pool shall be determined to be at least its minimum required depth at least once per 7 days.

Note: This Specification is moved to the Plant Systems Section (3.7) of the Tech Specs consistent with the location of this information in the ISTS. All changes to this Specification will be discussed and documented in Section 3.7.

REFUELING OPERATIONS

FUEL BUILDING VENTILATION SYSTEM - FUEL MOVEMENT

LIMITING CONDITION FOR OPERATION

3.9.12 The fuel building portion of the Supplemental Leak Collection and Release System (SLCRS) shall be OPERABLE and operating with fuel building exhaust flow discharging through at least one train of the SLCRS HEPA filters and charcoal adsorbers.

APPLICABILITY: During movement of recently irradiated fuel assemblies within the fuel storage pool, and

During movement of fuel assemblies over recently irradiated fuel assemblies within the fuel storage pool.

ACTION:

With the requirement of the above specification not satisfied, suspend all operations involving movement of recently irradiated fuel assemblies within the fuel storage pool and movement of fuel assemblies over recently irradiated fuel assemblies within the fuel storage pool. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.12.1 The fuel building portion of the SLCRS shall be verified to be operating with fuel building exhaust flow discharging through at least one train of SLCRS HEPA filters and charcoal adsorbers and that all fuel building doors are closed(1) at least once per 12 hours.

4.9.12.2 The fuel building portion of the SCLRS shall be demonstrated OPERABLE by testing the SLCRS per Specification 4.7.8 with the exception to item 4.7.8.1.c.2.

(1) The fuel building doors may be opened for entry and exit.

Note: This Specification is moved to the Plant Systems Section (3.7) of the Tech Specs consistent with the location of this information in the ISTS. All changes to this Specification will be discussed and documented in Section 3.7 for both units.

3/4.9.13 (This Specification number is not used.)

Note:
This page is deleted.

3/4.9.14 SPENT FUEL POOL STORAGE

LIMITING CONDITION FOR OPERATION

3.9.14 The combination of initial enrichment and burnup of each fuel assembly stored in the spent fuel storage pool shall comply with the limits specified in Table 3.9-1.

APPLICABILITY: Whenever any fuel assembly is stored in the spent fuel storage pool.

ACTION: With the above requirements not satisfied:

a. Immediately initiate action to move the non-complying fuel assembly to a location that complies with Table 3.9-1.

b. The provisions of Specifications 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.14 Verify, by administrative means, the initial enrichment and burnup complies with Table 3.9-1 prior to storing a fuel assembly in the spent fuel storage pool.

Note: This Specification is moved to the Plant Systems Section (3.7) of the Tech Specs consistent with the location of this information in the ISTS. All changes to this Specification will be discussed and documented in Section 3.7 for both units.

Note: This Specification is moved to Section 3.7 of the Tech Specs. Changes to this Specification will be discussed as part of Section 3.7 for both units.

Table 3.9-1

FUEL ASSEMBLY MINIMUM BURNUP VS. U-235 NOMINAL ENRICHMENT FOR STORAGE IN SPENT FUEL RACK REGIONS 1,2,3

Nominal Enrichment (w/o U-235)	Region 3 4-out-of-4 Burnup (MWD/MTU)	Region 2 3-out-of-4 Checkerboard Burnup (MWD/MTU)	Region 1 2-out-of-4 Checkerboard Burnup (MWD/MTU)
1.9	0	0	0
2.0	1615	0	0
2.2	4629	0	0
2.4	7295	0	0
2.6	9677	0	0
2.8	11877	1798	0
3.0	13995	3556	0
3.2	16112	5268	0
3.4	18235	6940	0
3.6	20349	8581	0
3.8	22443	10198	0
4.0	24503	11800	0
4.2	26519	13394	0
4.4	28492	14979	0
4.6	30428	16552	0
4.8	32329	18110	0
5.0	34201	19650	0

Note 1: Linear interpolation yields conservative results.

3/4.9.15 FUEL STORAGE POOL BORON CONCENTRATION

LIMITING CONDITION FOR OPERATION

3.9.15 The fuel storage pool boron concentration shall be greater than or equal to 2000 ppm.

APPLICABILITY: When fuel assemblies are stored in the fuel storage pool.

ACTION: With fuel storage pool boron concentration not within limits,

a. Immediately suspend all operations involving the movement of fuel assemblies in the fuel storage pool and initiate action to restore the fuel storage pool boron concentration to within the limit.

b. The provisions of Specifications 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.15 Verify the fuel storage pool boron concentration is within the limit at least once per 7 days.

Note: This Unit 2 Specification is moved to the Plant Systems Section (3.7) of the Tech Specs consistent with the location of this information in the ISTS. All changes to this Unit 2 Specification will be discussed and documented in Section 3.7.

3.9 Refueling Operations

Discussion of Changes

CTS 3/4.9.1 Boron Concentration
ITS 3.9.1 Boron Concentration
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

L.1 *(Category 4 – Relaxation of Required Action)* CTS 3.9.1 ACTION states that when the boron concentration requirement is not met, initiate and continue boration at ≥ 30 gpm of ≥ 7000 ppm (Unit 2) and of 7,000 ppm (Unit 1) boric acid solution or its equivalent until K_{eff} is reduced to ≤ 0.95 or the boron concentration is restored to ≥ 2400 ppm, whichever is more restrictive. ISTS 3.9.1 requires initiation of action to restore boron concentration to within limit. This changes the CTS by eliminating the Unit 1 and Unit 2 specific requirements for the boric acid solution to be used to restore compliance with the LCO.

The purpose of the CTS 3.9.1 Action is to preclude a reactivity event while the boron concentration is below the limit. This change is acceptable because the Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to restore the boron concentration. The Required Actions provide for safe operation under the specified Condition. The Required Actions suspend Core Alterations and positive reactivity additions as well as requiring the boron concentration be restored to within the limit. By precluding a positive reactivity addition the Required Actions assure a stable condition from which the boron concentration may be restored utilizing the best possible means for the given situation. The specific boric acid solution requirements in the Action and the time to restore the boron concentration to within the limit are not assumed in any accident analyses and are not necessary in the TS. The ISTS action to restore the boron concentration immediately is sufficient given that the other actions provide assurance that stable conditions exist for the core. Additionally, the ISTS Action allows for some operating flexibility to take advantage of current plant conditions when restoring the boron concentration to within the limit. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.2 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.9.1.1 requires the LCO reactivity condition to be determined prior to removing or unbolting the reactor vessel head, and prior to withdrawal of any full length control rod located within the reactor pressure vessel, in excess of 3 feet from its fully inserted position. ITS 3.9.1 does not contain this Surveillance Requirement. This changes the CTS by deleting the surveillance.

The purpose of CTS 3.9.1.1 is to ensure that the MODE 6 requirements are met prior to entering MODE 6 and that the reactor has sufficient SHUTDOWN MARGIN prior to withdrawing any control rods. This change is acceptable because the deleted Surveillance Requirement is not required to assure the plant is maintained in a safe condition or that the LCO is met.

The ISTS definition of Mode 6 "one or more reactor vessel head closure bolts less than fully tensioned" and the ISTS Mode 6 Surveillance Requirement to verify boron concentration within the limit provide adequate assurance the required boron concentration is met prior to unbolting or removing the reactor vessel head. The CTS surveillance being deleted is redundant and not required to assure the boron concentration is met prior to removing the vessel head. In addition, the ISTS Required Actions suspend positive reactivity additions when the boron concentration is not met. Therefore, the Actions provide adequate assurance that no control rod withdrawals will take place unless the boron concentration limit is met.

Thus, appropriate values continue to be tested in a manner and at a frequency necessary to give confidence that the assumptions in the safety analysis are protected. ISTS 3.9.1 requires that the boron concentration is met in MODE 6 or that action is initiated to restore the boron concentration immediately and that all positive reactivity additions and Core Alterations be suspended. Therefore, verification that the boron concentration requirement is met must be performed prior to entering MODE 6 in order to avoid immediately entering into Actions that would prohibit further refueling activities. This change is designated as less restrictive because Surveillances which are required in the CTS will not be required in the ITS.

L.3 *(Category 7 – Relaxation Of Surveillance Frequency)* CTS Surveillance 4.9.1.2 specifies that boron concentration be verified at least 3 times per 7 days with a maximum time interval between samples of 72 hours. The corresponding ISTS Surveillance requires boron concentration to be verified once per 72 hours. The CTS is revised to conform to the ISTS surveillance frequency. This changes the CTS by simplifying the surveillance frequency to once per 72 hours, which slightly reduces the number of required performances.

The purpose of CTS surveillance 4.9.1.1 is to confirm the required soluble boron concentration is met. This in turn provides assurance that adequate shutdown margin exists to preclude a reactivity event during refueling operations. This change is acceptable because the new Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of assurance. The purpose of the increased boron concentration during refueling operations is to ensure that sufficient SDM exists during manipulation of fuel assemblies. The frequency of once per 72 hours is acceptable considering the large volume of water involved during fuel handling operations when the potential exists for significant reactivity excursions, the relatively small dilution sources available, and that during a dilution event, the boron concentration would change slowly. In addition, the TS contain requirements that isolate unborated water sources in Mode 6. These requirements effectively preclude an RCS boron dilution event in Mode 6. Based on the low likelihood of a boron dilution event in Mode 6 and considering slow changes expected in the boron concentration, the frequency of once per 72 hours to verify the concentration provides adequate assurance that the required shutdown margin is maintained. This change is designated as less restrictive because Surveillances will be performed less frequently under the ITS than under the CTS.

More Restrictive Changes (M)

None

Removed Detail Changes (LA)

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.9.1 states that the boron concentration in MODE 6 shall be the more restrictive of a K_{eff} of 0.95 or a boron concentration of ≥ 2400 ppm. ISTS LCO 3.9.1 states that the boron concentration shall be within the limit specified in the COLR. This changes the CTS by relocating the specific reactivity condition (boron concentration) for MODE 6 to the Core Operating Limits Report (COLR).

The removal of cycle-specific parameter (design) limits from the TS and their relocation into the COLR is acceptable because the limits are developed or utilized under NRC-approved methodologies. The NRC documented in Generic Letter 88-16, Removal of Cycle-Specific Parameter Limits From the Technical Specifications, that this type of information is not necessary to be included in the TS to provide adequate protection of public health and safety. The ISTS still retains requirements and Surveillances that verify that the cycle-specific parameter limits are being met. ITS 3.9.1 continues to require that boron concentration limit is met. SR 3.9.1.1 requires periodic verification that boron concentration is within the limits provided in the COLR. The boron concentration specified in the COLR, as described in the ISTS 3.9.1 bases, provides assurance the K_{eff} of the core is maintained ≤ 0.95 during refueling operations. Therefore, only the boron concentration limit is retained in the COLR and verification of this limit is sufficient to ensure core reactivity continues to be maintained in a similar manner as before.

Also, this change is acceptable because the removed information will be adequately controlled in the COLR under the requirements provided in the Administrative Controls Section of the TS for the COLR. These administrative controls ensure that the applicable limits (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, Emergency Core Cooling Systems limits, and nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met. This change is designated as a less restrictive removal of detail change because information relating to cycle-specific parameter limits is being removed from the TS.

LA.2 *(Type 3 – Removing Procedural Details for Meeting TS Requirements and Related Reporting Requirements)* CTS Surveillance 4.9.1.2 specifies the boron concentration of the refueling canal and RCS be verified by chemical analysis. The corresponding ISTS surveillance only specifies that the boron concentration be verified within the limit. The ISTS bases for the surveillance contains the additional detail. The CTS is being revised to conform to the ISTS. This changes the CTS by moving specific details (where and how to verify the boron concentration) out of the CTS surveillance and into the Bases discussion for the surveillance.

The removal of these details for performing surveillance requirements, from the TS is acceptable because this type of information is not necessary to be included in the TS to provide adequate protection of public health and safety. The TS still retain the requirement to verify the boron concentration is within the limit. This requirement provides adequate assurance the plant is maintained in a safe condition. The TS Bases describe the details for performing this surveillance. These types of procedural details will be adequately controlled in the Bases. The TS Bases Control Program specified in Section 5 of the TS controls changes to the Bases. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting TS requirements are being removed from the TS.

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 CTS 3.9.1 provides requirements for the boron concentration of the Reactor Coolant System and the refueling canal. The ISTS provides requirements for the boron concentration of the Reactor Coolant System, the refueling canal, and the refueling cavity. The CTS is revised to conform to the ISTS requirements by the addition of the refueling cavity to the LCO requirements.

This change is acceptable because the technical requirements of the Specification are not affected. The change is appropriate since the cavity contains a volume of water that is hydraulically coupled to the reactor core during refueling. Therefore, this volume of water is part of the total mass of water for which the refueling boron concentration is required. For that reason, the refueling cavity is considered implicit in the CTS requirements. The proposed change does not add a new requirement to the CTS LCO or represent a technical change to the intent of the CTS. The addition of the refueling cavity to the CTS LCO requirements is a clarification of the existing requirements that does not represent a technical change. As such, this change is designated as administrative.

A.3 The phrase in the CTS 3.9.1 LCO, "all filled portions of the Reactor Coolant System and refueling canal" is eliminated consistent with the ISTS LCO requirements. This changes the CTS by eliminating the qualification for when the boron concentration specified in the LCO must be met for the refueling canal and the Reactor Coolant System.

This change is acceptable since in the ISTS, this qualification is not required. The ISTS 3.9.1 Bases defines refueling boron concentration as the "soluble boron concentration in the coolant in each of these volumes [RCS, canal & cavity] having direct access to the reactor core during refueling". In addition, the ISTS adds a note that modifies the applicability of the Specification. The ISTS note "only applicable to the refueling canal and refueling cavity when connected to the RCS" provides a further qualification of when the boron concentration requirement must be met in the refueling canal and cavity. Based on the definition of refueling boron concentration and the addition of the ISTS note, the CTS qualification of "all filled portions" is no longer required to help determine when the boron concentration requirement is applicable. The proposed change does not alter the intent of the Specification (i.e., to provide adequate shutdown margin for the core). The replacement of the CTS qualification with the ISTS note and definition represents a clarification that improves understanding and more accurately states the Specification's requirements. As the proposed change does not affect the technical requirements for adequate shutdown margin in the core, this change is considered administrative.

A.4 The CTS LCO requirement for a "uniform" boron concentration is deleted consistent with the ISTS LCO wording. This changes the CTS by eliminating a further qualification of the LCO requirement.

This change is acceptable because the requirement for a uniform boron concentration is not part of this Specification. The refueling boron concentration Specification does not contain requirements that provide the conditions for a uniform boron concentration. The refueling boron concentration Specification only ensures greater than or equal to the "required" boron concentration is present. More specific requirements that provide the conditions for maintaining a uniform RCS boron concentration are contained in other TS. The TS requirements for the RHR system and coolant circulation provide for mixing in the RCS to help ensure a uniform boron concentration is maintained. The RHR and coolant circulation TS requirements will continue to provide the required assurance that a more uniform RCS boron concentration is maintained. Therefore, the elimination of this statement from the refueling boron concentration LCO has no technical impact. As such, this change represents a clarification to the refueling boron concentration requirements consistent with the ISTS. Therefore, this change is considered administrative.

A.5 CTS LCO 3.9.1 states that with the reactor vessel head unbolted or removed, the boron concentration must be within the limit provided in the LCO. The CTS 3.9.1 Applicability is modified by a footnote that states, "The reactor shall be maintained in MODE 6 when the reactor vessel head is unbolted or removed." ISTS 3.9.1 does not include the phrase "with the reactor vessel head unbolted or removed" or the Applicability footnote. The CTS requirements are revised to be consistent with the ISTS. This changes the CTS by simplifying the Applicability.

This change is acceptable because the technical requirements are not revised. Both the ISTS and CTS Specifications are applicable in MODE 6. However, the ISTS defines MODE 6 as, "one or more reactor vessel head closure bolts less than fully tensioned." The ISTS Mode 6 definition encompasses the CTS requirements (both LCO and footnote) and provides assurance the unit is maintained in Mode 6 until all the head bolts are fully tensioned. Therefore, the ISTS Mode 6 Applicability accomplishes the CTS requirements and the conditions under which the LCO applies are not changed. This change is designated as administrative because the technical requirements of the specifications remain effectively the same.

A.6 CTS 3.9.1 Action contains the statement; "The provisions of Specification 3.0.3 are not applicable." ISTS 3.9.1 does not contain an equivalent statement. The CTS is revised to be consistent with the ISTS. This changes the CTS by eliminating the exception to LCO 3.0.3.

This change is acceptable because the technical requirements have not changed. ISTS LCO 3.0.3 is not applicable in MODE 6. Therefore, the CTS exception to Specification 3.0.3 is not needed. This change is designated as administrative because the technical requirements of the specifications have not changed.

CTS 3/4.9.2 Instrumentation
ITS 3.9.2 Nuclear Instrumentation
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

L.1 *(Category 1 – Relaxation of LCO Requirements)* The LCO for CTS 3.9.2 specifies that one of the two source range neutron flux monitors have audible indication in containment and the control room. The requirement for audible indication is deleted from the ITS LCO for Nuclear Instrumentation. This change reduces the CTS requirements applicable to the source range monitors in Mode 6.

The purpose of CTS 3.9.2 is to ensure an adequate ability to monitor core reactivity is available during Mode 6 refueling operations This change is acceptable because the LCO requirements continue to ensure that an adequate ability to monitor the core reactivity is maintained consistent with the safety analyses and licensing basis. The elimination of the audible indication feature of the required instrumentation does not adversely impact any safety analysis or design basis accident described in the UFSAR. The audible indication feature of the source range monitors is typically associated with the mitigation of a design basis boron dilution accident in Mode 6. BVPS does not assume a boron dilution accident in Mode 6. BVPS has TS requirements to isolate unborated water sources in Mode 6. The TS requirement to isolate unborated water sources is considered to preclude a boron dilution event. Therefore, the inclusion of a requirement for audible source range indication is overly conservative for BVPS. As described in the ISTS Bases for Nuclear Instrumentation in Mode 6, the requirement to include an audible alarm or count rate function only applies to plants that assume a boron dilution event that is mitigated by an operator response to the audible indication. For plants that have TS requirements to isolate unborated water sources in Mode 6 (as does BVPS) the source range monitor operability only includes a visual monitoring function. As such, the proposed change is consistent with the stated purpose of the ISTS and with the design and licensing basis of BVPS. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

L.2 *(Category 4 – Relaxation of Required Action)* CTS 3.9.2 Action states that with the requirements of the above specification not met, immediately suspend all operations involving positive reactivity changes. The corresponding ISTS Action A.2 changes the requirement to suspend all positive reactivity additions to "Suspend operations that would cause introduction into the RCS, coolant with boron concentration less than required to meet the boron concentration of LCO 3.9.1." The ISTS Action allows positive reactivity changes provided they do not introduce coolant into the RCS with a boron concentration below the refueling limit. This changes the CTS requirements by allowing limited positive reactivity additions.

The purpose of the CTS requirements are to provide a method to monitor core reactivity to ensure the core is maintained in a stable shutdown condition during refueling. The allowance of the ISTS Action for limited positive reactivity changes when one or more monitors may be inoperable is acceptable because the Required Actions will continue to provide adequate assurance that the RCS boron concentration is maintained greater than or equal to the required refueling boron concentration. Maintaining the refueling boron concentration within limit in the RCS provides for a conservative shutdown margin that assures stable core reactivity under refueling conditions. Therefore, the proposed Action provides sufficient precautions to assure the refueling boron concentration is maintained within the assumptions of the safety analyses and that the core is maintained in a stable shutdown condition. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.3 *(Category 5 – Deletion of Surveillance Requirement)* CTS surveillance requirement 4.9.2 specifies that a CHANNEL FUNCTION TEST is required for the source range neutron flux monitors at least once per 7 days and within 8 hours prior to the initial start of CORE ALTERATIONS. The corresponding ISTS surveillance requirements do not include the performance of CHANNEL FUNCTIONAL TESTS for the source range monitors. This changes the CTS by deleting the CHANNEL FUNCTIONAL TEST requirements for the source range monitors in Mode 6.

This change is acceptable because the deleted Surveillance Requirement is not necessary to verify that the equipment used to meet the LCO is consistent with the safety analysis. This change is consistent with the ISTS. In Mode 6, the source range monitors are required for indication only, there are no required setpoints associated with these instruments in this Mode. In this capacity, the source range instrumentation is typically used to provide indication of a change in counts per second (CPS) relative to previous readings, not precise CPS indication. The source range instrumentation is monitored for significant changes in the count rate that are important for evaluating a change in core status. The accepted convention for identifying criticality only requires that a slowly increasing count rate be verified.

Consistent with the ISTS, indication only instrumentation requires Channel Checks and Channel Calibrations. In the ISTS, the CHANNEL OPERATIONAL TESTS (COTs) are applied only to those instrument channels associated with required operational interlocks or actuations that have precise setpoints to be maintained within a specified accuracy over time. In Modes 2, and 3, the source range monitors perform required actuation functions and COTs are required for the source range monitors in those Modes. In addition, the ISTS requires the Channel Check surveillance to be performed on the source range monitors every 12 hours throughout Mode 6 operation instead of just during Core Alterations. The ISTS also adds an 18-month channel calibration requirement for the source range monitors in Mode 6. The 18-month Channel Calibration and the 12-hour Channel Check requirements typically applicable for other indication only instruments in the TS have been proven effective in maintaining those instruments operable. Considering the more frequent COTs performed on the source range monitors in other Modes, the effectiveness of the 18-month Channel Calibration and 12-hour Channel Check surveillance requirements in maintaining other indicating only instruments operable, and the accuracy required of these instruments in Mode 6, the proposed Mode 6 surveillance requirements for the source range monitors are adequate to assure their continued operability during refueling operations. Thus, the source range instruments will continue to be tested in a manner and at a frequency necessary to give confidence that the assumptions in the safety analysis are protected. This change is designated as less restrictive because Surveillances which are required in the CTS will not be required in the ITS.

More Restrictive Changes (M)

M.1 The CTS 3.9.2 LCO exception that allows only one source range monitor to be operable during installation of the upper internals is eliminated. This exception does not exist in the ISTS. This changes the CTS by eliminating an exception to the LCO requirements.

The CTS exception to the requirement to have two monitors available in Mode 6 is no longer required. This exception was previously required by BVPS to install the upper internals with one monitor inoperable. The TS Action with one source range monitor inoperable required a suspension of positive reactivity additions and Core Alterations. Because BVPS interpreted the installation of the upper internals as a Core Alteration that added positive reactivity, the TS Actions with one source range monitor inoperable precluded the installation of the upper internals. For this reason, the exception to the LCO requirement for two monitors to be operable in Mode 6 was necessary.

In granting the license amendment that provided the LCO 3.9.2 exception, the NRC stated in the SER that "During installation of the upper internals, neutrons may be reflected back into the core resulting in a positive reactivity addition. However, this reactivity addition is so small when compared to the negative reactivity provided by the required shutdown margin that, in fact, the shutdown margin remains essentially unchanged." In addition, the definition of Core Alteration and the Action to suspend positive reactivity additions have been revised consistent with the ISTS. The definition of Core Alterations is now limited to "reactivity components" and the Action to suspend positive reactivity additions is limited to operations that would introduce coolant in the RCS with a boron concentration less than that required for Mode 6. Given these ISTS revisions, the action of installing the upper internals would not be interpreted in the same manner as before and the resulting TS Actions applicable when one source range monitor is inoperable no longer preclude installation of the upper internals. Therefore, the CTS exception is no longer useful and eliminating it does not introduce a change to the TS requirements that will adversely affect the safe operation of the plant. Based on the discussions above, the elimination of the CTS LCO exception to two operable monitors is acceptable and makes the BVPS TS more consistent with the ISTS. This change eliminates an exception to the LCO and is, therefore, considered to be More Restrictive.

M.2 CTS Action b for two inoperable source range monitors is revised by the addition of a new Action requirement consistent with the corresponding Required Actions of the ISTS. The ISTS Action to " initiate action to restore one source range neutron flux monitor to OPERABLE status immediately" is added to the existing CTS Action to *verify the RCS born concentration every 12 hours.*

The proposed change adds a Required Action, consistent with the ISTS, which provides additional assurance that the requirement of the LCO for two operable monitors is restored. This change is acceptable because the proposed Required

Actions are reasonable and provide additional assurance that the reactor will be maintained in a safe condition. As such, the proposed change does not adversely impact plant operations or the ability to maintain the plant in a safe condition. This change is more restrictive because it provides a new Required Action.

M.3 CTS 4.9.2 requires a CHANNEL CHECK to be performed once per 12 hours during CORE ALTERATIONS. The corresponding ISTS SR requires a CHANNEL CHECK to be performed every 12 hours. This changes the CTS by requiring the CHANNEL CHECK to be performed every 12 hours in Mode 6 even if CORE ALTERATIONS are not in progress.

The purpose of this change is to ensure the proper surveillances are conducted at an appropriate frequency to ensure the source range monitors are maintained operable. This change is acceptable because the revised surveillance continues to verify the OPERABILITY of the source range monitors to ensure the reactor is maintained in a safe condition. The proposed change is appropriate as the Channel Functional Tests previously required for the source range monitors in Mode 6 are no longer specified in the ISTS. As such, the increased level of Channel Checks required by the ISTS for the source range monitors provides additional and necessary verifications of instrument OPERABILITY. Therefore, the proposed change does not adversely impact plant operations or the ability to maintain the plant in a safe condition. This change is considered more restrictive because it requires additional verifications that are not specified in the CTS.

M.4 CTS Surveillance Requirement 4.9.2 specifies testing for the source range instrumentation channels in Mode 6. The corresponding ISTS surveillances require the performance of a CHANNEL CALIBRATION on the source range monitors every 18 months. This 18-month surveillance is not specified in CTS 4.9.2. The CTS is revised to incorporate the ISTS 18-month channel Calibration requirement for the source range monitors. This addition changes the CTS by requiring a CHANNEL CALIBRATION every 18 months on each source range monitor.

The purpose of this change is to ensure the proper testing is conducted at an appropriate frequency to ensure the source range monitors are maintained operable. This change is acceptable because the revised surveillance continues to verify the OPERABILITY of the source range monitors to ensure the reactor is maintained in a safe condition. The proposed change is appropriate as the Channel Functional Tests previously required for the source range monitors in Mode 6 are no longer specified in the ISTS. As such, the addition of a Channel Calibration for the source range monitors in Mode 6 provides additional and necessary verification of instrument OPERABILITY. Therefore, the proposed change does not adversely impact plant operations or the ability to maintain the plant in a safe condition. This change is more restrictive because it requires an additional surveillance that is not specified in the CTS.

Removed Detail Changes (LA)

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS LCO 3.9.2 states that two source range neutron flux monitors (primary or alternate) shall be operating, each with continuous visual indication in the control room. The corresponding ISTS LCO states that two source range neutron flux monitors shall be OPERABLE. The CTS LCO is revised to conform to the ISTS LCO. The information describing the system functional requirements i.e., a primary or alternate monitor operating with continuous visual indication in the control room is moved to the TS bases.

The removal of this detail, which is related to the system design and functional requirements, from the TS, is acceptable because this type of information is not necessary to be included in the TS to provide adequate protection of public health and safety. The ISTS retains the requirement for two monitors to be OPERABLE and continues to require the associated testing which includes channel checks every 12 hours to verify the indication in the control room. Consistent with the ISTS format and presentation, the information describing the operability requirements is moved into the TS Bases. In addition, this change is acceptable because the removed information will be adequately controlled in the TS Bases. The TS Bases Control Program specified in Section 5 of the TS controls changes to the Bases. This program provides for the evaluation of changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because information relating to system design and function is being removed from the TS.

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 CTS Action b requires that the boron concentration of the RCS be determined at least once per 12 hours. The corresponding ISTS Action specifies that SR 3.9.1.1 is performed once per 12 hours. The CTS is revised to conform to the ISTS Action. This changes the CTS Action to refer to a surveillance requirement to verify the boron concentration.

This change is acceptable, as the technical intent of the Action (to verify boron concentration within the required limit) is not changed. The proposed change merely incorporates the ISTS method of referring to surveillance numbers within Actions rather than repeating the particulars of the surveillance requirements in each Action. The change is made to conform to the format and presentation of this information in the ISTS. As the proposed change does not introduce a technical change to the CTS it is considered an administrative change.

CTS 3.9.3 Decay Time
ITS - N/A
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

None

More Restrictive Changes (M)

None

Removed Detail Changes (LA)

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)* CTS 3.9.3 contains requirements relating to the time limit applicable to the movement of irradiated fuel assemblies. CTS 3.9.3 requires that the reactor be subcritical for the specified time limit prior to moving irradiated fuel assemblies. The ISTS do not contain any similar requirements. The CTS is revised to conform to the ISTS. This changes the CTS by removing this limit and the associated requirements for implementing it from the CTS.

The removal of this information from the TS makes the BVPS TS more consistent with the content of the ISTS. The removal of these requirements, which are related to the fuel design, from the TS, is acceptable because this type of information is not necessary to be included in the TS to provide adequate protection of public health and safety. The TS still retain requirements applicable to "recently" irradiated fuel that provide assurance the systems and components that mitigate the consequences of a fuel handling accident are available (operable) when "recently" irradiated fuel is being moved. Other TS requirements (Unit 1 Control Room Isolation) require equipment to be available (operable) when irradiated fuel is moved that does not meet the requirement for "recently irradiated". The time limit for "recently" irradiated is currently controlled outside the TS in the TS Bases. Similar to the time that defines recently irradiated, the decay time requirements are moved out of the TS into the Licensing Requirements Manual (LRM). The removal from the TS of limits related to fuel design that may change from fuel cycle to cycle is also consistent with the philosophy of Generic Letter 88-16 which established the Core Operating Limits Report to control similar limits outside of the TS.

This change is also acceptable because the removed requirements will be adequately controlled in the LRM. Requirements removed from the TS and placed in the LRM are incorporated by reference into the UFSAR. Therefore, any changes to these requirements are made in accordance with 10 CFR 50.59, which ensures changes are properly evaluated and that prior NRC approval is requested when required pursuant to 10 CFR 50.59. This change is designated as a less restrictive removal of design limits type change because a TS limit related to fuel design is being removed from the TS.

Administrative Changes (A)

None

CTS 3/4.9.4 Containment Building Penetrations
ITS 3.9.3 Containment Penetrations
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

L.1 *(Category 1 – Relaxation of LCO Requirements)* The CTS LCO requirement 3.9.4.c.2 that specifies each penetration providing direct access from the containment atmosphere to the outside atmosphere be capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System with the containment air being exhausted through this system at a flow rate of ≤ 7500 cfm to at least one OPERABLE filtered SLCRS train is revised to be consistent with the design and licensing bases associated with BVPS Units 1 and 2. The proposed changes are made to more accurately reflect the BVPS specific design. The corresponding ISTS requirements do not contain flow rate or filter requirements. The proposed revisions to the CTS include the following changes to the LCO 3.9.4.c. requirement and associated surveillances:

a) The requirement to be capable of being closed by an operable Containment Purge and Exhaust System and the associated surveillances which verify isolation valve actuation and the system flow rate (necessary for response time) are made applicable to Unit 2 only, and

b) The requirement for the Purge and Exhaust System air flow to be exhausted to an OPERABLE Supplemental Leak Collection and Release System (SLCRS) train and the surveillance to verify an operable SLCRS train are made applicable to Unit 1 only.

The most recent BVPS safety analysis for a fuel handling accident inside containment is based on moving irradiated fuel after 100 hours decay time. The most recent analysis show that no containment closure or filtration of purge exhaust is necessary to mitigate a design bases fuel handling accident that occurs after 100 hours of decay time. As such, the containment closure requirements of CTS 3/4.9.4 (ITS 3.9.3) are only applicable when moving fuel with less than 100 hours decay time or "recently" irradiated fuel (defined in the bases). No fuel handling accident analysis exists to support an open containment or unfiltered purge exhaust when moving irradiated fuel with less than 100 hours decay time. Therefore, the changes proposed to CTS 3/4.9.4 (ITS 3.9.3) are based on the safety analyses and licensing bases documents that were applicable to BVPS before the most recent safety analysis and which require containment closure or purge exhaust filtration to mitigate a fuel handling accident inside containment. The following discussion is based on the previous fuel handling accident safety analyses that required isolation or filtration to mitigate a fuel handling accident. The unit specific assumptions of the older safety analyses would be applicable if isolation or filtration is required for fuel movement involving recently irradiated fuel.

BVPS Unit 2 credited Containment Purge and Exhaust System isolation when necessary to mitigate the consequences of a fuel handling accident in containment.

Therefore, the proposed ITS LCO requirement 3.9.3.c.2 and SRs 3.9.3.3/4 and 3.9.3.1 are applicable to Unit 2 and have been retained for Unit 2. These changes are acceptable based on the Unit 2 UFSAR, Revision 11, Section 15.7.4.1 (applicable when containment closure or filtration was required) and Section 15.7.4 of NUREG 1057 (the initial NRC Safety Evaluation Report for BVPS Unit 2) which clearly state that BVPS Unit 2 credits Containment Purge and Exhaust System isolation when necessary to mitigate the consequences of a fuel handling accident in containment. The UFSAR Section 15.7.4.1 stated that "Environmental release from the containment is precluded by a design that automatically isolates the containment following the detection of radioactivity by the redundant containment purge monitors." Therefore, the requirement to exhaust the containment air to an operable SLCRS filtration train is overly conservative and unnecessary for Unit 2. As such, the requirement to exhaust to an operable SLCRS train is deleted for Unit 2.

BVPS Unit 1 did not credit Containment Purge and Exhaust System isolation to mitigate the consequences of a fuel handling accident in containment. Unit 1 relied on filtration of the effluent by SLCRS when necessary to mitigate the consequences of a fuel handling accident inside containment. Therefore, the proposed Unit 1 requirement (3.9.3.c.3) for the containment air exhaust to be lined up to an operable SLCRS filtration train is applicable to Unit 1 and has been retained for Unit 1. The requirements for containment purge and exhaust isolation are not applicable to Unit 1 and have been deleted for Unit 1. In addition, requirements for an operable SLCRS train (CTS surveillance 4.9.4.3) are also applicable to Unit 1 and have been retained for Unit 1. These changes are acceptable for Unit 1 because of the design of the Unit 1 Containment Purge and Exhaust System ductwork where the radiation monitors are located. This ductwork is not designed to withstand a seismic event. Although the radiation monitors provide an isolation signal to the purge and exhaust valves to close containment and prevent the escape of radioactivity, no credit may be taken in the Unit 1 design basis accident for purge and exhaust isolation on high radiation. As stated in the NRC Safety Evaluation Report (SER) for Amendment 23 dated 12/12/79 (which imposed the requirement for the containment air to be exhausted through SLCRS in the Unit 1 TS); "However, since the purge exhaust ductwork inside the containment containing the radiation monitors is non-seismic we have made dose calculations assuming the ductwork and monitors are damaged during a seismic event. In such an event we have assumed there is no containment isolation". The NRC SER is consistent with the fuel handling accident inside containment described in Unit 1 UFSAR, Revision 18, Section 14.2.1.4. The Unit 1 UFSAR (applicable when containment closure or filtration was required) clearly states the purge and exhaust system isolation valves are not required to close since the containment purge exhaust duct is lined up to the seismically supported leak collection and filter train.

The CTS LCO requirement 3.9.4.c.2 conservatively applied the requirements for filtration and isolation to each BVPS unit in order to make the TS requirements for each unit the same. Although the CTS requirement simplified the TS by making both Units the same, the CTS placed requirements on both units that were not assumed in the applicable accident analysis and were not necessary to mitigate a design basis fuel handling accident. The CTS is overly conservative considering the different Unit designs and licensing bases as described in the UFSARs and associated NRC SERs applicable when containment closure or filtration was required to mitigate a fuel handling accident. The changes proposed to the CTS remove the unnecessary requirements and make the TS requirements for each unit consistent with the BVPS specific design and appropriate licensing bases for when containment closure or filtration may be required to mitigate a fuel handling accident. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

More Restrictive Changes (M)

M.1 *Unit 2 only.* The sections of CTS 3.9.4 marked-up for deletion and identified by the "M1" change designation are only contained in the Unit 2 CTS 3.9.4 and do not appear in the Unit 1 CTS 3.9.4. The Unit 2 provisions that allow open PAL doors and other containment penetrations added by Amendment 116 to Unit 2 CTS 3.9.4 are eliminated from the TS. This changes the Unit 2 LCO by eliminating the allowance for penetrations to be open.

No other technical differences exist between the Unit 1 and Unit 2 CTS 3.9.4. The other sections of CTS 3.9.4 (not identified by the M1 designator) are common to both units. Therefore, the remainder of the changes identified in the Unit 2 CTS 3.9.4 markup also address all the changes made to the Unit 1 CTS 3.9.4.

The sections of the Unit 2 CTS 3.9.4 addressed by this DOC were added by License Amendment No. 116 (issued by NRC letter dated September 28, 2000). This License Amendment introduced changes to the TS that allowed both the personnel airlock (PAL) doors and certain other containment penetrations to be open during fuel handling. These changes were made to improve operational flexibility during refueling by facilitating containment entry and exit as well as containment isolation valve testing required by 10 CFR Part 50, Appendix J. The License amendment introduced a set of requirements in the Unit 2 CTS that included provisions for the filtration of ventilation system exhaust from the areas outside containment where the PAL doors or other containment penetrations opened. Crediting the filtration of the exhaust from the affected areas where the PAL doors and other containment penetrations opened resulted in dose calculations for a fuel handling accident that demonstrated compliance with both the 10 CFR Part 100 and General Design Criteria 19 dose limits.

Subsequent to License Amendment 116, License Amendment Request (LARs) Nos. 219 (Unit 1) and 73 (Unit 2) were submitted to the NRC by Letter No. L-01-038 dated March 19, 2001. These LARs were approved in License Amendment 241 for Unit 1 and 121 for Unit 2 issued by NRC letter dated 8/30/01. These License Amendments revised both the Unit 1 and Unit 2 TS to incorporate the results of a revised design basis fuel handling accident (that substantially reduced the number of broken fuel rods) and revised fuel handling accident radiological analyses based on Regulatory Guide 1.183, "Alternate Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors". The TS changes that resulted from these License Amendments revised the Applicability of TS associated with the mitigation of the consequences of a fuel handling accident (including CTS 3.9.4) such that these TS are only applicable when moving "recently irradiated fuel assemblies or moving fuel assemblies over recently irradiated fuel assemblies." Consistent with the ISTS, the term "recently" was defined in the TS bases. The

CTS bases define recently irradiated fuel as "fuel that has occupied part of a critical reactor core within the previous 100 hours".

Currently the BVPS radiological analyses associated with the design basis fuel handling accident assume 100 hours of decay time. The provisions of Unit 2 CTS 3.9.4 that allow both the PAL doors and certain other containment penetrations to be open during fuel handling (Amendment 116) are based on analyses that assume fuel movement only occurs after 100 hours of decay time. However, the current CTS 3.9.4 is only applicable when moving fuel with less than 100 hours decay time (recently irradiated fuel). BVPS currently does not have a radiological analysis to support open PAL doors or other containment penetrations when moving "recently" irradiated fuel. Therefore, the provisions that allow open PAL doors and other containment penetrations added by Amendment 116 to Unit 2 CTS 3.9.4 are eliminated from the TS. This change is acceptable because it revises the CTS to assure the containment penetrations are isolated when required to mitigate a fuel handling accident consistent with the guidance of SRP 15.7.4. Therefore, the proposed change does not adversely impact plant operations or the ability to maintain the plant in a safe condition. The change is considered More Restrictive as options that allow containment penetrations to be open are being eliminated from the TS.

Removed Detail Changes (LA)

LA.1 *(Type 3 – Removing Procedural Details for Meeting TS Requirements and Related Reporting Requirements)* CTS 3.9.4 LCO item c.1 requires penetrations to be closed by an isolation valve, blind flange, manual valve, or "approved functional equivalent". The corresponding ISTS LCO requirement specifies the penetration be closed by a manual or automatic isolation valve, blind flange, or "equivalent". In order to conform with the ISTS wording the CTS description of equivalent i.e., "approved functional" is being moved to the associated TS bases. This changes the CTS by moving out details related to meeting the TS requirements.

The removal of the detail describing the equivalent isolation method from the TS is acceptable because this type of information is not necessary to be included in the TS to provide adequate protection of public health and safety. The TS still retain the requirement to maintain penetrations isolated or capable of being isolated and surveillances to ensure this condition is maintained. Also, this change is acceptable because this type of procedural detail will be adequately controlled in the TS Bases. Changes to the Bases are controlled by the TS Bases Control Program specified in Section 5 of the TS. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details for meeting TS requirements are being removed from the TS.

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 CTS 3.9.4 Action states, "The provisions of Specification 3.0.3 are not applicable." The corresponding ISTS does not include this statement. ISTS LCO 3.0.3 states, "LCO 3.0.3 is only applicable in MODES 1, 2, 3, and 4." Therefore, in the ISTS, an exception to the provisions of LCO 3.0.3 in Mode 6 is not required. This changes CTS by deleting the exception to the provisions of 3.0.3.

This change is acceptable because the ISTS LCO 3.0.3 applicability (Modes 1-4) is consistent with the CTS 3.9.4 exception to 3.0.3. This change is designated as administrative because it does not result in technical changes to the CTS.

A.3 (Unit 1 only) CTS surveillance 4.9.4.3 specifies that the required portions of filtered SLCRS shall be demonstrated OPERABLE per Specification 4.7.8.1 with exception to item 4.7.8.1.c.2. This Containment Penetrations surveillance requirement references the surveillances of a ventilation system TS. The corresponding ISTS does not include this requirement. The need for filtered containment purge exhaust is specific to BVPS Unit 1. However, consistent with the format and presentation of most of the ISTS this Mode 6 SLCRS operability requirement is being moved to the SLCRS TS in Section 3.7. In general, in the ISTS, the requirements applicable to a system or component are contained within the TS for that system or component and not in another TS. An operability requirement, consistent with the specific SLCRS requirements of CTS 3.9.4, will be added to the SLCRS TS in Section 3.7 (ITS 3.7.12 Applicability).

This change is acceptable because it simply re-organizes the TS requirements to be more consistent with the ISTS format and presentation of similar requirements. As the proposed change does not introduce any technical changes to the CTS, it is considered administrative.

A.4 (Unit 2 only) CTS 3/4.9.4 LCO requirement 3.9.4.c.2 specifies a condition of the containment penetrations that requires the penetration to be "Capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System with the containment air being exhausted through this system at a flow rate of ≤ 7500 cfm to at least one OPERABLE filtered SLCRS train". This DOC addresses the removal of the 7500 cfm flow rate requirement from the LCO. The corresponding ISTS requirement does not contain a flow rate requirement. The proposed change moves the flow rate requirement for an operable containment purge and exhaust system into the corresponding surveillance requirement (ITS SR 3.9.3.1). The proposed change also reformats the CTS surveillance to incorporate the LCO requirements (including a note that specifies when the surveillance is applicable) consistent with the format and presentation of similar surveillances in the ISTS.

The proposed change is acceptable as it follows the ISTS format that typically specifies the values required for system operability in the surveillances associated with the operability requirement. In addition, the proposed change is acceptable because the LCO flow requirement continues to be retained within the TS. As this change does not introduce a technical change to the CTS requirements, it is considered an administrative change.

A.5 (Unit 2 only) CTS Surveillance 4.9.4.2.b requires "Testing the Containment Purge and Exhaust Isolation Valves per the applicable portions of Specification 4.9.9". CTS Surveillance 4.9.9 requires the purge and exhaust valves to be demonstrated operable by verifying that the valves isolate manually and on a high radiation signal. CTS Surveillance 4.9.9 also requires that the isolation time of the valves be verified. ITS 3.9.3 instead of referencing a surveillance in another TS, specifies the required surveillances in SR 3.9.3.3 and SR 3.9.3.4. The CTS is revised to conform to the ITS. This changes the CTS by incorporating the previously referenced surveillance requirements of CTS 4.9.9 into the surveillance requirements of ITS 3.9.3 as SRs 3.9.3.3 and 3.9.3.4. This DOC is intended to address the movement of these requirements between the TS. Other DOCs associated with CTS 4.9.9 and ITS SRs 3.9.3.3 and 3.9.3.4 address the changes made to these surveillance requirements.

The proposed change is acceptable because it moves the requirements previously referenced from another TS into the applicable Specification. As such, instead of cross-referencing the requirements, the proposed change provides the applicable requirements in the appropriate Specification and eliminates the need for the cross-reference. In addition, the proposed change divides the CTS surveillance (4.9.9) into two separate ITS surveillances (SRs 3.9.3.3 and 3.9.3.4) consistent with the presentation of similar surveillance requirements in the ISTS. As such the proposed change also revises the CTS to conform more closely to the ISTS presentation of surveillance requirements. The proposed change continues to assure the appropriate surveillances are performed on the purge and exhaust valves to assure their continued operability consistent with the requirements of ITS 3.9.3. As this change does not introduce technical changes to the CTS surveillance, it is considered an administrative change.

A.6 (Unit 2 only) The proposed ITS SRs 3.9.3.3 and 3.9.3.4 which replace CTS 4.9.4.2.b are modified by a Note that states, "Not required to be met for containment purge and exhaust valve(s) in penetrations closed to comply with LCO 3.9.3.c.1." The addition of this ITS Note changes the CTS by clarifying the applicability of the surveillance requirements consistent with the requirements of ITS LCO 3.9.3.

CTS LCO 3.9.4 (ITS LCO 3.9.3) specifies that the containment purge and exhaust penetrations must either be closed by an isolation valve or capable of being closed by an operable containment purge and exhaust isolation system. The ITS SRs 3.9.3.3 and 3.9.3.4 are required to be met when an operable containment purge and exhaust isolation system is required by LCO 3.9.3. If the containment purge and exhaust penetrations are isolated in accordance with LCO 3.9.3.c.1, an operable isolation system is not required by LCO 3.9.3. The proposed ITS SR note merely reflects the provisions of the LCO to provide a clarification regarding when the surveillances necessary for an operable containment purge and exhaust isolation system must be met. As such, the proposed change is an enhancement that more accurately describes the SR relationship to the LCO requirements. As the proposed change is consistent with the associated LCO requirements it does not introduce a technical change. The proposed change is designated administrative because it does not alter the technical requirements of the specification.

CTS 3/4.9.8.1 RHR and Coolant Circulation
ITS 3.9.4 RHR and Coolant Circulation – High Water Level
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

L.1 *(Category 4 – Relaxation of Required Action)* CTS 3.9.8.1 states, in part, that with less than one RHR loop in operation, suspend all operations involving a reduction in boron concentration of the Reactor Coolant System. The corresponding ISTS Action A.1 states that with the RHR loop requirements not met, suspend operations that would cause introduction into the RCS, coolant with boron concentration less than required to meet the boron concentration of LCO 3.9.1. The CTS is revised to conform to the ISTS. This changes the CTS by allowing coolant with boron concentration less than the RCS boron concentration, but greater than the boron concentration limit in LCO 3.9.1, to be added to the RCS when the RHR requirements are not met.

The purpose of the CTS 3.9.8.1 Action is to ensure that the required shutdown margin is maintained during periods when the RHR requirements are not met. Required Actions are used to establish remedial measures that must be taken in response to the degraded conditions in order to minimize risk associated with continued operation while providing time to restore the equipment or parameters to within the TS requirements. The proposed Required Action accomplishes this function and continues to ensure that the RCS boron concentration is maintained within the limits of LCO 3.9.1, "Refueling Boron Concentration." Maintaining the refueling boron concentration specified in LCO 3.9.1 is sufficient to ensure that adequate shutdown margin is maintained in Mode 6. As such, this change is acceptable because it continues to assure the plant is maintained in a safe condition during Mode 6. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.2 *(Category 4 – Relaxation of Required Action)* CTS 3.9.8.1 Action a states, in part, that with less than one RHR loop in operation, close all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere within 4 hours. The corresponding ISTS 3.9.4 Action A.6 states, in part, that with the RHR loop requirements not met, within 4 hours close each penetration providing direct access from the containment atmosphere to the outside atmosphere with a manual or automatic isolation valve, blind flange, or equivalent, or verify each penetration is capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System. The CTS is revised to conform to the ISTS. This changes the CTS Actions by allowing penetrations capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System to remain open when the RHR requirements are not met.

The purpose of the CTS 3.9.8.1 Action is to close containment to minimize the release of radioactive material should the RHR requirements continue to not be met and boiling occurs in the core. Therefore, containment penetrations are closed to minimize any potential radioactive release. This change is acceptable because the Actions continue to provide for containment closure. Closure of the Purge and Exhaust System isolation valves may be accomplished automatically by radiation monitor actuation or by manual action from the control room.

Manual isolation of the purge and exhaust penetrations is acceptable considering that the potential release from heating up the RCS is not the same as the immediate and large release assumed in a design basis fuel handling accident. Therefore, considering the nature of the potential release from heating the RCS, the heightened awareness of the operations staff during a loss of RHR and the radiation monitor indications available to the control room, sufficient information and time would be available to enable the operators to manually isolate the purge and exhaust penetrations if it becomes necessary to prevent any significant radioactive release. Although not specified as an Action in the TS, the BVPS purge exhaust may also be lined up to the filtration system in the Supplemental Leak Collection and Release System (SLCRS) which could provide a defense in depth capability to mitigate any release.

The proposed change only allows for a delay in isolating the containment purge and exhaust system. This delay may be necessary for continued habitability of the containment and restoration of RHR (BVPS RHR pumps are inside containment). As such, the proposed change continues to provide adequate assurance that the containment will be closed and that the release of radioactive material would be minimized should boiling occur in the core. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.3 *(Category 5 – Deletion of Surveillance Requirement)* CTS 4.9.8.1.a specifies that the required RHR loop be verified in operation and circulating ≥ 1000 gpm twice per shift when the RCS is in a reduced inventory condition. The CTS surveillance is modified by an asterisk footnote that defines a reduced inventory condition. The corresponding ISTS specification does not contain any similar requirements to the CTS surveillance. Consistent with the ISTS, this CTS surveillance requirement and associated footnote are deleted. This changes the CTS by eliminating CTS Surveillance 4.9.8.1.a.

The purpose of the CTS surveillance is to provide procedural type guidance for operating the RHR loop during reduced inventory condition to assure the safe operation of the RHR pumps. The requirements specified in the CTS surveillance are not related to the safety analysis assumptions of any design basis accidents. Nor is the CTS surveillance necessary to verify the RHR loop is in operation and meeting the requirements of the LCO. Consistent with the ISTS, the specific flow at which the RHR pumps are operated is controlled outside of the TS which allows for variations in flow to accommodate differing plant conditions such as reduced inventory. The RHR flow will be controlled by operations and sufficient flow maintained to assure the required forced RCS cooling is maintained consistent with the requirements of the LCO and that the RHR pumps are operated in a safe manner during all plant conditions including reduced inventory. Therefore, the operational guidance provided in the CTS surveillance is no longer required. This change is acceptable because the deleted Surveillance Requirement is not necessary to verify that the RHR loop used to meet the LCO can perform its required functions. The ISTS surveillance to verify the RHR loop in operation provides adequate assurance that the LCO requirements continue to be met. Thus, appropriate verifications continue to be performed in a manner and at a frequency necessary to give confidence that the equipment can perform its assumed safety function. This change is designated as less restrictive because Surveillances which are required in the CTS will not be required in the ITS.

L.4 *(Category 1 – Relaxation of LCO Requirements)* CTS LCO 3.9.8.1 requires that one RHR loop be operable and in operation. The corresponding ISTS LCO requires the same thing. However, the proposed BVPS ITS 3.9.4 LCO is modified by a Note that provides an allowance for the required RHR loop to be removed from service (i.e., circulating reactor coolant) when the RHR loop is used to drain the reactor cavity to the RWST. The ITS Note also requires that when the RHR loop is removed from service that it remains capable of being re-aligned to the RCS (to restore full reactor coolant circulation if needed). The proposed BVPS ITS LCO Note is not consistent with the corresponding ISTS. The CTS is revised to incorporate the provisions of the proposed BVPS ITS LCO Note. This changes the CTS by providing a specific allowance in the Technical Specification to remove the required RHR loop from circulating reactor coolant for use in draining the reactor cavity to the RWST.

The proposed BVPS LCO Note for ITS 3.9.4, "RHR and Coolant Circulation – High Water Level" is based on the exception provided in approved TSTF-21, Rev 0, for ISTS 3.9.6, "RHR and Coolant Circulation-Low Water Level." TSTF-21 has subsequently been incorporated into Revision 3 of NUREG-1431. TSTF-21, Rev. 0 included a bases statement in the LCO section of the ISTS 3.9.6 bases that allowed the required RHR pumps to be operable when aligned to the Refueling Water Storage Tank to support filling or draining the refueling cavity or for the performance of required testing. Due to the BVPS RHR design, the RHR pumps are normally used for draining the cavity (not filling). In addition, the BVPS RHR system is a dedicated heat removal system and is not part of the ECCS (like many other Westinghouse plants) and does not require the provision for realignment due to testing. Therefore, these provisions of the exception included in TSTF-21 are not applied to the BVPS specific ITS.

However, an issue remains with the exception provided by TSTF-21 to realign RHR from their required function of circulating reactor coolant. Specifically, the bases exception introduced by TSTF-21, Rev. 0 can not be used to override the required operability function of the RHR pump in ISTS 3.9.6 (i.e., circulating reactor coolant). ISTS 3.9.6 specifies in both the Specification (SR 3.9.6.1) and the bases that the RHR pump is required to be circulating reactor coolant. An exception in the Specification's LCO statement would be required to avoid potential conflict with the ISTS 3.9.6 SR and bases that specify circulating reactor coolant. In an NRC letter (from W. D. Beckner to J. Davis (NEI) dated 4/29/99), the NRC recommended TSTF-21, Rev.0 be revised to include an LCO exception Note in the Specification. The recommended Note provided a specific LCO exception to remove the RHR loop from operation to support fill and drain operations and to support required testing. However, the NRC recommended LCO Note was never incorporated in TSTF-21 and therefore, was not incorporated into Revision 3 of NUREG-1431. Therefore, BVPS has proposed the addition of a similar Note to the BVPS ITS. The LCO Note proposed by BVPS is similar to the Note recommended by the NRC (except for the BVPS plant specific design differences noted above).

The change described in this DOC addresses the addition of the exception provided by TSTF-21, Rev. 0, as modified by the NRC recommendation, for the "Low Water Level" RHR requirements to the "High Water Level" RHR requirements. Although TSTF-21, Rev.0, and the NRC recommended LCO Note only applied to ISTS 3.9.6, "RHR and Coolant Circulation-Low Water Level" the flexibility provided by the exception is also justified for the BVPS ITS 3.9.4, "RHR and Coolant Circulation – High Water Level" specification. The "High Water Level" specification only requires a single RHR loop to be operable and operating. The proposed Note would allow a smooth transition from the high water level condition to the low water level condition (i.e., draining the cavity to the RWST) using the single required RHR loop. Upon entering the low water level specification applicability two RHR loops are required operable with one in operation. Considering that the low water Specification already contains the exception for the operating RHR loop to be aligned to the RWST, the low water specification may be met using the same operating RHR pump required in the high water level specification which was used to drain the cavity. The complication of shifting operation to multiple RHR loops and than back to one RHR loop to meet the Specification requirements when changing the reactor cavity water level would not be necessary.

The proposed change is acceptable because the proposed allowance is contingent on maintaining the capability to realign the RHR loop to the RCS if it is required. Thus, assuring the capability to remove decay heat is maintained. In addition, the operation of draining the reactor cavity to the RWST provides some flow near the top of the reactor vessel that continues to remove decay heat. Therefore, although not circulating coolant, the draining of the reactor cavity does maintain some decay heat removal function.

The proposed change provides a relaxation to the CTS LCO requirement that is based on the plant design and accounts for the way the RHR system is routinely used during refueling operations. The proposed relaxation simplifies the transition between refueling cavity water level requirements and minimizes complications that could result from shifting RHR loop operation from one loop to two loops and back to one loop when changing the reactor cavity water level. The proposed change requires that the affected RHR loop be capable of being re-aligned to the RCS if necessary and therefore, continues to provide adequate assurance the plant is operated in a safe manner. This change is designated as less restrictive because less stringent LCO requirements are applicable in the ITS than are applicable in the CTS.

More Restrictive Changes (M)

M.1 The CTS 3.9.8.1 actions applicable with less than one RHR loop in operation are revised consistent with the corresponding ISTS Actions by the addition of a new requirement to initiate action to satisfy the RHR loop requirements. In addition, the nonspecific completion time for the CTS Actions to "suspend operations involving..." is revised by the addition of an immediate completion time for these CTS Actions, also consistent with the ISTS.

The new action to immediately initiate action to restore the RHR to the required status is consistent with good operating practice in the event RHR is lost and provides additional assurance that the plant will be placed in a safe condition as soon as possible. The addition of the explicit completion time of immediately for the CTS actions is also appropriate for these requirements in the event RHR is lost and provides further assurance the plant will be placed in a safe condition as soon as possible. As such, the proposed changes do not adversely impact plant operations or the ability to maintain the plant in a safe condition. The proposed revisions are not explicit requirements of the CTS and are therefore considered to be more restrictive changes.

M.2 CTS 3.9.8.1 Actions b and c specify, in part, that "the residual heat removal loop may be removed from operation for up to 1 hour per 8 hour period" and that " the residual heat removal loop may be removed from operation for up to 4 hours per 8 hour period during the performance of Ultrasonic In-service Inspection inside the reactor vessel nozzles." The corresponding ISTS requirement contains a provision that limits the applicability of the CTS allowances. The ISTS limitation states "provided no operations are permitted that would cause introduction into the Reactor Coolant System, coolant with boron concentration less than required to meet the minimum required boron concentration of LCO 3.9.1." The CTS is revised to incorporate the ISTS limitation. This changes the CTS allowance by prohibiting operations that will cause introduction into the RCS, coolant with a boron concentration less than required to meet the boron concentration of LCO 3.9.1.

This change is acceptable because it applies appropriate controls during periods when RHR is not in operation. The ISTS requirement prohibiting operations which would cause a reduction in the RCS boron concentration below that required to maintain the required shutdown margin is necessary to avoid unexpected reactivity changes. The addition of the ISTS requirement when the RHR loop is not in operation provides assurance the core is maintained in a stable condition and minimizes the potential for boron stratification. Therefore, the proposed change provides additional assurance the plant is maintained in a safe configuration during Mode 6 operations. This change is designated as more restrictive because it imposes a new condition to be met when an RHR loop is not in operation.

M.3 CTS 4.9.8.1 requires that an RHR loop be verified in operation and circulating a specified flow only in certain circumstances (i.e., during dilution and reduced inventory operations). The corresponding ITS surveillance (SR 3.9.4.1) specifies that the required RHR loop be verified in operation every 12 hours. This changes the CTS by requiring verification of the required RHR loop in operation every 12 hours regardless of the RCS water level or dilution operations.

The purpose of the ISTS surveillance is to verify the required RHR loop is in operation to provide assurance the plant is maintained in a stable condition regarding decay heat removal, and preventing thermal as well as boron stratification. The proposed change is acceptable because the addition of the proposed surveillance requirement will enhance and improve the assurance of safe Mode 6 operation currently provided by the existing CTS surveillances.

The proposed change represents a new and more frequent surveillance of the RHR system operation in Mode 6. The proposed change provides additional assurance the plant is maintained in a safe condition during Mode 6 operations without adversely impacting equipment availability or operational resources. This change is designated as more restrictive because it imposes a new surveillance that must be met in Mode 6.

M.4 Unit 1 only. Unit 1 CTS 3.9.8.1 LCO only specifies that an RHR loop be in operation. The corresponding ITS 3.9.4 also requires that the RHR loop be operable. The CTS LCO is revised to conform to the ITS LCO. This changes the CTS LCO by adding the requirement for the RHR loop to be operable as well as in operation.

The proposed change is acceptable because it provides additional assurance that the required cooling function of the RHR system is available when necessary to assure adequate core cooling. The additional requirement of being operable ensures the required RHR is capable of performing its intended safety function. Therefore, the proposed change continues to assure the plant is operated in a safe manner without adversely impacting equipment availability or operational resources. This change is designated as more restrictive because it imposes a new LCO requirement that must be met in Mode 6.

Removed Detail Changes (LA)

LA.1 *(Type 3 – Removing Procedural Details for Meeting TS Requirements and Related Reporting Requirements)* CTS 3.9.8.1 Action b states that "*the residual heat removal loop may be removed from operation for up to 1 hour per 8 hour period* during the performance of CORE ALTERATIONS in the vicinity of the reactor pressure vessel hot legs. The corresponding requirement in the ISTS states that "*the residual heat removal loop may be not in operation for ≤ 1 hour per 8 hour* period...". The CTS is revised to conform to the ISTS. This changes the CTS by moving the procedural details describing what may be accomplished during the 1 *hour exception to the Bases.*

The removal of these details for performing this CTS Action from the TS is acceptable because this type of information is not necessary to be included in the TS to provide adequate protection of public health and safety. The TS still retain the fundamental requirement that the RHR loop must be maintained operable and in operation. The affected CTS Action provides a 1-hour exception to the LCO requirement that may be used once per 8 hours. The CTS exception remains unchanged and continues to limit the time the RHR loop may not be in operation. Therefore, the removal of the information describing how the approved exception will be used does not reduce the CTS requirements. Also, this change is acceptable because these types of procedural details will be adequately controlled in the TS Bases. The TS Bases Control Program specified in Section 5 of the TS controls changes to the Bases. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled. This change is designated as a less restrictive removal of detail change because procedural details describing the TS requirements are being removed from the Technical Specifications.

LA.2 *(Type 3 – Removing Procedural Details for Meeting Tech Spec Requirements and Related Reporting Requirements).* CTS 4.9.8.1.b specifies that a flow rate ≥ 3000 gpm be maintained prior to the start of and once per hour during a reduction in the Reactor Coolant System boron concentration. The corresponding ISTS specification does not contain a requirement to maintain a specified flow during dilution operations. Consistent with the ISTS, this CTS surveillance requirement is being removed from the CTS and will be placed in the Licensing Requirements Manual (LRM). This changes the CTS by removing CTS Surveillance 4.9.8.1.b.

The purpose of the CTS surveillance is to provide procedural type guidance for operating the RHR loop during dilution operations to assure safe plant operation by reducing the probability of boron stratification. The requirements specified in the CTS surveillance are not related to the specific safety analysis assumptions of any design basis accidents described in the UFSAR. Nor is the CTS surveillance necessary to verify the RHR loop is in operation and meeting the requirements of the LCO. The BVPS TS require that unborated water sources be isolated in Modes 4, 5, and 6. Therefore, no boron dilution design basis accident is assumed to occur. Therefore, in accordance with the criteria for TS contained in 10 CFR 50.36, the specific RHR flow specified in the CTS surveillance for dilution operations, although prudent operational guidance, is not required in the TS.

Consistent with the ISTS, the specific flow at which the RHR pumps are operated is controlled outside of the TS which allows for variations in flow to accommodate differing plant conditions including dilution operations. The RHR flow will be controlled by operations and sufficient flow maintained to assure the required forced RCS cooling and to prevent thermal and boron stratification consistent with the requirements of the LCO as stated in the associated Bases. In addition, CTS surveillance 4.9.8.1.b is redundant to the requirements of CTS 3.1.1.3, "Boron Dilution". In Section 3.1, "Reactivity Control", CTS 3.1.1.3 specifies the same requirement as CTS surveillance 4.9.8.1.b, that an RCS flow rate ≥ 3000 gpm be maintained during a reduction in the RCS boron concentration. CTS 3.1.1.3 is applicable in all Modes. As CTS 3.1.1.3 does not meet the criteria of 10 CFR 50.36 for retention in the TS, it is being relocated to the LRM. Therefore, the requirement to maintain a specified RCS flow rate during dilution operations will continue to be applicable but will be located and controlled outside of the TS.

This change is acceptable because CTS 4.9.8.1.b is not necessary to verify that the RHR loop used to meet the LCO can perform its required functions. The ISTS surveillance to verify the RHR loop in operation provides adequate assurance that the LCO requirements continue to be met. Thus, appropriate verifications continue to be performed in a manner and at a frequency necessary to give confidence that the equipment can perform its assumed safety function. In addition, the affected RCS flow requirements will continue to be controlled in the LRM. The TS requirements relocated to the LRM are considered to be incorporated by reference into the UFSAR. Therefore, any changes to the LRM are made under the provisions of 10 CFR 50.59. As such any changes to this material will be properly evaluated and NRC review and approval obtained when required. This change is designated as a less restrictive removal of detail change because information relating to system operation is being removed from the TS.

LA.3 *(Type 2 – Removing Descriptions of System Operation)* CTS 4.9.8.1 requires that the RHR loop be verified in operation and circulating reactor coolant. The corresponding ISTS surveillance only requires that the RHR loop be verified in operation. This changes the CTS by moving the descriptive detail of "circulating reactor coolant" from the CTS surveillance to the Bases.

The removal of these details, which are related to system operation, from the TS is acceptable because this type of information is not necessary to be included in the

TS to provide adequate protection of public health and safety. The ITS still retains the requirement to verify the RHR loop is in operation. The ITS Bases document associated with the TS requirement contains an adequate description of the systems required operable and provides sufficient background information to explain why the TS requirements are necessary. As such, the descriptive detail in the CTS is no longer required. Also, this change is acceptable because the removed information will be adequately controlled in the TS Bases. Changes to the Bases are controlled by the TS Bases Control Program in Section 5 of the TS. This program provides for the evaluation of Bases changes in accordance with 10 CFR 50.59 to ensure the Bases are properly controlled and that prior NRC review and approval is obtained when required. This change is designated as a less restrictive removal of detail change because information relating to system operation is being removed from the Technical Specifications.

LA.4 Unit 1 only. *(Type 3 – Removing Procedural Details for Meeting Tech Spec Requirements and Related Reporting Requirements).* The Unit 1 CTS 4.9.8.1.b surveillance requires RHR operation to be verified as follows: "A flow rate ≥ 3000 gpm prior to the start of and once per hour during a reduction** in the Reactor Coolant System boron concentration". The Unit 1 surveillance is modified by a footnote that states, "** For purposes of this specification, the addition of borated water to the RCS does not constitute a reduction or dilution in RCS boron concentration provided the boron concentration of the borated water being added is greater than the minimum required to satisfy the requirements of Specification 3.9.1 for Mode 6. This Footnote is relocated from the TS to the LRM along with the associated surveillance requirement. The disposition of the Unit 1 surveillance 4.9.8.1.b is addressed by the DOC applicable to the corresponding Unit 2 surveillance. The only difference between Unit 1 and Unit 2 surveillance is that the Unit 1 surveillance has the ** footnote quoted above. The purpose of this DOC is to address the removal of the Unit 1 specific footnote.

The Unit 1 footnote provides a clarification of the requirement specified in CTS 4.9.8.1.b. The purpose of the CTS surveillance is to provide procedural type guidance for operating the RHR loop during dilution operations to assure safe plant operation by reducing the probability of boron stratification. The requirements specified in the CTS surveillance are not related to the specific safety analysis assumptions of any design basis accidents described in the UFSAR. Nor is the CTS surveillance necessary to verify the RHR loop is in operation and meeting the requirements of the LCO. The BVPS TS require that unborated water sources be isolated in Modes 4, 5, and 6. Therefore, no boron dilution design basis accident is assumed to occur. Therefore, in accordance with the criteria for TS contained in 10 CFR 50.36, the specific RHR flow specified in the CTS surveillance for dilution operations, although prudent operational guidance, is not required in the TS. As such, the note modifying this surveillance is also not required to be in the TS.

This change is acceptable because the Unit 1 note modifying CTS 4.9.8.1.b is not necessary to verify that the RHR loop used to meet the LCO can perform its required functions. The ISTS surveillance to verify the RHR loop in operation provides adequate assurance that the LCO requirements continue to be met. Thus, appropriate verifications continue to be performed in a manner and at a frequency necessary to give confidence that the equipment can perform its assumed safety function. In addition, the CTS surveillance and associated footnote will continue to be controlled in the LRM. The TS requirements relocated to the LRM are considered to be incorporated by reference into the UFSAR. Therefore, any changes to the LRM are made under the provisions of 10 CFR 50.59. As such any changes to this material will be properly evaluated and NRC review and approval obtained when required. This change is designated as a less restrictive removal of detail change because information relating to system operation is being removed from the TS.

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 The title and applicability of CTS 3/4.9.8.1 are revised consistent with the ISTS. The phrase "high water level" replaces "all water levels" in the title and the applicability is revised to add "with the water level greater than or equal to 23 feet above the reactor vessel flange" to Mode 6. This revision is consistent with the bases for the CTS. When the water level is equal to or greater than 23 feet above the reactor vessel flange a large heat sink is available for core cooling and adequate time exists to restore cooling if the single required RHR loop fails. Since CTS 3.9.8.2 (Low water level) is applicable when the water level is less than 23 feet above the reactor vessel flange it requires two operable RHR loops. As such, the appropriate applicability for CTS 3.9.8.1 (one RHR Loop required) is "with the water level equal to or greater than 23 feet above the reactor vessel flange.

The incorporation of this change provides a clear separation between the Applicabilities of the two RHR Loop TS (CTS 3.9.8.1 and 3.9.8.2) based on water level. The change requires that some of the CTS 3.9.8.1 requirements previously applicable at all water levels be repeated in CTS 3.9.8.2 (low water level) but does result in more clear RHR TS requirements for each water level. In addition, the proposed change does not result in a technical change to the RHR requirements for each water level. The proposed change is acceptable because it conforms to the ISTS, is consistent with the CTS Bases, and does not introduce a technical change. As such, this change is considered administrative.

A.3 CTS 3.9.8.1, Action a, states, in part, that with less than one RHR loop in operation, suspend all operations involving an increase in the reactor decay heat load. The corresponding ISTS Action states that with the RHR loop requirements not met suspend loading irradiated fuel assemblies in the core. The CTS is revised to conform to the ISTS. This changes the CTS by requiring that the loading of irradiated fuel assembles be suspended instead of requiring that all operations involving an increase in the reactor decay heat load be suspended.

This change is acceptable because the proposed change does not introduce a technical change to the intent of the CTS. The ISTS accomplishes the same purpose as the CTS. The reactor decay heat load is generated by irradiated fuel. The only method of increasing the decay heat load of a reactor in MODE 6 is to load additional irradiated fuel assemblies into the core. Therefore, the CTS and ISTS requirements are equivalent. The ISTS Action is merely more specific for Mode 6. This change is designated as administrative because it does not result in technical changes to the CTS.

A.4 CTS 3.9.8.1 states, in part, that with less than one RHR loop in operation, close all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere within 4 hours. The corresponding ISTS Actions state that with the RHR loop requirements not met, within 4 hours secure the equipment hatch with at least four bolts, close one door in each installed air lock, and close each penetration providing direct access from the containment atmosphere to the outside atmosphere with a manual or automatic isolation valve, blind flange, or equivalent. The CTS is revised to conform to the ISTS. This changes the CTS Action by providing more specific directions in the Actions to close containment.

The purpose of the CTS 3.9.8.1 Action is to ensure that radioactive material does not escape the containment should the RHR requirements continue to not be met and boiling occurs in the core. Therefore, containment penetrations are closed to seal the containment. This change is acceptable because the proposed Required Actions accomplish the same containment closure function as the CTS and provide the same assurance of continued safe operation under the specified Condition. The proposed change does not revise the technical intent of the CTS requirements. The ISTS Actions simply provide more specific directions regarding what penetrations must be closed. As such, this change is considered administrative.

A.5 CTS 3.9.8.1 Actions b and c specify that "the residual heat removal loop may be removed from operation for up to 1 hour per 8 hour period" and that " the residual heat removal loop may be removed from operation for up to 4 hours per 8 hour period during the performance of Ultrasonic In-service Inspection inside the reactor vessel nozzles." These CTS Actions are moved into notes that modify the LCO requirements for one RHR loop to be in operation. The placement of these CTS Actions in notes is consistent with the corresponding ISTS use of notes to modify the LCO requirements.

The proposed change is acceptable, as the technical intent of the CTS requirements remains unchanged only the presentation of the material is changed. In addition, the CTS Actions are intended to take exception to the LCO requirements for a specified period of time and in the ISTS such exceptions to the LCO requirements are contained in notes not Actions. As the proposed change only revises the presentation of the CTS requirements (from Actions to notes) and does not introduce a technical change to the intent of the CTS requirements, this change is considered administrative.

A.6 CTS 3.9.8.1 Action c states " The residual heat removal loop may be removed from operation for up to 4 hours per 8 hour period during the performance of Ultrasonic In-service Inspection inside the reactor vessel nozzles provided there is at least 23 feet of water above the top of the reactor vessel flange." There is no corresponding ISTS requirement for this BVPS specific allowance. However, when moved into the corresponding ISTS, this CTS requirement is changed by deleting "provided there is at least 23 feet of water above the top of the reactor vessel flange" from the requirement.

This change is acceptable based on the ISTS organization of the RHR/Coolant Circulation TS. The corresponding ISTS to CTS 3.9.8.1 is only applicable when the water level is ≥ 23 feet above the reactor vessel flange. Therefore, the limitation in CTS Action c regarding the water level is no longer required. The proposed change represents a change in the organization of the TS requirements that does not introduce a technical change to the CTS requirements. As this change is one of format and presentation it is considered administrative.

A.7 CTS 3.9.8.1 Action d states, "The provisions of Specification 3.0.3 are not applicable". The corresponding ISTS does not contain this provision. ISTS LCO 3.0.3 states, "LCO 3.0.3 is only applicable in MODES 1, 2, 3, and 4." Therefore, in the ISTS, an exception to the provisions of LCO 3.0.3 in Mode 6 is not required. This changes the CTS by deleting the exception to the provisions of 3.0.3 in CTS 3.9.8.1.

This change is acceptable because the ISTS LCO 3.0.3 applicability (Modes 1-4) is consistent with the CTS 3.9.8.1 exception to 3.0.3. This change is designated as administrative because it does not result in technical changes to the CTS.

A.8 Unit 1 only. A note that specifies "with fuel in the vessel" modifies the Unit 1 CTS 3.9.8.1 applicability of Mode 6. The corresponding ISTS applicability does not contain this note. The CTS footnote modifying the applicability is deleted consistent with the ISTS.

In the ISTS the definition of Mode in Section 1.0 includes the requirement that fuel is in the vessel. Therefore, the Unit 1 CTS footnote specifying "with fuel in the vessel" is no longer required to modify the applicable Mode. Given the ISTS definition of Mode includes the requirement for fuel in the vessel, the deletion of the footnote does not introduce a technical change to the CTS. As such this change is considered administrative.

CTS 3/4.9.8.2 Low Water Level

ITS 3.9.5 RHR and Coolant Circulation – Low Water Level

DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

L.1 *(Category 1 – Relaxation of LCO Requirements)* The CTS 3.9.8.2 LCO requirement is revised by the addition of two ISTS LCO Notes. Note 1 allows all RHR pumps to be removed from operation for ≤ 15 minutes when switching from one train to another, provided several conditions are met. Note 2 allows one required RHR loop to be inoperable for up to 2 hours for Surveillance testing, provided that the other loop is OPERABLE and in operation. This changes the CTS by providing exceptions to the LCO requirement for a limited time for specific reasons and under certain conditions.

The primary purpose of CTS 3.9.8.2 is to ensure sufficient decay heat removal capability is available in the specified low water level (less than 23 feet above the reactor vessel flange) mode of operation. The ISTS notes being added allow normal operational evolutions, such as pump swapping and surveillance testing, to be performed. The proposed notes provide limited exceptions to the LCO requirement with adequate precautions to assure safe plant operation. The addition of the ISTS notes is acceptable because the LCO continues to require that two RHR systems are maintained operable to ensure sufficient cooling capacity is readily available. The allowances are necessary for continued normal operation without reliance on the Action statements. In addition, the notes provide an adequately short time and/or operating constraints to ensure that the plant is maintained in a safe condition when the provisions of the notes are exercised. The evolutions permitted by the ISTS notes are required for normal plant operation and to demonstrate RHR or other required system operability. As such, the proposed ISTS allowances contribute to the safe operation of the plant. This change is designated as less restrictive because less stringent LCO requirements are being applied in the ITS than were applied in the CTS.

L.2 *(Category 5 – Deletion of Surveillance Requirement)* CTS Surveillance 4.9.8.2 requires verification that each RHR loop is OPERABLE per Specification 4.0.5. The corresponding ISTS does not contain this Surveillance. The CTS is revised to conform to the ISTS. This changes the CTS by replacing CTS 4.9.8.2 with the ISTS surveillance applicable for this TS (ITS SR 3.9.5.1 & SR 3.9.5.2).

The purpose of CTS Specification 4.0.5 is to require inservice testing in accordance with Section XI of the ASME Boiler and Pressure Vessel Code. The ASME Code requires extensive testing of Class 1, 2, and 3 pumps and valves. The required ASME testing and inspection of code class 1, 2, and 3 equipment will continue to be performed in accordance with federal regulations and the ISTS Inservice Testing Program specified in the Administrative Controls section of the ITS.

The BVPS RHR System functions to circulate reactor coolant and remove decay heat during shutdown conditions. The BVPS RHR System is not required to actuate automatically or perform continuously at maximum design pressure and flows that are specific assumptions of a safety analysis. In Mode 6, the RHR system only functions to remove decay heat and provide mixing of the reactor coolant. Demonstrating the operability of the RHR system in Mode 6 (with water level < 23 feet above the reactor vessel flange) may be accomplished by the verification of adequate flow in the operating loop to remove decay heat and verification of available power and breaker alignment of the standby loop (ITS SR 3.9.5.1 & SR 3.9.5.2). In addition, the RHR system is routinely operated during Mode 6 and the RHR loops are instrumented so that significant degradation of the RHR system could be determined from the RHR System flow and temperature instrumentation in the Control Room. This change conforms to the ISTS and provides reasonable and adequate test requirements to verify RHR system operability for the functional requirements of Mode 6 operation.

This change is acceptable because the deleted Surveillance Requirement is not necessary to verify that the equipment used to meet the LCO can perform its required functions. The proposed change is also acceptable because the tests and inspections required by the ASME code will continue to be performed in accordance with the applicable federal regulations and the ITS Inservice Testing Program. Therefore, the RHR systems will continue to be tested in a manner and at a frequency necessary to give confidence that the equipment can perform its assumed function. This change is designated as less restrictive because Surveillances which are required in the CTS will not be required in the ITS.

L.3 *(Category 4 – Relaxation of Required Action)* The Actions for containment closure in CTS 3.9.8.1 are applicable to CTS 3.9.8.2. CTS 3.9.8.1 Action a states, in part, that with less than one RHR loop in operation, close all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere within 4 hours. The corresponding ISTS 3.9.5 states, in part, that with the RHR loop requirements not met, within 4 hours close each penetration providing direct access from the containment atmosphere to the outside atmosphere with a manual or automatic isolation valve, blind flange, or equivalent, or verify each penetration is capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System. The CTS is revised to conform to the ISTS. This changes the CTS Actions by allowing penetrations capable of being closed by an OPERABLE Containment Purge and Exhaust Isolation System to remain open when the RHR requirements are not met.

The purpose of the CTS 3.9.8.1 Action is to close containment to minimize the release of radioactive material should the RHR requirements continue to not be met and boiling occurs in the core. Therefore, containment penetrations are closed to minimize any potential radioactive release. This change is acceptable because the Actions continue to provide for containment closure. Closure of the Purge and Exhaust System isolation valves may be accomplished automatically by radiation monitor actuation or by manual action from the control room.

Manual isolation of the purge and exhaust penetrations is acceptable considering that the potential release from heating up the RCS is not the same as the immediate and large release assumed in a design basis fuel handling accident that requires automatic isolation to mitigate. Therefore, considering the nature of the potential release from heating the RCS, the heightened awareness of the operations staff during a loss of RHR and the radiation monitor indications available to the control room, sufficient information and time would be available to enable the operators to manually isolate the purge and exhaust penetrations to prevent any significant radioactive release. Although not specified as an Action in the TS, the BVPS purge exhaust may also be lined up to the filtration system in the Supplemental Leak Collection and Release System (SLCRS) which could provide a defense in depth capability to mitigate any release.

The proposed change only allows for a delay in isolating the containment purge and exhaust system. This delay may be necessary for continued habitability of the containment and restoration of RHR (BVPS RHR pumps are inside containment). As such, the proposed change continues to provide adequate assurance that the containment will be closed and that the release of radioactive material would be minimized should boiling occur in the core. This change is designated as less restrictive because less stringent Required Actions are being applied in the ITS than were applied in the CTS.

L.4 *(Category 1 – Relaxation of LCO Requirements)* CTS LCO 3.9.8.2 requires that two RHR loops be operable and one RHR loop in operation. The corresponding ISTS LCO requires the same thing. However, the proposed BVPS ITS 3.9.5 LCO is modified by a Note (#3) that provides an allowance for the RHR loop required to be operating to be removed from service (i.e., circulating reactor coolant) when the RHR loop is used to drain the reactor cavity to the RWST. The ITS Note also requires that when the RHR loop is removed from service that it remains capable of being re-aligned to the RCS (to restore full reactor coolant circulation if needed). The proposed BVPS ITS LCO Note is not consistent with the corresponding ISTS. The CTS is revised to incorporate the provisions of the proposed BVPS ITS LCO Note. This changes the CTS by providing a specific allowance in the Technical Specification to remove the required RHR loop from circulating reactor coolant for use in draining the reactor cavity to the RWST.

The proposed BVPS LCO Note for ITS 3.9.5, "RHR and Coolant Circulation – Low Water Level" is based on the exception provided in approved TSTF-21, Rev 0, for ISTS 3.9.6, "RHR and Coolant Circulation-Low Water Level." TSTF-21 has subsequently been incorporated into Revision 3 of NUREG-1431. TSTF-21, Rev. 0 included a bases statement in the LCO section of the ISTS 3.9.6 bases that allowed the required RHR pumps to be operable when aligned to the Refueling Water Storage Tank to support filling or draining the refueling cavity or for the performance of required testing. Due to the BVPS RHR design, the RHR pumps are normally used for draining the cavity (not filling). In addition, the BVPS RHR system is a dedicated heat removal system and is not part of the ECCS (like many other Westinghouse plants) and does not require the provision for realignment due to testing. Therefore, these provisions of the exception included in TSTF-21 are not implemented in the BVPS specific ITS.

However, an issue remains with the bases exception provided by TSTF-21 to realign RHR from the required function of circulating reactor coolant. Specifically, the bases exception introduced by TSTF-21, Rev. 0 can not be used to override the required operability function of the RHR pump in ISTS 3.9.6 (i.e., circulating reactor coolant). ISTS 3.9.6 specifies in both the Specification (SR 3.9.6.1) and the bases that the RHR pump is required to be circulating reactor coolant. An exception in the Specification's LCO statement would be required to avoid potential conflict with the ISTS 3.9.6 SR and bases that specify circulating reactor coolant. In a letter (from W. D. Beckner to J. Davis (NEI) dated 4/29/99), the NRC recommended TSTF-21, Rev.0 be revised to include an LCO exception Note in the Specification. The recommended Note provided a specific LCO exception to remove the RHR loop from operation to support fill and drain operations and to support required testing. However, the NRC recommended LCO Note was never incorporated in TSTF-21 and therefore, was not incorporated into Revision 3 of NUREG-1431. Therefore, BVPS has proposed the addition of a similar LCO Note to the BVPS ITS. The LCO Note proposed by BVPS is similar to the Note recommended by the NRC (except for the BVPS plant specific design differences noted above).

The proposed change is acceptable because it is consistent with the intent of approved TSTF-21 and is necessary to ensure the provisions introduced by TSTF-21 can be implemented without potential conflicting technical specification requirements (as described above). In addition, the proposed Note includes the conservatism of being contingent on maintaining the capability to realign the RHR loop to the RCS if it is required. This additional requirement was recommended by the NRC (in the letter dated 4/29/99) but not incorporated into the final version of TSTF-21. Thus, the proposed change provides additional assurance (beyond the simple TSTF-21 bases change) that the capability to remove decay heat is maintained and controlled when implementing the provisions introduced by TSTF-21. In addition, the operation of draining the reactor cavity to the RWST provides some flow near the top of the reactor vessel that continues to remove decay heat. Therefore, although not circulating coolant, the draining of the reactor cavity does maintain some decay heat removal function.

The proposed change provides a relaxation to the CTS LCO requirement that is based on the plant design and accounts for the way the RHR system is routinely used during refueling operations. The proposed relaxation simplifies the transition between refueling cavity water level requirements and minimizes complications that could result from shifting RHR loop operation from one loop to two loops and back to one loop when changing the reactor cavity water level. The proposed change requires that the affected RHR loop be capable of being re-aligned to the RCS if necessary and therefore, continues to provide adequate assurance the plant is operated in a safe manner. This change is designated as less restrictive because less stringent LCO requirements are applicable in the ITS than are applicable in the CTS.

More Restrictive Changes (M)

M.1 CTS 3.9.8.2 requires two independent RHR loops to be OPERABLE and at least one loop to be in operation. The corresponding ISTS specifies a surveillance that requires verification every seven days of correct breaker alignment and indicated power available to the RHR pump not in operation. The CTS does not have a corresponding surveillance. The CTS is revised to adopt the ITS SR 3.9.5.2 for the standby RHR pump. This changes the CTS by adding a new Surveillance Requirement.

The ISTS LCO requires one RHR loop to be in operation and one RHR loop to be held in readiness should it be needed. The addition of the new surveillance compliments the ISTS LCO requirement by providing a corresponding surveillance for the standby RHR pump. The proposed change is acceptable because it provides additional assurance that the standby RHR loop will be ready should it be needed.

As such, the proposed change provides additional assurance the plant is maintained in a safe condition during Mode 6 operations without adversely impacting equipment availability or operational resources. This change is designated as more restrictive because it adds a new Surveillance Requirement to the CTS.

Removed Detail Changes (LA)

None

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 In converting CTS 3.9.8.2 to the corresponding ISTS the following requirements are added to the CTS: 1) An LCO requirement for one RHR loop to be in operation, 2) Actions requirements for when no RHR loop is in operation, and 3) A surveillance to verify the required RHR loop is in operation.

The addition of these requirements to CTS 3.9.8.2 (low water level) is a direct result of changing the applicability of CTS 3.9.8.1 from Mode 6 or all water levels to high water level only. The requirements being added to CTS 3.9.8.2 were previously contained in CTS 3.9.8.1 and applicable in Mode 6 at all water levels. Once the CTS 3.9.8.1 applicability was changed to high water level only, the requirements previously applicable at all water levels must now be repeated in CTS 3.9.8.2 (low water level) in order to maintain the same level of RHR TS requirements as before.

This DOC is only intended to address the repetition of these CTS 3.9.8.1 requirements in CTS 3.9.8.2 due to the change in applicability of CTS 3.9.8.1. The DOCs associated with CTS 3.9.8.1 already address the changes or additions to these requirements and are applicable to CTS 3.9.8.2 as well and do not need to be repeated here.

The proposed change is acceptable because the addition of these requirements to CTS 3.9.8.2 is necessary to maintain the same level of RHR requirements for all Mode 6 water levels as were previously contained only in CTS 3.9.8.1. In addition, the division of the applicability between high and low water TS requirements introduced by the ISTS serves to improve the clarity and understanding of these TS requirements. As the technical changes to these requirements are addressed in CTS 3.9.8.1, the change addressed by this DOC represents an organizational change to the CTS requirements to conform to the presentation of these requirements in the ISTS. Therefore, this change is considered administrative.

A.3 CTS 3.9.8.2, Action a, states, that with less than the required RHR loops OPERABLE, immediately initiate corrective action to return the required RHR loops to OPERABLE status as soon as possible. The corresponding ISTS Condition A, states that with less than the required number of RHR loops OPERABLE, immediately initiate action to restore required RHR loops to OPERABLE status or immediately initiate action to establish ≥ 23 feet of water above the top of reactor vessel flange. The CTS requirements are revised to conform to the ISTS. This changes the CTS by providing the option to exit the Applicability of the low water LCO and enter the high water LCO where only one RHR loop is required operable.

This change is acceptable because it does not introduce a new Action option to the CTS. Exiting the Applicability of an LCO (e.g., moving from low water level to high water level) is an implicit option in any TS. Once the TS is no longer applicable the associated Actions do not have to be completed (rules of usage in Section 3.0). In many cases, removing the plant from the applicability of the TS entails a reduction in power or shutdown that is undesirable but necessary to assure safe plant operation. However, in this case, the option to place the plant in another applicability (high water level) may be desirable as well as safe. Stating this option explicitly in the Actions highlights the existing option to change modes but does not introduce a technical change in the way the TS is currently used. This change is designated as administrative because it does not result in technical changes to the CTS.

A.4 CTS 3.9.8.2 Action b states, "The provisions of Specification 3.0.3 are not applicable." The corresponding ISTS does not include an exception to LCO 3.0.3. The CTS is revised to conform to the ISTS. This changes CTS by deleting an exception to LCO 3.0.3.

In the ISTS LCO 3.0.3 specifies that, "LCO 3.0.3 is only applicable in MODES 1, 2, 3, and 4." Therefore in the ISTS no exceptions to LCO 3.0.3 are required in Modes other than 1-4. This change is acceptable because adoption of the ISTS LCO 3.0.3 requirements results in essentially the same requirements as the CTS with the exception to 3.0.3. This change is designated as administrative because it does not result in technical changes to the CTS.

A.5 CTS 3.9.8.2 LCO is modified by a footnote, *, which states that the normal or emergency power source may be inoperable for each RHR loop. The corresponding ISTS does not include this statement. The CTS is revised to conform to the ISTS. This changes CTS by deleting the allowance provided by the * footnote from CTS 3.9.8.2.

The ISTS definition of "OPERABLE" states that a component is OPERABLE if either the normal or emergency power source is OPERABLE. Therefore, separate provisions within individual TS to provide this allowance are not required. The elimination of this allowance from CTS 3.9.8.2 is acceptable because the ISTS definition of OPERABLE already contains the necessary allowance. As such, the adoption of the ISTS does not result in a technical change to the CTS. This change is designated as administrative because it does not result in technical changes to the CTS.

CTS 3/4.9.9 Containment Purge and Exhaust Isolation System
ITS 3.3.6 Unit 2 Containment Purge and Exhaust Isolation Instrumentation
ITS 3.9.3 Containment Penetrations
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

L.1 (Unit 2 only) *(Category 7 – Relaxation Of Surveillance Frequency)* CTS surveillance 4.9.9 specifies the testing required for the containment purge and exhaust isolation valves. Surveillance 4.9.9 requires containment purge and exhaust system valve actuation and isolation timing verification every 7 days. The corresponding ITS SRs 3.9.3.3 and 3.9.3.4 require that the containment isolation valve actuation on a simulated or actual actuation signal (hi radiation and manual) as well as isolation timing be verified every 18 months. A note that takes exception to the surveillance when the valves are closed per the LCO requirement modifies the ISTS surveillance. The CTS is revised to conform to the ISTS. This changes the CTS valve actuation and isolation timing verification surveillance interval from 7 days to 18 months. Other changes made to the requirements of CTS 4.9.9 are addressed in different DOCs shown in the markup of CTS 4.9.9 and proposed SRs 3.9.3.3 and 3.9.3.4 in CTS LCO 3.9.4 (ITS 3.9.3).

The purpose of CTS surveillance 4.9.9 is to verify the required actuation and isolation time of the containment purge and exhaust isolation valves. The proposed change is consistent with the ISTS, and revises the CTS 7-day frequency for valve actuation and isolation time testing to once every 18 months. The CTS surveillance frequency of 7 days is overly conservative when compared to similar testing specified for other safety significant equipment. The proposed change makes the surveillance frequency for testing these valves more consistent with the standard requirements for actuation testing of other Engineered Safety Features Actuation System (ESFAS) components in the TS. For example, the Emergency Core Cooling System (ECCS) pump and valve actuation requirements are only required to be verified once per 18 months. In addition, the response time requirements of Reactor Trip and ESFAS instrumentation is only required to be verified every 18 months on a staggered test bases. As such, reliance on the 18-month frequency for verifying equipment actuation and timing is acceptable to assure the operability of safety significant equipment. In addition, the proposed change is reasonable considering the other existing surveillance testing that is required for the containment purge and exhaust isolation function. The surveillance requirements applicable to the actuating instrumentation (manual and high radiation) are contained in the ISTS Instrumentation Section in the Containment Purge and Exhaust Isolation Instrumentation TS (ITS 3.3.6). These instrumentation surveillance requirements include a 12 hour Channel Check (radiation monitors), a 92 day Channel Operation Test (radiation monitors), an 18 month Trip Actuating Device Operational Test (manual initiation), and an 18 month Channel Calibration (radiation monitors). The applicability of ITS 3.3.6 for the containment purge and exhaust isolation system is the same as ITS 3.9.3. Therefore, these additional surveillances must be met at the same time as ITS 3.9.3 to assure the purge and exhaust system is operable. The instrumentation surveillance requirements that are applicable to this function are also consistent with the surveillances required for ESFAS instrumentation functions and are therefore also appropriate for the containment purge and exhaust isolation function instrumentation. The reliance on an 18-month requirement for verification of valve actuation and timing is acceptable based on the proven assurance of operability provided by the 18-month surveillance interval and due to the more frequent and complete instrumentation surveillance requirements also applicable to this system. As such, the proposed instrumentation and actuation surveillance requirements applicable to this system adequately verify the operability of the system in a manner and frequency consistent with other ESFAS functions. This change is designated as less restrictive because the surveillance will be performed less frequently under the ITS than under the CTS.

L.2 (Unit 2 only) *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS Surveillance 4.9.9 requires verification of purge and exhaust valve actuation on a high radiation signal and manually. The corresponding ITS SR 3.9.3.3 specifies that the testing may be performed with an actual or simulated actuation signal. The CTS is revised to conform to the ISTS. This changes the CTS by explicitly allowing the use of either an actual or simulated signal when performing the required test.

The purpose of the CTS surveillances is to ensure the containment purge and exhaust valves actuate to their required position (closed). The surveillance provides assurance the valves are operable. The proposed change is acceptable because the explicit use of a certain type of signal is not necessary to verify the equipment used to meet the LCO can perform its required functions. The use of an actual as well as simulated signal is acceptable and sufficient to determine the affected components are operable. The affected components can not discriminate between an "actual" or "simulated" signal and, therefore, the results of the testing are unaffected by the type of signal used to initiate the test. Separate Instrumentation testing requirements (ITS 3.3.6) provide assurance the instrumentation will provide the required signal. As such, the proposed change does not adversely affect the safe operation of the plant and continues to assure the containment purge and exhaust system components are verified operable in a similar manner as before. In addition, the proposed change allows taking credit for unplanned actuations if sufficient information is collected to satisfy the surveillance test requirements. The proposed change is designated as less restrictive because less stringent Surveillance Requirements are being applied in the ITS than were applied in the CTS.

More Restrictive Changes (M)

None

Removed Detail Changes (LA)

LA.1 (Unit 2 only) *(Type 1 - Removing Details of System Design and System Description, Including Design Limits.)* CTS surveillance 4.9.9 requires the containment purge and exhaust valve actuation on a high radiation signal and manual initiation be verified. The corresponding ITS SR 3.9.3.3 specifies that the containment purge and exhaust valve actuation be verified on an actual or simulated actuation signal. The CTS is revised to conform to the ISTS. This changes the CTS by removing the details of system design (specific actuation signals) from the surveillance requirement to the Bases.

The removal of these details, which are related to the system design, from the surveillance is acceptable because this type of information is not necessary to be included in the TS to provide adequate protection of public health and safety. The resulting ITS SR 3.9.3.3 still retains the requirement to verify the actuation of the containment purge and exhaust valves in the same manner as the CTS. The specific details of the system design are inherent to the system's operability and need not be specified in the SR. The ITS surveillance will continue to verify the correct valve actuation using the appropriate actuation signals. As such, the ITS continues to assure the required systems are maintained operable consistent with the assumptions of the applicable safety analyses. Therefore, the proposed change continues to provide adequate assurance the plant is operated safely in the same manner as the CTS requirements. ITS SR 3.9.3.3 Bases describes the operability requirements for the containment purge and exhaust valves including the requirement that both manual and high radiation signals be verified. As such, this change is also acceptable because this type of design and operability detail will be adequately controlled in the ITS Bases consistent with the format and content of the ISTS. Changes to the Bases are controlled by the TS Bases Control Program specified in the Administrative Controls Section of the TS. This program provides for the evaluation of changes to ensure the Bases are properly controlled and that prior NRC review and approval is requested when required. This change is designated as a less restrictive removal of detail change because details regarding the system design are removed from the TS.

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements.

These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 (Unit 2 only) CTS surveillance 4.9.9 contains requirements to verify the operability of the containment purge and exhaust isolation valves (automatic and manual initiation and isolation time. The corresponding ISTS requirements for the purge and exhaust valves are contained in two separate TS. ITS 3.9.3 (CTS 3.9.4) contains the requirements for the isolation valves (actuation and timing) and ITS 3.3.6 contains the requirements for the purge and exhaust valve actuation instrumentation (manual and radiation monitor channels). The ISTS does not have a specification that corresponds to CTS 3.9.9. The CTS is revised to conform more closely to the ISTS. This changes CTS surveillance 4.9.9 by moving the valve actuation and timing requirements to ITS 3.9.3 (as SRs 3.9.3.3 and 3.9.3.4) and specific actuation instrumentation requirements to ITS 3.3.6. Other changes to CTS 4.9.9 are addressed in the DOCs associated with those changes as shown in the markups. This DOC only addresses the movement of these CTS requirements from one TS to another.

The proposed change is acceptable because it does not revise the technical requirements of the CTS surveillance. The change only moves the requirements to ITS 3.9.3 consistent with the location of similar requirements in the ISTS. The proposed change is designated administrative because the movement of requirements within the TS is not a technical change.

CTS 3/4.9.10 Water Level Reactor Vessel
ITS 3.9.6 Refueling Cavity Water Level
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

None

More Restrictive Changes (M)

M.1 The Action requirement for CTS 3.9.10 specifies that "With the requirements of the above specification not satisfied, suspend all operations involving movement of irradiated fuel assemblies within the containment and movement of fuel assemblies over irradiated fuel assemblies within the containment". No specific time is associated with the CTS Action. The corresponding Action in the ISTS requires that the Action be performed "immediately". The CTS is revised consistent with the ISTS to require that the Action be performed immediately.

The purpose of CTS 3.9.10 is to ensure that 23 feet of water is maintained above the reactor vessel flange when the potential for a fuel handling accident exists. The required water level is an assumption of the safety analyses associated with the fuel handling accident. If the water level requirement is not met, the release of radioactivity from a fuel handling accident may exceed the values predicted in the safety analyses.

The proposed change is acceptable because it requires the appropriate level of urgency for the Actions when the requirements of the specification and associated safety analyses are not met. The proposed change provides additional assurance that the plant will be operated in a safe manner consistent with the safety analyses without introducing any adverse effects to plant equipment or personnel. This change is designated as more restrictive because it provides a specific and immediate Completion Time for the CTS Actions.

Removed Detail Changes (LA)

None

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 CTS 3.9.10 Action states in part, "The provisions of Specification 3.0.3 are not applicable." The corresponding ISTS does not include an exception to LCO 3.0.3. The CTS is revised to conform to the ISTS. This changes CTS by deleting an exception to LCO 3.0.3.

In the ISTS LCO 3.0.3 specifies that, "LCO 3.0.3 is only applicable in MODES 1, 2, 3, and 4." Therefore in the ISTS, no exceptions to LCO 3.0.3 are required in Modes other than 1-4. This change is acceptable because adoption of the ISTS LCO 3.0.3 requirements results in essentially the same requirements as the CTS with the exception to 3.0.3. This change is designated as administrative because it does not result in technical changes to the CTS.

ENCLOSURE 4

DETERMINATIONS OF
NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC)
FOR
CHANGES MADE TO THE BVPS
CURRENT TECHNICAL SPECIFICATIONS (CTS)

Introduction
The determinations of NSHC contained within this Enclosure consist of two general types. This enclosure contains "Generic" NSHC developed for the categories of change identified in Enclosure 3 (Changes to the CTS) and "Specific" NSHC for those "Less Restrictive" changes that do not fit within one of the generic determinations of NSHC listed below. Each specific NSHC is identified by the associated Technical Specification and discussion of change (DOC) number from Enclosure 3.

Enclosure Contents

NO SIGNIFICANT HAZARDS DETERMINATION
FOR

ADMINISTRATIVE CHANGES

The Beaver Valley Power Station (BVPS) is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve reformatting, renumbering, and rewording of Technical Specifications with no change in intent. These changes, since they do not involve technical changes to the Technical Specifications, are administrative.

This type of change is associated with the movement of requirements within the Technical Specifications, or with the modification of wording or format that does not affect the technical content of the current Technical Specifications. In addition, these changes include all non-technical modifications of requirements to provide consistency with the ISTS in NUREG-1431. Administrative changes do not add, delete, or relocate any technical requirements of the current Technical Specifications.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change involves reformatting, renumbering, and rewording the existing Technical Specifications. The reformatting, renumbering, and rewording process involves no technical changes to the existing Technical Specifications. As such, this change is administrative in nature and does not affect initiators of analyzed events or assumed mitigation of accident or transient events. Therefore, this change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or changes in methods governing normal plant operation. The proposed change will not impose any new or eliminate any old requirements. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

   The proposed change will not reduce a margin of safety because it has no effect on any safety analyses assumptions. This change is administrative in nature. Therefore, the change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR

MORE RESTRICTIVE CHANGES

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve adding more restrictive requirements to the existing Technical Specifications by either making current requirements more stringent or by adding new requirements that currently do not exist.

These changes include such things as additional commitments that decrease allowed outage times, increase the frequency of surveillances, impose additional surveillances, increase the scope of specifications to include additional plant equipment, increase the applicability of specifications, or provide additional actions. These changes are generally made to conform to the ISTS in NUREG-1431 and are only included in the Technical Specifications when they serve to enhance the safe operation of the plant and are consistent with the applicable plant specific design basis and safety analysis assumptions.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change provides more stringent requirements for operation of the facility. These more stringent requirements do not result in operation that will increase the probability of initiating an analyzed event and do not alter assumptions relative to mitigation of an accident or transient event. The more restrictive requirements continue to ensure process variables, structures, systems, and components are maintained consistent with the safety analyses and licensing basis. Therefore, this change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or changes in methods governing normal plant operation. The proposed change does revise Technical Specification requirements. However, these changes are consistent with the assumptions in the safety analyses and licensing basis. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
MORE RESTRICTIVE CHANGES
(continued)

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

   The imposition of more restrictive requirements either has no effect on or increases the margin of plant safety. Each change in this category is, by definition, providing additional restrictions to enhance plant safety. The change maintains requirements within the safety analyses and licensing basis. Therefore, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES -

REMOVED DETAIL

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve moving details out of the Technical Specifications and into the Technical Specifications Bases, the Updated Final Safety Analyses Report (UFSAR), the Licensing Requirements manual (LRM) or other documents under regulatory control such as the Quality Assurance Program. The removal of this information is considered to be less restrictive because the Technical Specification change process no longer controls the information. Typically, the affected information is descriptive detail and the removal of this information conforms to the NRC approved content and format of the ISTS in NUREG-1431.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change relocates certain details from the Technical Specifications to other documents under regulatory control. The Technical Specification Bases, UFSAR, and Licensing Requirement Manual will be maintained in accordance with 10 CFR 50.59. In addition to 10 CFR 50.59 provisions, the Technical Specification Bases are subject to the change control provisions in the Administrative Controls Chapter of the Technical Specifications. The UFSAR is subject to the change control provisions of 10 CFR 50.71(e). Other documents used to contain the removed information are subject to controls imposed by Technical Specifications or regulations. As such, the relocation of descriptive details will only affect the level of regulatory control applicable to changes to the information moved. Changes to the affected information will continue to be evaluated in accordance with 10 CFR 50.59. As such, no significant increase in the probability or consequences of an accident previously evaluated will result. Therefore, this change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operations. The proposed change will not impose or eliminate any requirements, and adequate control of the information will be maintained. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES - REMOVED DETAIL
(continued)

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

   The proposed change will not reduce a margin of safety because it has no effect on any safety analysis assumptions. In addition, the descriptive details to be moved from the Technical Specifications to other documents are not being changed. Since any future changes to these details will be evaluated under the applicable regulatory change control mechanism, no significant reduction in a margin of safety will be allowed. A significant reduction in the margin of safety is not associated with the elimination of the 10 CFR 50.92 requirement for NRC review and approval of future changes to the relocated details. The proposed change provides consistency with the level of detail in the Westinghouse Standard Technical Specifications, NUREG-1431, issued and approved by the NRC Staff, which provides additional assurance that the proposed change has been evaluated and determined not to introduce a significant reduction in the margin of safety. Therefore, the proposed change does *not involve a significant reduction in a margin of safety.*

NO SIGNIFICANT HAZARDS DETERMINATION
FOR

LESS RESTRICTIVE CHANGES
CATEGORY 1

RELAXATION OF LCO REQUIREMENTS

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve relaxation of the current Technical Specification (CTS) Limiting Conditions for Operation (LCOs) such as the elimination of specific items from the LCO or Tables referenced in the LCO, or the addition of exceptions to the LCO.

These changes reflect the ISTS approach to provide LCO requirements that specify the protective conditions that are required to meet safety analysis assumptions for required features. These conditions replace the lists of specific devices used in the CTS to describe the requirements needed to meet the safety analysis assumptions. The ISTS also includes LCO Notes that allow exceptions to the LCO for the performance of testing or other operational needs. The ISTS provides the protection required by the safety analysis and provides flexibility for meeting the conditions without adversely affecting operations since equivalent features are required to be OPERABLE. The proposed changes may also be consistent with the current licensing basis, as identified in the discussion of individual changes. These changes are generally made to conform to NUREG-1431 or more accurately reflect the current licensing basis and have been evaluated to not be detrimental to plant safety.

The proposed changes are acceptable because they have been determined to be applicable to the BVPS design and consistent with the assumptions of the BVPS safety analyses. The effect of each change relative to the safe operation of the plant was evaluated in the discussion associated with the change. In addition, the proposed changes that are consistent with the ISTS have been previously evaluated by Westinghouse Electric Corp., the Westinghouse Owners Group, NEI, and the NRC in developing the ISTS and found not to adversely affect the safe operation of Westinghouse plants. In the Final Policy Statement on Technical Specification Improvements for Nuclear Power Reactors (58 FR 39132, 7/22/93), the NRC encourages licensees to update their Technical Specifications consistent with their vendor-specific ISTS and endorses the implementation of these new Technical Specifications by stating that implementation of the ISTS is expected to produce an improvement in the safety of nuclear power plants. Furthermore, the provisions of the ISTS have been adopted by many Westinghouse plants over the last 10 years. The combined operating experience of the plants that have implemented the ISTS also serves to demonstrate that the provisions of the ISTS do not adversely affect the safe operation of Westinghouse plants.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 1
RELAXATION OF LCO REQUIREMENTS
(continued)

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

The proposed change provides less restrictive LCO requirements for operation of the facility. The effect of the change relative to the safe operation of the plant was evaluated in the discussion associated with the change. The change has been determined not to adversely affect the safe operation of the plant. In addition, changes that are consistent with the ISTS have been previously evaluated and found not to adversely affect the safe operation of Westinghouse plants. Based on the conclusions of the plant specific evaluation associated with the change and the evaluation performed in developing the ISTS, the proposed change does not result in operating conditions that will significantly increase the probability of initiating an analyzed event. In addition, the proposed change was evaluated to assure that it does not alter the safety analysis assumptions relative to mitigation of an accident or transient event and that the resulting requirements continue to ensure the necessary process variables, structures, systems, and components are maintained operable consistent with the safety analyses. As such the proposed change also does not result in operating conditions that will significantly increase the consequences of an analyzed event. Therefore, the change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. The proposed change does impose different requirements. However, the change is consistent with the assumptions in the safety analyses and licensing basis. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The effect of the change relative to the safe operation of the plant was evaluated in the discussion associated with the change. The change has been determined not to adversely affect the safe operation of the plant. In addition, changes that are consistent with the ISTS have been previously evaluated and found not to adversely affect the safe operation of Westinghouse plants. Based on the conclusions of the plant specific evaluation associated with each change and the evaluation performed in developing the ISTS, the change has been determined to maintain plant operation within the assumptions of the applicable safety analyses. As such, the change does not result in operating conditions that significantly reduce any margin of safety. Therefore, the change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 4

RELAXATION OF REQUIRED ACTION

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve relaxation of the Required Actions in the current Technical Specifications (CTS).

Upon discovery of a failure to meet a Limiting Condition for Operation (LCO), the ISTS specifies Required Actions to complete for the associated Conditions. Required Actions of the associated Conditions are used to establish remedial measures that must be taken in response to the degraded conditions. These actions minimize the risk associated with continued operation while providing time to repair inoperable features. Some of the Required Actions are modified to place the plant in a MODE in which the LCO does not apply. Adopting Required Actions from the ISTS is acceptable because the Required Actions take into account the operability status of redundant systems of required features, the capacity and capability of the remaining features, and the compensatory attributes of the Required Actions as compared to the LCO requirements. These changes are generally made to conform to NUREG-1431 and have been evaluated to not be detrimental to plant safety.

The effect of each change relative to the safe operation of the plant was evaluated in the discussion associated with the change. In addition, the proposed changes that are consistent with the ISTS have been previously evaluated by Westinghouse Electric Corp., the Westinghouse Owners Group, NEI, and the NRC in developing the ISTS and found not to adversely affect the safe operation of Westinghouse plants. In the Final Policy Statement on Technical Specification Improvements for Nuclear Power Reactors (58 FR 39132, 7/22/93), the NRC encourages licensees to update their Technical Specifications consistent with their vendor-specific ISTS and endorses the implementation of these new Technical Specifications by stating that implementation of the ISTS is expected to produce an improvement in the safety of nuclear power plants. Furthermore, the provisions of the ISTS have been adopted by many Westinghouse plants over the last 10 years. The combined operating experience of the plants that have implemented the ISTS also serves to demonstrate that the provisions of the ISTS do not adversely affect the safe operation of Westinghouse plants.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 4
RELAXATION OF REQUIRED ACTION
(continued)

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

   The proposed change provides less restrictive Required Actions for operation of the facility. The effect of the change relative to the safe operation of the plant was evaluated in the discussion associated with the change. The change has been determined not to adversely affect the safe operation of the plant. Required Actions are not initiating conditions for any accident previously evaluated. In addition, changes that are consistent with the ISTS have been previously evaluated and found not to adversely affect the safe operation of Westinghouse plants. Based on the conclusions of the plant specific evaluation associated with the change and the evaluation performed in developing the ISTS, the proposed change does not result in operating conditions that will significantly increase the probability of initiating an analyzed event. The proposed change was also evaluated to assure that it does not alter the safety analysis assumptions relative to mitigation of an accident or transient event and that the resulting requirements continue to ensure the necessary process variables, structures, systems, and components are maintained operable consistent with the safety analyses or that the plant is placed in an operating Mode where the process variable, structure, system, or component is no longer required operable. In addition, the proposed change provides the appropriate remedial actions to be taken in response to the degraded condition considering the operability status of the redundant systems of required features, and the capacity and capability of remaining features while minimizing the risk associated with continued operation. As such the proposed change also does not result in operating conditions that will significantly increase the consequences of an analyzed event. Therefore, the change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. The Required Actions in the ISTS have been evaluated to ensure that no new accident initiators are introduced. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 4
RELAXATION OF REQUIRED ACTION
(continued)

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

The effect of the change relative to the safe operation of the plant was evaluated in the discussion associated with the change. The change has been determined not to adversely affect the safe operation of the plant. In addition, changes that are consistent with the ISTS have been previously evaluated and found not to adversely affect the safe operation of Westinghouse plants. Based on the conclusions of the plant specific evaluation associated with each change and the evaluation performed in developing the ISTS, the change has been determined to maintain plant operation within the assumptions of the applicable safety analyses. As such, the change does not result in operating conditions that significantly reduce any margin of safety. Therefore, the change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 5

DELETION OF SURVEILLANCE REQUIREMENT

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve deletion of Surveillance Requirements in the current Technical Specifications (CTS).

The CTS require safety systems to be tested and verified Operable prior to entering applicable operating conditions. The ISTS eliminates unnecessary CTS Surveillance Requirements that do not contribute to verification that the equipment used to meet the Limiting Condition for Operation (LCO) can perform its required functions. Therefore, appropriate equipment continues to be tested in a manner and at a frequency necessary to give confidence that the equipment can perform its assumed safety function. These changes are generally made to conform to NUREG-1431 and have been evaluated to not be detrimental to plant safety.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change deletes Surveillance Requirements. Surveillances are not initiators to any accident previously evaluated. Consequently, the probability of an accident previously evaluated is not significantly increased. The equipment specified in the LCO is still required to be OPERABLE and capable of performing the accident mitigation functions assumed in the accident analysis. As a result, the consequences of any accident previously evaluated are not significantly affected. Therefore, this change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. The remaining Surveillance Requirements are consistent with industry practice and are considered to be sufficient to prevent the removal of the subject Surveillances from creating a new or different type of accident. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 5
DELETION OF SURVEILLANCE REQUIREMENT
(continued)

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

The deleted Surveillance Requirements do not result in a significant reduction in the margin of safety. The change has been evaluated to ensure that the deleted Surveillance Requirements are not necessary for verification that the equipment used to meet the LCO can perform its required functions. Therefore, appropriate equipment continues to be tested in a manner and at a frequency necessary to give confidence that the equipment can perform its assumed safety function. Therefore, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 6

RELAXATION OF SURVEILLANCE REQUIREMENT ACCEPTANCE CRITERIA

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve the relaxation of Surveillance Requirements acceptance criteria in the current Technical Specifications (CTS).

The CTS require safety systems to be tested and verified Operable prior to entering applicable operating conditions. The ISTS eliminates or relaxes the Surveillance Requirement acceptance criteria that do not contribute to verification that the equipment used to meet the Limiting Condition for Operation (LCO) can perform its required functions. For example, the ISTS allows some Surveillance Requirements to verify Operability under actual or test conditions. Adopting the ISTS allowance for "actual" conditions is acceptable because required features cannot distinguish between an "actual" signal and a "test" signal. Also included are changes to CTS requirements that are replaced in the ITS with separate and distinct testing requirements which, when combined, include Operability verification of all Technical Specification required components for the features specified in the CTS. Adopting this format preference in the ISTS is acceptable because Surveillance Requirements that remain include testing of all previous features required to be verified OPERABLE. Changes that provide exceptions to Surveillance Requirements to provide for variations that do not affect the results of the test are also included in this category. These changes are generally made to conform to NUREG-1431 and have been evaluated to not be detrimental to plant safety.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change relaxes the acceptance criteria of Surveillance Requirements. Surveillances are not initiators to any accident previously evaluated. Consequently, the probability of an accident previously evaluated is not significantly increased. The equipment being tested is still required to be OPERABLE and capable of performing the accident mitigation functions assumed in the accident analysis. As a result, the consequences of any accident previously evaluated are not significantly affected. Therefore, this change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 6
RELAXATION OF SURVEILLANCE REQUIREMENT ACCEPTANCE CRITERIA
(continued)

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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

   The relaxed acceptance criteria for Surveillance Requirements do not result in a significant reduction in the margin of safety. The relaxed Surveillance Requirement acceptance criteria have been evaluated to ensure that they are sufficient to verify that the equipment used to meet the LCO can perform its required functions. Therefore, appropriate equipment continues to be tested in a manner that gives confidence that the equipment can perform its assumed safety function. Therefore, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 7

RELAXATION OF SURVEILLANCE FREQUENCY

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve the relaxation of Surveillance Frequencies in the current Technical Specifications (CTS).

CTS and ISTS Surveillance Frequencies specify time interval requirements for performing surveillance testing. Increasing the time interval between Surveillance tests in the ISTS results in decreased equipment unavailability due to testing which also increases equipment availability. In general, the ISTS contain test frequencies that are consistent with industry practice or industry standards for achieving acceptable levels of equipment reliability. Adopting testing practices specified in the ISTS is acceptable based on similar design, like-component testing for the system application and the availability of other Technical Specification requirements which provide regular checks to ensure limits are met. Relaxation of Surveillance Frequency may also include changes such as the addition of Surveillance Notes which allow testing to be delayed until appropriate unit conditions for the test are established, or exempt testing in certain MODES or specified conditions in which the testing can not be performed.

Reduced testing can result in a safety enhancement because the unavailability due to testing is reduced and; in turn, reliability of the affected structure, system or component should remain constant or increase. Reduced testing is acceptable where operating experience, industry practice or the industry standards such as manufacturers' recommendations have shown that these components usually pass the Surveillance when performed at the specified interval, therefore the frequency is acceptable from a reliability standpoint. Surveillance Frequency changes to incorporate alternate train testing have been shown to be acceptable where other qualitative or quantitative test requirements are required which are established predictors of system performance. Surveillance Frequency extensions can be based on NRC-approved topical reports. The NRC staff has accepted topical report analyses that bound the plant-specific design and component reliability assumptions. These changes are generally made to conform to NUREG-1431 and have been evaluated to not be detrimental to plant safety.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change relaxes Surveillance Frequencies. The relaxed Surveillance Frequencies have been established based on achieving acceptable levels of equipment reliability.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 7
RELAXATION OF SURVEILLANCE FREQUENCY
(continued)

Consequently, equipment which could initiate an accident previously evaluated will continue to operate as expected and the probability of the initiation of any accident previously evaluated will not be significantly increased. The equipment being tested is still required to be OPERABLE and capable of performing any accident mitigation functions assumed in the accident analysis. As a result, the consequences of any accident previously evaluated are not significantly affected. Therefore, this change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

   The relaxed Surveillance Frequencies do not result in a significant reduction in the margin of safety. The relaxation in the Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. Thus, appropriate equipment continues to be tested at a Frequency that gives confidence that the equipment can perform its assumed safety function when required. Therefore, this change does not involve a significant reduction in a margin of safety.

BVPS CONVERSION TO IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS)

SECTION 4.0 DESIGN FEATURES

ENCLOSURES

1. MARKUP OF THE ISTS TO SHOW THE BVPS DIFFERENCE AND JUSTIFICATION FOR THE DEVIATION (JFD) FROM THE STANDARD
2. MARKUP OF THE ISTS BASES TO SHOW THE BVPS DIFFERENCE AND JFD FROM THE STANDARD
3. MARKUP OF THE CURRENT BVPS TECHNICAL SPECIFICATIONS (CTS) TO SHOW CHANGES AND DISCUSSION OF CHANGES (DOCs)
4. NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC) FOR CHANGES MADE TO THE CTS

ENCLOSURE 1

CHANGES TO THE ISTS

MARKUPS TO SHOW BVPS PLANT SPECIFIC DIFFERENCES
&
JUSTIFICATION FOR DEVIATION (JFD)
FROM THE STANDARD TS

Introduction

This enclosure contains the markup of the Improved Standard Technical Specifications (ISTS) to show the changes necessary to make the ISTS document specific to BVPS Units 1 and 2. Changes to the ISTS are identified with a number. The number is associated with a JFD that describes the reason for the change. The markup of the ISTS is followed by a document containing the numbered JFDs for the changes made to each of the ISTS. Not every change to the ISTS is identified and explained by a JFD. Changes that simply insert current Technical Specification (CTS) information into bracketed (optional) ISTS text are not identified with a separate JFD. Bracketed ISTS text identifies specific text that is to be replaced with the corresponding CTS information. Therefore, such changes to the ISTS are self-explanatory and represent the simple transference of CTS requirements to the ISTS. Other changes to the ISTS (i.e., less obvious changes) are described by a JFD.

As the BVPS Unit 1 & 2 Technical Specifications (TS) are being combined into a single set of TS, one markup of each ISTS is usually provided for both Units 1 and 2. In cases where significant Unit differences make separate Unit 1 and 2 TS desirable to preserve the presentation and clarity of the TS requirements, separate Unit specific TS are included. Unit differences are identified in each ISTS.

In addition, the ISTS in this enclosure are marked (where applicable) to show the changes to the standard text resulting from the Industry/NRC TS Task Force (TSTF) process. The TSTF revisions to the standard are marked-up and identified with the applicable TSTF number (i.e., TSTF-03, TSTF-19, etc.). Each TSTF change has its own justification associated with it as part of the Industry/NRC process. The TSTF justifications are not repeated in the BVPS ISTS conversion documentation.

The following Table contains the list of the ISTS and the corresponding BVPS CTS for this section along with the resulting BVPS specific ITS for the section. The Table provides a summary disposition of the ISTS and the CTS for this Section.

SECTION 4.0 DESIGN FEATURES

ISTS	BVPS ITS	CTS
4.1 Site Location	4.1 Site Location	5.1 Site Location
4.2 Reactor Core	4.2 Reactor Core	5.2 Reactor Core

SECTION 4.0 DESIGN FEATURES

ISTS	BVPS ITS	CTS
4.3 Fuel Storage	4.3 Fuel Storage	5.3 Fuel Storage

4.0 DESIGN FEATURES

4.1 Site Location

~~[Text Description of Site location.]~~

Insert 1
CTS Description

4.2 Reactor Core

4.2.1 Fuel Assemblies

The reactor shall contain [157] fuel assemblies. Each assembly shall consist of a matrix of [Zircalloy or ZIRLO] fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO_2) as fuel material. Limited substitutions of zirconium alloy or stainless steel filler rods for fuel rods, in accordance with approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff approved codes and methods and shown by tests or analyses to comply with all fuel safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in nonlimiting core regions.

4.2.2 [Control Rod] Assemblies

The reactor core shall contain [48] [control rod] assemblies. The control material shall be [silver indium cadmium~~, boron carbide, or hafnium metal~~] as approved by the NRC.

1

4.3 Fuel Storage

4.3.1 Criticality

2

as specified in LCO 3.7.14, "Spent Fuel Pool Storage"

4.3.1.1 The spent fuel storage racks are designed and shall be maintained with:

Unit 1

a. Fuel assemblies having a maximum U-235 enrichment ~~of [4.5] weight percent,~~

12 U

Insert 2
Unit 2 CTS

b. $K_{eff} \leq 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in [Section 9.~~1~~ of the ~~F~~SAR],

Insert 3
Unit 2 CTS

[c. ~~A nominal [9.15] inch center-to-center distance between fuel assemblies placed in [the high density fuel storage racks].]~~

Insert 4
U1 & U2 CTS

[d. ~~A nominal [10.95] inch center-to-center distance between fuel assemblies placed in [low density fuel storage racks].]~~

4.0 DESIGN FEATURES

3

4.3 Fuel Storage (continued)

Insert 5 U1 & U2 CTS

[e. ~~New or partially spent fuel assemblies with a discharge burnup in the "acceptable range" of Figure [3.7.17-1] may be allowed unrestricted storage in [either] fuel storage rack(s), and]~~

~~[f. New or partially spent fuel assemblies with a discharge burnup in the "unacceptable range" of Figure [3.7.17-1] will be stored in compliance with the NRC approved [specific document containing the analytical methods, title, date, or specific configuration or figure].]~~

4

4.3.1.2 The new fuel storage racks are designed and shall be maintained with:

5.00

a. Fuel assemblies having a maximum U-235 enrichment of ~~[4.5]~~ weight percent, with a tolerance of + 0.05 weight percent

12 Unit 1

b. $k_{eff} \leq 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in [Section 9.1 of the FSAR],

Unit 1 U

and Section 9.1 of the Unit 2 UFSAR,

Insert 7 Unit 2 CTS

c. $k_{eff} \leq 0.98$ if moderated by aqueous foam, which includes an allowance for uncertainties as described in [Section 9.1 of the FSAR], ~~and~~

21

d. A nominal ~~[10.95]~~ inch center to center distance between fuel assemblies placed in the storage racks.

Unit 1

4.3.2 Drainage

750 feet - 10 inches.

Insert 8 Unit 2 CTS

The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation ~~[23 ft]~~.

4.3.3 Capacity

Unit 1 1627

Insert 9 Unit 2 CTS

The spent fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than ~~[1737]~~ fuel assemblies.

5

5

INSERTS

Insert 1	The Beaver Valley Power Station is located in Shippingport Borough, Beaver County, Pennsylvania, on the south bank of the Ohio River. The site is approximately 1 mile southeast of Midland, Pennsylvania, 5 miles east of East Liverpool, Ohio, and approximately 25 miles northwest of Pittsburgh, Pennsylvania. The Unit 1 exclusion area boundary has a minimum radius of 2000 feet from the center of containment. The Unit 2 exclusion area boundary has a minimum radius of 2000 feet around the Unit No. 1 containment building.
Insert 2	Unit 2 K_{eff} < 1.0 if fully flooded with unborated water, which includes an allowance for uncertainties as described in Section 9.1 of the UFSAR,
Insert 3	Unit 2 only. $K_{eff} \leq 0.95$ if fully flooded with water borated to 450 ppm, which includes an allowance for uncertainties as described in Section 9.1 of the UFSAR,
Insert 4	Unit 1 A nominal center to center distance between fuel assemblies placed in the fuel storage racks of 10.82 inch for Region 1, with 9.02 inch for Regions 2 and 3, Unit 2 A minimum center to center distance between fuel assemblies placed in the fuel storage racks of 10.4375 inches, and
Insert 5	Fuel assembly storage shall comply with the requirements of LCO 3.7.14, "Spent Fuel Pool Storage".
Insert 6	Not used.
Insert 7	Unit 2 $K_{eff} \leq 0.95$ if moderated by aqueous foam, which includes an allowance for uncertainties as described in Section 9.1 of the UFSAR, and
Insert 8	Unit 2 The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 751 feet - 3 inches.
Insert 9	Unit 2 The fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 1088 fuel assemblies.

ITS 4.0 Design Features

JUSTIFICATION FOR DEVIATION (JFD)

1. The ISTS specification stating the maximum U-235 enrichment is revised consistent with the CTS. The corresponding Unit 1 and 2 CTS do not specify a single limit in the Design Features section of the TS. The CTS reference the individual TS that contains all the limits associated with fuel assembly storage for multiple regions of the spent fuel pools. The TS associated with these limits contain the specific values for the different regions of the spent fuel pools. Due to the multiple values specified in the TS and in order to keep all the necessary information in one location (LCO values, Actions, and Surveillances), the CTS presentation of this information is preferred and has been retained. The change maintains the current BVPS licensing bases.

2. The ISTS Fuel Storage requirements (4.3.1.1.b,c, &d) are revised to reflect the BVPS Unit 1 and Unit 2 corresponding CTS requirements. As the Unit 1 and Unit 2 spent fuel pools are not designed or licensed the same, some items specified in ISTS 4.3.1.1 are marked to show a Unit 1 requirement and a separate Unit 2 requirement or a requirement applicable only to one unit or the other. In all cases, the marked-up and inserted requirements are consistent with the corresponding CTS requirements and are necessary to show the Unit differences in the combined TS. This presentation retains the same ISTS numbering for each Unit. The changes are consistent with the current licensing basis of the BVPS units.

3. The ISTS fuel storage requirements 4.3.1.1.e & f are revised to incorporate the corresponding CTS requirement. Similar to JFD 1 above, the corresponding CTS requirement for fuel storage simply refers the individual TS that contains all the requirements applicable to the stored fuel. Due to the various requirements associated with each unit and each region within the storage pools, the BVPS CTS presentation of this requirement retains all the necessary information regarding fuel assembly storage in one place. The CTS presentation of this information is preferred and has been retained. The change maintains the current BVPS licensing bases.

4. The ISTS requirements for new fuel storage (4.3.1.2.a-d) are revised consistent with the corresponding CTS requirements. As the Unit 1 and Unit 2 storage pools are not designed or licensed the same, some items specified in ISTS 4.3.1.1 are marked to show a Unit 1 requirement and a separate Unit 2 requirement. In all cases, the marked-up and inserted requirements are consistent with the corresponding CTS requirements and are necessary to show the Unit differences in the combined TS. This presentation retains the same ISTS numbering for each Unit. The changes are consistent with the current licensing basis of the BVPS units.

5. The ISTS requirements for Drainage and Capacity (4.3.2 & 4.3.3) are revised consistent with the corresponding CTS requirements. Due to unit design differences, separate Unit 1 and Unit 2 entries for each ISTS item are necessary to show the Unit differences in the combined TS. The changes are consistent with the current licensing basis of the BVPS units.

ENCLOSURE 2

CHANGES TO THE ISTS BASES

MARKUP TO SHOW BVPS PLANT SPECIFIC DIFFERENCES
&
JUSTIFICATION FOR DEVIATION (JFD)
FROM THE STANDARD BASES

Introduction

This enclosure contains the markup of the Improved Standard Technical Specifications (ISTS) Bases to show the changes necessary to make the ISTS Bases document specific to BVPS Units 1 and 2. Changes to the ISTS Bases are identified with a number. The number is associated with a JFD that describes the reason for the change. The markups of the ISTS Bases are followed by a document containing the numbered JFDs for the changes made to the ISTS Bases. Not every change to the ISTS Bases is identified and explained by a JFD. Changes that simply insert current Technical Specification (CTS) information into bracketed (optional) ISTS text are not typically identified with a separate JFD. Bracketed ISTS text identifies specific text that is to be replaced with the corresponding CTS information. Therefore, such changes to the ISTS Bases are self-explanatory and represent the simple transference of CTS requirements to the ISTS. Other changes to the ISTS (i.e., less obvious changes) are described by a JFD.

As the BVPS Unit 1 & 2 Technical Specifications (TS) are being combined into a single set of TS, one markup of each ISTS Bases is provided for both Unit 1 and 2. Unit differences are identified in each ISTS Bases.

In addition, the Bases in this enclosure are marked (where applicable) to show the changes to the standard text resulting from the Industry/NRC TS Task Force (TSTF) process. The TSTF revisions to the standard are marked-up and identified with the applicable TSTF number (i.e., TSTF-03, TSTF-19, etc.). Each TSTF change has its own justification associated with it as part of the Industry/NRC process. The TSTF justifications are not repeated in the BVPS ISTS conversion documentation.

There are no Bases associated with Section 4.0 Design Features

8

ENCLOSURE 3

CHANGES TO THE CTS

CURRENT TECHNICAL SPECIFICATION (CTS) MARKUP
&
DISCUSSION OF CHANGES (DOCs)

Introduction

This enclosure contains the markup of the current BVPS Unit 2 Technical Specifications (TS), and where necessary to show a change to a BVPS Unit 1 TS that is not addressed by the associated Unit 2 markup and DOCs, a BVPS Unit 1 TS page is included. If a Unit 1 page is included it will be marked to show the change to the Unit 1 specific difference, and will not typically contain markups that repeat the applicable changes already addressed in the corresponding Unit 2 markup. Therefore, unless otherwise stated, each DOC applies to both Units 1 and 2 even though the change may only be marked on the Unit 2 TS.

The CTS is marked-up to show the changes necessary to convert to the Improved Standard Technical Specifications (ISTS) in NUREG-1431, Revision 2. The marked-up CTS result in the BVPS specific Improved Technical Specifications (ITS) contained in Enclosure 1.

In order to facilitate the review of the changes to the CTS, the marked-up CTS are presented in their original numerical order, not ISTS numerical order. The new ITS number is marked at the top of the first page of each CTS and the disposition of each CTS and ISTS is summarized in the Table included at the beginning of Enclosure 1 for each TS Section.

The marked-up TS are followed by the applicable DOCs. Each technical change and more complex administrative change marked on the TS has a unique alpha-numeric designator that corresponds to a specific DOC. Due to the large number of format, editorial and presentation differences between the CTS and the new standard TS, not all of these changes are identified in the marked-up CTS pages. The single generic A.1 administrative change DOC designated on the first page of each marked-up CTS addresses all the marked and unmarked editorial, format, and presentation changes necessary to convert that entire CTS to the corresponding new standard TS. Only the more complex (less obvious) administrative type changes made to the CTS are identified with individual administrative DOCs (i.e., A.2, A.3, etc.).

The DOCs are grouped by the category of the change (i.e., less restrictive, more restrictive, administrative, etc). Each category of change is also associated with a No Significant Hazards Consideration (NSHC) for that change in Enclosure 4.

Certain categories of change also have a sub-category or change type associated with the DOC. The sub-category or change type is used to further group the CTS changes in more specific sub-categories that utilize a common NSHC or DOC.

Each CTS change marked as "Less Restrictive", with no subcategory identified in the associated DOC to reference a generic NSHC, will have a "Specific" NSHC included in Enclosure 4. A description of the categories and types of changes follows.

ENCLOSURE 3 (continued)

Categories and Types of Changes to the CTS

I. The major categories utilized to group changes to the CTS are as follows:

A - Administrative

L - Less Restrictive

M - More Restrictive

LA - Removed Detail (Sections of Tech Spec text removed from CTS)

R - Relocated (Entire Tech Spec requirement removed from CTS)

II. The subcategories of Less Restrictive "L" changes are as follows: (1)

1. Relaxation of LCO Requirements
2. Relaxation of Applicability
3. Relaxation of Completion Time
4. Relaxation of Required Action
5. Deletion of Surveillance Requirement
6. Relaxation of Surveillance Requirement Acceptance Criteria
7. Relaxation of Surveillance Frequency
8. Deletion of Reporting Requirement

III. The types of Removed Detail "LA" changes are as follows: (2)

1. Removing Details of System Design and System Description, Including Design Limits
2. Removing Descriptions of System Operation
3. Removing Procedural Details for Meeting Tech Spec Requirements and Related Reporting Requirements
4. Removing Administrative Requirements Redundant to Regulations
5. Removing Performance Requirements for Indication-Only Instruments and Alarms

(1) Each subcategory of Less Restrictive change is associated with a corresponding NSHC in Enclosure 4.

(2) The types of Removed Detail changes all share a common "LA" NSHC in Enclosure 4.

4.0 Design Features

A.1

5.0 DESIGN FEATURES

5.1 SITE LOCATION

A2 Insert Unit 1 exclusion area boundary

Unit 2

4

The Beaver Valley Power Station ~~Unit No. 2~~ is located in Shippingport Borough, Beaver County, Pennsylvania, on the south bank of ~~the~~ Ohio River. The site is approximately 1 mile southeast of Midland, Pennsylvania, 5 miles east of East Liverpool, Ohio, and approximately 25 miles northwest of Pittsburgh, Pennsylvania. The exclusion area boundary has a minimum radius of 2000 feet around the Unit No. 1 containment building.

5.2 REACTOR CORE

5.2.1 FUEL ASSEMBLIES

The reactor shall contain 157 fuel assemblies. Each assembly shall consist of a matrix of Zircaloy or ZIRLO fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO_2) as fuel material. Limited substitutions of zirconium alloy or stainless steel filler rods for fuel rods, in accordance with approved applications of fuel rod configurations, may be used. Fuel assemblies shall be limited to those fuel designs that have been analyzed with applicable NRC staff approved codes and methods and shown by tests or analyses to comply with all fuel safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in nonlimiting core regions.

5.2.2 CONTROL ROD ASSEMBLIES

LA.1

4

The reactor core shall contain 48 ~~full length and no part length control rod assemblies.~~ ~~The full length control rod assemblies shall contain a nominal 142 inches of absorber material. The nominal values of absorber material shall be 80 percent silver, 15 percent indium and 5 percent cadmium. All control rods shall be clad with stainless steel tubing.~~

The control material shall be silver indium cadmium as approved by the NRC.

5.3 FUEL STORAGE

5.3.1 CRITICALITY

5.3.1.1 The spent fuel storage racks are designed and shall be maintained with:

Insert B

Unit 2

~~a.~~ k_{eff} < 1.0 if fully flooded with unborated water, which includes an allowance for uncertainties as described in UFSAR Section 9.1;

a. ~~b.~~ Fuel assemblies having a maximum U-235 enrichment as ~~set forth~~ specified in ~~Specification 3.9.14~~ 3.7.14;

A.2

A.3

4.0 Design Features

A.1

~~5.0 DESIGN FEATURES~~

Unit 2 only.

A.2

c. $K_{eff} \le 0.95$ if fully flooded with water borated to 450 ppm, which includes an allowance for uncertainties as described in UFSAR Section 9.1;

Insert D

Unit 2

d. A minimum center to center distance between fuel assemblies placed in the fuel storage racks of 10.4375 inches;

e. Fuel assembly storage shall comply with the requirements of Specification ~~3.9.14~~. 3.7.14

A.3

4

~~5~~.3.1.2 The new fuel storage racks are designed and shall be maintained with:

a. Fuel assemblies having a maximum U-235 enrichment of 5.00 weight percent with a tolerance of + 0.05 weight percent;

b. $K_{eff} \le 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in UFSAR Section 9.1;

Unit 1 UFSAR Section 9.12 and Unit 2

Insert C

Unit 2

c. $K_{eff} \le 0.95$ if moderated by aqueous foam, which includes an allowance for uncertainties as described in UFSAR Section 9.1;

d. A nominal 21 inch center to center distance between fuel assemblies placed in the storage racks.

4

~~5~~.3.2 DRAINAGE

The spent ~~fuel storage~~ Unit 2 is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 751'-3".

Insert Unit 1 Drainage Info

4

~~5~~.3.3 CAPACITY

Unit 2

The fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 1088 fuel assemblies.

Insert Unit 1 Capacity Info

A2

A1

5.0 DESIGN FEATURES

5.1 SITE LOCATION

The Beaver Valley Power Station Unit No. 1 is located in Shippingport Borough, Beaver *This material is the same as Unit 2. Changes to this material are addressed in the Unit 2 markup* south bank of the Ohio River. The si southeast of Midland, Pennsylvania, 5 miles east of East Liverpool, Ohio, and approximately 25 miles northwest of Pittsburgh, Pennsylvania. The exclusion area boundary has a minimum radius of 2000 feet from the center of containment.

Unit 1

5.2 REACTOR CORE

5.2.1 FUEL ASSEMBLIES

The reactor shall contain 157 fuel assemblies. Each assembly shall consist of a matrix of Zircaloy or ZIRLO fuel rods with an initial composition of natural or slightly enriched uranium dioxide (UO_2) as fuel material. L lloy or stainless steel filler ro e with approved applications of be used. Fuel assemblies shall s that have been analyzed with ap and methods and shown by tests or analyses to comply with all fuel safety design bases. A limited number of lead test assemblies that have not completed representative testing may be placed in nonlimiting core regions.

This material is the same as Unit 2. Changes to this material are addressed in the Unit 2 markup

5.2.2 CONTROL ROD ASSEMBLIES

The reactor core shall contain 48 full length and no part length control rod assemblies. The full length control rod assemblies shall contain a nominal 142 inches of absorber material. The nominal values of absorber material shall be 80 percent silver, 15 percent indium and 5 percent cadmium. All control rods shall be clad with stainless steel tubing.

5.3 FUEL STORAGE

5.3.1 CRITICALITY

5.3.1.1 The spent fuel storage racks are designed and shall be maintained with:

a. Fuel assemblies having a maximum U-235 enrichment as set forth in Specification 3.9.14;

Unit 1

b. $K_{eff} \leq 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in UFSAR Section 9.12;

Insert B

UNIT 1 PAGE

~~DESIGN FEATURES~~

Unit 1

e. A nominal center to center distance between fuel assemblies placed in the fuel storage racks of 10.82 inch for Region 1, with 9.02 inch for Regions 2 and 3;

Insert D

~~d. Fuel assembly storage shall comply with the requirements of Specification 3.9.14.~~

~~5.3.1.2 The new fuel storage racks are designed and shall be maintained with:~~

~~a. Fuel assemblies having a maximum U-235 enrichment of 5.00 weight percent with a tolerance of + 0.05 weight percent;~~

~~b. $K_{eff} \leq 0.95$ if fully flooded with unborated water, which includes an allowance for uncertainties as described in UFSAR Section 9.12;~~

Unit 1

~~c.~~ $K_{eff} \leq 0.98$ if moderated by aqueous foam, which includes an allowance for uncertainties as described in UFSAR Section 9.12;

Insert C

~~d. A nominal 21 inch center to center distance between fuel assemblies placed in the storage racks.~~

~~5.3.2 DRAINAGE~~ Unit 1

The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 750' - 10".

~~5.3.3 CAPACITY~~ Unit 1

The fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 1627 fuel assemblies.

Unit 1 Capacity Info Insert

Unit 1 Drainage Info Insert

These items are the same as the corresponding Unit 2 items and are addressed in the Unit 2 markup.

ITS 4.0 Design Features
CTS 5.0 Design Features

Less Restrictive Changes (L)

DISCUSSION OF CHANGE (DOC)

NONE

ITS 4.0 Design Features
CTS 5.0 Design Features

More Restrictive Changes (M)

DISCUSSION OF CHANGE (DOC)

NONE

ITS 4.0 Design Features

CTS 5.0 Design Features

Removed Detail Changes (LA)

DISCUSSION OF CHANGE (DOC)

LA.1 *(Type 1 – Removing Details of System Design and System Description, Including Design Limits)*

CTS 5.2.2, "Control Rod Assemblies" is revised consistent with the ISTS. The more detailed CTS description of the control rods is replaced with the more simple ISTS description. The level of detail contained in the CTS regarding the precise length of each rod and the percent of each absorber material used in the rods, as well as the cladding material is removed from the CTS. This information is moved to the UFSAR. The ISTS version of this description, a simple list of the absorber material, is substituted for the CTS version.

The removal of these details, which are related to system design, from the CTS is acceptable because this type of information is not necessary to be included in the TS to provide adequate protection of public health and safety. The TS still retain requirements on control rod OPERABILITY in Section 3.1. These requirements provide adequate assurance the control rods are capable of performing their safety function. Additionally, the removed information is more appropriately contained in the UFSAR. The inclusion of the details of component design and material in the UFSAR is consistent with the content and purpose of the UFSAR. The UFSAR is controlled under 10 CFR 50.59 which ensures that changes to the material contained in the UFSAR are properly evaluated. Therefore, the removal of this information from the TS and placement in the UFSAR is acceptable. This change is designated as a less restrictive removal of detail change because information relating to system design is being removed from the TS.

ITS 4.0 Design Features

CTS 5.0 Design Features

Administrative Changes (A)

DISCUSSION OF CHANGE (DOC)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 The Unit 2 CTS Section 5.0 (ISTS 4.0) is marked up to include the Unit 1 differences (multiple inserts) from the corresponding Unit 1 pages. Each unit specific item is identified as applicable to one or the other unit. Common items are not marked as applicable to either unit.

The proposed change is acceptable because no technical changes have been made to the CTS requirements. Where different, the Unit 1 CTS requirements have simply been added to the Unit 2 requirements to make a common TS. As the inclusion of the Unit 1 material and identification of unit specific items does not introduce a technical change to the CTS requirements this change is acceptable and designated administrative.

A.3 The CTS Section 5.0 references to TS in Section 3.9 are revised to be consistent with the ITS. The TS referenced in CTS Section 5.0 address requirements for the spent fuel pool and are not contained in Section 3.9 in the ITS. As these TS are applicable in MODES other than Refueling, the ITS includes these requirements in Section 3.7, " Plant Systems".

The proposed change is acceptable as the change to the referenced TS numbers in CTS Section 5.0 does not introduce a technical change to the CTS requirements. This change only represents a change in the location of the requirements being referenced. Any technical changes to the affected TS will be addressed in the DOCs associated with those TS. As such, this change is acceptable and is considered administrative.

ENCLOSURE 4

DETERMINATIONS OF
NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC)
FOR
CHANGES MADE TO THE BVPS
CURRENT TECHNICAL SPECIFICATIONS (CTS)

Introduction

The determinations of NSHC contained within this Enclosure consist of two general types. This enclosure contains "Generic" NSHC developed for the categories of change identified in Enclosure 3 (Changes to the CTS) and "Specific" NSHC for those "Less Restrictive" changes that do not fit within one of the generic determinations of NSHC listed below. Each specific NSHC is identified by the associated Technical Specification and discussion of change (DOC) number from Enclosure 3.

Enclosure Contents

NO SIGNIFICANT HAZARDS DETERMINATION
FOR

ADMINISTRATIVE CHANGES

The Beaver Valley Power Station (BVPS) is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve reformatting, renumbering, and rewording of Technical Specifications with no change in intent. These changes, since they do not involve technical changes to the Technical Specifications, are administrative.

This type of change is associated with the movement of requirements within the Technical Specifications, or with the modification of wording or format that does not affect the technical content of the current Technical Specifications. In addition, these changes include all non-technical modifications of requirements to provide consistency with the ISTS in NUREG-1431. Administrative changes do not add, delete, or relocate any technical requirements of the current Technical Specifications.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change involves reformatting, renumbering, and rewording the existing Technical Specifications. The reformatting, renumbering, and rewording process involves no technical changes to the existing Technical Specifications. As such, this change is administrative in nature and does not affect initiators of analyzed events or assumed mitigation of accident or transient events. Therefore, this change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or changes in methods governing normal plant operation. The proposed change will not impose any new or eliminate any old requirements. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

   The proposed change will not reduce a margin of safety because it has no effect on any safety analyses assumptions. This change is administrative in nature. Therefore, the change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES -

REMOVED DETAIL

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve moving details out of the Technical Specifications and into the Technical Specifications Bases, the Updated Final Safety Analyses Report (UFSAR), the Licensing Requirements manual (LRM) or other documents under regulatory control such as the Quality Assurance Program. The removal of this information is considered to be less restrictive because the Technical Specification change process no longer controls the information. Typically, the affected information is descriptive detail and the removal of this information conforms to the NRC approved content and format of the ISTS in NUREG-1431.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change relocates certain details from the Technical Specifications to other documents under regulatory control. The Technical Specification Bases, UFSAR, and Licensing Requirement Manual will be maintained in accordance with 10 CFR 50.59. In addition to 10 CFR 50.59 provisions, the Technical Specification Bases are subject to the change control provisions in the Administrative Controls Chapter of the Technical Specifications. The UFSAR is subject to the change control provisions of 10 CFR 50.71(e). Other documents used to contain the removed information are subject to controls imposed by Technical Specifications or regulations. As such, the relocation of descriptive details will only affect the level of regulatory control applicable to changes to the information moved. Changes to the affected information will continue to be evaluated in accordance with 10 CFR 50.59. As such, no significant increase in the probability or consequences of an accident previously evaluated will result. Therefore, this change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operations. The proposed change will not impose or eliminate any requirements, and adequate control of the information will be maintained. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES - REMOVED DETAIL
(continued)

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

The proposed change will not reduce a margin of safety because it has no effect on any safety analysis assumptions. In addition, the descriptive details to be moved from the Technical Specifications to other documents are not being changed. Since any future changes to these details will be evaluated under the applicable regulatory change control mechanism, no significant reduction in a margin of safety will be allowed. A significant reduction in the margin of safety is not associated with the elimination of the 10 CFR 50.92 requirement for NRC review and approval of future changes to the relocated details. The proposed change provides consistency with the level of detail in the Westinghouse Standard Technical Specifications, NUREG-1431, issued and approved by the NRC Staff, which provides additional assurance that the proposed change has been evaluated and determined not to introduce a significant reduction in the margin of safety. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

BVPS CONVERSION TO IMPROVED STANDARD TECHNICAL SPECIFICATIONS (ISTS)

SECTION 5.0 Administrative Controls

ENCLOSURES

1. MARKUP OF THE ISTS TO SHOW THE BVPS DIFFERENCE AND JUSTIFICATION FOR THE DEVIATION (JFD) FROM THE STANDARD
2. MARKUP OF THE ISTS BASES TO SHOW THE BVPS DIFFERENCE AND JFD FROM THE STANDARD
3. MARKUP OF THE CURRENT BVPS TECHNICAL SPECIFICATIONS (CTS) TO SHOW CHANGES AND DISCUSSION OF CHANGES (DOCs)
4. NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC) FOR CHANGES MADE TO THE CTS

ENCLOSURE 1

CHANGES TO THE ISTS

MARKUPS TO SHOW BVPS PLANT SPECIFIC DIFFERENCES
&
JUSTIFICATION FOR DEVIATION (JFD)
FROM THE STANDARD TS

<u>Introduction</u>
This enclosure contains the markup of the Improved Standard Technical Specifications (ISTS) to show the changes necessary to make the ISTS document specific to BVPS Units 1 and 2. Changes to the ISTS are identified with a number. The number is associated with a JFD that describes the reason for the change. The markup of the ISTS is followed by a document containing the numbered JFDs for the changes made to each of the ISTS. Not every change to the ISTS is identified and explained by a JFD. Changes that simply insert current Technical Specification (CTS) information into bracketed (optional) ISTS text are not identified with a separate JFD. Bracketed ISTS text identifies specific text that is to be replaced with the corresponding CTS information. Therefore, such changes to the ISTS are self-explanatory and represent the simple transference of CTS requirements to the ISTS. Other changes to the ISTS (i.e., less obvious changes) are described by a JFD.

As the BVPS Unit 1 & 2 Technical Specifications (TS) are being combined into a single set of TS, one markup of each ISTS is usually provided for both Units 1 and 2. In cases where significant Unit differences make separate Unit 1 and 2 TS desirable to preserve the presentation and clarity of the TS requirements, separate Unit specific TS are included. Unit differences are identified in each ISTS.

In addition, the ISTS in this enclosure are marked (where applicable) to show the changes to the standard text resulting from the Industry/NRC TS Task Force (TSTF) process. The TSTF revisions to the standard are marked-up and identified with the applicable TSTF number (i.e., TSTF-03, TSTF-19, etc.). Each TSTF change has its own justification associated with it as part of the Industry/NRC process. The TSTF justifications are not repeated in the BVPS ISTS conversion documentation.

The following Table contains the list of the ISTS and the corresponding BVPS CTS for this section along with the resulting BVPS specific ITS for the section. The Table provides a summary disposition of the ISTS and the CTS for this Section.

SECTION 5.0 ADMINISTRATIVE CONTROLS

ISTS	BVPS ITS	CTS
5.1 Responsibility	5.1 Responsibility	6.1 Responsibility
5.2 Organization	5.2 Organization	6.2 Organization
5.3 Unit Staff Qualification	5.3 Unit Staff Qualification	6.3 Unit Staff Qualification

SECTION 5.0 ADMINISTRATIVE CONTROLS

ISTS	BVPS ITS	CTS
5.4 Procedures	5.4 Procedures	6.8 Procedures
5.5 Programs and Manuals	5.5 Programs and Manuals	6.8 Procedures
5.6 Reporting Requirements	5.6 Reporting Requirements	6.9 Reporting Requirements
5.7 High Radiation Area	5.7 High Radiation Area	6.12 High Radiation Area

5.0 ADMINISTRATIVE CONTROLS

5.1 Responsibility

1

- REVIEWER'S NOTES -

1. Titles for members of the unit staff shall be specified by use of an overall statement referencing an ANSI Standard acceptable to the NRC staff from which the titles were obtained, or an alternative title may be designated for this position. Generally, the first method is preferable; however, the second method is adaptable to those unit staffs requiring special titles because of unique organizational structures.

2. The ANSI Standard shall be the same ANSI Standard referenced in Section 5.3, Unit Staff Qualifications. If alternative titles are used, all requirements of these Technical Specifications apply to the position with the alternative title as apply with the specified title. Unit staff titles shall be specified in the Final Safety Analysis Report or Quality Assurance Plan. Unit staff titles shall be maintained and revised using those procedures approved for modifying/revising the Final Safety Analysis Report or Quality Assurance Plan.

5.1.1 The plant manager shall be responsible for overall unit operation and shall delegate in writing the succession to this responsibility during his absence.

2

The plant manager or his designee shall approve, prior to implementation, each proposed test, experiment or modification to systems or equipment that affect nuclear safety.

5.1.2 The [Shift Supervisor (SS)] shall be responsible for the control room command function. During any absence of the [SS] from the control room while the unit is in MODE 1, 2, 3, or 4, an individual with an active Senior Reactor Operator (SRO) license shall be designated to assume the control room command function. During any absence of the [SS] from the control room while the unit is in MODE 5 or 6, an individual with an active SRO license or Reactor Operator license shall be designated to assume the control room command function. 3

5.0 ADMINISTRATIVE CONTROLS

5.2 Organization

5.2.1 Onsite and Offsite Organizations

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

a. Lines of authority, responsibility, and communication shall be defined and established throughout highest management levels, intermediate levels, and all operating organization positions. These relationships shall be documented and updated, as appropriate, in organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These requirements including the plant-specific titles of those personnel fulfilling the responsibilities of the positions delineated in these Technical Specifications shall be documented in the ~~[FSAR/QA Plan]~~ Unit 2 UFSAR, 4

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

c. A ~~specified~~ corporate officer with direct responsibility for the plant shall have corporate responsibility for overall plant nuclear safety and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the plant to ensure nuclear safety, and 5

d. The individuals who train the operating staff, carry out ~~health physics~~ radiation protection, or perform quality assurance functions may report to the appropriate onsite manager; however, these individuals shall have sufficient organizational freedom to ensure their independence from operating pressures. 6

5.2.2 Unit Staff

The unit staff organization shall include the following:

a. A non-licensed operator shall be assigned to each reactor containing fuel and an additional non-licensed operator shall be assigned for each control room from which a reactor is operating in MODES 1, 2, 3, or 4.

~~- REVIEWER'S NOTE -~~
~~Two unit sites with both units shutdown or defueled require a total of three non-licensed operators for the two units.~~ 7

5.2 Organization

5.2.2 Unit Staff (continued)

b. Shift crew composition may be less than the minimum requirement of 10 CFR 50.54(m)(2)(i) and 5.2.2.a and 5.2.2.f for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements.

An individual qualified in

procedures

c. ~~A~~ radiation protection ~~technician~~ shall be on site when fuel is in the reactor. The position may be vacant for not more than 2 hours, in order to provide for unexpected absence, provided immediate action is taken to fill the required position. 8

d. Administrative procedures shall be developed and implemented to limit the working hours of personnel who perform safety related functions (e.g., [licensed Senior Reactor Operators (SROs), licensed Reactor Operators (ROs), ~~health physicists~~, auxiliary operators, and key maintenance personnel]).

radiation control technicians 1

The controls shall include guidelines on working hours that ensure adequate shift coverage ~~shall be~~ maintained without routine heavy use of overtime.

is 1

Any deviation from the above guidelines shall be authorized in advance by the plant manager or the plant manager's designee, in accordance with approved administrative procedures, and with documentation of the basis for granting the deviation. Routine deviation from the working hour guidelines shall not be authorized.

TSTF 258 R4 Editorial

been

Controls shall be included in the procedures to require a periodic independent review be conducted to ensure that excessive hours have not ~~be~~ assigned.

shall either hold an SRO license or have held an SRO license for a pressurized water reactor. The

9

a current

9

e. The operations manager ~~or~~ assistant operations manager shall hold ~~an~~ SRO license.

f. An individual shall provide advisory technical support to the unit operations shift crew in the areas of thermal hydraulics, reactor engineering, and plant analysis with regard to the safe operation of the unit. This individual shall meet the qualifications specified by the Commission Policy Statement on Engineering Expertise on Shift.

A single qualified person can be used to satisfy this position for both units. 10

5.0 ADMINISTRATIVE CONTROLS

5.3 Unit Staff Qualifications

- REVIEWER'S NOTE -

Minimum qualifications for members of the unit staff shall be specified by use of an overall qualification statement referencing an ANSI Standard acceptable to the NRC staff or by specifying individual position qualifications. Generally, the first method is preferable; however, the second method is adaptable to those unit staffs requiring special qualification statements because of unique organizational structures.

11

5.3.1 Each member of the unit staff shall meet or exceed the minimum qualifications of [Regulatory Guide 1.8, Revision 2, 1987, or more recent revisions, or ANSI Standard acceptable to the NRC staff]. [The staff not covered by Regulatory Guide 1.8 shall meet or exceed the minimum qualifications of Regulations, Regulatory Guides, or ANSI Standards acceptable to NRC staff].

Insert 1

5.3.2 For the purpose of 10 CFR 55.4, a licensed Senior Reactor Operator (SRO) and *a licensed ~~reactor operator~~ (RO) are those individuals who, in addition to meeting* the requirements of ~~TS~~ 5.3.1, perform the functions described in 10 CFR 50.54(m).

Rev. 3

Reactor Operator

Specification

5.0 ADMINISTRATIVE CONTROLS

5.4 Procedures

5.4.1 Written procedures shall be established, implemented, and maintained covering the following activities:

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

b. The emergency operating procedures required to implement the requirements of NUREG-0737 and to NUREG-0737, Supplement 1, as stated in [Generic Letter 82-33],

c. Quality assurance for effluent and environmental monitoring,

d. Fire Protection Program implementation, and

e. All programs specified in Specification 5.5.

5.0 ADMINISTRATIVE CONTROLS

5.5 Programs and Manuals

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

5.5.1 Offsite Dose Calculation Manual (ODCM)

a. The ODCM shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring alarm and trip setpoints, and in the conduct of the radiological environmental monitoring program, and

b. The ODCM shall also contain the radioactive effluent controls and radiological environmental monitoring activities, and descriptions of the information that should be included in the Annual Radiological Environmental Operating, and Radioactive Effluent Release Reports required by Specification [5.6.2] and Specification [5.6.3]. TSTF-369

Licensee initiated changes to the ODCM: 1 2

a. Shall be documented and records of reviews performed shall be retained. This documentation shall contain:

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

   2. A determination that the change(s) maintain the levels of radioactive effluent control required by 10 CFR 20.1302, 40 CFR 190, 10 CFR 50.36a, and 10 CFR 50, Appendix I, and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations,

b. Shall become effective after the approval of the plant manager, and 1

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

CTS

manager, pre-designated alternate, or a pre-designated manager to whom the plant manager has assigned in writing the responsibility for review and approval of specific subjects,

5.5 Programs and Manuals

5.5.2 Primary Coolant Sources Outside Containment

This program provides controls to minimize leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to levels as low as practicable. The systems include [Recirculation Spray, Safety Injection, Chemical and Volume Control, gas stripper, and Hydrogen Recombiner]. The program shall include the following: 12

a. Preventive maintenance and periodic visual inspection requirements and

b. Integrated leak test requirements for each system at least once per [18] months.

The provisions of SR 3.0.2 are applicable.

5.5.3 [Post Accident Sampling

- REVIEWER'S NOTE -
This program may be eliminated based on the implementation of WCAP-14986, Rev. 1, "Post Accident Sampling System Requirements: A Technical Basis," and the associated NRC Safety Evaluation dated June 14, 2000. 13

This program provides controls that ensure the capability to obtain and analyze reactor coolant, radioactive gases, and particulates in plant gaseous effluents and containment atmosphere samples under accident conditions. The program shall include the following:

a. Training of personnel,

b. Procedures for sampling and analysis, and

c. Provisions for maintenance of sampling and analysis equipment.]

5.5.4 Radioactive Effluent Controls Program

2

This program conforms to 10 CFR 50.36a for the control of radioactive effluents and for maintaining the doses to members of the public from radioactive effluents as low as reasonably achievable. The program shall be contained in the ODCM, shall be implemented by procedures, and shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

5.5 Programs and Manuals

5.5.4 Radioactive Effluent Controls Program (continued)

2

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

b. Limitations on the concentrations of radioactive material released in liquid effluents to unrestricted areas, conforming to ten times the concentration values in Appendix B, Table 2, Column 2 to 10 CFR 20.1001-20.2402,

c. Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with 10 CFR 20.1302 and with the methodology and parameters in the ODCM,

d. Limitations on the annual and quarterly doses or dose commitment to a member of the public from radioactive materials in liquid effluents released from each unit to unrestricted areas, conforming to 10 CFR 50, Appendix I,

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

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

g. Limitations on the dose rate resulting from radioactive material released in gaseous effluents from the site to areas ~~at or~~ beyond the site boundary shall be in accordance with the following: 1

   1. For noble gases: a dose rate ≤ 500 mrem/yr to the whole body and a dose rate ≤ 3000 mrem/yr to the skin and

   2. For iodine-131, iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days: a dose rate ≤ 1500 mrem/yr to any organ,

h. Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents from each unit to areas beyond the site boundary, conforming to 10 CFR 50, Appendix I,

5.5 Programs and Manuals

5.5.~~4~~ Radioactive Effluent Controls Program (continued)

2

i. Limitations on the annual and quarterly doses to a member of the public from iodine-131, iodine-133, tritium, and all radionuclides in particulate form with half lives > 8 days in gaseous effluents released from each unit to areas beyond the site boundary, conforming to 10 CFR 50, Appendix I, and

j. Limitations on the annual dose or dose commitment to any member of the public, beyond the site boundary, due to releases of radioactivity and to radiation from uranium fuel cycle sources, conforming to 40 CFR 190.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Radioactive Effluent Controls Program surveillance frequency.

UFSAR Table 4.1-10 (Unit 1) and
UFSAR Table 3.9N-1 (Unit 2)

14

5.5.~~5~~ Component Cyclic or Transient Limit

3

This program provides controls to track the ~~FSAR, Section [-]~~, cyclic and transient occurrences to ensure that components are maintained within the design limits.

5.5.6 [Pre-Stressed Concrete Containment Tendon Surveillance Program

This program provides controls for monitoring any tendon degradation in pre-stressed concrete containments, including effectiveness of its corrosion protection medium, to ensure containment structural integrity. The program shall include baseline measurements prior to initial operations. The Tendon Surveillance Program, inspection frequencies, and acceptance criteria shall be in accordance with [Regulatory Guide 1.35, Revision 3, 1989].

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Tendon Surveillance Program inspection frequencies.]

15

5.5.7 Reactor Coolant Pump Flywheel Inspection Program

This program shall provide for the inspection of each reactor coolant pump flywheel per the recommendations of Regulatory Position C.4.b of Regulatory Guide 1.14, Revision 1, August 1975.

In lieu of Position C.4.b(1) and C.4.b(2), a qualified in-place UT examination over the volume from the inner bore of the flywheel to the circle one-half of the outer radius or a surface examination (MT and/or PT) of exposed surfaces of the removed flywheels may be conducted at approxiately 10 year intervals coinciding with the Inservice Inspection schedule as required by ASME Section XI.

16

5.5 Programs and Manuals

5.5.7 Reactor Coolant Pump Flywheel Inspection Program (continued)

- REVIEWER'S NOTES -

1. The inspection interval and scope for RCP flywheels stated above can be applied to plants that satisfy the staff requirements in the safety evaluation of Topical Report, WCAP-14535A, "Topical Report on Reactor Coolant Pump Flywheel Inspection Elimination."

2. Licensees shall confirm that the flywheels are made of SA 533 B material. Further, licensees having Group-15 flywheels (as determined in WCAP-14535A, "Topical Report on Reactor Coolant Pump Flywheel Inspection Elimination") need to demonstrate that material properties of their A516 material is equivalent to SA 533 B material, and its reference temperature, RT, is less than 30 °F. 16

3. For flywheels not made of SA 533 B or A516 material, licensees need to either demonstrate that the flywheel material properties are bounded by those of SA 533 B material, or provide the minimum specified ultimate tensile stress, the fracture toughness, and the reference temperature, RT_{NDT}, for that material. For the latter, the licensees should employ these material properties, and use the methodology in the topical report, as extended in the two responses to the staff's RAI, to provide an assessment to justify a change in inspection schedule for their plants.

4. Licensees with Group-10 flywheels need to confirm that their flywheels have an adequate shrink fit to preclude loss of shrink fit of the flywheel at the maximum overspeed, or to provide an evaluation demonstrating that no detrimental effects would occur if the shrink fit was lost as maximum overspeed.

5.5.8 Inservice Testing Program

4

This program provides controls for inservice testing of ASME Code Class 1, 2, and 3 components. The program shall include the following:

a. Testing frequencies specified in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as follows:

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

5.5 Programs and Manuals

5.5.8 Inservice Testing Program (continued)

4

ASME Boiler and Pressure Vessel Code and applicable Addenda terminology for inservice testing activities	Required Frequencies for performing inservice testing activities
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

34

and other normal and accelerated Frequencies specified in the Inservice Testing Program

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

5.5.~~9~~ Steam Generator (SG) Tube Surveillance Program

Insert 2

17

- REVIEWER'S NOTE -

The Licensee's current ~~licensing basis steam generator~~ tube surveillance requirements shall be ~~relocated from~~ the ~~LCO and included~~ here. An appropriate ~~administrative~~ controls program format should ~~be used~~.

The provisions of SR 3.0.2 are applicable to the SG Tube Surveillance Program test frequencies.

and SR 3.0.3

18

5.5.~~10~~ Secondary Water Chemistry Program

6

This program provides controls for monitoring secondary water chemistry to inhibit SG tube degradation ~~and low pressure turbine disc stress corrosion cracking~~. The program shall include:

19

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

b. Identification of the procedures used to measure the values of the critical variables,

5.5 Programs and Manuals

5.5.~~10~~ 6 Secondary Water Chemistry Program (continued)

c. Identification of process sampling points, ~~which shall include monitoring the discharge of the condensate pumps for evidence of condenser in-leakage,~~ 19

d. Procedures for the recording and management of data,

e. Procedures defining corrective actions for all off control point chemistry conditions, and

f. A procedure identifying the authority responsible for the interpretation of the data and the sequence and timing of administrative events, which is required to initiate corrective action.

5.5.~~11~~ 7 Ventilation Filter Testing Program (VFTP)

Insert 4

20

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].

a. Demonstrate for each of the ESF systems that an inplace test of the high efficiency particulate air (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] at the system flowrate specified below [± 10%].

ESF Ventilation System	Flowrate
[ ]	[ ]

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, and ASME N510-1989] at the system flowrate specified below [± 10%].

ESF Ventilation System	Flowrate
[ ]	[ ]

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], 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 (86 °F) and the relative humidity specified below.

5.5 Programs and Manuals

5.5.~~11~~ 7 Ventilation Filter Testing Program (VFTP) (continued)

ESF Ventilation System	Penetration	RH	Face Velocity (fps)
[ ]	[See Reviewer's Note]	[See Reviewer's Note]	[See Reviewer's Note]

- REVIEWER'S NOTES -

The use of any standard other than ASTM D3803-1989 to test the charcoal sample may result in an overestimation of the capability of the charcoal to adsorb radioiodine. As a result, the ability of the charcoal filters to perform in a manner consistent with the licensing basis for the facility is indeterminate.

ASTM D 3803-1989 is a more stringent testing standard because it does not differentiate between used and new charcoal, it has a longer equilibration period performed at a temperature of 30°C (86°F) and a relative humidity (RH) of 95% (or 70% RH with humidity control), and it has more stringent tolerances that improve repeatability of the test. 20

Allowable Penetration = [(100% - Methyl Iodide Efficiency * for Charcoal Credited in Licensee's Accident Analysis) / Safety Factor]

When ASTM D3803-1989 is used with 30 °C (86 °F) and 95% RH (or 70% RH with humidity control) is used, the staff will accept the following:

Safety factor ≥ 2 for systems with or without humidity control.

Humidity control can be provided by heaters or an NRC-approved analysis that demonstrates that the air entering the charcoal will be maintained less than or equal to 70 percent RH under worst-case design-basis conditions.

If the system has a face velocity greater than 110 percent of 0.203 m/s (40 ft/min), the face velocity should be specified.

*This value should be the efficiency that was incorporated in the licensee's accident analysis which was reviewed and approved by the staff in a safety evaluation.

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%].

5.5 Programs and Manuals

5.5.~~11~~ Ventilation Filter Testing Program (VFTP) (continued)

7

ESF Ventilation System	Delta P	Flowrate
[ ]	[ ]	[ ]

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

ESF Ventilation System	Wattage]
[ ]	[ ]

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

20

(Unit 2)

waste gas decay tanks (Unit 1) and gaseous waste

5.5.~~12~~ Explosive Gas and Storage Tank Radioactivity Monitoring Program

8

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 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"]. 1

The program shall include:

waste gas decay tank (Unit 1) and each connected group of waste gas storage tanks (Unit 2)

ensure that the concentration of hydrogen and oxygen is maintained below flammability limits

a. The limits for 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)~~, 1

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~~ > 0.5 rem to any individual in an unrestricted area, in the event of [an uncontrolled release of the tanks' contents], and 32

c. A surveillance program to ensure that the quantity of radioactivity contained in all outdoor liquid radwaste tanks that are not surrounded by liners, dikes,

5.5 Programs and Manuals

5.5.~~12~~ Explosive Gas and Storage Tank Radioactivity Monitoring Program (continued)

8

33 greater

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 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.

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.

5.5.~~13~~ Diesel Fuel Oil Testing Program

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 acceptance criteria, all in accordance with applicable ASTM Standards. The purpose of the program is to establish the following:

a. Acceptability of new fuel oil for use prior to addition to storage tanks by determining that the fuel oil has:

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(if gravity was not determined by comparison with suppliers certification)

1. An API gravity or an absolute specific gravity within limits,
2. A flash point and kinematic viscosity within limits for ASTM 2D fuel oil, and

~~or~~ a water and sediment content within limits.

21

3. A ~~clear and bright appearance with proper color,~~

b. Within 31 days following addition of the new fuel oil to storage tanks, verify that the properties of the new fuel oil, other than those addressed in a., above, are within limits for ASTM 2D fuel oil, and

c. Total particulate concentration of the fuel oil is ≤ 10 mg/l when tested every 31 days ~~in accordance with ASTM D-2276, Method A-2 or A-3.~~

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The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Diesel Fuel Oil Testing Program test frequencies.

5.5 Programs and Manuals

5.5.~~14~~ 10 Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications.

a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.

b. Licensees may make changes to Bases without prior NRC approval provided the changes do not require either of the following:

1. A change in the TS incorporated in the license or

2. A change to the updated FSAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.

c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the FSAR.

d. Proposed changes that meet the criteria of Specification ~~5.5.14b~~ 5.5.10.b.1 and 5.5.10.b.2 above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e). 1

5.5.~~15~~ 11 Safety Function Determination Program (SFDP)

This program ensures loss of safety function is detected and appropriate actions taken. Upon entry into LCO 3.0.6, an evaluation shall be made to determine if loss of safety function exists. Additionally, other appropriate actions may be taken as a result of the support system inoperability and corresponding exception to entering supported system Condition and Required Actions. This program implements the requirements of LCO 3.0.6. The SFDP shall contain the following:

a. Provisions for cross train checks to ensure a loss of the capability to perform the safety function assumed in the accident analysis does not go undetected,

b. Provisions for ensuring the plant is maintained in a safe condition if a loss of function condition exists,

c. Provisions to ensure that an inoperable supported system's Completion Time is not inappropriately extended as a result of multiple support system inoperabilities, and

5.5 Programs and Manuals

5.5.~~15~~6 Safety Function Determination Program (SFDP) (continued)

11

d. Other appropriate limitations and remedial or compensatory actions.

Rev. 3

A loss of safety function exists when, assuming no concurrent single failure, ~~and assuming~~ *no concurrent loss of offsite power, or no concurrent loss of onsite* diesel generator(s), a safety function assumed in the accident analysis cannot be performed. For the purpose of this program, a loss of safety function may exist when a support system is inoperable, and:

a. A required system redundant to the system(s) supported by the inoperable support system is also inoperable, or

b. A required system redundant to the system(s) in turn supported by the inoperable supported system is also inoperable, or

c. A required system redundant to the support system(s) for the supported systems (a) and (b) above is also inoperable.

The SFDP identifies where a loss of safety function exists. If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered. When a loss of safety function is caused by the inoperability of a single Technical Specification support system, the appropriate Conditions and Required Actions to enter are those of the support system.

5.5.~~16~~7 *Containment Leakage Rate Testing Program*

12

~~[OPTION A]~~

~~a. A program shall establish the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option A, as modified by approved exemptions.~~

~~b. The maximum allowable containment leakage rate, L_a, at P_a, shall be [ ]% of containment air weight per day.~~ 22

~~c. Leakage rate acceptance criteria are:~~

~~1. Containment leakage rate acceptance criterion is $\leq 1.0\ L_a$. During the first unit startup following testing in accordance with this program, the leakage rate acceptance criteria are $< 0.60\ L_a$ for the Type B and C tests and $< 0.75\ L_a$ for Type A tests.~~

~~2. Air lock testing acceptance criteria are:~~

5.5 Programs and Manuals

5.5.~~16~~ Containment Leakage Rate Testing Program (continued)

22

12

For Unit 1, exemptions to Appendix J of 10 CFR 50 are dated November 19, 1984, December 5, 1984, and July 26, 1995. For Unit 2, exemptions to Appendix J of 10 CFR 50 are as stated in the Operating License.

~~a) Overall air lock leakage rate is ≤ [0.05 L_a] when tested at ≥ P_a.~~

~~b) For each door, leakage rate is ≤ [0.01 L_a] when pressurized to [≥ 10 psig].~~

~~d. The provisions of SR 3.0.3 are applicable to the Containment Leakage Rate Testing Program.~~

~~e. Nothing in these Technical Specifications shall be construed to modify the testing Frequencies required by 10 CFR 50, Appendix J.~~

22

~~[OPTION B]~~

1. For Unit 1, the next Type A test performed after the May 29, 1993 Type A test shall be performed no later than May 28, 2008.
2. For Unit 2, the next Type A test performed after the November 10, 1993 Type A test shall be performed no later than November 9, 2008.

22

a. A program shall establish the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions. This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," dated September, 1995, [as modified by the following exceptions:

~~1. . . .]~~

43.3 psig (for Unit 1) and 44.9 psig (for Unit 2)

b. The calculated peak containment internal pressure for the design basis loss of coolant accident, P_a, is ~~[45 psig]. The containment design pressure is [50 psig]~~.

22

c. The maximum allowable containment leakage rate, L_a, at P_a, shall be ~~[1]~~% of containment air weight per day.

0.10%

d. Leakage rate acceptance criteria are:

prior to MODE 4 entry

22

1. Containment leakage rate acceptance criterion is 1.0 L_a. ~~During~~ the first unit startup following testing in accordance with this program, the leakage rate acceptance criteria are < 0.60 L_a for the Type B and C tests and ≤ 0.75 L_a for Type A tests.

1

However, during

2. Air lock testing acceptance criteria are:

   a) Overall air lock leakage rate is ≤ [0.05 L_a] when tested at ≥ P_a.

Insert 6

   ~~b) For each door, leakage rate is ≤ [0.01 L_a] when pressurized to [≥ 10 psig]~~

22

5.5 Programs and Manuals

5.5.~~16~~ Containment Leakage Rate Testing Program (continued)

12

e. The provisions of SR 3.0.3 are applicable to the Containment Leakage Rate Testing Program.

f. Nothing in these Technical Specifications shall be construed to modify the testing Frequencies required by 10 CFR 50, Appendix J.

~~[OPTION A/B Combined]~~

~~a. A program shall establish the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J. [Type A][Type B and C] test requirements are in accordance with 10 CFR 50, Appendix J, Option A, as modified by approved exemptions. [Type B and C][Type A] test requirements are in accordance with 10 CFR 50, Appendix J, Option B, as modified by approved exemptions. The 10 CFR 50, Appendix J, Option B test requirements shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," dated September, 1995 [,as modified by the following exemptions:~~ 22

~~1. . . .]~~

~~b. The calculated peak containment internal pressure for the design basis loss of coolant accident, P_a, [45 psig]. The containment design pressure is [50 psig].~~

~~c. The maximum allowable containment leakage rate, L_a, at P_a, shall be [ ]% of containment air weight per day.~~

~~d. Leakage rate acceptance criteria are:~~

~~1. Containment leakage rate acceptance criterion is $\leq 1.0\ L_a$. During the first unit startup following testing in accordance with this program, the leakage rate acceptance criteria are $< 0.60\ L_a$ for the Type B and C tests and [$< 0.75\ L_a$ for Option A Type A tests][$\leq 0.75\ L_a$ for Option B Type A tests].~~

~~2. Air lock testing acceptance criteria are:~~

~~a) Overall air lock leakage rate is $\leq$ [0.05 L_a] when tested at $\geq P_a$.~~

~~b) For each door, leakage rate is $\leq$ [0.01 L_a] when pressurized to [$\geq$10 psig].~~

5.5 Programs and Manuals

5.5.16 Containment Leakage Rate Testing Program (continued)

e. The provisions of SR 3.0.3 are applicable to the Containment Leakage Rate Testing Program.

f. Nothing in these Technical Specifications shall be construed to modify the testing Frequencies required by 10 CFR 50, Appendix J.

22

5.5.~~17~~ Battery Monitoring and Maintenance Program

13

This Program provides for battery restoration and maintenance, based on {the recommendations of IEEE Standard 450-1995, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications," or of the battery manufacturer} including the following:

a. Actions to restore battery cells with float voltage < {2.13} V, and

b. Actions to equalize and test battery cells that had been discovered with electrolyte level below the ~~minimum established design limit~~.

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top of the plates

5.0 ADMINISTRATIVE CONTROLS

5.6 Reporting Requirements

The following reports shall be submitted in accordance with 10 CFR 50.4.

5.6.1 Occupational Radiation Exposure Report

- REVIEWER'S NOTE -

[A single submittal may be made for a multiple unit station. The submittal should combine sections common to all units at the station.]

A tabulation on an annual basis of the number of station, utility, and other personnel (including contractors), for whom monitoring was performed, receiving an annual deep dose ~~equivalent > 100 mrem~~s and the associated collective deep dose equivalent (reporte TSTF-369 ccording to work and job functions (e.g., reactor operations ~~and surveillance, in~~service inspection, routine maintenance, special maintenance [describe maintenance], waste processing, and refueling). This tabulation supplements the requirements of 10 CFR 20.2206. The dose assignments to various duty functions may be estimated based on pocket ionization chamber, thermoluminescence dosimeter (TLD), electronic dosimeter, or film badge measurements. Small exposures totaling < 20 percent of the individual total dose need not be accounted for. In the aggregate, at least 80 percent of the total deep dose equivalent received from external sources should be assigned to specific major work functions. The report covering the previous calendar year shall be submitted by April 30 of each year. [The initial report shall be submitted by April 30 of the year following the initial criticality.]

5.6.2 Annual Radiological Environmental Operating Report

1

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- REVIEWER'S NOTE -

[*A single submittal may be made for a multiple unit station. The submittal should combine sections common to all units at the station.*] 23

The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted by May 15 of each year. The report shall include summaries, interpretations, and analyses of trends of the results of the Radiological Environmental Monitoring Program for the reporting period. The material provided shall be consistent with the objectives outlined in the Offsite Dose Calculation Manual (ODCM), and in 10 CFR 50, Appendix I, Sections IV.B.2, IV.B.3, and IV.C.

The Annual ~~Radiological Environmental Operating Report~~ shall include the ~~results of analyses of~~ all radiological environmental ~~samples and of all~~ 25

5.6 Reporting Requirements

5.6.2 Annual Radiological Environmental Operating Report (continued)

1

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

25

5.6.3 Radioactive Effluent Release Report

2

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- REVIEWER'S NOTE -

23

[A single submittal may be made for a multiple unit station. The submittal shall 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 in the previous year shall be submitted prior to May 1 of each year 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 Part 50, Appendix I, Section IV.B.1.

5.6.4 Monthly Operating Reports

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Routine reports of operating shutdown experience shall be submitted on a monthly basis no later than the 15th of each month following the calendar month covered by the report.

5.6.5 CORE OPERATING LIMITS REPORT (COLR)

3

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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:

[The individual specifications that address core operating limits must be referenced here.]

26

Insert 7

5.6 Reporting Requirements

5.6.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

3

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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:

Insert 8

[Identify the Topical Report(s) by number and title or identify the staff Safety Evaluation Report for a plant specific methodology by NRC letter and date. The COLR will contain the complete identification for each of the TS referenced topical reports used to prepare the COLR (i.e., report number, title, revision, date, and any supplements).]

26

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.

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

4

5.6.6 Reactor Coolant System (RCS) PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)

1

Overpressure Protection System (OPPS) enable temperature

LCO 3.4.3, "RCS Pressure and Temperature (P/T) Limits," and

LCO 3.4.12, "Overpressure Protection System (OPPS)"

a. RCS pressure and temperature limits for heat up, cooldown, low temperature operation, criticality, and hydrostatic testing, ~~LTOP arming~~, and PORV lift settings as well as heatup and cooldown rates shall be established and documented in the PTLR for the following:

[The individual specifications that address RCS pressure and temperature limits must be referenced here.]

27

b. The analytical methods used to determine the RCS pressure and temperature limits shall be those previously reviewed and approved by the NRC, specifically those described in the following documents:

Insert 11

~~[Identify the NRC staff approval document by date.]~~

c. The PTLR shall be provided to the NRC upon issuance for each reactor vessel fluence period and for any revision or supplement thereto.

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[Identify the Topical Report(s) by number and title or identify the NRC Safety Evaluation for a plant specific methodology by NRC letter and date. The PTLR will contain the complete identification for each of the TS referenced Topical Reports used to prepare the PTLR (i.e., report number, title, revision, date, and any supplements).]

5.6 Reporting Requirements

5.6.6 4 RCS PRESSURE AND TEMPERATURE LIMITS REPORT (continued)

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- REVIEWER'S NOTES -

The methodology for the calculation of the P-T limits for NRC approval should include the following provisions:

1. The methodology shall describe how the neutron fluence is calculated (reference new Regulatory Guide when issued).
2. The Reactor Vessel Material Surveillance Program shall comply with Appendix H to 10 CFR 50. The reactor vessel material irradiation surveillance specimen removal schedule shall be provided, along with how the specimen examinations shall be used to update the PTLR curves.
3. Low Temperature Overpressure Protection (LTOP) System lift setting limits for the Power Operated Relief Valves (PORVs), developed using NRC-approved methodologies may be included in the PTLR. 28
4. The adjusted reference temperature (ART) for each reactor beltline material shall be calculated, accounting for radiation embrittlement, in accordance with Regulatory Guide 1.99, Revision 2.
5. The limiting ART shall be incorporated into the calculation of the pressure and temperature limit curves in accordance with NUREG-0800 Standard Review Plan 5.3.2, Pressure-Temperature Limits.
6. LTOP arming temperature limit development methodology.
7. The minimum temperature requirements of Appendix G to 10 CFR Part 50 shall be incorporated into the pressure and temperature limit curves.
8. Licensees who have removed two or more capsules should compare for each surveillance material the measured increase in reference temperature (RT_{NDT}) to the predicted increase in RT_{NDT}; where the predicted increase in RT_{NDT} is based on the mean shift in RT_{NDT} plus the two standard deviation value ($2\sigma_\Delta$) specified in Regulatory Guide 1.99, Revision 2. If the measured value exceeds the predicted value (increase $RT_{NDT} + 2\sigma_\Delta$), the licensee should provide a supplement to the PTLR to demonstrate how the results affect the approved methodology.

5.6 Reporting Requirements

5.6.~~7~~ 5 Post Accident Monitoring Report

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D

When a report is required by Condition B or ~~G~~ of LCO 3.3.[3], "Post Accident Monitoring (PAM) Instrumentation," a report shall be submitted within the following 14 days except as noted in Condition D. 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. 35

~~5.6.8~~ 6 ~~[Tendon Surveillance Report~~ 29

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~~Any abnormal degradation of the containment structure detected during the tests required by the Pre-stressed Concrete Containment Tendon Surveillance Program shall be reported to the NRC within 30 days. The report shall include a description of the tendon condition, the condition of the concrete (especially at tendon anchorages), the inspection procedures, the tolerances on cracking, and the corrective action taken.]~~

5.6.~~9~~ ~~7~~ 6 ~~[~~ Steam Generator Tube Inspection Report ~~]~~

Insert 9

~~- REVIEWER'S NOTES -~~ 30

~~1. Reports required by the Licensee's current licensing basis regarding steam generator tube surveillance requirements shall be included here. An appropriate administrative controls format should be used.~~

~~2. These reports may be required covering inspection, test, and maintenance activities. These reports are determined on an individual basis for each unit and their preparation and submittal are designated in the Technical Specifications.~~

5.0 ADMINISTRATIVE CONTROLS

[5.7 High Radiation Area]

31 Insert 10

~~As provided in paragraph 20.1601(c) of 10 CFR Part 20, the following controls shall be applied to high radiation areas in place of the controls required by paragraph 20.1601(a) and (b) of 10 CFR Part 20:~~

~~5.7.1 High Radiation Areas with Dose Rates Not Exceeding 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation~~

~~a. Each entryway to such an area shall be barricaded and conspicuously posted as a high radiation area. Such barricades may be opened as necessary to permit entry or exit of personnel or equipment.~~

~~b. Access to, and activities in, each such area shall be controlled by means of Radiation Work Permit (RWP) or equivalent that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures.~~

~~c. Individuals qualified in radiation protection procedures and personnel continuously escorted by such individuals may be exempted from the requirement for an RWP or equivalent while performing their assigned duties provided that they are otherwise following plant radiation protection procedures for entry to, exit from, and work in such areas.~~

~~d. Each individual or group entering such an area shall possess:~~

~~1. A radiation monitoring device that continuously displays radiation dose rates in the area, or~~

~~2. A radiation monitoring device that continuously integrates the radiation dose rates in the area and alarms when the device's dose alarm setpoint is reached, with an appropriate alarm setpoint, or~~

~~3. A radiation monitoring device that continuously transmits dose rate and cumulative dose information to a remote receiver monitored by radiation protection personnel responsible for controlling personnel radiation exposure within the area, or~~

~~4. A self-reading dosimeter (e.g., pocket ionization chamber or electronic dosimeter) and,~~

~~(i) Be under the surveillance, as specified in the RWP or equivalent, while in the area, of an individual qualified in radiation protection procedures, equipped with a radiation monitoring device that~~

5.7 High Radiation Area

5.7.1 High Radiation Areas with Dose Rates Not Exceeding 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation (continued)

continuously displays radiation dose rates in the area; who is responsible for controlling personnel exposure within the area, or

(ii) Be under the surveillance as specified in the RWP or equivalent, while in the area, by means of closed circuit television, of personnel qualified in radiation protection procedures, responsible for controlling personnel radiation exposure in the area, and with the means to communicate with individuals in the area who are covered by such surveillance.

e. Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them. These continuously escorted personnel will receive a pre-job briefing prior to entry into such areas. This dose rate determination, knowledge, and pre-job briefing does not require documentation prior to initial entry.

5.7.2 High Radiation Areas with Dose Rates Greater than 1.0 rem/hour at 30 Centimeters from the Radiation Source of from any Surface Penetrated by the Radiation, but less than 500 rads/hour at 1 Meter from the Radiation Source or from any Surface Penetrated by the Radiation 31

a. Each entryway to such an area shall be conspicuously posted as a high radiation area and shall be provided with a locked or continuously guarded door or gate that prevents unauthorized entry, and, in addition:

1. All such door and gate keys shall be maintained under the administrative control of the shift supervisor, radiation protection manager, or his or her designees, and

2. Doors and gates shall remain locked except during periods of personnel or equipment entry or exit.

b. Access to, and activities in, each such area shall be controlled by means of an RWP or equivalent that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures.

c. Individuals qualified in radiation protection procedures may be exempted from the requirement for an RWP or equivalent while performing radiation

5.7 High Radiation Area

5.7.2 High Radiation Areas with Dose Rates Greater than 1.0 rem/hour at 30 Centimeters from the Radiation Source of from any Surface Penetrated by the Radiation, but less than 500 rads/hour at 1 Meter from the Radiation Source or from any Surface Penetrated by the Radiation (continued)

surveys in such areas provided that they are otherwise following plant radiation protection procedures for entry to, exit from, and work in such areas.

d. Each individual group entering such an area shall possess:

1. A radiation monitoring device that continuously integrates the radiation rates in the area and alarms when the device's dose alarm setpoint is reached, with an appropriate alarm setpoint, or

2. A radiation monitoring device that continuously transmits dose rate and cumulative dose information to a remote receiver monitored by radiation protection personnel responsible for controlling personnel radiation exposure within the area with the means to communicate with and control every individual in the area, or 31

3. A self-reading dosimeter (e.g., pocket ionization chamber or electronic dosimeter) and,

(i) Be under surveillance, as specified in the RWP or equivalent, while in the area, of an individual qualified in radiation protection procedures, equipped with a radiation monitoring device that continuously displays radiation dose rates in the area; who is responsible for controlling personnel exposure within the area, or

(ii) Be under surveillance as specified in the RWP or equivalent, while in the area, by means of closed circuit television, or personnel qualified in radiation protection procedures, responsible for controlling personnel radiation exposure in the area, and with the means to communicate with and control every individual in the area.

4. In those cases where options (2) and (3), above, are impractical or determined to be inconsistent with the "As Low As is Reasonably Achievable" principle, a radiation monitoring device that continuously displaces radiation dose rates in the area.

e. Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and

5.7 High Radiation Area

5.7.2 High Radiation Areas with Dose Rates Greater than 1.0 rem/hour at 30 Centimeters from the Radiation Source of from any Surface Penetrated by the Radiation, but less than 500 rads/hour at 1 Meter from the Radiation Source or from any Surface Penetrated by the Radiation (continued)

entry personnel are knowledgeable of them. These continuously escorted personnel will receive a pre-job briefing prior to entry into such areas. This dose rate determination, knowledge, and pre-job briefing does not require documentation prior to initial entry. 31

f. Such individual areas that are within a larger area where no enclosure exists for the purpose of locking and where no enclosure can reasonably be constructed around the individual area need not be controlled by a locked door or gate, nor continuously guarded, but shall be barricaded, conspicuously posted, and a clearly visible flashing light shall be activated at the area as a warning device.

INSERTS FOR ITS 5.0

Administrative Controls

Insert 1 for Section 5.3.1

Each member of the unit and radiation protection staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions, except for the following:

- the operations manager as specified in Specification 5.2.2.e,
- the radiation protection manager who shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975, and
- the technical advisory engineering representative who shall have a bachelor's degree or equivalent in a scientific or engineering discipline with specific training in plant design and response analysis of the plant for transients and accidents.

Insert 2 for Section 5.5.5 (from CTS requirements)

This program provides requirements for SG tube sample selection and inspection. Each SG shall be inspected in accordance with Table 5.5.5.1-1 (for Unit 1 SGs) and Table 5.5.5.2-1(for Unit 2 SGs).

5.5.5.1 Unit 1 Steam Generator Tube Sample Selection and Inspection

The steam generator tube minimum sample size, inspection result classification, and the corresponding action required shall be as specified in Table 5.5.5.1-2. The inservice inspection of steam generator tubes shall be performed at the frequencies specified in Specification 5.5.5.1.3 and the inspected tubes shall be verified acceptable per the acceptance criteria of Specification 5.5.5.1.4.

1. Steam generator tubes shall be examined in accordance with Article 8 of Section V ("Eddy current Examination of Tubular Products") and Appendix IV to Section XI ("Eddy Current Examination of Nonferromagnetic Steam Generator Heat Exchanger Tubing") of the applicable year and addenda of the ASME Boiler and Pressure Vessel Code required by 10CFR50, Section 50.55a(g).

2. The tubes selected for each inservice inspection shall include at least 3 percent of the total number of tubes in all steam generators; the tubes selected for these inspections shall be selected on a random basis except:

    a. Where experience in similar plants with similar water chemistry indicates critical areas to be inspected, then at least 50 percent of the tubes inspected shall be from these critical areas.

    b. The first sample of tubes selected for each inservice inspection (subsequent to the preservice inspection) of each steam generator shall include:

        1. All nonplugged tubes that previously had detectable wall

penetrations greater than 20 percent, and

2. Tubes in those areas where experience has indicated potential problems, and

3. A tube inspection (pursuant to Specification 5.5.5.1.4.a.8) shall be performed on each selected tube. If any selected tube does not permit the passage of the eddy current probe for a tube inspection, this shall be recorded and an adjacent tube shall be selected and subjected to a tube inspection.

c. The tubes selected as the second and third samples (if required by Table 5.5.5.1-2) during each inservice inspection may be subjected to a partial tube inspection provided:

1. The tubes selected for these samples include the tubes from those areas of the tube sheet array where tubes with imperfections were previously found, and

2. The inspections include those portions of the tubes where imperfections were previously found.

The results of each sample inspection shall be classified into one of the following three categories:

Category	Inspection Results
C-1	Less than 5 percent of the total tubes inspected are degraded tubes and none of the inspected tubes are defective.
C-2	One or more tubes, but not more than 1 percent of the total tubes inspected are defective, or between 5 percent and 10 percent of the total tubes inspected are degraded tubes.
C-3	More than 10 percent of the total tubes inspected are degraded tubes or more than 1 percent of the inspected tubes are defective.

Note: In all inspections, previously degraded tubes must exhibit significant (greater than 10 percent) further wall penetrations to be included in the above percentage calculations.

3. Inspection Frequencies - The above required inservice inspections of steam generator tubes shall be performed at the following frequencies:

a. The first inservice inspection shall be performed after 6 Effective Full Power Months (EFPM) but within 24 EFPM of initial criticality or following steam generator replacement. Subsequent inservice inspections shall be performed at intervals of not less than 12 nor more than 24 calendar months after the previous inspection. If two consecutive inspections, not including the preservice inspection, result in all inspection results falling into the C-1 category or if two consecutive inspections demonstrate that previously observed degradation has not continued and no additional degradation has occurred, the inspection interval may be extended to a maximum of once per 40 months.

Note: Inservice inspection is not required during the steam generator replacement outage.

b. If the results of the inservice inspection of a steam generator conducted in accordance with Table 5.5.5.1-2 fall into Category C-3, the inspection frequency shall be increased to at least once per 20 months. The increase in inspection frequency shall apply until the subsequent inspections satisfy the criteria of specification 5.5.5.1.3.a; the interval may then be extended to a maximum of once per 40 months.

c. Additional, unscheduled inservice inspections shall be performed on each steam generator in accordance with the first sample inspection specified in Table 5.5.5.1-2 during the shutdown subsequent to any of the following conditions:

1. Primary-to-secondary tube leaks (not including leaks originating from tube-to-tube sheet welds) in excess of the limits of LCO 3.4.13,

2. A seismic occurrence greater than the Operating Basis Earthquake,

3. A loss-of-coolant accident requiring actuation of the engineered safeguards, or

4. A main steamline or feedwater line break.

4. Acceptance Criteria

a. As used in this Specification:

1. Imperfection means an exception to the dimensions, finish or contour of a tube from that required by fabrication drawings or specifications. Eddy-current testing indications below 20 percent of the nominal tube wall thickness, if detectable, may be considered as imperfections.

2. Degradation means a service-induced cracking, wastage, wear or general corrosion occurring on either inside or

outside of a tube.

3. Degraded Tube means a tube containing imperfections greater than or equal to 20 percent of the nominal wall thickness caused by degradation.

4. Percent Degradation means the percentage of the tube wall thickness affected or removed by degradation.

5. Defect means an imperfection of such severity that it exceeds the plugging limit. A tube containing a defect is defective. Any tube which does not permit the passage of the eddy-current inspection probe shall be deemed a defective tube.

6. Plugging Limit means the imperfection depth at or beyond which the tube shall be removed from service by plugging because it may become unserviceable prior to the next inspection. The plugging limit is equal to 40 percent of the nominal tube wall thickness.

7. Unserviceable describes the condition of a tube if it leaks or contains a defect large enough to affect its structural integrity in the event of an Operating Basis Earthquake, a loss-of-coolant accident, or a steamline or feedwater line break as specified in 5.5.5.1.3.c, above.

8. Tube Inspection means an inspection of the steam generator tube from the point of entry (hot-leg side) completely around the U-bend to the top support of the cold-leg.

b. The steam generator shall be determined OPERABLE after completing the corresponding actions (plug all tubes exceeding the plugging limit) required by Table 5.5.5.1-2.

The Provisions of SR 3.0.2 and SR 3.0.3 are applicable to the SG Tube Surveillance Program inspection Frequencies.

UNIT 1 TABLE 5.5.5.1-1
(page 1 of 1)

MINIMUM NUMBER OF STEAM GENERATORS TO BE

INSPECTED DURING INSERVICE INSPECTION

Preservice Inspection	No	Yes
No. of Steam Generators per Unit	Three	Three
First Inservice Inspection	All	Two
Second & Subsequent Inservice Inspections	One (1)	One (2)

Table Notation:

(1) The inservice inspection may be limited to one steam generator on a rotating schedule encompassing 9 percent of the tubes if the results of the first or previous inspections indicate that all steam generators are performing in a like manner. Note that under some circumstances, the operating conditions in one or more steam generators may be found to be more severe than those in other steam generators. Under such circumstances the sample sequence shall be modified to inspect the most severe conditions.

(2) The other steam generator not inspected during the first inservice inspection shall be inspected. The third and subsequent inspections should follow the instructions described in (1) above.

UNIT 1 TABLE 5.5.5.1-2
(page 1 of 1)

STEAM GENERATOR TUBE INSPECTION

1ST SAMPLE INSPECTION			2ND SAMPLE INSPECTION		3RD SAMPLE INSPECTION	
Sample Size	Result	Action Required	Result	Action Required	Result	Action Required
A minimum of S tubes per S.G.	C-1	None	N/A	N/A	N/A	N/A
	C-2	Plug defective tubes and inspect additional 2S tubes in this S.G.	C-1	None	N/A	N/A
			C-2	Plug defective tubes and Inspect additional 4S tubes in this S.G.	C-1	None
					C-2	Plug defective tubes
					C-3	Perform action for C-3 result of first sample
			C-3	Perform action for C-3 result of first sample	N/A	N/A
	C-3	Inspect all tubes in this S.G., plug defective tubes and inspect 2S tubes in each other S.G. Notification to NRC pursuant to Specification 5.6.6.1	All other S.G.s are C-1	None	N/A	N/A
			Some S.G.s are C-2 but no additional S.G.s are C-3	Perform action for C-2 result of second sample	N/A	N/A
			Additional S.G. is C-3	Inspect all tubes in each S.G. and plug defective tubes. Notification to NRC pursuant to Specification 5.6.6.1.	N/A	N/A

$s = \frac{9}{n}\%$ Where n is the number of steam generators inspected during an inspection.

5.5.5.2 Unit 2 SG Tube Surveillance Program

The steam generator tube minimum sample size, inspection result classification, and the corresponding action required shall be as specified in Table 5.5.5.2-2. The inservice inspection of steam generator tubes shall be performed at the frequencies specified in Specification 5.5.5.2.3 and the inspected tubes shall be verified acceptable per the acceptance criteria of Specification 5.5.5.2.4.

1. Steam generator tubes shall be examined in accordance with Article 8 of Section V ("Eddy Current Examination of Tubular Products") and Appendix IV to Section XI ("Eddy Current Examination of Nonferromagnetic Steam Generator Heat Exchanger Tubing") of the applicable year and addenda of the ASME Boiler and Pressure Vessel Code required by 10 CFR 50.55a(g). When applying the exceptions of Specifications 5.5.5.2.2.a through 5.5.5.2.2.c, previous defects or imperfections in the area repaired by sleeving are not considered an area requiring reinspection.

2. The tubes selected for each inservice inspection shall include at least 3 percent of the total number of tubes in all steam generators; the tubes selected for these inspections shall be selected on a random basis except:

   a. Where experience in similar plants with similar water chemistry indicates critical areas to be inspected, then at least 50 percent of the tubes inspected shall be from these critical areas.

   b. The first sample of tubes selected for each inservice inspection (subsequent to the preservice inspection) of each steam generator shall include:

      1. All nonplugged tubes that previously had detectable wall penetrations greater than 20 percent, and

      2. Tubes in those areas where experience has indicated potential problems, and

      3. At least 3 percent of the total number of sleeved tubes in all three steam generators. A sample size less than 3 percent is acceptable provided all the sleeved tubes in the steam generator(s) examined during the refueling outage are inspected. These inspections will include both the tube and the sleeve, and

      4. A tube inspection pursuant to Specification 5.5.5.2.4.a.8. If any selected tube does not permit the passage of the eddy current probe for a tube or sleeve inspection, this shall be

recorded and an adjacent tube shall be selected and subjected to a tube inspection.

5. Indications left in service as a result of application of the tube support plate voltage-based repair criteria (Specification 5.5.5.2.4.a.10) shall be inspected by bobbin coil probe during all future refueling outages.

c. The tubes selected as the second and third samples (if required by Table 5.5.5.2-2) during each inservice inspection may be subjected to a partial tube inspection provided:

1. The tubes selected for these samples include the tubes from those areas of the tube sheet array where tubes with imperfections were previously found, and

2. The inspections include those portions of the tubes where imperfections were previously found.

d. Implementation of the steam generator tube-to-tube support plate repair criteria requires a 100-percent bobbin coil inspection for hot-leg and cold-leg tube support plate intersections down to the lowest cold-leg tube support plate with known outside diameter stress corrosion cracking (ODSCC) indications. The determination of the lowest cold-leg tube support plate intersections having ODSCC indications shall be based on the performance of at least a 20% random sampling of tubes inspected over their full length.

The results of each sample inspection shall be classified into one of the following three categories:

Category	Inspection Results
C-1	Less than 5 percent of the total tubes inspected are degraded tubes and none of the inspected tubes are defective.
C-2	One or more tubes, but not more than 1 percent of the total tubes inspected are defective, or between 5 percent and 10 percent of the total tubes inspected are degraded tubes.
C-3	More than 10 percent of the total tubes inspected are degraded tubes or more than 1 percent of the inspected tubes are defective.

Note: In all inspections, previously degraded tubes or sleeves must exhibit significant (greater than 10 percent) further wall penetrations to be included in the above percentage calculations.

3. The above required inservice inspections of steam generator tubes shall be performed at the following inspection frequencies:

   a. The first inservice inspection shall be performed after 6 Effective Full Power Months but within 24 calendar months of initial criticality. Subsequent inservice inspections shall be performed at intervals of not less than 12 nor more than 24 calendar months after the previous inspection. If two consecutive inspections following service under All Volatile Treatment (AVT) conditions, not including the preservice inspection, result in all inspection results falling into the C-1 category or if two consecutive inspections demonstrate that previously observed degradation has not continued and no additional degradation has occurred, the inspection interval may be extended to a maximum of once per 40 months.

   b. If the inservice inspection of a steam generator conducted in accordance with Table 5.5.5.2-2 requires a third sample inspection whose results fall in Category C-3, the inspection frequency shall be increased to at least once per 20 months. The increase in inspection frequency shall apply until a subsequent inspection demonstrates that a third sample inspection is not required.

   c. Additional, unscheduled inservice inspections shall be performed on each steam generator in accordance with the first sample inspection specified in Table 5.5.5.2-2 during the shutdown subsequent to any of the following conditions:

      1. Primary-to-secondary tube leaks (not including leaks originating from tube-to-tube sheet welds) in excess of the limits of Specification 3.4.13,

      2. A seismic occurrence greater than the Operating Basis Earthquake,

      3. A loss-of-coolant accident requiring actuation of the engineered safeguards, or

      4. A main steamline or feedwater line break.

4. <u>Acceptance Criteria</u>

   a. As used in this Specification:

      1. <u>Imperfection</u> means an exception to the dimensions, finish or contour of a tube or sleeve from that required by fabrication drawings or specifications. Eddy-current testing indications below 20 percent of the nominal tube wall thickness, if detectable, may be considered as imperfections.

2. Degradation means a service-induced cracking, wastage, wear or general corrosion occurring on either inside or outside of a tube or sleeve.

3. Degraded Tube means a tube or sleeve containing imperfections greater than or equal to 20 percent of the nominal wall thickness caused by degradation.

4. Percent Degradation means the percentage of the tube or sleeve wall thickness affected or removed by degradation.

5. Defect means an imperfection of such severity that it exceeds the plugging or repair limit. A tube containing a defect is defective. Any tube which does not permit the passage of the eddy-current inspection probe shall be deemed a defective tube.

6. Plugging or Repair Limit means the imperfection depth at or beyond which the tube shall be removed from service by *plugging or repaired by sleeving in the affected area* because it may become unserviceable prior to the next inspection. The plugging or repair limit imperfection depths are specified in percentage of nominal wall thickness as follows:

    a) Original tube wall 40%

        This definition does not apply to tube support plate intersections for which the voltage-based repair criteria are being applied. Refer to Specification 5.5.5.2.4.a.10 for the repair limit applicable to these intersections.

    b) ABB Combustion Engineering TIG welded sleeve wall 27%

    c) Westinghouse laser welded sleeve wall 25%

7. Unserviceable describes the condition of a tube if it leaks or contains a defect large enough to affect its structural integrity in the event of an Operating Basis Earthquake, a loss-of-coolant accident, or a steamline or feedwater line break as specified in Specification 5.5.5.2.3.c, above.

8. Tube Inspection means an inspection of the steam generator tube from the point of entry (hot-leg side) completely around the U-bend to the top support of the cold-leg.

9. Tube Repair refers to sleeving which is used to maintain a tube in-service or return a tube to service. This includes the removal of plugs that were installed as a corrective or preventive measure. The following sleeve designs have been found acceptable:

   a) ABB Combustion Engineering TIG welded sleeves, CEN-629-P, Revision 02 and CEN-629-P Addendum 1.

   b) Westinghouse laser welded sleeves, WCAP-13483, Revision 2.

10. Tube Support Plate Plugging Limit is used for the disposition of an alloy 600 steam generator tube for continued service that is experiencing predominantly axially oriented outside diameter stress corrosion cracking confined within the thickness of the tube support plates. At tube support plate intersections, the plugging (repair) limit is based on maintaining steam generator tube serviceability as described below:

    a) Steam generator tubes, whose degradation is attributed to outside diameter stress corrosion cracking within the bounds of the tube support plate with bobbin voltages less than or equal to 2.0 volts will be allowed to remain in service.

    b) Steam generator tubes, whose degradation is attributed to outside diameter stress corrosion cracking within the bounds of the tube support plate with a bobbin voltage greater than 2.0 volts will be repaired or plugged, except as noted in Specification 5.5.5.2.4.a.10.c) below.

    c) Steam generator tubes, with indications of potential degradation attributed to outside diameter stress corrosion cracking within the bounds of the tube support plate with a bobbin voltage greater than 2.0 volts but less than or equal to the upper voltage repair limit may remain in service if a rotating pancake coil or acceptable alternative inspection does not detect degradation. Steam generator tubes, with indications of outside diameter stress corrosion cracking degradation with a bobbin voltage greater than the upper voltage repair limit will be plugged or repaired. The upper voltage repair limit is calculated according to the methodology in Generic Letter 95-05 as supplemented.

d) If an unscheduled mid-cycle inspection is performed, the following mid-cycle repair limits apply instead of the limits identified in Specifications 5.5.5.2.4.a.10.a), 5.5.5.2.4.a.10.b), and 5.5.5.2.4.a.10.c).

The mid-cycle repair limits are determined from the following equations:

$$V_{MURL} = \frac{V_{SL}}{1.0 + NDE + Gr\left(\frac{CL - \Delta t}{CL}\right)}$$

$$V_{MLRL} = V_{MURL} - (V_{URL} - V_{LRL})\left(\frac{CL - \Delta t}{CL}\right)$$

where:

V_{URL} =	upper voltage repair limit
V_{LRL} =	lower voltage repair limit
V_{MURL} =	mid-cycle upper voltage repair limit based on time into cycle
V_{MLRL} =	mid-cycle lower voltage repair limit based on V_{MURL} and time into cycle
Δt =	length of time since last scheduled inspection during which V_{URL} and V_{LRL} were implemented
CL =	cycle length (the time between two scheduled steam generator inspections)
V_{SL} =	structural limit voltage
Gr =	average growth rate per cycle length
NDE =	95% cumulative probability allowance for nondestructive examination uncertainty (i.e., a value of 20% has been approved by NRC (The NDE is the value provided by the NRC in Generic Letter 95-05 as supplemented))

Implementation of these mid-cycle repair limits should follow the same approach as in Specifications 5.5.5.2.4.a.10.a), 5.5.5.2.4.a.10.b), and 5.5.5.2.4.a.10.c).

b. The steam generator shall be determined OPERABLE after completing the corresponding actions (plug or repair all tubes exceeding the plugging or repair limit) required by Table 5.5.5.2-2.

Unit 2 Table 5.5.5.2-1
(page 1 of 1)

MINIMUM NUMBER OF STEAM GENERATORS TO BE
INSPECTED DURING INSERVICE INSPECTION

Preservice Inspection	No	Yes
Number of Steam Generators per Unit	3	3
First Inservice Inspection	All	2
Second and Subsequent Inservice Inspections	1[(1)]	1[(2)]

(1) The inservice inspection may be limited to one steam generator on a rotating schedule encompassing 9% of the tubes if the results of the first or previous inspections indicate that all steam generators are performing in a like manner. Note that under some circumstances, the operating conditions in one or more steam generators may be found to be more severe than those in other steam generators. Under such circumstances the sample sequence shall be modified to inspect the most severe conditions.

(2) The other steam generator not inspected during the first inservice inspection shall be inspected. The third and subsequent inspections should follow the instruction described in footnote (1) above.

Unit 2 Table 5.5.5.2-2
(page 1 of 1)

Steam Generator (SG) Tube Inspection

First Sample Inspection			Second Sample Inspection		Third Sample Inspection	
Sample Size	Result	Action Required	Result	Action Required	Result	Action Required
A minimum of S tubes per SG	C-1	None	NA	NA	NA	NA
	C-2	Plug or repair defective tubes and inspect additional 2S tubes in this SG	C-1	None	NA	NA
			C-2	Plug or repair defective tubes and inspect additional 4S tubes in this SG	C-1	None
					C-2	Plug or repair defective tubes
					C-3	Perform action for C-3 result of first sample
			C-3	Perform action for C-3 result of first sample	NA	NA
	C-3	Inspect all tubes in this SG, plug or repair defective tubes and inspect 2S tubes in each other SG Notification of NRC pursuant to Specification 5.6.6.2	All other SGs are C-1	None	NA	NA
			Some SGs are C-2, but no additional SGs are C-3	Perform action for C-2 result for second sample	NA	NA
			Additional SG is C-3	Inspect all tubes in each SG and plug or repair defective tubes Notification of NRC pursuant to Specification 5.6.6.2	NA	NA

$S = \frac{9\%}{n}$ where n is the number of SGs inspected during an inspection.

Insert 3 - Not Used.

Insert 4 for Section 5.5.7

Ventilation Filter Testing Program (VFTP)

A program shall be established to implement the following required testing of Engineered Safety Feature (ESF) filter ventilation systems for the Control Room Emergency Ventilation System (CREVS) and the Supplemental Leak Collection and Release System (SLCRS). Tests described in Specifications 5.5.7.a and 5.5.7.b shall be performed once per 18 months:

- after each complete or partial replacement of the high efficiency particulate air (HEPA) filter or charcoal adsorber bank;
- after any structural maintenance on the HEPA filter or charcoal adsorber housing;
- following significant painting, fire, or chemical release (for the Unit 1 and Unit 2 SLCRS) in any ventilation zone communicating with the system while the filtration system is operating; and
- following significant painting, fire, or chemical release (for the Unit 1 and Unit 2 CREVS) in the vicinity of control room outside air intakes while the system is operating.

Tests described in Specification 5.5.7.c shall be performed once per 18 months:

- after 720 hours of adsorber operation (for the Unit 1 and 2 CREVS and the Unit 1 SLCRS) or after 4 months of adsorber operation (for the Unit 2 SLCRS);
- after any structural maintenance on the charcoal adsorber bank housing;
- following significant painting, fire, or chemical release (for the Unit 1 and Unit 2 SLCRS) in any ventilation zone communicating with the system while the filtration system is operating; and
- following significant painting, fire, or chemical release (for the Unit 1 and Unit 2 CREVS) in the vicinity of control room outside air intakes while the system is operating.

Tests described in Specifications 5.5.7.d and 5.5.7.e shall be performed once per 18 months.

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

a. Demonstrate for each of the required ESF systems that an inplace test of the HEPA filters shows a penetration and system bypass specified below when tested in accordance with ANSI N510-1980 (for the Unit 1 and 2 CREVS) and the Unit 2 SLCRS and in accordance with ANSI N510-1975 (for the Unit 1 SLCRS) at the system flowrate specified below:

ESF Ventilation System	Penetration	Flowrate
SLCRS	< 1.0% (Unit 1) < 0.05% (Unit 2)	≥ 32,400 cfm and ≤ 39,600 cfm (Unit 1) ≥ 51,300 cfm and ≤ 62,700 cfm (Unit 2)
CREVS	< 0.05%	≥ 800 cfm and ≤ 1000 cfm

b. Demonstrate for each of the required ESF systems that an inplace test of the charcoal adsorber shows a penetration and system bypass specified below when tested in accordance with ANSI N510-1980 (for the Unit 1 and 2 CREVS and the Unit 2 SLCRS) and ANSI N510-1975 (for the Unit 1 SLCRS) at the system flowrate specified below:

ESF Ventilation System	Penetration	Flowrate
SLCRS	< 1.0% (Unit 1) < 0.05% (Unit 2)	≥ 32,400 cfm and ≤ 39,600 cfm (Unit 1) ≥ 51,300 cfm and ≤ 62,700 cfm (Unit 2)
CREVS	< 0.05%	≥ 800 cfm and ≤ 1000 cfm

c. Demonstrate for each of the required ESF systems that a laboratory test of a sample of the charcoal adsorber, when obtained as described in Regulatory Guide 1.52, Revision 2, or using a slotted tube sampler in accordance with ANSI N509-1980 shows, within 31 days after removal, the methyl iodide removal efficiency greater than or equal to the value specified below when tested in accordance with ASTM D3803-1989 at a temperature of 30°C, an inlet methyl iodide concentration of 1.75 mg/m^3, and an air flow velocity and relative humidity (RH) specified below:

ESF Ventilation System	Removal Efficiency	Air Flow Velocity	RH
SLCRS	90% (Unit 1) 99% (Unit 2)	0.9 ft/sec (Unit 1) 0.7 ft/sec (Unit 2)	≥ 95% (Unit 1) ≥ 70% (Unit 2)
CREVS	99% (Unit 1) 99% (Unit 2)	0.68 ft/sec (Unit 1) 0.7 ft/sec (Unit 2)	≥ 70% (Unit 1) ≥ 70% (Unit 2)

d. Demonstrate for each of the required ESF systems that the pressure drop across the combined HEPA filters and the charcoal adsorbers is less than the value specified below when tested at the system flowrate specified as follows:

ESF Ventilation System	Delta P	Flowrate
SLCRS	6 inches Water Gauge (Unit 1)	≥ 32,400 cfm and ≤ 39,600 cfm (Unit 1)
	6.8 inches Water Gauge (Unit 2)	≥ 51,300 cfm and ≤ 62,700 cfm (Unit 2)
CREVS	6 inches Water Gauge (Unit 1)	≥ 800 cfm and ≤ 1000 cfm (Unit 1)
	5.6 inches Water Gauge (Unit 2)	≥ 800 cfm and ≤ 1000 cfm (Unit 2)

e. Demonstrate that the heaters for each of the ESF systems dissipate the value specified below when tested in accordance with ANSI N510-1980.

ESF Ventilation System	Wattage
SLCRS	≥ 160.9 kW and ≤ 264.5 kW (Unit 2 only)
CREVS	≥ 3.87 kW and ≤ 5.50 kW

Insert 5 - Not Used.

Insert 6 for Section 5.5.12

b) For each emergency air lock door, no detectable seal leakage when gap between door seals is pressurized to ≥ 10 psig or door seal leakage quantified to ensure emergency air lock door seal leakage rate is < 0.0005 La when tested at ≥ 10 psig.

c) For each personnel air lock door, no detectable seal leakage when gap between door seals is pressurized to ≥ P_a or door seal leakage quantified to ensure personnel air lock door seal leakage rate is < 0.0005 La when tested at ≥ P_a.

Insert 7 for Section 5.6.3

SL 2.1.1, "Reactor Core Safety Limits"
LCO 3.1.1, "SHUTDOWN MARGIN (SDM)"
LCO 3.1.3, "Moderator Temperature Coefficient (MTC)"
LCO 3.1.5, "Shutdown Bank Insertion Limits"
LCO 3.1.6, "Control Bank Insertion Limits"
LCO 3.2.1, "Heat Flux Hot Channel Factor ($F_Q(Z)$)"
LCO 3.2.2, "Nuclear Enthalpy Rise Hot Channel Factor ($F^N_{\Delta H}$)"
LCO 3.2.3, "Axial Flux Difference (AFD)"
LCO 3.3.1, "Reactor Trip System (RTS) Instrumentation - Overtemperature and Overpower ΔT Allowable Value parameter values
LCO 3.4.1, "RCS Pressure, Temperature, and Flow Departure from Nucleate Boiling (DNB) Limits"
LCO 3.9.1, "Boron Concentration"

Insert 8 for Section 5.6.3

WCAP-9272-P-A, "Westinghouse Reload Safety Evaluation Methodology,"

WCAP-8745-P-A, "Design Bases for the Thermal Overtemperature ΔT and Thermal Overpower ΔT Trip Functions,"

WCAP-12945-P-A, Volumes 1 through 5, "Code Qualification Document for Best Estimate LOCA Analysis,"

WCAP-14565-P-A, "VIPRE-01 Modeling and Qualification for Pressurized Water Reactor Non-LOCA Thermal-Hydraulic Safety Analysis"

WCAP-10216-P-A, "Relaxation of Constant Axial Offset Control/FQ Surveillance Technical Specification"

WCAP-12610-P-A, "VANTAGE+ Fuel Assembly Reference Core Report"

WCAP-15025-P-A, "Modified WRB-2 Correlation, WRB-2M, for Predicating Critical Heat Flux in 17x17 Rod Bundles with Modified LPD Mixing Vane Grids"

As described in reference documents listed above, when an initial assumed power level of 102% of rated thermal power is specified in a previously approved method, 100.6% of rated thermal power may be used when input for reactor thermal power measurement of feedwater flow is by the leading edge flow meter (LEFM).

Caldon, Inc. Engineering Report-80P, "Improving Thermal Power Accuracy and Plant Safety While Increasing Operating Power Level Using the LEFM √™ System"

Caldon, Inc. Engineering Report-160P, "Supplement to Topical Report ER-80P: Basis for a Power Uprate with the LEFM √™ System"

Insert 9 for ITS Section 5.6.6

5.6.6.1 Unit 1 SG Tube Inspection Report

a. Within 15 days following the completion of each inservice inspection of steam generator tubes, the number of tubes plugged in each steam generator shall be submitted in a Special Report in accordance with 10 CFR 50.4.

b. The complete results of the steam generator tube inservice inspection shall be submitted in a Special Report in accordance with 10 CFR 50.4 within 12 months following the completion of the inspection. This Special Report shall include:

1. Number and extent of tubes inspected.

2. Location and percent of wall-thickness penetration for each indication of an imperfection.

3. Identification of tubes plugged.

c. Results of steam generator tube inspections which fall into Category C-3 shall be reported to the Commission prior to resumption of plant operation. The written report shall provide a description of investigations conducted to determine the cause of the tube degradation and corrective measures taken to prevent recurrence.

5.6.6.2 Unit 2 SG Tube Inspection Report

a. Within 15 days following the completion of each inservice inspection of steam generator tubes, the number of tubes plugged or repaired in each steam generator shall be submitted in a Special Report in accordance with 10 CFR 50.4.

b. The complete results of the steam generator tube and sleeve inservice inspection shall be submitted in a Special Report in accordance with 10 CFR 50.4 within 12 months following the completion of the inspection. This Special Report shall include:

1. Number and extent of tubes and sleeves inspected.

2. Location and percent of wall-thickness penetration for each indication of an imperfection.

3. Identification of tubes plugged or repaired.

c. Results of steam generator tube inspections which fall into Category C-3 shall be reported to the Commission prior to resumption of plant operation. The written report shall provide a description of investigations conducted to determine the cause of the tube degradation and corrective measures taken to prevent recurrence.

d. For implementation of the voltage-based repair criteria to tube support plate intersections, notify the Commission prior to returning the steam generators to service (MODE 4) should any of the following conditions arise:

1. If estimated leakage based on the projected end-of-cycle (or if not practical, using the actual measured end-of-cycle) voltage distribution exceeds the leak limit (determined from the licensing basis dose calculation for the postulated main steamline break) for the next operating cycle.

2. If circumferential crack-like indications are detected at the tube support plate intersections.

3. If indications are identified that extend beyond the confines of the tube support plate.

4. If indications are identified at the tube support plate elevations that are attributable to primary water stress corrosion cracking.

5. If the calculated conditional burst probability based on the projected end-of-cycle (or if not practical, using the actual measured end-of-cycle) voltage distribution exceeds 1×10^{-2}, notify the Commission and provide an assessment of the safety significance of the occurrence.

Insert 10 for Section 5.7

5.7.1 In lieu of the "control device" or "alarm signal" required by 10 CFR 20.1601, each high radiation area in which the intensity of radiation is > 100 mrem/hr but < 1000 mrem/hr shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiological Work Permit (RWP). Radiation protection personnel or personnel escorted by radiation protection personnel in accordance with approved emergency procedures, shall be exempt from the RWP issuance requirement during the performance of their radiation protection duties, provided they comply with approved radiation protection procedures for entry into high radiation areas. Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

a. A radiation monitoring device that continuously indicates the radiation dose rate in the area.

b. A radiation monitoring device that continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate levels in the area have been established and personnel have been made knowledgeable of them.

c. An individual qualified in radiation protection procedures with a radiation dose rate monitoring device. This individual shall be responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by a radiation protection supervisor in the RWP.

5.7.2 In addition to the requirements of Specification 5.7.1 above, for each high radiation area in which the intensity of radiation is > 1000 mrem/hr, locked doors shall be provided to prevent unauthorized entry into such areas and the keys shall be maintained under administrative control of the shift supervisor on duty or a radiation protection supervisor.

Insert 11 for Section 5.6.4

NRC Letter, "Beaver Valley Power Station, Units 1 and 2 – Acceptance of Methodology for Referencing Pressure and Temperature Limits Report (TAC Nos. MB3319 and MB3320)," dated October 8, 2002.

WCAP-14040-NP-A, "Methodology Used to Develop Cold Overpressure Mitigating System Setpoints and RCS Heatup and Cooldown Limit Curves."

The methodology listed in WCAP-14040-NP-A was used with two exceptions:

- ASME Code Case N-640, "Alternative Reference Fracture Toughness for Development of P-T Limits for Section XI, Division 1."
- ASME, Section XI, Appendix G, "Fracture Toughness Criteria for Protection Against Failure," 1996 version.

5.0 Administrative Controls

JUSTIFICATIONS FOR DEVIATION

ITS 5.0 Administrative Controls

JUSTIFICATION FOR DEVIATION (JFD)

1. Changes are made (additions, deletions, and/or changes) to the ISTS that reflect the plant specific nomenclature, number, reference, system description, analysis, or licensing basis (CTS).

2. The second paragraph of ISTS 5.1.1 states that the plant manager of his designee shall approve, prior to implementation, each proposed test, experiment or modification by system or equipment that affect nuclear safety. The BVPS Units 1 and 2 CTS do not include this requirement. The requirement for approval of tests, experiment or modifications is adequately controlled by BVPS administrative procedures and need not be included in the BVPS ITS.

3. ISTS 5.1.2 specifies requirements for the control room command function. The BVPS Units 1 and 2 CTS do not include these requirements. The ISTS administrative control requirement was not adopted in the BVPS ITS based on the current licensing basis and due to the sufficient existing federal regulations that address plant staffing and command and control requirements. Specifically 10 CFR 50.54(K)(1) states:

   "The licensee shall designate individuals to be responsible for directing the licensed activities of licensed operators. These individuals shall be licensed as senior operators pursuant to part 55 of this chapter."

   In addition, 10 CFR 50.54(m)(2)(iii) states:

   "When a nuclear power unit is in an operational mode other than cold shutdown or refueling, as defined by the unit's technical specifications, each licensee shall have a person holding a senior operator license for the nuclear power unit in the control room at all times. In addition to this senior operator, for each fueled nuclear power unit, a licensed operator or senior operator shall be present at the controls at all times."

   And 10 CFR 50.54(K) states:

   "An operator or senior operator licensed pursuant to part 55 of this chapter shall be present at the controls at all times during the operation of the facility".

   The ISTS command and control specification does not add significantly to the requirements of the regulations stated above. The ISTS specification contains a recommended method using specific plant titles for implementing the command and control requirement of 10 CFR 50.54(K)(1). However, it does not affect the regulation requirement that an SRO must be in charge (regardless of job title). In addition, the federal regulations include explicit staffing requirements (i.e., 10 CFR 50.54(K) and 10 CFR 50.54(m)(2)(iii)) which reinforce the requirement to have an SRO in the control room and a licensed operator at the controls. The existing regulations regarding control room staffing and command are sufficiently clear to provide adequate guidance for safe plant operation. The day to day details regarding control room staffing and command are controlled within the appropriate plant procedures. The guidance provided by the federal regulations is adequate to develop appropriate implementing procedures that assure the safe operation of the plant.

The current BVPS licensing basis regarding control room command and control requirements being left to procedures has been confirmed by the NRC over the years. The ISTS command and control requirement was originally contained in the old Standard Technical Specifications (NUREG-0452, Revision 5) current when Unit 2 was licensed. However, during the licensing of Unit 2, the NRC reviewed, approved and issued the BVPS CTS excluding this control room command function requirement. More recently the NRC issued License Amendments Nos. 255 (Unit 1) and 136 (Unit 2) dated 5/15/03. These amendments extensively revised the technical specification Administrative Controls Section for Unit Staff (6.2.2). This section specifically addresses the requirements for the BVPS control room staff and corresponds to the contents of the ISTS section in question. In the conclusion of the Safety Evaluation Report associated with these amendments, the NRC stated that:

> "Based on the above, the proposed BVPS-1 and 2 Section 6.0 TSs provide clearer, more readily understandable requirements to ensure safe operation of the plants. The NRC staff concludes that they satisfy the guidance in the Commission's policy statement with regard to the content of the TSs, and conform to the model provided in NUREG-1431, Revision 2, with appropriate modifications for plant-specific considerations."

Therefore, this provision of the ISTS is not adopted by BVPS consistent with the CTS.

4. ISTS 5.2.1.a states "These requirements, including the plant-specific titles of those personnel fulfilling the responsibilities of the positions delineated in these Technical Specifications shall be documented in the [FSAR/QA Plan]." Corresponding ITS 5.2.1.a is revised to reflect CTS 6.2.1.a. The change reflects the BVPS Units 1 and 2 locations of the plant-specific titles are contained in the Unit 2 UFSAR.

5. ISTS 5.2.1.c, which states "A specified corporate officer shall have corporate responsibility for overall plant safety ...," is revised to be consistent with the corresponding CTS 6.2.1.c. ITS 5.2.1.c states "A corporate officer with direct responsibility for the plant shall have corporate responsibility for overall plant safety...," and reflects the BVPS Units 1 and 2 plant-specific organization.

6. Changes are made (additions, deletions, and/or changes) to the ISTS that reflect the plant specific nomenclature (specifically the reference to "health physics" in ISTS 5.2.1.d is changed to "radiation protection" in ITS 5.2.1.d).

7. ISTS 5.2.2.a is modified by a Reviewer's Note that states, "Two unit sites with both units shutdown or defueled require a total of three non-licensed operators for the two sites." The BVPS Units 1 and 2 CTS do not include this requirement. The requirement for non-licensed operators when both units are shutdown or de-fueled is adequately controlled by BVPS administrative procedures and need not be included in the BVPS ITS.

8. ISTS 5.2.2.c states, A radiation protection technician shall be on site when fuel is in the reactor." ITS 5.2.2.c is revised to reflect CTS 6.2.2.c. ITS 5.2.2.c states," An individual qualified in radiation protection procedures shall be on site when fuel is in the reactor."

9. ISTS 5.2.2.e states, "The operations manager or assistant operations manager shall hold an

SRO license." ITS 5.2.2.e is revised to reflect CTS 6.2.2.e. ITS 5.2.2.e states, "The operations manager shall hold an SRO license or have held an SRO license for a pressurized water reactor. The assistant operations manager shall hold a current SRO license." This change is consistent with the BVPS Units 1 and 2 licensing bases.

10. ISTS 5.2.2.f includes requirements for an individual to provide advisory technical support to the unit operations shift crew. These requirements are modified in ITS 5.2.2.f to reflect CTS 6.2.2.f. ITS 5.2.2.f is modified to also include, "A single qualified person can be used to satisfy this position for both units." The change is consistent with the BVPS Units 1 and 2 licensing bases.

11. ISTS 5.3.1 provides staff qualification requirements. These qualifications requirements are revised in ITS 5.3.1 to reflect the requirements of CTS 6.3.1. The qualification requirements in ITS 5.3.1 are consistent with the BVPS Units 1 and 2 licensing bases. The corresponding ISTS Reviewer's Note is deleted. The Reviewer's Note provides information for the NRC to identify acceptable methods to meet the requirements. The Reviewer's Note is not meant to be retained in the final version of the plant-specific submittal.

12. ISTS 5.5.2 provides requirements for Primary Coolant Sources Outside Containment. This program is not included in the BVPS Units 1 and 2 ITS. There are no requirements for this program in the CTS. Requirements for minimizing leakage from those portions of systems outside containment that could contain highly radioactive fluids during an accident or transient are administratively controlled at BVPS Units 1 and 2. For Unit 1, the requirements are controlled in a license condition. For Unit 2, the requirements are controlled in plant procedures. This was previously reviewed and concurred with in an NRC letter dated July 12, 1988 "Beaver Valley Unit 2 – Post Accident Coolant Leakage, TMI Item III D.1.1 (TAC 62924)." Not including this ISTS program in the BVPS Units 1 and 2 ITS is consistent with the BVPS Units 1 and 2 licensing bases. Moreover, for Unit 2, the conformance to the TMI Action requirement is described in UFSAR Table 1.10-1 "NUREG-0737 Conformance." Specifically, UFSAR Table 1.10-1 and Section 13.5.2.1 provide the program commitments for primary coolant sources outside containment. Subsequent specifications are renumbered as a result of this change to the ISTS.

13. ISTS 5.5.3 provides requirements for Post Accident Sampling. This program is not included in the BVPS Units 1 and 2 ITS. There are no current requirements for this program in the CTS. Requirements for post accident sampling are administratively controlled at BVPS Units 1 and 2. The BVPS post accident sampling program requirement was eliminated in a previous License Amendment Request based on the implementation of WCAP-14986, Revision 1 as described in TSTF-366, Revision 0. Not including this ISTS program in the BVPS Units 1 and 2 ITS is consistent with the BVPS Units 1 and 2 licensing bases. Subsequent specifications are renumbered as a result of this change to the ISTS.

14. ISTS 5.5.5 (ITS 5.5.3) provides requirements for Component Cyclic or Transient Limits. The location of the limits in the UFSAR is revised to reflect the differences in the Unit 1 and Unit 2 UFSAR locations.

15. ISTS 5.5.6 provides requirements for Pre-Stressed Concrete Containment Tendon

Surveillance Program. The design at BVPS does not include the installation of pre-stressed concrete containment tendons. As such, there is no requirement for this surveillance program in the CTS. Not including this ISTS program in the BVPS ITS is consistent with the BVPS Units 1 and 2 licensing and design bases.

16. ISTS 5.5.7 provides requirements for the Reactor Coolant Pump Flywheel Inspection Program. There is no requirement for this program in the CTS. Requirements for reactor coolant pump flywheel inspection are administratively controlled at BVPS Units 1 and 2 in the Inservice Inspection Program. Reactor coolant pump flywheel inspection requirements were removed from the BVPS Unit 1 Technical Specifications by a previous License Amendment Request based upon their inclusion in the Unit 1 Inservice Inspection Program. Subsequent licensing of Unit 2 was made consistent with the licensing bases of Unit 1 and reactor coolant pump flywheel inspection requirements were located in the Unit 2 Inservice Inspection Program. Not including this ISTS program in the BVPS ITS is consistent with the BVPS Units 1 and 2 licensing bases. Subsequent specifications in the ITS are renumbered as a result of this change to the ISTS.

17. ISTS 5.5.9 (ITS 5.5.5) provides the requirements for the Steam Generator (SG) Tube Surveillance Program. Consistent with the associated Reviewer's Note, the BVPS Units 1 and 2 current licensing basis for SG tube inspections, reflected in CTS 4.4.5 and Tables 4.4-1 and 4.4-2 for each Unit, are included in this program. The corresponding ISTS Reviewer's Note is deleted. The Reviewer's Note provides information for the NRC to identify acceptable methods to meet the requirements. The Reviewer's Note is not meant to be retained in the final version of the plant-specific submittal. The CTS requirements for each Unit are specified in separate subsections of ITS Specification 5.5.5 (i.e., 5.5.5.1 (Unit 1) and 5.5.5.2 (Unit 2)). The separate presentation for each unit maintains the different CTS requirements for each unit in a separate program and facilitates unit specific changes in the future.

18. ISTS 5.5.9 (ITS 5.5.5) states that the provisions of SR 3.0.2 are applicable to the SG Tube Surveillance Program Surveillance Frequencies. The requirements in ITS 5.5.5 were located in individual Surveillances in the CTS 4.4.5. Thus, CTS 4.0.2 (ITS SR 3.0.2) and CTS 4.0.3 (ITS SR 3.0.3) applied to the CTS surveillance frequencies. To maintain this allowance, a statement that SR 3.0.2 and SR 3.0.3 are applicable to the surveillance frequencies has been added to ITS 5.5.5. The markup shows the statement at the end of the insert (i.e., the end of the Unit 2 program). However, this statement is applicable to the Unit 1 program (5.5.5.1) as well as the Unit 2 program (5.5.5.2). Thus, although only shown once on the markup, a statement is added in the insert to the end of the Unit 1 program as well.

19. ISTS 5.5.10 (ITS 5.5.6) provides requirements for the Secondary Water Chemistry Program. ITS 5.5.6 (description of the basis for the program and requirements for including process sampling points for monitoring the discharge of condensate pumps) is revised to reflect the BVPS Units 1 and 2 licensing bases in CTS 6.8.5.

20. ISTS 5.5.11 (ITS 5.5.7) provides requirements for the Ventilation Filter Testing Program. ITS 5.5.7 is revised to reflect the BVPS Units 1 and 2 licensing bases in Unit 1 CTS

4.7.7.1.1, 4.7.7.1.2, and 4.7.8.1 and Unit 2 CTS 4.7.7.1 and 4.7.8.1.

21. ISTS 5.5.13 (ITS 5.5.9) provides requirements for the Diesel Fuel Oil Testing Program. ITS 5.5.9.a.2 requirements for verifying that kinematic viscosity of new fuel oil is within required limits prior to adding the new fuel oil to the storage tanks are revised to reflect the requirements of CTS 4.8.1.1.2.d. CTS 4.8.1.1.2.d.1.b) only requires verifying the kinematic viscosity of new fuel oil is within limits, prior to adding it to the storage tanks, if gravity was not determined by comparison with the supplier's certification. ITS 5.5.9.a.3 is revised to require the performance of a water and sediment test of new fuel oil, in place of the clear and bright test of new fuel oil required in the ISTS. These changes reflect the BVPS Units 1 and 2 licensing bases.

22. ISTS 5.5.16 (ITS 5.5.12) provides requirements for the Containment Leakage Rate Testing Program. The requirements of the ISTS are revised to reflect current licensing basis requirements (contents of the CTS Leakage Rate Testing Program), clarifications of testing Frequency requirements, and the containment air lock leak rate testing requirements of CTS 4.6.1.3.

23. ISTS 5.6.1, and 5.6.2 each include a Reviewer's Note with bracketed information. The brackets are removed and corresponding BVPS Units 1 and 2 information is provided consistent with the CTS 6.9.2, and 6.9.3. In addition, the words "Reviewer's Note" are deleted.

24. Not used.

25. ISTS 5.6.1 provides requirements for the Annual Radiological Environmental Operating Report. ISTS 5.6.1 also includes details of reporting analyses results of radiological environmental samples and environmental radiation measurements. This level of detail for reporting is not included in the corresponding CTS 6.9.2. Therefore, these details are not included in ITS 5.6.1. Not including these ISTS reporting details in the BVPS Units 1 and 2 ITS is consistent with the BVPS Units 1 and 2 licensing bases.

26. The brackets in ISTS 5.6.3, CORE OPERATING LIMITS REPORT (COLR), have been removed and the proper plant-specific information is provided (i.e., the list of BVPS Units 1 and 2 ITS to which the COLR applies and the list of approved COLR topical reports and references used in preparing the COLR) in ITS 5.6.3.

27. The brackets in ISTS 5.6.4, PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR), have been removed and the proper plant-specific information is provided (i.e., the list of BVPS Units 1 and 2 ITS to which the PTLR applies and the list of approved PTLR topical reports and references used in preparing the PTLR) in ITS 5.6.4.

28. The ISTS 5.6.4 Reviewer's Note is deleted. The Reviewer's Note provides information for the NRC to identify acceptable methods to meet the requirements. The Reviewer's Note is not meant to be retained in the final version of the plant-specific submittal.

29. ISTS 5.6.6 provides requirements for Tendon Surveillance Report. The design at BVPS

does not include the installation of pre-stressed concrete containment tendons. As such, there is no requirement for a surveillance program and no requirement for this report in the CTS. Not including this ISTS reporting requirement in the BVPS ITS is consistent with the BVPS Units 1 and 2 licensing and design bases. Subsequent specifications are renumbered as a result of this change to the ISTS.

30. ISTS 5.6.7 (ITS 5.6.6) provides the requirements for the Steam Generator Tube Inspection Report. Consistent with the associated Reviewer's Notes, the BVPS Units 1 and 2 current licensing basis, reflected in CTS 4.4.5, is included in this reporting section. A separate report subsection (5.6.6.1 & 5.6.6.2) for each BVPS unit is included to maintain each Unit's requirements separate and consistent with the CTS. The corresponding ISTS Reviewer's Notes are deleted. The Reviewer's Notes provide information for the NRC to identify acceptable methods to meet the requirements. The Reviewer's Notes are not meant to be retained in the final version of the plant-specific submittal.

31. ISTS 5.7 provides requirements for High Radiation Areas. ITS 5.5.7 is revised to reflect the BVPS Units 1 and 2 licensing bases and High Radiation Area controls. The change is consistent with the requirements in CTS 6.12.

32. ISTS 5.5.12.b (ITS 5.5.8.b) is revised to reflect the BVPS Units 1 and 2 whole body exposure limit consistent with the requirements in CTS 6.8.6.c.2.

33. ISTS 5.5.12 (ITS 5.5.8) states "A surveillance program to ensure that the quantity of radioactivity contained...is less than the amount that would result in concentrations less than the limits..." ITS 5.5.8 is revised to replace the word "less than" with the word "greater than" consistent with CTS 6.8.6.c.3. The change reflects the BVPS Units 1 and 2 licensing basis as accepted by the NRC in a previous BVPS SER. This change includes no new requirements, but only provides a clarification of the phrase. The intent of the phrase is to ensure that the 10 CFR 20 limits are not exceeded.

34. ISTS 5.5.8.b states "The provisions of SR 3.0.2 are applicable to the above required Frequencies for performing inservice testing activities." The above required Frequencies referenced in ISTS 5.5.8.b are listed in ISTS 5.5.8.a. ISTS 5.5.8.a contains a list of test intervals referenced in the ASME Inservice Test Requirements. However, the list of test intervals in ITS 5.5.8.a is not a comprehensive list. As such, the corresponding ITS 5.5.4.b states "The provisions of SR 3.0.2 are applicable to the above required Frequencies and other normal and accelerated Frequencies specified in the Inservice Testing Program for performing inservice testing activities. The proposed BVPS ITS 5.5.4.b would be applicable to all the test intervals referenced in the ASME Inservice Testing requirements and not just the test intervals listed in ISTS 5.5.8.a.

    ISTS 5.5.8.a provides a list of the common ASME terminology for inservice testing activities (e.g., monthly, quarterly, etc.) and a corresponding required Frequency (e.g., at least once every 31 days, at least once every 92 days, etc.). Consistent with the explanation in Section 3.1.3 of NUREG 1482, "Guidelines for Inservice Testing at Nuclear Power Plants," the intent of this list of ASME surveillance intervals with a corresponding required Frequency is to avoid potential confusion regarding the ASME test intervals. For example, an ASME test interval of monthly could be applied such that the required testing is accomplished at the beginning of one month and the end of the next month effectively yielding a test interval of almost two months. As such, ISTS 5.5.8.a specifies "required Frequencies" (e.g., at least once every 31 days) for the common ASME terminology for inservice testing activities. It is not the intent of ISTS 5.5.8.a to identify all the potential test intervals that may be utilized in inservice testing activities, nor is the list provided in ISTS 5.5.8.a intended to limit the provisions of ISTS 5.5.8.b to only those frequencies. However, the ASME inservice test requirements utilizes Surveillance Frequencies not specified in ISTS 5.5.8.a. For example, the ASME inservice testing activities may utilize accelerated frequencies (typically some fraction of the common test frequencies listed in ISTS 5.5.8.a) and performance based frequencies which may not correspond to a common frequency listed in ISTS 5.5.8.a. Literal compliance with ISTS 5.5.8.b would preclude the application of the provisions of SR 3.0.2 from any test interval not specifically listed in ISTS 5.5.8.a.

The purpose of ISTS 5.5.8.b (ITS 5.5.4.b) is to provide the same allowances normally applicable to all other surveillance requirements (and some Action Completion Times) by the provisions of SR 3.0.2. SR 3.0.2 allows a surveillance interval (or in some cases an Action Completion Time) to be extended up to 25% longer than the stated interval. As stated in the ISTS Bases for SR 3.0.2, "This extension facilitates Surveillance scheduling and considers plant operating conditions that may not be suitable for conducting the Surveillance (e.g., transient conditions or other ongoing Surveillance or maintenance activities)". SR 3.0.2 provides this scheduling flexibility to help assure that the required surveillance tests will be performed in a safe and timely manner with proper consideration for existing plant conditions and other ongoing activities. The provisions of SR 3.0.2 are applicable to almost all technical specification surveillance testing (except where regulations, i.e., 10 CFR 50 Appendix J, may require a specific test Frequency). Given that the surveillance interval extensions allowed by SR 3.0.2 are applicable to such safety significant and time sensitive surveillance requirements as the verification of reactor trip system instrumentation setpoints, there is no reason why the provisions of SR 3.0.2 should not also be applied to all the ASME frequencies that may be specified for pump and valve inservice test activities. In addition, the proposed change is consistent with NUREG 1482, "Guidelines for Inservice Testing at Nuclear Power Plants," which acknowledges the applicability of the 25% Frequency extension allowed by the TS. As such, the proposed change is acceptable because it provides the necessary flexibility for scheduling all inservice test activities to assure the required testing is performed in both a safe and timely manner with proper consideration for existing plant conditions and other ongoing activities.

35. ITS 5.6.5 is revised to reflect changes made in ITS 3.3.3. In ITS 3.3.3, Action Conditions B and D reference 5.6.5. In addition ITS 3.3.3 Condition D requires that the report be submitted in the following 7 days instead of the 14 days specified in 5.6.5.

ENCLOSURE 2

CHANGES TO THE ISTS BASES

SECTION 5.0 ADMINISTRATIVE CONTROLS CONTAINS NO BASES

ENCLOSURE 3

CHANGES TO THE CTS

CURRENT TECHNICAL SPECIFICATION (CTS) MARKUP
&
DISCUSSION OF CHANGES (DOCs)

Introduction

This enclosure contains the markup of the current BVPS Unit 2 Technical Specifications (TS), and where necessary to show a change to a BVPS Unit 1 TS that is not addressed by the associated Unit 2 markup and DOCs, a BVPS Unit 1 TS page is included. If a Unit 1 page is included it will be marked to show the change to the Unit 1 specific difference, and will not typically contain markups that repeat the applicable changes already addressed in the corresponding Unit 2 markup. Therefore, unless otherwise stated, each DOC applies to both Units 1 and 2 even though the change may only be marked on the Unit 2 TS.

The CTS is marked-up to show the changes necessary to convert to the Improved Standard Technical Specifications (ISTS) in NUREG-1431, Revision 2. The marked-up CTS result in the BVPS specific Improved Technical Specifications (ITS) contained in Enclosure 1.

In order to facilitate the review of the changes to the CTS, the marked-up CTS are presented in their original numerical order, not ISTS numerical order. The new ITS number is marked at the top of the first page of each CTS and the disposition of each CTS and ISTS is summarized in the Table included at the beginning of Enclosure 1 for each TS Section.

The marked-up TS are followed by the applicable DOCs. Each technical change and more complex administrative change marked on the TS has a unique alpha-numeric designator that corresponds to a specific DOC. Due to the large number of format, editorial and presentation differences between the CTS and the new standard TS, not all of these changes are identified in the marked-up CTS pages. The single generic A.1 administrative change DOC designated on the first page of each marked-up CTS addresses all the marked and unmarked editorial, format, and presentation changes necessary to convert that entire CTS to the corresponding new standard TS. Only the more complex (less obvious) administrative type changes made to the CTS are identified with individual administrative DOCs (i.e., A.2, A.3, etc.).

The DOCs are grouped by the category of the change (i.e., less restrictive, more restrictive, administrative, etc). Each category of change is also associated with a No Significant Hazards Consideration (NSHC) for that change in Enclosure 4.

Certain categories of change also have a sub-category or change type associated with the DOC. The sub-category or change type is used to further group the CTS changes in more specific sub-categories that utilize a common NSHC or DOC.

Each CTS change marked as "Less Restrictive", with no subcategory identified in the associated DOC to reference a generic NSHC, will have a "Specific" NSHC included in Enclosure 4. A description of the categories and types of changes follows.

ENCLOSURE 3 (continued)

Categories and Types of Changes to the CTS

I. The major categories utilized to group changes to the CTS are as follows:

A - Administrative

L - Less Restrictive

M - More Restrictive

LA - Removed Detail (Sections of Tech Spec text removed from CTS)

R - Relocated (Entire Tech Spec requirement removed from CTS)

II. The subcategories of Less Restrictive "L" changes are as follows: (1)

1. Relaxation of LCO Requirements
2. Relaxation of Applicability
3. Relaxation of Completion Time
4. Relaxation of Required Action
5. Deletion of Surveillance Requirement
6. Relaxation of Surveillance Requirement Acceptance Criteria
7. Relaxation of Surveillance Frequency
8. Deletion of Reporting Requirement

III. The types of Removed Detail "LA" changes are as follows: (2)

1. Removing Details of System Design and System Description, Including Design Limits
2. Removing Descriptions of System Operation
3. Removing Procedural Details for Meeting Tech Spec Requirements and Related Reporting Requirements
4. Removing Administrative Requirements Redundant to Regulations
5. Removing Performance Requirements for Indication-Only Instruments and Alarms

(1) Each subcategory of Less Restrictive change is associated with a corresponding NSHC in Enclosure 4.

(2) The types of Removed Detail changes all share a common "LA" NSHC in Enclosure 4.

ITS 5.1

A1

5 ~~6~~.0 ADMINISTRATIVE CONTROLS

ITS 5.2

~~6~~.1 RESPONSIBILITY

~~6~~.1.1 The plant manager shall be responsible for overall facility operation and shall delegate in writing the succession to this responsibility during his absence.

~~6~~.2 ORGANIZATION

5 ~~6~~.2.1 ONSITE AND OFFSITE ORGANIZATIONS

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

a. Lines of authority, responsibility and communication shall be established and defined for the highest management levels through intermediate levels to and including all operating organization positions. These relationships shall be documented and updated, as appropriate, in the form of organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These requirements, including the plant-specific titles of those personnel fulfilling the responsibilities of the positions delineated in these technical specifications shall be documented in the Unit 2 UFSAR. The correlation between the positions described in these technical specifications and the plant-specific titles are documented in the Unit 2 UFSAR, Table 13.1-2.

UFSAR

LA1

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

c. The corporate officer with direct responsibility for the plant shall have corporate responsibility for overall plant nuclear safety and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the plant to ensure nuclear safety.

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

5 6.2.2 UNIT STAFF

The unit organization shall be subject to the following:

a. A non-licensed operator shall be assigned to each reactor containing fuel and an additional non-licensed operator shall be assigned for each control room from which a reactor is operating in MODES 1, 2, 3, or 4.

b. Shift crew composition may be less than the minimum requirement of 10 CFR 50.54(m)(2)(i) and 6.2.2.a and 6.2.2.f for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements.

c. An individual qualified in radiation protection procedures shall be onsite when fuel is in the reactor. The position may be vacant for not more than 2 hours, in order to provide for unexpected absence, provided immediate action is taken to fill the required position.

d. Administrative procedures shall be developed and implemented to limit the working hours of personnel who perform safety related functions (e.g., licensed Senior Reactor Operators (SROs), licensed Reactor Operators (ROs), radiation control technicians, auxiliary operators, and key maintenance personnel).

The controls shall include guidelines on working hours that ensure adequate shift coverage shall be maintained without routine heavy use of overtime.

Any deviation from the above guidelines shall be authorized in advance by the plant manager or the plant manager's designee, in accordance with approved administrative procedures, and with documentation of the basis for granting the deviation. Routine deviation from the working hour guidelines shall not be authorized.

Controls shall be included in the procedures to require a periodic independent review be conducted to ensure that excessive hours have not been assigned.

UNIT STAFF (Continued)

e. The operations manager shall either hold a senior reactor operator license or have held a senior reactor operator license for a pressurized water reactor. The assistant operations manager shall hold a current senior reactor operator license.

f. An individual shall provide advisory technical support to the unit operations shift crew in the areas of thermal hydraulics, reactor engineering, and plant analysis with regard to the safe operation of the unit. This individual shall meet the qualifications specified by the Commission Policy Statement on Engineering Expertise on Shift. A single qualified person can be used to satisfy this position for both units.

(Next page is 6-6)

5

6.3 FACILITY STAFF QUALIFICATIONS

5

6.3.1 Each member of the facility and radiation protection staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions, except for the operations manager as specified in Specification 6.2.2.e, the radiation protection manager who shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975, and the technical advisory engineering representative who shall have a bachelor's degree or equivalent in a scientific or engineering discipline with specific training in plant design and response analysis of the plant for transients and accidents.

~~6.4 DELETED~~

~~6.5 DELETED~~

A2

6.6 REPORTABLE EVENT ACTION

6.6.1 The following actions shall be taken for REPORTABLE EVENTS:

a. The Commission shall be notified in accordance with 10 CFR 50.72 and/or a report be submitted pursuant to the requirements of Section 50.73 to 10 CFR Part 50.

~~6.7 DELETED~~

Add ITS 5.3.2

For the purpose of 10 CFR 55.4, a licensed Senior Reactor Operator (SRO) and a licensed reactor operator (RO) are those individuals who, in addition to meeting the requirements of TS 5.3.1, perform the functions described in 10 CFR 50.54(m).

A3

5.4 ~~6.8~~ PROCEDURES

~~6.8~~.1 Written procedures shall be established, implemented, and maintained covering the activities referenced below:

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

A4
b. Refueling operations.

c. Surveillance and test activities of safety related equipment.

~~d. Not used.~~

~~e. Not used.~~

d ~~f.~~ Fire Protection Program implementation. and,

g. PROCESS CONTROL PROGRAM implementation. UFSAR LA2

A5 ~~h. OFFSITE DOSE CALCULATION MANUAL implementation.~~

~~6.8.2 Deleted~~

~~6.8.3 Deleted~~

~~6.8.4 Deleted~~

M1

Add ITS 5.4.1.b

The emergency operating procedures required to implement the requirements of NUREG-0737 and to NUREG-0737, Supplement 1, as stated in Generic Letter 82-33,

Add ITS 5.4.1.c

Quality assurance for effluent and environmental monitoring,

M4

Add ITS 5.4.1.e

All programs specified in Specification 5.5.

M2

5.5.6 PROCEDURES (Continued)

This provides controls

~~6.8.5~~ A program for monitoring of secondary water chemistry to inhibit steam generator tube degradation ~~shall be implemented~~. This program shall ~~be described in the station chemistry manual and shall~~ include:

a. Identification of a sampling schedule for the critical ~~parameters and~~ control points for these ~~parameters~~;

b. Identification of the procedures used to measure the values of the critical ~~parameters~~; variables

c. Identification for process-sampling points;

d. Procedures for the recording and management of data;

e. Procedures defining corrective actions for all off control point chemistry conditions; and

f. A procedure identifying:

1) the authority responsible for the interpretation of the data, and

2) the sequence and timing of administrative events which is required to initiate corrective action.

5.5 ~~6.8.6~~ The following programs shall s be established, implemented and maintained:

5.5.2 ~~a.~~ Radioactive Effluent Control Program

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

a. ~~1)~~ Limitations on the functional capability ~~operability~~ of radioactive liquid and gaseous monitoring instrumentation including surveillance tests and setpoint determination in accordance with the methodology in the ODCM, A22

b. ~~2)~~ Limitations on the concentrations of radioactive material released in liquid effluents to ~~UNRESTRICTED AREAS~~ unrestricted areas, conforming to 10 times the concentration values in ~~10 CFR Part 20, Appendix B, Table 2, Column 2~~ to 10 CFR 20.1001-20.2402. A8 A8

Determination of projected dose contributions from radioactive effluents in accordance with the methodology in the ODCM at least every 31 days.

A6

PROCEDURES (Continued)

c. ~~3)~~ Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with 10 CFR 20.1302 and with the methodology and parameters in the ODCM,

member of the public

d. ~~4)~~ Limitations on the annual and quarterly doses or dose commitment to a ~~MEMBER OF THE PUBLIC~~ from radioactive materials in liquid effluents released from each unit to ~~UNRESTRICTED AREAS~~ conforming to Appendix I to 10 CFR Part 50,

unrestricted areas

L3

e. ~~5)~~ Determination of cumulative ~~and projected~~ dose contributions from radioactive effluents for the current calendar quarter and current calendar year in accordance with the methodology and parameters in the ODCM at least every 31 days~~,~~

functional capability

A22

f. ~~6)~~ Limitations on the ~~operability~~ and use of the liquid and gaseous effluent treatment systems to ensure that the appropriate portions of these systems are used to reduce releases of radioactivity when the projected doses in a 31-day period would exceed 2 percent of the guidelines for the annual dose or dose commitment conforming to Appendix I to 10 CFR Part 50,

from the site

g. ~~7)~~ Limitations on the dose rate resulting from radioactive material released in gaseous effluents to areas beyond the ~~SITE BOUNDARY~~ shall be ~~limited to~~ the following:

a dose rate less

site boundary

in accordance with

1 ~~a)~~ For noble gases: ~~Less~~ than or equal to 500 mrem/year to the ~~total~~ body and less than or equal to 3000 mrem/year to the skin and,

whole

2 ~~b)~~ For Iodine-131, Iodine-133, for tritium, and for all radionuclides in particulate form with half-lives greater than 8 days: ~~Less~~ than or equal to 1500 mrem/year to any organ,

a dose rate less

h. ~~8)~~ Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents from each unit to areas beyond the ~~SITE BOUNDARY~~ conforming to Appendix I to 10 CFR Part 50,

site boundary

i. ~~9)~~ Limitations on the annual and quarterly doses to a ~~MEMBER OF THE PUBLIC~~ from Iodine-131, Iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released from each unit to areas beyond the ~~SITE BOUNDARY~~ conforming to Appendix I to 10 CFR Part 50,

member of the public

site boundary

PROCEDURES (Continued)

A7 The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Radioactive Effluent Controls Program Surveillance Frequency.

j. ~~10)~~ Limitations on the annual dose or dose commitment to any ~~MEMBER OF THE PUBLIC~~ due to releases of radioactivity and to radiation from uranium fuel cycle sources conforming to 40 CFR Part 190.

beyond the Site boundary

~~b.~~ Radiological Environmental Monitoring Program

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

LA3

ODCM

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

site boundary

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

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

5.5.8 ~~c.~~ 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 Gaseous Waste Storage Tanks, 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 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".

PROCEDURES (Continued)

The program shall include:

1. The limits for concentrations of hydrogen and oxygen in the Waste Gas Holdup System and a surveillance program to ensure the limits are maintained. Such limits shall ensure that the concentration of hydrogen and oxygen is maintained below the flammability limits.

2. A surveillance program to ensure that the quantity of radioactivity contained in each connected group of Gaseous Waste Storage Tanks 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 tanks' contents, and

3. 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 greater than the limits of 10 CFR 20, Appendix B, Table 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.

SR 3.0.2 and 3.0.3

The provisions of ~~Specifications 4.0.2 and 4.0.3~~ are applicable to the Explosive Gas and Storage Tank Radioactivity Monitoring Program surveillance frequencies.

5.6 ~~6.9~~ REPORTING REQUIREMENTS

The following reports shall be submitted in accordance with 10 CFR 50.4.

~~6.9.1 DELETED~~

ITS 5.5

UNIT 1 PAGE

3) Participation in an Interlaboratory Comparison

Changes to this Unit 1 material are addressed in the Unit 2 markup and DOCs except for the Unit 1 specific nomenclature used in this program and identified below.

matrices are performed as part of the quality assurance program for environmental monitoring.

~~e.~~ 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 Waste Gas Decay Tanks, 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 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".

Unit 1 specific nomenclature retained in ITS Program 5.5.8

The program shall include:

1. The limits for concentrations of hydrogen and oxygen in the Waste Gas Holdup System and a surveillance program to ensure the limits are maintained. Such limits shall ensure that the concentration of hydrogen and oxygen is maintained below the flammability limits.

2. A surveillance program to ensure that the quantity of radioactivity contained in each Waste Gas Decay Tank 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 tanks' contents, and

3. 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 greater than the limits of 10 CFR 20, Appendix B, Table 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.

REPORTING REQUIREMENTS (Continued)

5.6.1 ~~6.9.2~~ ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

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

A single submittal may be made for a multiple unit station. The submittal should combine sections common to all units at the station.

- -

The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted before May 15 of each year. The report shall include summaries, interpretations, and analyses of trends of the results of the Radiological Environmental Monitoring Program for the reporting period. The material provided shall be consistent with the objectives outlined in the Offsite Dose Calculation Manual (ODCM) and in 10 CFR Part 50, Appendix I Sections IV.B.2, IV.B.3, and IV.C.

5.6.2 ~~6.9.3~~ ~~ANNUAL~~ RADIOACTIVE EFFLUENT RELEASE REPORT

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

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

- -

REPORTING REQUIREMENTS (Continued)

The ~~Annual~~ Radioactive Effluent Release Report covering the operation of the unit during the previous year shall be submitted prior to May 1 of each year 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 (PCP) and in conformance with 10 CFR 50.36a and 10 CFR Part 50, Appendix I Section IV.B.1.

~~6.9.4 Deleted~~

5.6.3 ~~6.9.5~~ 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:

LCO 3.1.1 SHUTDOWN MARGIN (SDM)
LCO 3.1.3 Moderator Temperature Coefficient (MTC)
A10

SL 2.1.1 Reactor Core Safety Limits

LCO 3.1.~~3.~~5 Shutdown ~~Rod~~ Bank Insertion Limits

LCO 3.1.~~3.~~6 Control ~~Rod~~ Bank Insertion Limits

LCO 3.2.~~1~~ 3 Axial Flux Difference-Relaxed Axial Offset Control

LCO 3.2.~~2~~ 1 Heat Flux Hot Channel Factor-$F_Q(Z)$

LCO 3.2.~~3~~ 2 Nuclear Enthalpy Rise Hot Channel Factor-$F^N_{\Delta H}$

LCO 3.4.1 ~~3.2.5~~ ~~DNB Parameter~~ RCS Pressure, Temperature, and Flow Departure from Nucleate Boiling (DNB) Limits

LCO 3.3.1~~.1~~ Reactor Trip System Instrumentation - Overtemperature and Overpower ΔT ~~setpoint~~ Allowable Value parameter values

LCO 3.9.1 Boron Concentration
A10

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:

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

LA4

COLR

REPORTING REQUIREMENTS (Continued)

COLR

WCAP-8745-P-A, "Design Bases for the Thermal Overtemperature ΔT and Thermal Overpower ΔT Trip Functions," September 1986.

LA4

WCAP 12945-P-A, Volume 1 (Revision 2) and Volumes 2 through 5 (Revision 1), "Code Qualification Document for Best Estimate LOCA Analysis," March 1998 (Westinghouse Proprietary).

COLR

WCAP-14565-P-A, "VIPRE-01 Modeling and Qualification for Pressurized Water Reactor Non-LOCA Thermal-Hydraulic Safety Analysis", October 1999.

WCAP-10216-P-A, Revision 1A "Relaxation of Constant Axial Offset Control-FQ Surveillance Technical Specification," February 1994.

COLR

WCAP-12610-P-A, "VANTAGE+ Fuel Assembly Reference Core Report," April 1995 (Westinghouse Proprietary).

LA4

WCAP-15025-P-A, "Modified WRB-2 Correlation, WRB-2M, for Predicating Critical Heat Flux in 17x17 Rod Bundles with Modified LPD Mixing Vane Grids," April 1999.

COLR

As described in reference documents listed above, when an initial assumed power level of 102% of rated thermal power is specified in a previously approved method, 100.6% of rated thermal power may be used when input for reactor thermal power measurement of feedwater flow is by the leading edge flow meter (LEFM).

Caldon, Inc. Engineering Report-80P, "Improving Thermal Power Accuracy and Plant Safety While Increasing Operating Power Level Using the LEFM√™ System," Revision 0, March 1997.

LA4

Caldon, Inc. Engineering Report-160P, "Supplement to Topical Report ER-80P: Basis for a Power Uprate With the LEFM√™ System," Revision 0, May 2000.

COLR

REPORTING REQUIREMENTS (Continued)

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 shutdown margin, transient analysis limits, and accident analysis limits) of the safety analysis are met.

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

5.6.4 ~~6.9.6~~ Reactor Coolant System (RCS) PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)

5.6.4.a ~~a.~~ ~~Reactor Coolant System~~ RCS pressure and temperature limits for heatup, cooldown, low temperature operation, criticality, hydrostatic testing, Overpressure Protection System (OPPS) enable temperature, and Power Operated Relief Valve (PORV) lift settings as well as heatup and cooldown rates shall be established and documented in the PTLR for the following:

LCO 3.4.3 ~~1.~~ ~~Specification 3.4.9.1~~, "~~Reactor Coolant System~~ RCS Pressure ~~/Temperature~~ and Temperature (P/T) Limits", ~~and~~

LCO 3.4.12 ~~2.~~ ~~Specification 3.4.9.3~~, "~~Reactor Coolant System~~ Overpressure Protection Systems (OPPS)".

5.6.4.b ~~b.~~ The analytical methods used to determine the RCS pressure and temperature limits shall be those previously reviewed and approved by the NRC, specifically those described in the following documents:

1. NRC Letter, "BEAVER VALLEY POWER STATION, UNITS 1 AND 2 - ACCEPTANCE OF METHODOLOGY FOR REFERENCING PRESSURE AND TEMPERATURE LIMITS REPORT (TAC Nos. MB3319 and MB3320)," dated October 8, 2002.

2. WCAP-14040-NP-A, "Methodology Used to Develop Cold Overpressure Mitigating System Setpoints and RCS Heatup and Cooldown Limit Curves," Revision 2. PTLR LA5

5.6.4.b The methodology listed in WCAP-14040-NP-A was used with two exceptions:

~~a)~~ ~~Use of~~ ASME Code Case N-640, "Alternative Reference Fracture Toughness for Development of P-T Limits for Section XI, Division 1"~~, and~~

~~b) Use of methodology of the~~ 1996 version of ASME Section XI, Appendix G, "Fracture Toughness Criteria for Protection Against Failure".

ITS 5.6 ITS 5.7 A1

PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR) (Continued)

5.6.4.c ~~c.~~ The PTLR shall be provided to the NRC upon issuance for each reactor vessel fluence period and for any revision or supplement thereto.

LA6 UFSAR

~~6.10 DELETED~~

6.11 RADIATION PROTECTION PROGRAM

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

5.7 ~~6.12~~ HIGH RADIATION AREA

5.7.1 ~~6.12.1~~ In lieu of the "control device" or "alarm signal" required by paragraph 20.1601 of 10 CFR 20, each high radiation area in which the intensity of radiation is greater than 100 mrem/hr but less than 1000 mrem/hr shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiological Work Permit ~~(1)~~. Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

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

b. A radiation monitoring device which continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate level in the area has been established and personnel have been made knowledgeable of them.

~~(1)~~ Radiation protection personnel, or personnel escorted by radiation protection personnel in accordance with approved emergency procedures, shall be exempt from the RWP issuance requirement during the performance of their radiation protection duties, provided they comply with approved radiation protection procedures for entry into high radiation areas.

HIGH RADIATION AREA (Continued)

c. An individual qualified in radiation protection procedures who is equipped with a radiation dose rate monitoring device. This individual shall be responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by a ~~facility~~ radiation protection supervisor in the Radiological Work Permit.

5.7.2

~~6.12.2~~ In addition to the ~~The~~ requirements of 5.7.1 ~~6.12.1~~, above, ~~also apply to~~ for each high radiation area in which the intensity of radiation is greater than 1000 mrem/hr~~. In addition~~, locked doors shall be provided to prevent unauthorized entry into such areas and the keys shall be maintained under the administrative control of the shift supervisor on duty ~~and/~~or a ~~facility~~ radiation protection supervisor.

6.13 PROCESS CONTROL PROGRAM (PCP)

Changes to the PCP:

a. Shall be documented and records of reviews performed shall be retained in accordance with the applicable record retention provision of the quality assurance program description included in the Updated Final Safety Analysis Report. *This documentation shall contain:*

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

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

PORC

b. Shall become effective after review and acceptance by the ~~OSC~~ and the approval of the plant manager, predesignated alternate or a predesignated manager to whom the plant manager has assigned in writing the responsibility for review and approval of specific subjects.

LA7 UFSAR

5.5.1

~~6.14~~ OFFSITE DOSE CALCULATION MANUAL (ODCM)

Changes to the ODCM:

LA8 ODCM

a. Shall be documented and records of reviews performed shall be retained in accordance with the applicable record retention provision of the quality assurance program description included in the Updated Final Safety Analysis Report. This documentation shall contain:

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

2) A determination that the change (s) ~~will~~ maintain the level of radioactive effluent control required by 10 CFR 20.1302, 40 CFR Part 190, 10 CFR 50.36a, and Appendix I to 10 CFR Part 50 and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations.

PORC LA8 ODCM

b. Shall become effective after review and acceptance by the ~~OSC~~ and the approval of the plant manager, predesignated alternate or a predesignated manager to whom the plant manager has assigned in writing the responsibility for review and approval of specific subjects.

NRC

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

5.5.12

~~6.16 Moved to the PROCESS CONTROL PROGRAM.~~

~~6.17~~ CONTAINMENT LEAKAGE RATE TESTING PROGRAM

5.5.12.a

~~A~~ program shall be established~~ to implement~~ the leakage rate testing of the containment as required by 10 CFR 50.54 (o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions~~(1)~~. This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995, except that the next Type A test performed after the November 10, 1993 Type A test shall be performed no later than November 9, 2008.

~~(1)~~ Exemptions to Appendix J of 10 CFR 50, as stated in the operating license.

OFFSITE DOSE CALCULATION MANUAL (ODCM) (Continued)

c. Shall ~~be~~ submitted to the Commission in the form of a complete, ~~legible~~ copy of the entire ODCM as a part of or c... ...nt Release R... ...y change to t... ...entified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date (e.g., month/year) the change was implemented.

Changes to this Unit 1 material are addressed in the Markup and DOCs associated with the corresponding Unit 2 text.

5.5.12.a

~~6.16~~ Moved to the PROCESS CONTROL PROGRAM.

~~6.17~~ Containment Leakage Rate Testing Program

A program shall ~~be~~ establish~~ed to implement~~ the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions~~(1)~~. This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995, except that the next Type A test performed after the May 29, 1993 Type A test shall be performed no later than May 28, 2008.

The peak calculated containment internal pressure for the design basis loss of coolant accident, P_a, is 43.3 psig.

The maximum allowable containment leakage rate, L_a, at P_a, shall be 0.10% of containment air weight per day.

Leakage Rate acceptance criteria are:

5.5.12.b

a. ... is $\leq$ 1.0 L_a ... 0 L_a for the ... leakage rate (MNPLR) basis. During the first unit startup following testing in accordance with this program, the leakage rate acceptance criteria are < 0.60 L_a on a maximum pathway leakage rate (MXPLR)[2] basis for Type B and Type C tests and < 0.75 L_a for Type A tests.

Changes to this Unit 1 material are addressed in the Markup and DOCs associated with the corresponding Unit 2 text.

~~(1)~~ Exemptions to Appendix J of 10 CFR 50 dated November 19, 1984, December 5, 1984, and July 26, 1995.

(2) For p... ...ed valve(s), blind... ..., the MXPLR of t... ...he measured leakage through the isolation device(s).

Changes to this Unit 1 material are addressed in the Markup and DOCs associated with the corresponding Unit 2 text.

5.5.12.b CONTAINMENT LEAKAGE RATE TESTING PROGRAM (Continued)

The peak calculated containment internal pressure for the design basis loss of coolant accident, P_a, is 44.9 psig.

5.5.12.c The maximum allowable containment leakage rate, L_a, at P_a, shall be 0.10% of containment air weight per day.

5.5.12.d Leakage Rate acceptance criteria are: A25 prior to MODE 4 entry

a. Containment leakage rate acceptance criterion is 1.0 L_a ~~≤ 1.0 L_a for the overall Type A leakage test and ≤ 0.60 L_a for the Type B and Type C tests on a minimum pathway leakage rate (MNPLR) basis~~. During the first unit startup following testing in accordance with this program, the leakage rate acceptance criteria are < 0.60 L_a ~~on a maximum pathway leakage rate (MXPLR)~~[(2)] ~~basis~~ for Type B and Type C tests and ≤ 0.75 L_a ~~< 0.75 L_a~~ for Type A tests. L2

5.5.12.f Nothing in these Technical Specifications shall be construed to modify the testing Frequencies required by 10 CFR 50, Appendix J.

A11 b. A6 Air lock testing acceptance criteria and required action are as stated in Specification 3.6.1.3 titled "Containment Air Locks."

~~The provisions of Specification 4.0.2 do not apply to the test frequencies specified in the Containment Leakage Rate Testing Program.~~

5.5.12.e The provisions of SR 3.0.3 ~~Specification 4.0.3~~ are applicable to the Containment Leakage Rate Testing Program.

5.5.10 ~~6.18~~ TECHNICAL SPECIFICATIONS (TS) BASES CONTROL PROGRAM

This program provides a means for processing changes to the Bases of these Technical Specifications.

a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.

b. Licensees may make changes to Bases without prior NRC approval provided the changes do not require either of the following:

1. a change in the TS incorporated in the license; or

~~(2) For penetrations which are isolated by use of a closed valve(s), blind flange(s), or de-activated automatic valve(s), the MXPLR of the isolated penetration is assumed to be the measured leakage through the isolation device(s).~~ L2

TECHNICAL SPECIFICATIONS (TS) BASES CONTROL PROGRAM (Continued)

2. a change to the updated FSAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.

c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the FSAR.

5.5.10.b.1 and 5.5.10.b.2

d. Proposed changes that meet the criteria of Specification ~~6.18.b.1 & 2~~ above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e).

Add ITS 5.5.3, Component Cyclic or Transient Limit — Insert 1

Add ITS 5.5.11, Safety Function Determination Program — Insert 2

Add ITS 5.5.13, Battery Monitoring and Maintenance Program — Insert 3

M3

Add ITS 5.5.9, Diesel Fuel Oil Testing Program — Insert 4 — A23

Add ITS 5.6.5, Post Accident Monitoring Report — Insert 5 — A24

5.5.1 OFFSITE DOSE CALCULATION MANUAL (ODCM)

1.30 The OFFSITE DOSE CALCULATION MANUAL (ODCM) shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring Alarm/Trip Setpoints, and in the conduct of the radiological Environmental ~~Radiological~~ Monitoring Program. The ODCM shall also contain ~~(1)~~ the Radioactive Effluent Controls and Radiological Environmental Monitoring activities ~~Programs required by Section 6.8.6~~ and ~~(2)~~ descriptions of the information that should be included in the Annual Radiological Environmental Operating and ~~Annual~~ Radioactive Effluent Release Reports required by Specifications 5.6.1 and Specification 5.6.2 ~~in the Administrative Control section~~.

radiological

and

activities

5.6.1 and Specification 5.6.2

GASEOUS RADWASTE TREATMENT SYSTEM

1.31 A GASEOUS RADWASTE TREATMENT SYSTEM is any system designed and installed to reduce radioactive gaseous effluents by collecting Primary Coolant System offgases from the primary system and providing for delay or holdup for the purpose of reducing the total radioactivity prior to release to the environment.

VENTILATION EXHAUST TREATMENT SYSTEM

1.32 V[...] esigned and insta[...] aterial in parti[...] r vent exhaust g[...] for the purpose o[...] exhaust stream prior to the release to the environment (such a system is not considered to have any effect on noble gas effluents). Engineered Safety Feature (ESF) atmospheric cleanup systems are not considered to be VENTILATION EXHAUST TREATMENT SYSTEM components.

NOTE: These Definitions are contained in the Definition Section (1.0) of the Tech Specs consistent with the location of these requirements in the ISTS. Changes to this information is discussed and documented in Section 1.0 of the Tech Specs.

PURGE-PURGING

1.33 PURGE or PURGING is the controlled process of discharging air or gas from a confinement to maintain temperature, pressure, humidity, concentration or other operating conditions, in such a manner that replacement air or gas is required to purify the confinement.

VENTING

1.34 VENTING is the controlled process of discharging air or gas from a confinement to maintain temperature, pressure, humidity, concentration or other operating conditions, in such a manner that replacement air or gas is not provided or required during VENTING. Vent, used in system names, does not imply a VENTING process.

ITS 5.5

~~APPLICABILITY~~

CTS Page for ITS 5.5.4

A1

~~SURVEILLANCE REQUIREMENTS~~

~~4.0.3 If it is discovered that a Surveillance was not performed within its allowed surveillance interval, defined by Specification 4.0.2, then compliance with the requirement to declare the Limiting Condition for Operation not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified surveillance interval, whichever is greater. This delay period is permitted to allow performance of the Surveillance. A risk evaluation shall be performed for any Surveillance delayed greater than 24 hours and the risk impact shall be managed.~~

~~If the Surveillance is not performed within the delay period, the Limiting Condition for Operation must immediately be declared not met, and the applicable ACTION(s) must be entered.~~

~~When the Surveillance is performed within the delay period and the~~

NOTE: These requirements are contained in the Applicability Section (3.0) of the Tech Specs consistent with the location of these requirements in the ISTS. Changes to this information is discussed and documented in Section 3.0 of the Tech Specs.

~~4.0.4 Entry into an OPERATIONAL MODE or other specified condition in the Applicability of a Limiting Condition for Operation shall only be made when the Limiting Condition for Operation Surveillances have been met within their allowed surveillance interval, except as provided by Specification 4.0.3. When a Limiting Condition for Operation is not met due to Surveillances not having been met, entry into an OPERATIONAL MODE or other specified condition in the Applicability shall only be made in accordance with Specification 3.0.4. This provision shall not prevent entry into OPERATIONAL MODES, or other specified conditions in the Applicability, that required to comply with ACTION requirements or that are part of it.~~

LA9

ISI

This program provides controls

5.5.4 ~~4.0.5 Surveillance Requirements~~ for inservice inspection and testing of ASME Code Class 1, 2 and 3 ~~components shall be applicable as follows:~~

components. The program shall include the following:

~~a.1 Inservice inspection of ASME Code Class 1, 2 and 3 components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50, Section 50.55a(g).~~

A12

~~a.2 Inservice testing of ASME Code Class 1, 2 and 3 pumps and valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50, Section 50.55a(f).~~

ITS 5.5

~~APPLICABILITY~~

CTS Page for ITS 5.5.4

~~SURVEILLANCE REQUIREMENTS~~

a

Testing frequencies

~~b.~~ ~~Surveillance intervals~~ specified in Section XI of the ~~ASME Boiler and Pressure Vessel Code and applicable Addenda for the inservice~~ inspection and ~~testing activities required by the~~ ASME Boiler and Pressure Vessel Code and applicable Addenda ~~shall be applicable~~ as follows ~~in these Technical Specifications~~:

ISI

LA9

ASME Boiler and Pressure Vessel Code and applicable Addenda terminology for inservice inspection and testing activities	Required frequencies for performing inservice inspection and 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

A13

b

SR 3.0.2

~~c.~~ The provisions of ~~Specification 4.0.2~~ are applicable to the above required frequencies for performing inservice inspection ~~and~~ testing activities.

and other normal and accelerated Frequencies specified in the Inservice Testing Program

L4

A15

~~d. Performance of the above inservice inspection and testing activities shall be in addition to other specified Surveillance Requirements.~~

d

~~e.~~ Nothing in the ASME Boiler and Pressure Vessel Code shall be construed to supersede the requirements of any Technical Specification.

A14

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

5.5.5.1 UNIT 1 SG TUBE SURVEILLANCE PROGRAM

~~REACTOR COOLANT SYSTEM~~

DRAFT PAGE FROM UNIT 1 LAR # 302

3/4.4.5 STEAM GENERATORS

A1

LIMITING CONDITION FOR OPERATION

3.4.5 Each steam generator shall be OPERABLE.

NOTE: These requirements are contained in the Reactor Coolant System section (3.4.13) of the Tech Specs consistent with the location of these requirements in the ISTS. Changes to this information are discussed and documented in Section 3.4 of the Tech Specs.

generator(s) to OPERABLE status

5.5.5 SG Tube Surveillance Program. This program provides requirements for steam generator tube sample selection and inspection. Each steam generator shall be inspected in accordance with Table 5.5.5.1-1.

SURVEILLANCE R... EME...

A16

5.5.5.1-2

4.4.5.1 Steam Generator Sample Selection and Inspection - Each ...erator shall be determined ~~OPERABLE during~~ shutdown by ... and inspecting at least ... r of steam ~~generators~~ spe... Table 4.4-1.

5.5.5.1 Unit 1

Surveillance Program

5.5.5.1.3

5.5.5.1.4

~~4.4.5.2~~ Steam Generator Tube ~~Sample Selection and Inspection~~ - The steam generator tube minimum sample size, inspection result classification, and the corresponding action required shall be as specified in Table ~~4.4-2~~. The inservice inspection of steam generator tubes shall be performed at the frequencies specified in Specification ~~4.4.5.3~~ and the inspected tubes shall be verified acceptable per the acceptance criteria of Specification ~~4.4.5.4~~. Steam generator tubes shall be examined in accordance with Article 8 of Section V ("Eddy current Examination of Tubular Products") and Appendix IV to Section XI ("Eddy Current Examination of Nonferromagnetic Steam Generator Heat Exchanger Tubing") of the applicable year and addenda of the ASME Boiler and Pressure Vessel Code required by 10CFR50, Section 50.55a(g). The tubes selected for each inservice inspection shall include at least 3 percent of the total number of tubes in all steam generators; the tubes selected for these inspections shall be selected on a random basis except:

5.5.5.1.1

5.5.5.1.2

a. Where experience in similar plants with similar water chemistry indicates critical areas to be inspected, then at least 50 percent of the tubes inspected shall be from these critical areas.

b. The first sample of tubes selected for each inservice inspection (subsequent to the preservice inspection) of each steam generator shall include:

1. All nonplugged tubes that previously had detectable wall penetrations greater than 20 percent, and

2. Tubes in those areas where experience has indicated potential problems, and

SURVEILLANCE REQ 5.5.5.1.4.a.8 Continued)

A16

3. A tube inspection (pursuant to Specification ~~4.4.5.4.a.8)~~ shall be performed on each selected tube. If any selected tube does not permit the passage of the eddy current probe for a tube inspection, this shall be recorded and an adjacent tube shall be selected and subjected to a tube inspection.

5.5.5.1-2

c. The tubes selected as the second and third samples (if required by Table ~~4.4-2~~) during each inservice inspection may be subjected to a partial tube inspection provided:

1. The tubes selected for these samples include the tubes from those areas of the tube sheet array where tubes with imperfections were previously found, and

2. The inspections include those portions of the tubes where imperfections were previously found.

The results of each sample inspection shall be classified into one of the following three categories:

Category	Inspection Results
C-1	Less than 5 percent of the total tubes inspected are degraded tubes and none of the inspected tubes are defective.
C-2	One or more tubes, but not more than 1 percent of the total tubes inspected are defective, or between 5 percent and 10 percent of the total tubes inspected are degraded tubes.
C-3	More than 10 percent of the total tubes inspected are degraded tubes or more than 1 percent of the inspected tubes are defective.

Note: In all inspections, previously degraded tubes must exhibit significant (greater than 10 percent) further wall penetrations to be included in the above percentage calculations.

A16

5.5.5.1.3

~~SURVEILLANCE REQUIREMENTS~~ (Continued)

Inspection

~~4.4.5.3~~ Inspection Frequencies - The above required inservice inspections of steam generator tubes shall be performed at the following frequencies:

a. The first inservice inspection shall be performed after 6 Effective Full Power Months (EFPM) but within 24 EFPM of initial criticality or following steam generator replacement. Subsequent inservice inspections shall be performed at intervals of not less than 12 nor more than 24 calendar months after the previous inspection. If two consecutive inspections, not including the preservice inspection, result in all inspection results falling into the C-1 category or if two consecutive inspections demonstrate that previously observed degradation has not continued and no additional degradation has occurred, the inspection interval may be extended to a maximum of once per 40 months.

Note: Inservice inspection is not required during the steam generator replacement outage.

5.5.5.1-2

b. If the results of the inservice inspection of a steam generator conducted in accordance with Table ~~4.4-2~~ fall into Category C-3, the inspection frequency shall be increased to at least once per 20 months. The increase in inspection frequency shall apply until the subsequent inspections satisfy the criteria of specification ~~4.4.5.3.a~~; the interval may then be extended to a maximum of once per 40 months.

5.5.5.1.3.a

5.5.5.1-2

c. Additional, unscheduled inservice inspections shall be performed on each steam generator in accordance with the first sample inspection specified in Table ~~4.4-2~~ during the shutdown subsequent to any of the following conditions:

LCO 3.4.13

1. Primary-to-secondary tube leaks (not including leaks originating from tube-to-tube sheet welds) in excess of the limits of ~~Specification 3.4.6.2~~,

2. A seismic occurrence greater than the Operating Basis Earthquake,

3. A loss-of-coolant accident requiring actuation of the engineered safeguards, or

4. A main steamline or feedwater line break.

5.5.5.1.4 ANCE REQUIREMENTS (Continued)

~~4.4.5.4~~ Acceptance Criteria A16

a. As used in this Specification:

1. Imperfection means an exception to the dimensions, finish or contour of a tube from that required by fabrication drawings or specifications. Eddy-current testing indications below 20 percent of the nominal tube wall thickness, if detectable, may be considered as imperfections.

2. Degradation means a service-induced cracking, wastage, wear or general corrosion occurring on either inside or outside of a tube.

3. Degraded Tube means a tube containing imperfections greater than or equal to 20 percent of the nominal wall thickness caused by degradation.

4. Percent Degradation means the percentage of the tube wall thickness affected or removed by degradation.

5. Defect means an imperfection of such severity that it exceeds the plugging limit. A tube containing a defect is defective. Any tube which does not permit the passage of the eddy-current inspection probe shall be deemed a defective tube.

6. Plugging Limit means the imperfection depth at or beyond which the tube shall be removed from service by plugging because it may become unserviceable prior to the next inspection. The plugging limit is equal to 40 percent of the nominal tube wall thickness.

7. Unserviceable describes the condition of a tube if it leaks or contains a defect large enough to affect its structural integrity in the event of an Operating Basis Earthquake, a loss-of-coolant accident, or a steamline or feedwater line break as specified in 5.5.5.1.3.c ~~4.4.5.3.c~~, above.

8. Tube Inspection means an inspection of the steam generator tube from the point of entry (hot-leg side) completely around the U-bend to the top support of the cold-leg.

b. The steam generator shall be determined OPERABLE after completing the corresponding actions (plug all tubes exceeding the plugging limit) required by Table ~~4.4-2~~ 5.5.5.1-2

SURVEILLANCE REQUIREMENTS (Continued)

~~4.4.5.5 Reports~~

a. Within 15 days following the completion of each inservice inspection of steam generator tubes, the number of tubes plugged in each steam generator shall be submitted in a Special Report in accordance with 10 CFR 50.4.

b. The complete results of the steam generator tube inservice inspection shall be submitted in a Special Report in accordance with 10 CFR 50.4 within 12 months following the completion of the inspection. This Special Report shall include:

1. Number and extent of tubes inspected.

2. Location and percent of wall-thickness penetration for each indication of an imperfection.

3. Identification of tubes plugged.

c. Results of steam generator tube inspections which fall into Category C-3 shall be reported to the Commission ~~pursuant to Specification 6.6~~ prior to resumption of plant operation. The written report shall provide a description of investigations conducted to determine the cause of the tube degradation and corrective measures taken to prevent recurrence.

A2

5.6.6.1 Unit 1 Steam Generator Tube Inspection Report

Moved to Report Section of 5.0

A16

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the SG Tube Surveillance Program Inspection Frequencies.

UNIT 1 TABLE ~~4.4-1~~ 5.5.5.1-1 (Page 1 of 1)

A16

MINIMUM NUMBER OF STEAM GENERATORS TO BE

INSPECTED DURING INSERVICE INSPECTION

Preservice Inspection	No	Yes
No. of Steam Generators per Unit	Three	Three
First Inservice Inspection	All	Two
Second & Subsequent Inservice Inspections	One (1)	One (2)

Table Notation:

(1) The inservice inspection may be limited to one steam generator on a rotating schedule encompassing 9 percent of the tubes if the results of the first or previous inspections indicate that all steam generators are performing in a like manner. Note that under some circumstances, the operating conditions in one or more steam generators may be found to be more severe than those in other steam generators. Under such circumstances the sample sequence shall be modified to inspect the most severe conditions.

(2) The other steam generator not inspected during the first inservice inspection shall be inspected. The third and subsequent inspections should follow the instructions described in (1) above.

5.5.5.1 UNIT 1 SG TUBE SURVEILLANCE PROGRAM

UNIT 1

5.5.5.1-2

DRAFT PAGE FROM UNIT 1 LAR # 302

(Page 1 of 1)

TABLE ~~4.4-2~~

A16

STEAM GENERATOR TUBE INSPECTION

1ST SAMPLE INSPECTION			2ND SAMPLE INSPECTION		3RD SAMPLE INSPECTION	
Sample Size	Result	Action Required	Result	Action Required	Result	Action Required
A minimum of S tubes per S.G.	C-1	None	N/A	N/A	N/A	N/A
	C-2	Plug defective tubes and inspect additional 2S tubes in this S.G.	C-1	None	N/A	N/A
			C-2	Plug defective tubes and inspect additional 4S tubes in this S.G.	C-1	None
					C-2	Plug defective tubes
					C-3	Perform action for C-3 result of first sample
			C-3	Perform action for C-3 result of first sample	N/A	N/A
	C-3	Inspect all tubes in this S.G., plug defective tubes and inspect 2S tubes in each other S.G. Notification to NRC pursuant to Specification ~~6.6~~ 5.6.6.1	All other S.G.s are C-1	None	N/A	N/A
			Some S.G.s are C-2 but no additional S.G.s are C-3	Perform action for C-2 result of second sample	N/A	N/A
			Additional S.G. is C-3	Inspect all tubes in each S.G. and plug defective tubes. Notification to NRC pursuant to Specification ~~6.6.~~ 5.6.6.1	N/A	N/A

A2

$S = \frac{9}{n}\%$ Where n is the number of steam generators inspected during an inspection.

5.5.5.2 Unit 2 SG Tube Surveillance Program

~~3/4.4.5 STEAM GENERATORS~~

A1

~~LIMITING CONDITION FOR OPERATION~~

~~3.4.5 Each steam generator shall be OPERABLE.~~

NOTE: These requirements are contained in the Reactor Coolant System section (3.4.13) of the Tech Specs consistent with the location of these requirements in the ISTS. Changes to this information are discussed and documented in Section 3.4 of the Tech Specs.

~~With one or more steam generators inoperable, restore the inoperable generator(s) to OPERABLE status prior to increasing T_{avg} above 200°F.~~

~~SURVEILLANCE REQUIREMENTS~~

5.5.5 SG Tube Surveillance Program. This program provides requirements for steam generator tube sample selection and inspection. Each steam generator shall be inspected in accordance with Table 5.5.5.2-1.

~~4.4.5.1 Steam Generator Sample Selection and Inspection - Each steam generator shall be determined OPERABLE during shutdown by selecting and inspecting at least the minimum number of steam generators specified in Table 4.4-1.~~

5.5.5.2.3 5.5.5.2 Unit 2 5.5.5.2-2 Surveillance Program 5.5.5.2.4

~~4.4.5.2~~ Steam Generator Tube ~~Sample Selection and Inspection~~ - The steam generator tube minimum sample size, inspection result classification, and the corresponding action required shall be as specified in Table ~~4.4-2~~. The inservice inspection of steam generator tubes shall be performed at the frequencies specified in Specification ~~4.4.5.3~~ and the inspected tubes shall be verified acceptable per the acceptance criteria of Specification ~~4.4.5.4~~. Steam generator tubes shall be examined in accordance with Article 8 of Section V ("Eddy Current Examination of Tubular Products") and Appendix IV to Section XI ("Eddy Current Examination of Nonferromagnetic Steam Generator Heat Exchanger Tubing") of the applicable year and addenda of the ASME Boiler and Pressure Vessel Code required by 10CFR50, Section 50.55a(g). When applying the exceptions of ~~4.4.5.2.a~~ through ~~4.4.5.2.e~~, previous defects or imperfections in the area repaired by sleeving are not considered an area requiring reinspection. The tubes selected for each inservice inspection shall include at least 3 percent of the total number of tubes in all steam generators; the tubes selected for these inspections shall be selected on a random basis except:

5.5.5.2.1 5.5.5.2.2 5.5.5.2.2.a 5.5.5.2.2c

a. Where experience in similar plants with similar water chemistry indicates critical areas to be inspected, then at least 50 percent of the tubes inspected shall be from these critical areas.

b. The first sample of tubes selected for each inservice inspection (subsequent to the preservice inspection) of each steam generator shall include:

A16

5.5.5.2 Unit 2 SG Tube Surveillance Program

A1

1. All nonplugged tubes that previously had detectable wall penetrations greater than 20 percent, and

2. Tubes in those areas where experience has indicated potential problems, and

3. At least 3 percent of the total number of sleeved tubes in all three steam generators. A sample size less than 3 percent is acceptable provided all the sleeved tubes in the steam generator(s) examined during the refueling outage are inspected. These inspections will include both the tube and the sleeve, and

4. A tube inspection pursuant to Specification ~~4.4.5~~.4.a.8. If any selected tube does not permit the passage of the eddy current probe for a tube or sleeve inspection, this shall be recorded and an adjacent tube shall be selected and subjected to a tube inspection.

5.5.5.2

5.5.5.2-2

5. Indications left in service as a result of application of the tube support plate voltage-based repair criteria (~~4.4.5~~.4.a.10) shall be inspected by bobbin coil probe during all future refueling outages.

c. The tubes selected as the second and third samples (if required by Table ~~4.4-2~~) during each inservice inspection may be subjected to a partial tube inspection provided:

1. The tubes selected for these samples include the tubes from those areas of the tube sheet array where tubes with imperfections were previously found, and

2. The inspections include those portions of the tubes where imperfections were previously found.

d. Implementation of the steam generator tube-to-tube support plate repair criteria requires a 100-percent bobbin coil inspection for hot-leg and cold-leg tube support plate intersections down to the lowest cold-leg tube support plate with known outside diameter stress corrosion cracking (ODSCC) indications. The determination of the lowest cold-leg tube support plate intersections having ODSCC indications shall be based on the performance of at least a 20-percent random sampling of tubes inspected over their full length.

A16

5.5.5.2 Unit 2 SG Tube Surveillance Program

A1

SURVEILLANCE REQUIREMENTS (Continued)

The results of each sample inspection shall be classified into one of the following three categories:

Category	Inspection Results
C-1	Less than 5 percent of the total tubes inspected are degraded tubes and none of the inspected tubes are defective.
C-2	One or more tubes, but not more than 1 percent of the total tubes inspected are defective, or between 5 percent and 10 percent of the total tubes inspected are degraded tubes.
C-3	More than 10 percent of the total tubes inspected are degraded tubes or more than 1 percent of the inspected tubes are defective.

Note: In all inspections, previously degraded tubes or sleeves must exhibit significant (greater than 10 percent) further wall penetrations to be included in the above percentage calculations.

~~4.4.5.3 Inspection Frequencies~~ 5.5.5.2.3 Inspection The above required inservice inspections of steam generator tubes shall be performed at the following frequencies:

a. The first inservice inspection shall be performed after 6 Effective Full Power Months but within 24 calendar months of initial criticality. Subsequent inservice inspections shall be performed at intervals of not less than 12 nor more than 24 calendar months after the previous inspection. If two consecutive inspections following service under All Volatile Treatment (AVT) conditions, not including the preservice inspection, result in all inspection results falling into the C-1 category or if two consecutive inspections demonstrate that previously observed degradation has not continued and no additional degradation has occurred, the inspection interval may be extended to a maximum of once per 40 months.

A16

A1 5.5.5.2-2

SURVEILLANCE REQUIREMENTS (Continued)

b. If the inservice inspection of a steam generator conducted in accordance with Table ~~4.4-2~~ requires a third sample inspection whose results fall in Category C-3, the inspection frequency shall be increased to at least once per 20 months. The increase in inspection frequency shall apply until a subsequent inspection demonstrates that a third sample inspection is not required.

c. Additional, unscheduled inservice inspections shall be performed on each steam generator in accordance with the first sample inspection specified in Table ~~4.4-2~~ during the shutdown subsequent to any of the following conditions:

1. Primary-to-secondary tube leaks (not including leaks originating from tube-to-tube sheet welds) in excess of the limits of ~~Specification 3.4.6.2~~, LCO 3.4.13

2. A seismic occurrence greater than the Operating Basis Earthquake,

3. A loss-of-coolant accident requiring actuation of the engineered safeguards, or

4. A main steamline or feedwater line break.

5.5.5.2.4. ~~4.4.5.4~~ Acceptance Criteria

a. As used in this Specification:

1. Imperfection means an exception to the dimensions, finish or contour of a tube or sleeve from that required by fabrication drawings or specifications. Eddy-current testing indications below 20 percent of the nominal tube wall thickness, if detectable, may be considered as imperfections.

2. Degradation means a service-induced cracking, wastage, wear or general corrosion occurring on either inside or outside of a tube or sleeve.

3. Degraded Tube means a tube or sleeve containing imperfections greater than or equal to 20 percent of the nominal wall thickness caused by degradation.

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5.5.5.2 Unit 2 SG Tube Surveillance Program

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SURVEILLANCE REQUIREMENTS (Continued)

4. Percent Degradation means the percentage of the tube or sleeve wall thickness affected or removed by degradation.

5. Defect means an imperfection of such severity that it exceeds the plugging or repair limit. A tube containing a defect is defective. Any tube which does not permit the passage of the eddy-current inspection probe shall be deemed a defective tube.

6. Plugging or Repair Limit means the imperfection depth at or beyond which the tube shall be removed from service by plugging or repaired by sleeving in the affected area because it may become unserviceable prior to the next inspection. The plugging or repair limit imperfection depths are specified in percentage of nominal wall thickness as follows:

   a) Original tube wall 40%

   This definition does not apply to tube support plate intersections for which the voltage-based repair criteria are being applied. Refer to ~~4.4.5~~.4.a.10 for the repair limit applicable to these intersections.

   5.5.5.2

   b) ABB Combustion Engineering TIG welded sleeve wall 27%

   c) Westinghouse laser welded sleeve wall 25%

7. Unserviceable describes the condition of a tube if it leaks or contains a defect large enough to affect its structural integrity in the event of an Operating Basis Earthquake, a loss-of-coolant accident, or a steamline or feedwater line break as specified in ~~4.4.5~~.3.c, above.

8. Tube Inspection means an inspection of the steam generator tube from the point of entry (hot-leg side) completely around the U-bend to the top support to the cold-leg.

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5.5.5.2 Unit 2 SG Tube Surveillance Program

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SURVEILLANCE REQUIREMENTS (Continued)

9. Tube Repair refers to sleeving which is used to maintain a tube in-service or return a tube to service. This includes the removal of plugs that were installed as a corrective or preventive measure. The following sleeve designs have been found acceptable:

   a) ABB Combustion Engineering TIG welded sleeves, CEN-629-P, Revision 02 and CEN-629-P Addendum 1.

   b) Westinghouse laser welded sleeves, WCAP-13483, Revision 2.

10. Tube Support Plate Plugging Limit is used for the disposition of an alloy 600 steam generator tube for continued service that is experiencing predominantly axially oriented outside diameter stress corrosion cracking confined within the thickness of the tube support plates. At tube support plate intersections, the plugging (repair) limit is based on maintaining steam generator tube serviceability as described below:

   a) Steam generator tubes, whose degradation is attributed to outside diameter stress corrosion cracking within the bounds of the tube support plate with bobbin voltages less than or equal to 2.0 volts will be allowed to remain in service.

   b) Steam generator tubes, whose degradation is attributed to outside diameter stress corrosion cracking within the bounds of the tube support plate with a bobbin voltage greater than 2.0 volts will be repaired or plugged, except as noted in ~~4.4.5~~.4.a.10.c below.

5.5.5.2

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SURVEILLANCE REQUIREMENTS (Continued)

c) Steam generator tubes, with indications of potential degradation attributed to outside diameter stress corrosion cracking within the bounds of the tube support plate with a bobbin voltage greater than 2.0 volts but less than or equal to the upper voltage repair limit~~(1)~~ may remain in service if a rotating pancake coil or acceptable alternative inspection does not detect degradation. Steam generator tubes, with indications of outside diameter stress corrosion cracking degradation with a bobbin voltage greater than the upper voltage repair limit~~(1)~~ will be plugged or repaired.

d) If an unscheduled mid-cycle inspection is performed, the following mid-cycle repair limits apply instead of the limits identified in ~~4.4.5~~ 4.a.10.a, ~~4.4.5~~ 4.a.10.b, and ~~4.4.5~~.4.a.10.c.

5.5.5.2

The mid-cycle repair limits are determined from the following equations:

$$V_{MURL} = \frac{V_{SL}}{1.0 + NDE + Gr\left(\frac{CL - \Delta t}{CL}\right)}$$

$$V_{MLRL} = V_{MURL} - (V_{URL} - V_{LRL})\left(\frac{CL - \Delta t}{CL}\right)$$

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~~(1)~~ The upper voltage repair limit is calculated according to the methodology in Generic Letter 95-05 as supplemented.

5.5.5.2 Unit 2 SG Tube Surveillance Program A1

SURVEILLANCE REQUIREMENTS (Continued)

where:

V_{URL}	=	upper voltage repair limit
V_{LRL}	=	lower voltage repair limit
V_{MURL}	=	mid-cycle upper voltage repair limit based on time into cycle
V_{MLRL}	=	mid-cycle lower voltage repair limit based on V_{MURL} and time into cycle
Δt	=	length of time since last scheduled inspection during which V_{URL} and V_{LRL} were implemented
CL	=	cycle length (the time between two scheduled steam generator inspections)
V_{SL}	=	structural limit voltage
Gr	=	average growth rate per cycle length
NDE	=	95-percent cumulative probability allowance for nondestructive examination uncertainty (i.e., a value of 20-percent has been approved by NRC)~~(2)~~

Specifications

Implementation of these mid-cycle repair limits should follow the same approach as in ~~TS~~ ~~4.4.5~~.4.a.10.a, ~~4.4.5~~.4.a.10.b, and ~~4.4.5~~.4.a.10.c.

5.5.5.2

A16

~~(2)~~ The NDE is the value provided by the NRC in GL 95-05 as supplemented.

5.5.5.2 Unit 2 SG Tube Surveillance Program
&
5.6.6.2 Unit 2 SG Tube Inspection Report

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SURVEILLANCE REQUIREMENTS (Continued)

b. The steam generator shall be determined OPERABLE after completing the corresponding actions (plug or repair all tubes exceeding the plugging or repair limit) required by Table ~~4.4-2~~. 5.5.5.2-2

5.6.6.2

~~4.4.5.5~~ ~~Reports~~ Unit 2 Steam Generator Tube Inspection Report

a. Within 15 days following the completion of each inservice inspection of steam generator tubes, the number of tubes plugged or repaired in each steam generator shall be submitted in a Special Report in accordance with 10 CFR 50.4.

b. The complete results of the steam generator tube and sleeve inservice inspection shall be submitted in a Special Report in accordance with 10 CFR 50.4 within 12 months following the completion of the inspection. This Special Report shall include:

1. Number and extent of tubes and sleeves inspected.

2. Location and percent of wall-thickness penetration for each indication of an imperfection.

3. Identification of tubes plugged or repaired.

A2

c. Results of steam generator tube inspections which fall into Category C-3 shall be reported to the Commission ~~pursuant to Specification 6.6~~ prior to resumption of plant operation. The written report shall provide a description of investigations conducted to determine the cause of the tube degradation and corrective measures taken to prevent recurrence.

d. For implementation of the voltage-based repair criteria to tube support plate intersections, notify the Commission prior to returning the steam generators to service (MODE 4) should any of the following conditions arise:

1. If estimated leakage based on the projected end-of-cycle (or if not practical, using the actual measured end-of-cycle) voltage distribution exceeds the leak limit (determined from the licensing basis dose calculation for the postulated main steamline break) for the next operating cycle.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the SG Tube Surveillance Program test frequencies.

A16

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SURVEILLANCE REQUIREMENTS (Continued)

2. If circumferential crack-like indications are detected at the tube support plate intersections.

3. If indications are identified that extend beyond the confines of the tube support plate.

4. If indications are identified at the tube support plate elevations that are attributable to primary water stress corrosion cracking.

5. If the calculated conditional burst probability based on the projected end-of-cycle (or if not practical, using the actual measured end-of-cycle) voltage distribution exceeds 1×10^{-2}, notify the Commission and provide an assessment of the safety significance of the occurrence.

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5.5.5.2 Unit 2 SG Tube Surveillance Program

Unit 2

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(page 1 of 1) TABLE ~~4.4-1~~ 5.5.5.2-1

MINIMUM NUMBER OF STEAM GENERATORS TO BE INSPECTED DURING INSERVICE INSPECTION

Preservice Inspection	No	Yes
No. of Steam Generators per Unit	Three	Three
First Inservice Inspection	All	Two
Second & Subsequent Inservice Inspections	One[1]	One[2]

~~Table Notation~~

1. The inservice inspection may be limited to one steam generator on a rotating schedule encompassing 9% of the tubes if the results of the first or previous inspections indicate that all steam generators are performing in a like manner. Note that under some circumstances, the operating conditions in one or more steam generators may be found to be more severe than those in other steam generators. Under such circumstances the sample sequence shall be modified to inspect the most severe conditions.

2. The other steam generator not inspected during the first inservice inspection shall be inspected. The third and subsequent inspections should follow the instruction described in 1 above.

footnote

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5.5.5.2 Unit 2 SG Tube Surveillance Program

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(page 1 of 1) Unit 2 TABLE ~~4.4-2~~ 5.5.5.2-2

STEAM GENERATOR TUBE INSPECTION

1ST SAMPLE INSPECTION			2ND SAMPLE INSPECTION		3RD SAMPLE INSPECTION	
Sample Size	Result	Action Required	Result	Action Required	Result	Action Required
A minimum Of S tubes per S.G.	C-1	None	N/A	N/A	N/A	N/A
	C-2	Plug or repair defective tubes and inspect additional 2S tubes in this S.G.	C-1	None	N/A	N/A
			C-2	Plug or repair defective tubes and inspect additional 4S tubes in this S.G.	C-1	None
					C-2	Plug or repair defective tubes
					C-3	Perform action for C-3 result of first sample
			C-3	Perform action for C-3 result of first sample	N/A	N/A
	C-3	Inspect all tubes in this S.G., plug or repair defective tubes and inspect 2S tubes in each other S.G. Notification to NRC pursuant to Specification ~~6.6~~ 5.6.6.2. A2	All other S.G.s are C-1	None	N/A	N/A
			Some S.G.s C-2 but no additional S.G.s are C-3	Perform action for C-2 result of second sample	N/A	N/A
			Additional S.G. is C-3	Inspect all tubes in each S.G. and plug or repair defective tubes. Notification to NRC pursuant to Specification ~~6.6~~ 5.6.6.2 A2	N/A	N/A

$S = \frac{9}{n} \%$ Where n is the number of steam generators inspected during an inspection.

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ITS 5.5

SURVEILLANCE REQUIREMENTS

~~4.6.1.3 Each containment air lock shall be demonstrated OPERABLE:~~

NOTE: These requirements are contained in the Containment Systems section (3.6.2) of the Tech Specs consistent with the location of these requirements in the ISTS. Changes to this information is discussed and documented in Section 3.6 of the Tech Specs.

~~Testing Program:~~

5.5.12.d.2.b) & 5.5.12.d.2.c)

~~1.~~ Verify no detectable seal leakage when the gap between the door seals is pressurized for at least 2 minutes to:

a) Personnel air lock ≥ Pa (44.9 psig).

b) Emergency air lock ≥ 10.0 psig.

CLRTP

LA10

or, quantify the air lock door seal leakage to ensure that the leakage rate is ≤ 0.0005 L_a when tested at ≥ P_a (44.9 psig) for the personnel air lock and ≤ 0.0005 L_a when tested at ≥ 10.0 psig for the emergency air lock.

5.5.12.d.2.a)

~~2.~~ Conduct the overall air lock leakage tests, at ≥ P_a (44.9 psig), and verify the overall air lock leakage rate is ≤ 0.05 L_a when tested at ≥ P_a (44.9 psig):

~~a) At the frequency specified in the Containment Leakage Rate Testing Program, and~~

~~b) Following maintenance performed on the outer personnel air lock door which may result in a decrease in closure force on any part of the door sealing surface.~~

NOTE: These requirements are contained in the Containment Systems section (3.6.2) of the Tech Specs consistent with the location of these requirements in the ISTS. Changes to this information is discussed and documented in Section 3.6 of the Tech Specs.

~~(7) An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test.~~

~~(8) Results shall be evaluated against the acceptance criteria applicable to LCO 3.6.1.2.~~

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UNIT 1

ITS 5.5

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~~SURVEILLANCE REQUIREMENTS~~

NOTE: These requirements are contained in the Containment Systems section (3.6.2) of the Tech Specs consistent with the location of these requirements in the ISTS. Changes to this information is discussed and documented in Section 3.6 of the Tech Specs.

~~testing at the frequency specified in the Containment Leakage Rate Testing Program:~~

5.5.12.d.2.b) & 5.5.12.d.2.c)

~~1.~~ Verify no detectable seal leakage when the gap between the door seals is pressurized for at least 2 minutes to:

a) Personnel air lock $\geq P_a$ (43.3 psig).

b) Emergency air lock $\geq$ 10.0 psig.

LA10

CLRTP

or, quantify the air lock door seal leakage to ensure that the leakage rate is $\leq 0.0005\ L_a$ when tested at $\geq P_a$ (43.3 psig) for the personnel air lock and $\leq 0.0005\ L_a$ when tested at $\geq$ 10.0 psig for the emergency air lock.

5.5.12.d.2.a)

~~2.~~ Conduct the overall air lock leakage tests at $\geq P_a$ (43.3 psig), and verify the overall air lock leakage rate is $\leq 0.05\ L_a$ when tested at $\geq P_a$ (43.3 psig):

~~a) At the frequency specified in the Containment Leakage Rate Testing Program, and~~

~~b) Following maintenance performed on the outer personnel air lock door which may result in a decrease in closure force on~~

NOTE: These requirements are contained in the Containment Systems section (3.6.2) of the Tech Specs consistent with the location of these requirements in the ISTS. Changes to this information is discussed and documented in Section 3.6 of the Tech Specs.

~~opened at a time.~~

~~(7) An inoperable air lock door does not invalidate the previous successful performance of the overall air lock leakage test.~~

~~(8) Results shall be evaluated against the acceptance criteria applicable to LCO 3.6.1.2.~~

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ITS 5.5

~~LIMITING CONDITION FOR OPERATION (continued)~~

NOTE: These requirements are contained in the Plant Systems section (3.7.10) of the Tech Specs consistent with the location of these requirements in the ISTS. Changes to this information is discussed and documented in Section 3.7 of the TS.

~~b.2 With two required CREVS trains inoperable, immediately suspend movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel~~

A program shall be established to implement the following required testing of Engineered Safety Feature (ESF) filter ventilation systems for the Control Room Emergency Ventilation System (CREVS) and the Supplemental Leak Collection and Release System (SLCRS). Tests described in Specifications 5.5.7.a and 5.5.7.b shall be performed A17

~~SURVEILLANCE REQUIREMENTS~~

~~4.7.7.1 The CREVS shall be demonstrated OPERABLE:~~ A18 A19

, and following significant painting, fire, or chemical release in the vicinity of control room outside air intakes while the system is operating.

~~a. De~~

~~b. At least once per 31 days by verifying that each CREVS train operates for ≥ 15 minutes with the heaters in operation.~~

5.5.7 ~~c.~~ At least once per 18 months or (1) after each complete or partial replacement of a HEPA filter or charcoal adsorber bank, or (2) after any structural maintenance on the HEPA filter or charcoal adsorber housings by: VFTP LA11

5.5.7.b ~~1.~~ Verifying that the charcoal adsorbers remove ≥ 99.95% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating each CREVS train at a flow rate of 800 to 1000 cfm. VFTP LA11

5.5.7.a ~~2.~~ Verifying that the HEPA filter banks remove ≥ 99.95% of the DOP when they are tested in-place in accordance with ANSI N510-1980 while operating each CREVS train at a flow rate of 800 to 1000 cfm.

A18

~~3.~~ Verifying a system flow rate of 800 to 1000 cfm during operation of each CREVS train.

A19 significant

or after any structural maintenance on the charcoal adsorber bank housing

~~d.~~ 5.5.7.c At least once per 18 months or (1) after 720 hours of system operation, or (2) following painting, fire or chemical release in the vicinity of control room outside air intakes while the system is operating, within 31 days after removal, subjecting the carbon contained in at least one test canister or at least two carbon samples removed from one of the charcoal adsorbers to a laboratory carbon sample analysis and verifying a removal efficiency of ≥ 99% for radioactive methyl iodide at an air flow velocity of 0.7 ft/sec with an inlet methyl iodide concentration of 1.75 mg/m^3, ≥ 70% relative humidity, and 30°C; other test conditions including test parameter tolerances shall be in accordance with ASTM D3803-1989. The carbon samples not obtained from test canisters shall be prepared by either:

LA11

VFTP

ITS 5.5

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LA11

SURVEILLANCE REQUIREMENTS (Continued)

VFTP

Sample obtained in accordance with Regulatory Guide 1.52, Revision 2, or using slotted tube samples in accordance with ANSI N509-1980.

a) Emptying one entire bed from a removed adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed, or

b) Emptying a longitudinal sample from an adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed.

~~e.~~ At least once per 18 months by: A26 using a slotted tube sampler

5.5.7.d

1. Verifying that the pressure drop for the combined HEPA filters and charcoal adsorber banks is less than 5.6 inches Water Gauge while operating each CREVS train at a flow rate of 800 to 1000 cfm.

~~2. Verifying that each CREVS train actuates on a simulated or actual actuation signal.~~

~~3. Deleted~~

~~4. Deleted.~~

5.5.7.e

~~5.~~ Verifying that the heaters dissipate at least 3.87 kw and not exceeding 5.50 kw when tested in accordance with ANSI N510-1980.

~~f. By verifying at least once every 36 months, on a STAGGERED TEST BASIS, that each CREVS train can maintain the control room at a positive pressure of ≥ 1/8 inch Water Gauge relative to the outside atmosphere during operation at a flow rate of 800 to 1000 cfm.~~

NOTE: These requirements are contained in the Plant Systems section (3.7.10) of the Tech Specs consistent with the location of these requirements in the ISTS. Changes to this information is discussed and documented in Section 3.7 of the Tech Specs.

A17 The provisions of SR 3.0.2 and SR 3.0.3 are applicable.

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A1

LIMITING CONDITION FOR OPERATION (continued)

ACTION (Continued)

b.2 With two required CREVS trains inoperable, immediately suspend movement of recently irradiated fuel assemblies and movement of fuel assemblies over recently irradiated fuel

NOTE: These requirements are contained in the Plant Systems section (3.7.10) of the TS consistent with the location of these requirements in the ISTS. Changes to this information is discussed and documented in Section 3.7 of the TS.

SURVEILLANCE REQUIREMENTS

A18 A19

4.7.7.1 The CREVS shall be demonstrated OPERABLE:

the vicinity of control room outside air intakes while the system is operating

a. Deleted.

b. At least once per 31 days by verifying that the CREVS train operates for ≥ 15 minutes with the heaters in operation.

5.5.7

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~~c.~~ At least once per 18 months or after every 720 hours of system operation or (1) after each complete or partial replacement of a HEPA filter or charcoal adsorber bank, or (2) after any structural maintenance on the HEPA filter or charcoal adsorber housing or (3) following painting, fire or chemical release in ~~any ventilation zone communicating with the system~~ by:

A19

significant

5.5.7.a and 5.5.7.b

A20

~~1.~~ Verifying that the filtration system satisfies the in-place penetration and by-pass leakage testing acceptance criteria of less than 0.05% when tested in accordance with ANSI N510-1980 while operating the CREVS at a flow rate of 800 - 1000 cfm.

5.5.7.c

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LA11

~~2.~~ Within 31 days after removal, subjecting the carbon contained in at least one test canister or at least two carbon samples removed from one of the charcoal adsorbers to a laboratory carbon sample analysis and verifying a removal efficiency of ≥ 99% for radioactive methyl iodine at an air flow velocity of ~~.68~~ ft/sec with an inlet methyl iodide concentration of 1.75 mg/m^3, ≥ 70% relative humidity, and 30°C; other test conditions including test parameter tolerances shall be in accordance with ASTM D3803-1989. The carbon samples not obtained from test canisters shall be prepared by either:

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a) Emptying one entire bed from a removed adsorber tray, mixing the adsorbent thoroughly, and obtaining a sample volume equivalent to at least two inches in diameter and with a length equal to the thickness of the bed, or

Sample obtained in accordance with Regulatory Guide 1.52, Revision 2, or using slotted tube samples in accordance with ANSI N509-1980.

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SURVEILLANCE REQUIREMENTS (continued)

LA11 VFTP

b) Removing a longitudinal sample from an adsorber tray using a slotted-tube sampler, mixing the adsorbent thoroughly, and obtaining a sample volume equivalent to at least two inches in diameter and with length equal to the thickness of the bed.

5.5.7.a and 5.5.7.b ~~3.~~ Verifying a system flow rate of 800 - 1000 cfm during operation of the CREVS train.

~~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 CREVS train at a flow rate of 800 - 1000 cfm.

~~2. Verifying each CREVS train actuates on a simulated or actual actuation signal.~~

~~3. Deleted.~~

5.5.7.e ~~4.~~ Verifying that the heaters dissipate at least 3.87 kw and not exceeding 5.50 kw when tested in accordance with ANSI N510-1980.

~~e. By verifying at least once every 36 months, on a STAGGERED TEST BASIS, that each CREVS train can maintain the control room at a positive pressure of ≥ 1/8 inch Water Gauge relative to the outside atmosphere during operation at a flow rate of 800-1000 cfm.~~

~~4.7.7.2 The BV-2 CREVS, when utilized to meet BV-1 Technical Specification 3.7.7, shall be demonstrated OPERABLE in accordance with BV-2 Technical Specification 4.7.7.1.~~

A17 The provisions of SR 3.0.2 and SR 3.0.3 are applicable.

NOTE: These requirements are contained in the Plant Systems section (3.7.10) of the Tech Specs consistent with the location of these requirements in the ISTS. Changes to this information is discussed and documented in Section 3.7 of the Tech Specs.

~~3/4.7.8 SUPPLEMENTAL LEAK COLLECTION AND RELEASE SYSTEM (SLCRS)~~

~~LIMITING CONDITION FOR OPERATION~~

~~3.7.8.1 Two SLCRS exhaust air filter trains shall be OPERABLE.~~

~~APPLICABILITY: MODES 1, 2, 3 and 4.~~

NOTE: These requirements are contained in the Plant Systems section (3.7.12) of the Tech Specs consistent with the location of these requirements in the ISTS. Changes to this information is discussed and documented in Section 3.7 of the Tech Specs.

~~HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.~~

~~SURVEILLANCE REQUIREMENTS~~

~~4.7.8.1 Each SLCRS exhaust air filter train shall be demonstrated OPERABLE:~~

~~a. At least once per 31 days by initiating, from the control room, flow through the "standby" HEPA filter and charcoal adsorber train and verifying that the train operates for at least 15 minutes with the heater controls operational.~~

A17

5.5.7 ~~b.~~ At least once per 18 months or (1) after each complete or partial replacement of a HEPA filter or charcoal adsorber bank, or (2) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (3) following significant painting, fire or chemical release in any ventilation zone communicating with the system while the filtration system is operating ~~by~~:

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5.5.7.b ~~1.~~ Verifying that the charcoal adsorbers remove ≥ 99.95% of a halogenated hydrocarbon refrigerant test gas when ~~they are tested in-place in accordance with ANSI N510-1980~~ while operating the ventilation system at a flow rate of 57,000 cfm ± 10%.

LA11

5.5.7.a ~~2.~~ Verifying that the HEPA filter banks remove ≥ 99.95% of the DOP when they are tested in-place in accordance ~~with ANSI~~ N510-1980 while operating the ventilation system at a flow rate of 57,000 cfm ± 10%.

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5.5.7.c ~~3.~~ Within 31 days after removal, subjecting the carbon contained in at least one test canister or at least two carbon samples removed from one of the charcoal adsorbers to a laboratory carbon sample analysis and

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A program shall be established to implement the following required testing of Engineered Safety Feature (ESF) filter ventilation systems for the Control Room Emergency Ventilation System (CREVS) and the Supplemental Leak Collection and Release System (SLCRS). Tests described in Specifications 5.5.7.a and 5.5.7.b shall be performed

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SURVEILLANCE REQUIREMENTS

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as described in Regulatory Guide 1.52, Revision 2

verifying a removal efficiency of ≥ 99% for radioactive methyl iodide at an air flow velocity of 0.7 ft/sec with an inlet methyl iodide concentration of 1.75 mg/m^3, ≥ 70% relative humidity, and 30°C; other test conditions including test parameter tolerances shall be in accordance with ASTM D3803-1989. The carbon samples not obtained from test canisters shall be taken with a slotted tube sampler in accordance with ANSI N509-1980.

5.5.7.b and 5.5.7.c

~~4.~~ Verifying a system flow rate of 57,000 cfm ± 10% during system operation.

~~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 less than 6.8 inches Water Gauge while operating the ventilation system at a flow rate of 57,000 cfm ± 10%.

~~2. Verifying that the exhaust from the contiguous area is~~

NOTE: These requirements are contained in the Plant Systems section (3.7.12) of the Tech Specs consistent with the location of these requirements in the ISTS. Changes to this information is discussed and documented in Section 3.7 of the Tech Specs.

~~5 minutes.~~

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d. Verifying that the air flow distribution to each HEPA filter and charcoal adsorber is within ± 20% of the averaged flow per unit after initial installation and after any maintenance affecting the flow distribution.

5.5.7.c

~~e.~~ At least once per 4 months of ~~system~~ adsorber operation, perform the surveillance requirement of 4.7.8.1.b.3.

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The provisions of SR 3.0.2 and SR 3.0.3 are applicable.

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5.5.7.e Demonstrate that the heaters for the SLCRS dissipate ≥ 160.9 kW and ≤ 264.5 kW when tested in accordance with ANSI N510-1980.

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ITS 5.5

3/4.7.8 SUPPLEMENTAL LEAK COLLECTION AND RELEASE SYSTEM (SLCRS)

LIMITING CONDITION FOR OPERATION

3.7.8.1 Two SLCRS exhaust air filter trains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With one SLCRS exhaust air filter train inoperable, restore the inoperable train to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the

NOTE: These requirements are contained in the Plant Systems section (3.7.12) of the Tech Specs consistent with the location of these requirements in the ISTS. Changes to this information is discussed and documented in Section 3.7 of the Tech Specs.

4.7.8.1 Each SLCRS exhaust air filter train shall be demonstrated OPERABLE:

a. At least once per 31 days on a STAGGERED TEST BASIS by:

1. Initiating, from the control room, flow through the HEPA filter and charcoal adsorber train and verifying that the train operates for at least 15 minutes.

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~~b.~~ At least once per 18 months or after every 720 hours of system operation or (1) after each complete or partial replacement of a HEPA filter or charcoal adsorber bank, or (2) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (3) following significant painting, fire or chemical release in any ventilation zone communicating with the system while the filtration system is operating by:

A19

5.5.7.b

~~1.~~ Verifying that the charcoal adsorbers remove ≥ 99% of a halogenated hydrocarbon refrigerant test gas when they are testing in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 36,000 cfm ± 10%.

VFTP

LA11

SURVEILLANCE REQUIREMENTS (Continued)

5.5.7.a ~~2.~~ Verifying that the HEPA filter banks remove ≥ 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the ventilation system at a flow rate of 36,000 cfm ± 10%.

VFTP

LA11

5.5.7.c ~~3.~~ Subjecting the carbon contained in at least one test canister or at least two carbon samples removed from one of the charcoal adsorbers to a laboratory carbon sample analysis and verifying a removal efficiency of ≥ 90% for radioactive methyl iodide at an air flow velocity of 0.9 ft/sec with an inlet methyl iodide concentration of 1.75 mg/m^3, ≥ 95% relative humidity, and 30°C; other test conditions including test parameter tolerances shall be in accordance with ASTM D3803-1989. The carbon samples not obtained from test canisters shall be prepared by either:

Sample obtained in accordance with Regulatory Guide 1.52, Revision 2, or using slotted tube samples in accordance with ANSI N509-1980.

LA11

VFTP

a) Emptying one entire bed from a removed adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed, or

b) Emptying a longitudinal sample from an adsorber tray, mixing the adsorbent thoroughly, and obtaining samples at least two inches in diameter and with a length equal to the thickness of the bed.

5.5.7.a and 5.5.7.b ~~4.~~ Verifying a system flow rate of 36,000 cfm ± 10% during system operation.

~~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 inches Water Gauge while operating the ventilation system at a flow rate of 36,000 cfm ± 10%.

~~2. Verifying that the SLCRS flow is diverted through the filter train on a Containment Isolation - Phase "A" signal.~~

NOTE: These requirements are contained in the Plant Systems section (3.7.12) of the Tech Specs consistent with the location of these requirements in the ISTS. Changes to this information is discussed and documented in Section 3.7 of the Tech Specs.

A17 The provisions of SR 3.0.2 and SR 3.0.3 are applicable.

SURVEILLANCE REQUIREMENTS (Continued)

~~d.~~ Verifying that the air flow distribution to each HEPA filter and charcoal adsorber is within ± 20% of the averaged flow per unit after initial installation and after any maintenance affecting the flow distribution.

LA11

VFTP

CTS Page for ITS 5.5.9 | A1 | ITS 5.5

Acceptability of | for use | by determining that the fuel oil has:

5.5.9.a ~~d.~~ ~~By sampling~~ new fuel oil in accordance with ASTM D4057-81 prior to addition to the storage tanks ~~and:~~

A21

~~1.~~ By verifying in accordance with the test specified in ASTM D975-81 ~~prior to addition to the storage tanks that the sample has:~~

A21 — within limits for ASTM 2D fuel oil,

NOTE: The requirements are contained in the Electrical Systems section (3.8.3) of the Tech Specs consistent with the location of these requirements in the ISTS. Any changes to this information will be discussed and documented in Section 3.8 of the Tech Specs.

5.5.9.a.1 ~~a)~~ An API Gravity ~~of within 0.3 degrees at 60°F or a specific gravity of within 0.0016 at 60/60°F, when compared to the supplier's certificate~~ or an absolute specific gravity at 60/60°F of greater than or equal to 0.83 but less than or equal to 0.89 or an API gravity at 60°F of greater than or equal to 27 degrees but less than or equal to 39 degrees,

and

within limits — A21

5.5.9.a.2 ~~b)~~ ~~A~~ kinematic ~~viscosity~~ at 40°C of greater than or equal to 1.9 centi~~stokes, but less than or equal to 4.1 centistokes,~~ if gravity was not determined by comparison with the supplier's certification,

~~c)~~ A flash point equal to or greater than 125°F,

5.5.9.a.3 ~~d)~~ A water and sediment content of less than or equal to 0.05% when tested in accordance with ASTM D1796-83, and

e) A total particulate contamination level of less than 10 mg/liter when tested in accordance with ASTM D2276-78, Method A.

~~2.~~ ~~By verifying~~ within 31 days ~~of obtaining the sample that the other properties~~ specified in Table 1 of ASTM D975-81 ~~are met~~ when tested in accordance with ASTM D975-81 except that the analysis for sulfur may be performed in accordance with ASTM D1552-79 or ASTM D2622-82.

A21 — or equal to

~~e.~~ At least once ~~every 31 days~~ by obtaining a sample of fuel oil from the storage tanks and day tanks in accordance with ASTM D2276-78, and verifying that total particulate ~~contamination~~ is less than 10 mg/liter when ~~checked in~~ accordance with ASTM D2276-~~78~~, Method A.

concentration of the fuel — A21 | tested

following addition of the new fuel oil to storage tanks, verify that the properties of the new fuel oil, other than those addressed in a., above, are within limits for ASTM 2D fuel oil, and

A21

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Diesel Fuel Oil Testing Program test frequencies.

INSERTS FOR CTS 6.0 MARKUP

INSERT 1

5.5.3 Component Cyclic or Transient Limit

This program provides controls to track UFSAR Table 4.1-10 (Unit 1) and UFSAR Table 3.9N-1 (Unit 2), cyclic and transient occurrences to ensure that components are maintained within the design limits.

INSERT 2

5.5.11 Safety Function Determination Program (SFDP)

This program ensures loss of safety function is detected and appropriate actions taken. Upon entry into LCO 3.0.6, an evaluation shall be made to determine if loss of safety function exists. Additionally, other appropriate actions may be taken as a result of the support system inoperability and corresponding exception to entering supported system Condition and Required Actions. This program implements the requirements of LCO 3.0.6. The SFDP shall contain the following:

a. Provisions for cross train checks to ensure a loss of the capability to perform the safety function assumed in the accident analysis does not go undetected,

b. Provisions for ensuring the plant is maintained in a safe condition if a loss of function condition exists,

c. Provisions to ensure that an inoperable supported system's Completion Time is not inappropriately extended as a result of multiple support system inoperabilities, and

d. Other appropriate limitations and remedial or compensatory actions.

A loss of safety function exists when, assuming no concurrent single failure, and assuming no concurrent loss of offsite power, or no concurrent loss of onsite diesel generator(s), a safety function assumed in the accident analysis cannot be performed. For the purpose of this program, a loss of safety function may exist when a support system is inoperable, and:

a. A required system redundant to the system(s) supported by the inoperable support system is also inoperable, or

b. A required system redundant to the system(s) in turn supported by the inoperable supported system is also inoperable, or

c. A required system redundant to the support system(s) for the supported systems (a) and (b) above is also inoperable.

The SFDP identifies where a loss of safety function exists. If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered. When a loss of safety function is caused by the inoperability of a single Technical Specification support system, the appropriate Conditions and Required Actions to enter are those of the support system.

INSERT 3

5.5.13 Battery Monitoring and Maintenance Program

This Program provides for battery restoration and maintenance, based on {the *recommendations of IEEE Standard 450-1995, "IEEE Recommended Practice for* Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications," or of the battery manufacturer} including the following:

a. Actions to restore battery cells with float voltage < 2.13 V, and

b. Actions to equalize and test battery cells that had been discovered with electrolyte level below the top of the plates.

INSERT 4

5.5.9 Diesel Fuel Oil Testing Program

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 acceptance criteria, all in accordance with applicable ASTM Standards. The purpose of the program is to establish the following:

INSERT 5

5.6.5 Post Accident Monitoring Report

When a report is required by Condition B or D of LCO 3.3.3, "Post Accident Monitoring (PAM) Instrumentation," a report shall be submitted within the following 14 days except as noted in Condition D. 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.

5.0 Administrative Controls

DISCUSSION OF CHANGES

CTS 6.0 ADMINISTRATIVE CONTROLS
ITS 5.0 Administrative Controls
DISCUSSION OF CHANGE (DOC)

Less Restrictive Changes (L)

L.1 Not used.

L.2 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 6.17, "Containment Leakage Rate Testing Program," provides containment leakage rate acceptance criteria. Specifically, the CTS provide details for the minimum pathway leakage rate (MNPLR) basis. ISTS 5.5.16 (ITS 5.5.12) does not contain this level of detail in the Containment Leakage Rate Testing Program. The CTS has been revised to delete this level of detail. This change is being made so that the BVPSs ITS are consistent as possible with NUREG-1431.

The purpose of CTS 6.17 is to provide the programmatic requirements for containment leakage rate testing. This change is acceptable because the details being deleted are provided in specific guidance document related to 10 CFR 50, Appendix J, Option B containment leakage rate testing programs. Specifically, the Containment Leakage Rate Testing Program described in CTS 6.17 (ITS 5.5.12) states that the program "shall be in accordance with the guidelines contained in Regulatory Guide 1.163, 'Performance-Based Containment Leak-Test Program,' dated September 1995." Regulatory Guide 1.163 endorses the Nuclear Energy Institute (NEI) guidance document that specifies the details for the MNPLR basis. Deleting this level of detail from the TS and relying on the industry guidance documents that contain these details does not impact the capability of the components or systems being leak rate tested from performing their intended safety function. This change is designated as less restrictive because less stringent acceptance criteria are being applied in the ITS than were applied in the CTS.

L.3 *(Category 6 – Relaxation Of Surveillance Requirement Acceptance Criteria)* CTS 6.8.6.a. provides the requirements for the Radioactive Effluent Controls Program. CTS 6.8.6.a.5) states, "Determination of cumulative and projected dose contributions from radioactive effluents for the current calendar quarter and current calendar year in accordance with the methodology and parameters in the ODCM at least every 31 days." The corresponding ITS 5.5.2.e states "Determination of cumulative dose contributions from radioactive effluents for the current calendar quarter and current calendar year in accordance with the methodology and parameters in the ODCM at least every 31 days. Determination of projected dose contributions from radioactive effluents in accordance with the methodology in the ODCM at least every 31 days. This changes CTS 6.8.6.a.5) to be consistent with the RETS requirements relocated from the Technical Specification to the Offsite Dose Calculation Manual in accordance with Generic Letter 89-01.

Generic Letter 89-01 provided guidance for relocation of Radiological Effluent Technical Specifications (RETS) from the Technical Specifications to the Offsite Dose Calculation Manual (ODCM), including programmatic controls to be included in the Administrative Controls Chapter of Technical Specifications. Generic Letter 89-01 provided the requirements and wording for the Radiological Effluent Controls Program. These requirements were developed from the RETS. The requirement of CTS 6.8.6.a.5) dealing with projected dose contributions should only be "Determination of projected dose contributions from radioactive effluents in accordance with the methodology in the ODCM at least every 31 days" since that was the requirement in the original RETS relocated to the ODCM. There should not be a requirement to project dose contributions for the current calendar quarter and current calendar year. This change makes the requirements of CTS 6.8.6.a.5) consistent with the RETS requirements relocated from the Technical Specification to the Offsite Dose Calculation Manual in accordance with Generic Letter 89-01. This change is acceptable since it is a clarification needed to maintain provisions that were allowed in the RETS and includes no new requirements. This change is designated as less restrictive because less stringent acceptance criteria are being applied in the ITS than were applied in the CTS.

L.4 *(Category 7 – Relaxation Of Surveillance Frequency)* CTS 4.0.5.c states "The provisions of Specification 4.0.2 are applicable to the above required frequencies for performing inservice inspection and testing activities." The above required Frequencies referenced in CTS 4.0.5.c are listed in CTS 4.0.5.b. CTS 4.0.5.b contains a list of test intervals referenced in the ASME Inservice Test Requirements. However, the list of test intervals in CTS 4.0.5.b is not a comprehensive list. As such, proposed ITS 5.5.4.b (which corresponds to CTS 4.0.5.c) states "The provisions of SR 3.0.2 are applicable to the above required Frequencies and other normal and accelerated Frequencies specified in the Inservice Testing Program for performing inservice testing activities. Changes regarding the CTS references to 4.0.2 and inservice inspection activities are addressed by other DOCs. This DOC addresses the addition of the words "and other normal and accelerated Frequencies specified in the Inservice Testing Program". The proposed BVPS ITS 5.5.4.b would replace CTS 4.0.5.c and be applicable to all the test intervals referenced in the ASME Inservice Testing requirements and not just the more common test intervals listed in CTS 4.0.5.b.

CTS 4.0.5.b provides a list of the common ASME terminology for inservice testing activities (e.g., monthly, quarterly, etc.) and a corresponding required Frequency (e.g., at least once every 31 days, at least once every 92 days, etc.). Consistent with the explanation in Section 3.1.3 of NUREG 1482, "Guidelines for Inservice Testing at Nuclear Power Plants," the intent of this TS list of ASME surveillance intervals with a corresponding required Frequency is to avoid potential confusion regarding the ASME test intervals. For example, an ASME test interval of monthly could be applied such that the required testing is accomplished at the beginning of one month and the end of the next month effectively yielding a test interval of almost two months. As such, CTS 4.0.5.b specifies "required Frequencies" (e.g., at least once every 31 days) for the common ASME terminology for inservice testing activities. It is not the intent of CTS 4.0.5.b to identify all the potential test intervals that may be utilized in inservice testing activities, nor is the list provided in CTS 4.0.5.b intended to limit the provisions of CTS 4.0.5.c to only those frequencies. However, the ASME inservice test requirements utilizes Surveillance Frequencies not specified in CTS 4.0.5.b. For example, the ASME inservice testing activities may utilize accelerated frequencies (typically some fraction of the common test frequencies listed in CTS 4.0.5.b) and performance based frequencies which may not correspond to a common frequency listed in CTS 4.0.5.b. However, literal compliance with CTS 4.0.5.c would preclude the application of the 25% Surveillance Frequency extension provided by CTS 4.0.2 (ITS SR 3.0.2) from any test interval not specifically listed in CTS 4.0.5.b.

The purpose of CTS 4.0.5.c (ITS 5.5.4.b) is to provide the same allowances normally applicable to all other surveillance requirements by the provisions of CTS 4.0.2 (ITS SR 3.0.2). ITS SR 3.0.2 allows a surveillance interval (or in some cases an Action Completion Time) to be extended up to 25% longer than the stated interval. As stated in the ISTS Bases for SR 3.0.2, "This extension facilitates Surveillance scheduling and considers plant operating conditions that may not be suitable for conducting the Surveillance (e.g., transient conditions or other ongoing Surveillance or maintenance activities)". SR 3.0.2 provides this scheduling flexibility to help assure that the required surveillance tests will be performed in a safe and timely manner with proper consideration for existing plant conditions and other ongoing activities. The provisions of SR 3.0.2 are applicable to almost all technical specification surveillance testing (except where regulations, i.e., 10 CFR 50 Appendix J, may require a specific test Frequency). Given that the surveillance interval extensions allowed by SR 3.0.2 are applicable to such safety significant and time sensitive surveillance requirements such as the verification of reactor trip system instrumentation setpoints, there is no reason why the provisions of SR 3.0.2 should not also be applied to all the ASME frequencies that may be specified for pump and valve inservice test activities. In addition, the proposed change is consistent with NUREG 1482, "Guidelines for Inservice Testing at Nuclear Power Plants," which acknowledges the applicability of the 25% Frequency extension allowed by the TS. As such, the proposed change is acceptable because it provides the necessary flexibility for scheduling all inservice test activities to assure the required testing is performed in both a safe and timely manner with proper consideration for existing plant conditions and other ongoing activities. This change is designated as less restrictive because less stringent frequency requirements are applicable in the ITS than were applicable in the CTS.

More Restrictive Changes (M)

M.1 CTS 6.8.1 specifies that written procedures be established, implemented, and maintained covering the activities referenced in CTS 6.8.1.a through 6.8.1.h. ITS 5.4.1.b is added to the list of CTS activities to cover emergency operating procedures (EOPs). This changes the CTS by requiring written procedures be established, implemented, and maintained covering emergency operating procedures.

The CTS do not specifically require the current form of EOPs (although BVPS Units 1 and 2 are committed to have them per NUREG-0737 and Generic Letter 82-33). ITS 5.4.1.b requires EOPs which implement the requirements of NUREG-0737, NUREG-0737-Supplement 1, and Generic Letter 82-33. This change is acceptable because it is consistent with current plant practice. The change is designated as more restrictive because it imposes an additional Technical Specification requirement.

M.2 CTS 6.8.1 specifies that written procedures be established, implemented, and maintained covering the activities referenced in CTS 6.8.1.a through 6.8.1.h. ITS 5.4.1.e is added to the list of CTS activities to cover all programs and manuals specified in ITS 5.5. This changes the CTS by requiring written procedures be established, implemented, and maintained covering all programs and manuals specified in ITS 5.5.

ITS 5.5 contains thirteen programs/manuals that will require (by ITS 5.4.1.e) procedures to be implemented and maintained. This change is acceptable since the programs/manuals support implementation of the requirements of the ITS and the UFSAR. The change is designated as more restrictive because it imposes additional Technical Specification requirements.

M.3 CTS do not include program requirements for component cyclic or transient limits, safety function determination, or battery monitoring and maintenance. ISTS includes programs for these activities. The CTS are revised to conform to the ISTS. This changes the CTS be adding the following programs.

ITS 5.5.3	Component Cyclic or Transient Limit
ITS 5.5.11	Safety Function Determination Program (SFDP)
ITS 5.5.13	Battery Monitoring and Maintenance Program

The Component Cyclic or Transient Limit Program is provided to control the tracking of UFSAR cyclic and transient occurrences. The Safety Function Determination Program is included to support implementation of the support system OPERABILITY characteristics of the Technical Specifications. The Battery Monitoring and Maintenance Program is included to provide for battery restoration and maintenance. The specific wording associated with these three programs may be found in ITS 5.5.3, 5.5.11, and 5.5.13. The changes are acceptable since they support implementation of the requirements of the ITS and the UFSAR. This change is designated as more restrictive because it imposes additional programmatic requirements in Technical Specifications.

M.4 CTS 6.8.1 specifies that written procedures be established, implemented, and maintained covering the activities referenced in CTS 6.8.1.a through 6.8.1.h. ITS 5.4.1.c is added to the list of CTS activities to cover the quality assurance for effluent and environmental monitoring. This changes the CTS by requiring written procedures be established, implemented, and maintained covering the quality assurance for effluent and environmental monitoring.

This change is acceptable since it supports implementation of the programmatic requirements of ITS 5.5. The change is designated as more restrictive because it imposes additional Technical Specification requirements.

M.5 (Unit 2 only) CTS 3/4.7.8.1, "Supplemental Leak Collection and Release System (SLCRS)" requires the heater controls to be operational. This requirement is reflected in ITS 3.7.12. The CTS, however, does not specify heater test parameters that would typically be included in ITS Section 5.0 for the Ventilation Filter Testing Program (VFTP) to support the operational requirements of the SLCRS heaters. The Unit 2 CTS has been revised to require the demonstration that the SLCRS heaters dissipate ≥ 160.9 kW and ≤ 264.5 kW when tested in accordance with ANSI N510-1980 (ITS 5.5.7.e).

This change is acceptable since the added surveillance requirement helps demonstrates the operability of the SLCRS heaters to perform their intended function consistent with the design requirements of the system. The heater test parameters ensure that the ANSI N510-1980 requirement to maintain a relative humidity of ≥ 70% can be met. This additional testing is consistent with similar testing required for the CREVS heaters. This change is designated as more restrictive because it imposes additional programmatic requirements in Technical Specifications.

Removed Detail Changes (LA)

LA.1 *(Type 3 – Removing Procedural Details for Meeting TS Requirements)* CTS 6.2.1.a specifies that the correlation between positions described in these technical specifications and the plant-specific titles are documented in the Unit 1 or Unit 2, as applicable, UFSAR Table 13.1-2. The corresponding ITS 5.2.1.a does not include this detail. The CTS are revised to conform to the ISTS. This changes the CTS by moving the detail of the location of the correlation between Technical Specification positions and the plant specific titles to the Updated Final Safety Analysis Report (UFSAR).

The information related to plant specific titles is more appropriately discussed and controlled in the UFSAR. The removal of this detail for meeting the TS requirements is not necessary to be in the TS in order to provide adequate protection of the public health and safety. The ITS retains the requirement that the plant-specific titles of those personnel fulfilling the responsibilities of the positions delineated in the Technical Specifications shall be documented in the UFSAR. Also, this change is acceptable because these requirements will be adequately controlled in the UFSAR. Changes to the UFSAR are controlled in accordance with 10CFR 50.59. This control ensures that prior NRC review and approval are obtained when required by 10 CFR 50.59. This change is designated as a less restrictive removal of detail change because procedural details for meeting TS requirements are being removed from the TS.

LA.2 *(Type 4 – Administrative Requirements Redundant to Regulations)* CTS 6.8.1.g requires that written procedures for the PROCESS CONTROL PROGRAM (PCP) be established, implemented, and maintained. The ITS does not include these requirements. This changes the CTS by moving the requirements from the Technical Specifications to the Updated Final Safety Analysis Report (UFSAR).

The PCP implements the requirements of 10 CFR 20, 10 CFR 61, and 10 CFR 71. Compliance with these regulations is required by the BVPS Units 1 and 2 Operating Licenses, and procedures would be the method to ensure compliance with the program. The removal of these requirements is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. Regulations provide an adequate level of control for the affected requirements and inclusion of this requirement in the Technical Specifications is not necessary to satisfy the 10 CFR 50.36 criteria. The NRC's Final Policy Statement on Improved Technical Specifications allows licensees to remove Technical Specification requirements that do not meet any of the criteria for mandatory inclusion in the TS. Also, this change is acceptable because these requirements will be adequately controlled in the UFSAR. Changes to the UFSAR are controlled in accordance with 10CFR 50.59. This control ensures that prior NRC review and approval are obtained when required by 10 CFR 50.59. Therefore, relocation of the administrative details identified above is acceptable. This change is designated as a less restrictive removal of detail change because procedural details for meeting TS requirements are being removed from the TS.

LA.3 *(Type 3 – Removing Procedural Details for Meeting TS Requirements)* CTS 6.8.6.b provides requirements for the Radiological Environmental Monitoring Program. The ISTS do not include these requirements. The CTS are revised to conform to the ISTS. This changes the CTS by moving the requirements for the Radiological Environmental Monitoring Program to the Offsite Dose Calculation Manual (ODCM). In addition, the CTS is revised, upon relocation of these requirements, to replace the defined term "SITE BOUNDARY" with a non-defined term "site boundary" since this definition has been deleted from the TS.

This program is a redundant verification of the effectiveness of the effluent monitoring program contained in the ODCM and specified in the administrative controls section of the ITS. The relocated program has no impact or effect on nuclear safety of the plant. ITS 5.5.1 for the ODCM requires the ODCM to contain these activities. The removal of this detail for meeting the TS requirements from the TS is acceptable because this type of information is not necessary to be in the TS in order to provide adequate protection of the public health and safety. Also, this change is acceptable because this type of detail will be adequately controlled in the ODCM by the requirements provided for the ODCM in Chapter 5 of the Technical Specifications. This change is designated as a less restrictive removal of detail change because a procedural detail for meeting TS requirements is being removed from the TS.

LA.4 *(Type 3 – Removing Procedural Details for Meeting TS Requirements)* CTS 6.9.5 provides requirements for the CORE OPERATING LIMITS REPORT (COLR) and includes references to topical reports used to prepare the COLR, including associated revision numbers and dates. ISTS 5.6.3 does not include this detail (i.e., topical report revision numbers and dates). The CTS are revised to conform to the ISTS. This changes the CTS by moving the topical report reference details to the COLR implementing document.

The removal of this detail for meeting the TS requirements from the TS is acceptable because this type of information is not necessary to be in the TS in order to provide adequate protection of the public health and safety. The ITS retains the listing of topical report numbers and titles that are used in preparing the COLR.

Also, this change is acceptable because this type of detail will be adequately controlled in the COLR implementing document by the requirements provided for the COLR in Chapter 5 of the Technical Specifications. This change is designated as a less restrictive removal of detail change because a procedural detail for meeting TS requirements is being removed from the TS.

LA.5 *(Type 3 – Removing Procedural Details for Meeting TS Requirements)* CTS 6.9.6 provides requirements for the PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR) and includes references to topical reports used to prepare the PTLR, including associated revision numbers and the specific purpose of the topical reports. ISTS 5.6.4 does not include this detail (i.e., topical report revision numbers and specific purpose). The CTS are revised to conform to the ISTS. This changes the CTS by moving the topical report reference details to the PTLR implementing document.

The removal of this detail for meeting the TS requirements from the TS is acceptable because this type of information is not necessary to be in the TS in order to provide adequate protection of the public health and safety. The ITS retains the listing of topical report numbers and titles that are used in preparing the PTLR. Also, this change is acceptable because this type of detail will be adequately controlled in the PTLR implementing document by the requirements provided for the PTLR in Chapter 5 of the Technical Specifications. This change is designated as a less restrictive removal of detail change because a procedural detail for meeting TS requirements is being removed from the TS.

LA.6 *(Type 3 – Removing Procedural Details for Meeting TS Requirements)* CTS 6.11 provides requirements for the Radiation Protection Program. The ISTS do not include these requirements. The CTS are revised to conform to the ISTS. This changes the CTS by moving the requirements for the Radiation Protection Program to the Updated Final Safety Analysis Report (UFSAR).

The Radiation Protection Program requires procedures to be prepared for personnel radiation protection consistent with 10 CFR 20. These procedures are for nuclear plant personnel and have no impact on nuclear safety or the health and safety of the public. Requirements to have procedures to implement 10 CFR 20 are contained in 10 CFR 20.1101(b). Periodic review of these procedures is addressed in 10 CFR 20.1101(c). Since the CTS requirements are contained in the regulations and the BVPS Units 1 and 2 Operating Licenses require compliance with 10 CFR 20, there is no need to repeat the requirements in the ITS. As such, the relocated details are not required to be in the ITS to provide adequate protection of the public health and safety. Also, this change is acceptable because these requirements will be adequately controlled in the UFSAR. Changes to the UFSAR are controlled in accordance with 10CFR 50.59. This control ensures that prior NRC review and approval are obtained when required by 10 CFR 50.59. This change is designated as a less restrictive removal of detail change because a procedural detail for meeting TS requirements is being removed from the TS.

LA.7 *(Type 4 – Administrative Requirements Redundant to Regulations)* CTS 6.13 provides a change control process for the PROCESS CONTROL PROGRAM (PCP). The ITS does not include these requirements. This changes the CTS by moving the PCP requirements from the Technical Specifications to the Updated Final Safety Analysis Report (UFSAR). In addition, the CTS is revised, upon relocation of these requirements, to replace the word "OSC" with the word "PORC."

The PCP implements the requirements of 10 CFR 20, 10 CFR 61, and 10 CFR 71. Compliance with these regulations is required by the BVPS Units 1 and 2 Operating Licenses, and procedures and change control processes would be the method to ensure compliance with the program. The removal of these requirements is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. Regulations provide an adequate level of control for the affected requirements and inclusion of this requirement in the Technical Specifications is not necessary to satisfy the 10 CFR 50.36 criteria. The NRC's Final Policy Statement on Improved Technical Specifications allows licensees to remove Technical Specification requirements that do not meet any of the criteria for mandatory inclusion in the TS. Also, this change is acceptable because these requirements will be adequately controlled in the UFSAR. Changes to the UFSAR are controlled in accordance with 10CFR 50.59. This control ensures that prior NRC review and approval are obtained when required by 10 CFR 50.59. Therefore, relocation of the administrative details identified above is acceptable. This change is designated as a less restrictive removal of detail change because procedural details for meeting TS requirements are being removed from the TS.

LA.8 *(Type 3 – Removing Procedural Details for Meeting TS Requirements)* CTS 6.14 provide procedural details for meeting the TS requirements related to changes to the ODCM (specifically record retention and review and acceptance responsibility of the OSC). ITS 5.5.1, Offsite Dose Calculation Manual (ODCM), provides requirements for changes to the ODCM, but does not include the procedural details for record retention and change review and acceptance responsibility of the OSC. This changes the CTS by moving these procedural details to the ODCM. In addition, the CTS is revised, upon relocation of these requirements, to replace the word "OSC" with the word "PORC."

The removal of this detail for meeting the TS requirements from the TS is acceptable because this type of information is not necessary to be in the TS in order to provide adequate protection of the public health and safety. The ITS retains the requirement related to changes to the ODCM. Also, this change is acceptable because this type of detail will be adequately controlled in the ODCM by the requirements provided for the ODCM in Chapter 5 of the Technical Specifications. This change is designated as a less restrictive removal of detail change because a procedural detail for meeting TS requirements is being removed from the TS.

LA.9 *(Type 4 – Administrative Requirements Redundant to Regulations)* CTS 4.0.5 provides requirements for the Inservice Inspection Program. The ITS does not include Inservice Inspection requirements. This changes the CTS by moving these requirements from the Technical Specifications to the Inservice Inspection Program.

The ISI requirements of CTS 4.0.5 are redundant to requirements of the ASME Code Section XI and the Inservice Inspection Program and thus may be removed from the Technical Specifications. The removal of these requirements is acceptable because this type of information is not necessary to be included in the Technical Specifications to provide adequate protection of public health and safety. This type of information was included in the Technical Specifications as an administrative requirement that functioned to highlight the existing regulatory requirement. The Technical Specifications still retain requirements for the affected components to be OPERABLE. Also, this change is acceptable because these requirements will be adequately controlled by the Inservice Inspection Program and the requirements of 10 CFR 50.55a related to inservice inspection. Regulations provide an adequate level of control for the affected requirement. Therefore, relocation of the administrative requirements identified above is acceptable.

LA.10 *(Type 3 – Removing Procedural Details for Meeting TS Requirements)* CTS 4.6.1.3.a.1 provides procedural details for meeting the TS requirement to verify air lock door seal leakage meets the required acceptance criteria (i.e., the time period for maintaining the door seal gap pressurized). ITS 3.6.2, Containment Air Locks, and ITS 5.5.12, Containment Leakage Rate Test Program, require testing of the containment air lock door seals, but do not specify the detail of the time period for maintaining the door seal gap pressurized. This changes the CTS by moving procedural details of verifying that containment air lock door seal leakage meets the required acceptance criteria to the Containment Leakage Rate Testing Program implementing document.

The removal of this detail for meeting the TS requirements from the TS is acceptable because this type of information is not necessary to be in the TS in order to provide adequate protection of the public health and safety. The ITS retains the requirement for verification that the air lock door seal leakage meets the required acceptance criteria. Also, this change is acceptable because this type of procedural detail will be adequately controlled in the Containment Leakage Rate Testing Program by the requirements provided for the Containment Leakage Rate Testing Program in Chapter 5 of the Technical Specifications. The Technical Specifications continue to ensure that the applicable limits are met. This change is designated as a less restrictive removal of detail change because a procedural detail for meeting TS requirements is being removed from the TS.

LA.11 *(Type 3 – Removing Procedural Details for Meeting TS Requirements)* Unit 1 CTS 4.7.7.1.1.c.2, 4.7.8.1.b.1, 4.7.8.1.b.2, 4.7.8.1.b.3, and 4.7.8.1.d, and Unit 2 CTS 4.7.7.1.c.1, 4.7.7.1.c.2, 4.7.7.1.d, 4.7.8.1.b.1, 4.7.8.1.b.2, 4.7.8.1.b.3, and 4.7.8.1.d provide procedural details for meeting the TS requirement related to ventilation filter testing of the Control Room Emergency Ventilation System and the Supplemental Leak Collection and Release System. ITS 5.5.7, Ventilation Filter Testing Program, requires testing of the Control Room Emergency Ventilation System and the Supplemental Leak Collection and Release System ventilation filters, but do not specify the procedural details of the testing. This changes the CTS by moving procedural details of verifying ventilation filter testing meets the required acceptance criteria to the Ventilation Filter Testing Program implementing document.

The removal of this detail for meeting the TS requirements from the TS is acceptable because this type of information is not necessary to be in the TS in order to provide adequate protection of the public health and safety. The ITS retains the requirement for ventilation filters of the Control Room Emergency Ventilation

System and the Supplemental Leak Collection and Release System meet the required acceptance criteria and are OPERABLE. Also, this change is acceptable because this type of procedural detail will be adequately controlled in the Ventilation Filter Testing Program implementing document by the requirements provided for the Ventilation Filter Testing Program in Chapter 5 of the Technical Specifications. The Technical Specifications continue to ensure that the applicable limits are met. This change is designated as a less restrictive removal of detail change because a procedural detail for meeting TS requirements is being removed from the TS.

Administrative Changes (A)

A.1 In the conversion of the Beaver Valley Power Station current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS), certain changes (wording preferences, editorial changes, reformatting, revised numbering or order, etc.) are made to obtain consistency with NUREG-1431, Rev. 2, "Standard Technical Specifications-Westinghouse Plants" (ISTS).

Due to the large number of such changes, A.1 changes may not always be marked on each CTS page. Marked or unmarked, all A.1 changes are identified by a single annotation of A.1 at the top of the first page of each CTS. These changes include all non-technical modifications of requirements to provide consistency with the ISTS, including all significant format changes made to update the older NUREG-0452 Technical Specification presentation to the ISTS format. This type of change is also associated with the movement of requirements within the Technical Specifications and with changes made to the presentation of Technical Specifications requirements to combine the Unit 1 and 2 Technical Specifications into one document and highlight the differences between the Unit 1 and 2 requirements. These changes are designated as administrative changes and are acceptable because they do not result in technical changes to the CTS requirements.

A.2 CTS 6.6, Reportable Event Action, specifies, in the case of a Reportable Event, that the Commission be notified in accordance with 10 CFR 50.72 and/or a report be submitted pursuant to the requirements of 10 CFR 50.73. The ISTS does not include a corresponding reporting requirement. The requirements of CTS 6.6 are not included in the BVPS Units 1 and 2 ITS consistent with the ISTS. This changes the CTS by removing the requirements for Reportable Event Actions.

This change is acceptable because the requirements of CTS 6.6.1.a of Reportable Event Action are contained in 10 CFR 50.72 and 10 CFR 50.73. Therefore, there is no need to repeat these requirements in the Technical Specifications. In addition, all references to TS 6.6 have been eliminated from the CTS. Each report specified in the BVPS ITS contains sufficient information without the additional reference to CTS 6.6. Therefore, this reference is no longer needed to provide complete instructions for reports. Individual reporting requirements are specifically referenced where necessary. In addition, similar requirements for reports are contained in the federal regulations and the BVPS Units 1 and 2 Operating Licenses require compliance with 10 CFR 50. As such, the elimination of this reporting requirement from the ITS does not result in technical changes and is designated as administrative.

A.3 CTS 6.3 includes the requirements for facility staff qualifications. ITS 5.3 includes the CTS 6.3 requirements for facility staff qualifications in Specification 5.3.1. ITS 5.3 also includes Specification 5.3.2, which states, "For the purpose of 10 CFR 55.4, a licensed Senior Reactor Operator (SRO) and a licensed Reactor Operator (RO) are those individuals who, in addition to meeting the requirements of TS 5.3.1, perform the functions described in 10 CFR 50.54(m)." This changes the CTS by including this additional qualification.

This change is acceptable because the change is an editorial clarification. ITS 5.3.2 is provided to define the licensed SROs and licensed ROs for the purpose of 10 CFR 55.4. At BVPS Units 1 and 2, SROs and ROs are part of the facility staff and are subject to the requirements of ITS 5.3 (CTS 6.3). In addition, the requirements in 10 CFR 55 and 10 CFR 50.54(m) related to SROs and ROs are applicable to BVPS Units 1 and 2. Therefore, this change does not result in technical changes and is designated as administrative.

A.4 CTS 6.8.1.b requires procedures for refueling operations and CTS 6.8.1.c requires procedures for surveillance and test activities. ITS 5.4.1 requires procedures for various activities, but does not specifically list refueling operations and surveillance and test activities. This changes the CTS by removing the explicit requirements for written procedures for refueling operations and surveillance and test activities.

This change is acceptable because these types of procedures are also required by CTS 6.8.1.a (ITS 5.4.1.a), which references Regulatory Guide 1.33, Appendix A. Regulatory Guide 1.33, Appendix A, requires procedures for refueling operations and surveillance and test activities. Therefore, it is not necessary to specifically identify each type of procedure in ITS 5.4.1. The change does not result in technical changes and is designated as administrative.

A.5 CTS 6.8.1.h requires procedures for implementation of the OFFSITE DOSE CALCULATION MANUAL (ODCM). ITS 5.4.1 requires procedures for various activities, but does not specifically list the ODCM. This changes the CTS by removing the explicit requirements for written procedures for implementation of the ODCM.

This change is acceptable because implementing procedures for the ODCM are also required by ITS 5.4.1.e. ITS 5.4.1.e requires procedures be established, implemented, and maintained for all programs and manuals in ITS 5.5 (including the ODCM). Therefore, it is not necessary to specifically identify each program in ITS 5.4.1. The change does not result in technical changes and is designated as administrative.

A.6 CTS 6.17.b specifies, in part, the leakage rate acceptance criteria as the "air lock testing acceptance criteria and required action as stated in Specification 3.6.1.3 titled "Containment Air Locks."" ITS 5.5.12.d denotes the specific air lock testing acceptance criteria specified in CTS 3.6.1.3. This changes the CTS by adding the specific air lock testing criteria and eliminating the reference to "required action."

The Containment Leakage Rate Testing Program assures the Operability of certain containment systems specified in ITS Section 3.6, "Containment Systems." The failure to meet the requirements of the Containment Leakage Rate Testing Program would require entry into specific Actions for inoperable containment systems. Specifying acceptance criteria details in the Containment Leakage Rate Testing Program rather than in the containment system LCOs continues to ensure that the LCO can be met, and upon discovery of a failure to meet the acceptance criteria, the Required Actions of the associated Conditions can be entered. This change is designated as an administrative change since the programmatic requirements were moved from other sections in the Technical Specifications.

A.7 CTS 4.0.5 provides the Inservice Testing Program requirements. CTS 6.8.6.a provides the Radioactive Effluent Control Program requirements. Both of these CTS programs contain surveillance requirements for which Surveillance Frequency extensions applied. The ISTS applies Surveillance Frequency extension allowances to each of these programs. The CTS are revised to conform to the ISTS. This changes the CTS by providing a statement of applicability of ITS SR 3.0.2 (CTS 4.0.2) and ITS SR 3.0.3 (CTS 4.0.3) to ITS 5.5.2 (Radioactive Effluent Control Program) and a statement of applicability of ITS SR 3.0.3 (CTS 4.0.3) to ITS 5.5.4 (Inservice Testing Program).

These statements are needed to maintain allowances for Surveillance Frequency extensions contained in the ITS since these SRs are not normally applied to frequencies identified in the Administrative Controls Section of the ITS. Since this change is a clarification required to maintain provisions that would be allowed in the LCO sections of the Technical Specifications, it is designated as administrative.

A.8 CTS 6.8.6 provides requirements for the Radioactive Effluent Controls Program. ITS 5.5.2 includes the same requirements for the Radioactive Effluent Controls Program, except that the CTS references to radiation exposure and dose are modified to reflect the revised 10 CFR 20 requirements.

The change is acceptable since the revised 10 CFR 20 requirements are currently applicable to BVPS Units 1 and 2. As a result, the change makes the existing wording of CTS 6.8.6 more consistent with the wording of the revised 10 CFR 20. The change does not result in technical changes and is designated as administrative.

A.9 Not used.

A.10 CTS 6.9.5 includes a list of Technical Specifications (TS) for which core operating limits are established and documented in the CORE OPERATING LIMITS REPORT (COLR). ITS 5.6.3 includes a similar list of TS, but also includes LCO 3.1.1, "SHUTDOWN MARGIN (SDM)," LCO 3.1.3, "Moderator Temperature Coefficient (MTC)," and LCO 3.9.1, "Boron Concentration."

This change is acceptable because the application of the COLR to each of these additional TS is addressed in the Discussion of Changes for each of the associated ITS. Therefore, this change to CTS 6.9.5, "CORE OPERATING LIMITS REPORT (COLR)," includes no new requirements and is designated as administrative.

A.11 CTS 6.17, Containment Leakage Rate Testing Program, exempts the requirements of CTS 4.0.2 from applying to the frequencies specified in the Primary Containment Leakage Rate Testing Program. ITS 5.5.12, Containment Leakage Rate Testing Program, does not include this explicit exemption of the requirements of ITS SR 3.0.2, but states that "nothing...shall be construed to modify the testing Frequencies required by 10 CFR 50, Appendix J." This changes the CTS by replacing the explicit exemption of CTS 4.0.2 (ITS SR 3.0.2) with a more general statement.

In the ITS, the ITS 3.0 Chapter requirements only apply to ITS Sections 3.1 through 3.9. In addition, by maintaining this requirement in the ITS, it will add confusion since only those ITS Chapter 3.0 allowances are provided when they are applicable. For example, CTS 4.0.1 and 4.0.4 also do not apply to the Primary Containment Leakage Rate Testing Program, but this is not stated in CTS 6.17. Therefore, the specific statement to exempt this requirement (CTS 4.0.2) is redundant and has been replaced by a more general statement. The change does not result in technical changes and is designated as administrative.

A.12 CTS 4.0.5.a.1 and a.2 state inservice inspection and inservice testing required by 10 CFR 50.55a(g) and 10 CFR 50.55a(f) shall be performed. The ISTS does not include these requirements. The CTS are revised to conform to the ISTS. This changes the CTS by eliminating the explicit requirement to comply with the requirements of 10 CFR 50.55a(f) and 10 CFR 50.55a(g).

This change is acceptable because the requirements of CTS 4.0.5.a.1 and a.2 are contained in 10 CFR 50.55a(f) and 10 CFR 50.55a(g). Therefore, there is no need to repeat these requirements in the Technical Specifications. Since these requirements are contained in the regulations and since the BVPS Units 1 and 2 Operating Licenses require compliance with 10 CFR 50, the change does not result in technical changes and is designated as administrative.

A.13 CTS 4.0.5.b includes a definition of inservice testing surveillance intervals. The CTS listing does not include a definition "Biennially or every 2 years. The ISTS requirements for inservice testing (5.5.4) do include a definition of the Frequency "Biennially or every 2 years. The CTS are revised to conform to the ISTS. This changes the CTS by adding a definition of "Biennially or every 2 years."

This change is acceptable because it includes no new requirements, but only provides a clarification of the term. The change does not result in technical changes and is designated as administrative.

A.14 CTS 4.0.5 provides the Inservice Testing Program requirements. CTS 6.8.6.a provides the Radioactive Effluent Control Program requirements. Both of these CTS programs contain surveillance requirements for which Surveillance Frequency extensions applied. The ISTS applies Surveillance Frequency extension allowances to each of these programs. The CTS are revised to conform to the ISTS. This changes the CTS by providing a statement of applicability of ITS SR 3.0.2 (CTS 4.0.2) and ITS SR 3.0.3 (CTS 4.0.3) to ITS 5.5.2 (Radioactive Effluent Control Program) and a statement of applicability of ITS SR 3.0.3 (CTS 4.0.3) to ITS 5.5.4 (Inservice Testing Program).

These statements are needed to maintain allowances for Surveillance Frequency extensions contained in the ITS since these SRs are not normally applied to frequencies identified in the Administrative Controls Section of the ITS. Since this change is a clarification required to maintain provisions that would be allowed in the LCO sections of the Technical Specifications, it is designated as administrative.

A.15 CTS 4.0.5.d states that performance of the above inservice inspection and testing activities shall be in addition to other specified Surveillance Requirements. ITS 5.5.4 (Inservice Testing Program) does not include this statement. This changes the CTS be deleting the statement that performance of the above inservice inspection and testing activities shall be in addition to other specified Surveillance Requirements.

This change is acceptable since CTS 4.0.5.d effectively states that all applicable requirements must be met. Repeating this overall requirement as a specific detail is redundant and unnecessary. Therefore, this detail is deleted without any technical change in the requirements and is designated as administrative.

A.16 CTS 4.4.5 (including Tables 4.4-1 and 4.4-2) provide steam generator tube inspection requirements. ITS 5.5.5 (and 5.6.6 for reporting requirements) includes these requirements in the Administrative Controls Chapter 5. As such, a general program statement has been added as ITS 5.5.5. Following the general program introduction, the BVPS Unit 1 (5.5.5.1) and Unit 2 (5.5.5.2) specific Steam Generator Tube Surveillance Program requirements are stated. This changes the CTS by including the CTS steam generator tube surveillance requirements in a Steam Generator Tube Surveillance Program in Section 5.0 of the ITS. The reporting requirements for each unit were moved to ITS Section 5.6.6. The CTS requirements are renumbered as necessary to conform to the new location for these requirements.

In addition, a statement of applicability of ITS SR 3.0.2 (CTS 4.0.2) and ITS SR 3.0.3 (CTS 4.0.3) is provided to clarify that the allowances for Frequency extensions apply to the requirements described in the Steam Generator Tube Surveillance Program. The NUREG-1431, Section 5.0, "Administrative Controls" requirements are not explicitly covered by the allowances provided in Section 3.0, "LCO/SR Applicability." Therefore, specific Frequency allowances must be directly stated in Section 5.0. As such, a statement of applicability of ITS SR 3.0.2 and SR 3.0.3 was added consistent with the CTS allowances pertaining to CTS 4.4.5.

This change is acceptable since it moves the CTS requirements to the Administrative Controls section of the Technical Specifications consistent with the ISTS. The proposed change maintains the CTS provisions that were previously applicable in the LCO Section 3.4 of the Technical Specifications and includes no new requirements. The proposed change only involves the format and presentation of the CTS requirements. Therefore, the change does not result in technical changes and is designated as administrative.

A.17 CTS 4.7.7.1 and CTS 4.7.8.1 provide ventilation filter testing requirements for the Control Room Emergency Ventilation System and the Supplemental Leak Collection and Release System. ITS 5.5.7 includes these requirements in a program in the Administrative Controls Chapter 5. As such, a general program statement has been added as ITS 5.5.7. This changes the CTS by providing a Ventilation Filter Testing Program (VFTP). In addition, a statement of applicability of ITS SR 3.0.2 (CTS 4.0.2) and ITS SR 3.0.3 (CTS 4.0.3) is provided to clarify that the allowances for Frequency extensions do apply to the test described in the VFTP. Consistent with NUREG-1431, Section 5.0, "Administrative Controls" requirements are not explicitly covered by the allowances provided in Section 3.0, "LCO/SR Applicability." Specific Frequency allowances must be directly stated in Section 5.0. As such, a statement of applicability of ITS SR 3.0.2 and SR 3.0.3 was added consistent with the CTS allowances pertaining to CTS 4.7.7.1 and 4.7.8.1.

This change is acceptable since it is a clarification needed to maintain provisions that would be allowed in the LCO sections of the Technical Specifications and includes no new requirements. The change does not result in technical changes and is designated as administrative.

A.18 Unit 2 CTS 4.7.7.1.c and 4.7.7.1.d provide Frequencies for performing in-place testing and laboratory testing of the Control Room Emergency Ventilation System. For in-place testing, the Frequencies are "At least once per 18 months or (1) after each complete or partial replacement of the HEPA filter or charcoal adsorber bank or (2) after any structural maintenance on the HEPA filter or charcoal adsorber housing. For laboratory testing, the Frequencies are "At least once per 18 months or (1) after 720 hours of system operation or (2) following painting, fire, or chemical release in the vicinity of control room outside air intakes while the system is operating." ITS 5.5.7 specifies the Frequencies for in-place testing as "once per 18 months; after each complete or partial replacement of the HEPA filter or charcoal adsorber bank; after any structural maintenance on the HEPA filter or charcoal adsorber housing; and, following significant painting, fire, or chemical release in the vicinity of control room outside air intakes while the system is operating." ITS specifies the Frequencies for laboratory testing as "once per 18 months; after 720 hours of adsorber operation for the Control Room Emergency Ventilation System (CREVS); after any structural maintenance on the charcoal adsorber bank housing; and, following significant painting, fire, or chemical release in the vicinity of control room outside air intakes while the system is operating. This changes the CTS by adding the explicit Frequency, for in-place testing, of "following significant painting, fire, or chemical release in the vicinity of control room outside air intakes while the system is operating" (the addition of the word "significant" is addressed in Discussion of Change A.19) and by adding the explicit Frequency, for laboratory testing, "or after any structural maintenance on the charcoal adsorber housing."

These changes are acceptable since Unit 1 CTS 4.7.7.1.2.c includes ventilation filter in-place and laboratory testing requirements for the Unit 2 CEFS. The Unit 1 CTS 4.7.7.1.2.c Frequencies for these tests of the Unit 2 CREVS include, for the in-place testing, "following painting, fire, or chemical release in any ventilation zone communicating with the system," and, for the laboratory testing, "after any structural maintenance on the HEPA filter or charcoal adsorber housings." In addition, the change to "in the vicinity of the control room outside air intakes" from "in any ventilation zone communicating with the system" is a clarification since CREVS only takes air from the outside air intakes. Therefore, the additional explicit Frequencies for in-place testing and laboratory testing are already required for the Unit 2 CREVS. Therefore, the change does not result in technical changes and is designated as administrative.

A.19 CTS 4.7.7.1 and CTS 4.7.8.1 require certain ventilation filter testing following painting, fire, or chemical release in any ventilation zone communicating with the subsystems. For the CREVS, ITS 5.5.7 only requires testing if the painting, fire, or chemical release is "significant" and when it is in the vicinity of control room outside air intakes while the system is operating. For SLCRS, ITS 5.5.7 only requires testing if the painting, fire, or chemical release is "significant" and when it is in the vicinity of control room outside air intakes while the "filtration" system is operating. This changes the CTS by clarifying these ventilation filter tests are required to be performed following "significant" painting, fire, or chemical releases.

Current BVPS Units 1 and 2 practice is that not all painting, fire, or chemical release results in the need to perform certain ventilation filter tests. Only painting, fire, or chemical release that could affect the ventilation filter subsystems, i.e., that which is significant and is in a ventilation zone that communicates with the system while the filtration system is operating, would require performance of the tests. The word "significant" was added for clarity and consistency with current practice to avoid a misinterpretation that any painting, fire, or chemical release (such as using a small can of paint to do touch-up work in an affected ventilation zone) would result in the need to perform the tests. Similarly, the wording "while the system is operating (CREVS) and "while the filtration system is operating (SLCRS)" was added to clarify that this is the time when the painting, fire, or chemical release could affect the ventilation filter subsystems. The SLCRS statement was clarified using the word "filtration system" since the system can be operated bypassing the system filters. This clarification is administrative, and is consistent with the most recently approved BWR/5 ITS Amendment, WNP-2. In addition, the NRC, in a letter to Entergy Operations dated September 11, 1997, supported the clarification that not all painting, fires, or chemical releases required the ventilation filter subsystems to be tested. This change is acceptable since it is a clarification and includes no new requirements. The change does not result in technical changes and is designated as administrative.

A.20 Unit 1 CTS 4.7.7.1.1.c.1 and 4.7.7.1.2.c.1 provides in-place testing requirements for the Unit 1 Control Room Emergency Ventilation System and the Unit 2 Control Room Emergency Ventilation System. The CTS groups both the HEPA filter and charcoal filter in-place testing surveillance requirements into one surveillance with one acceptance criteria for penetration and bypass leakage. ITS 5.5.7.a and 5.5.7.b provide separate surveillance requirements for the in-place testing requirement of the HEPA filter and for the in-place testing requirement of the charcoal adsorber. This changes the CTS by dividing the current in-place testing requirements, including acceptance criteria, into two separate requirements.

This change is acceptable since it includes no new requirements, but only involves a presentation difference. The change does not result in technical changes and is designated as administrative.

A.21 CTS 4.8.1.1.2.d and 4.8.1.1.2.e provide diesel fuel oil testing requirements. ITS 5.5.9 includes these requirements in a program in the Administrative Controls Chapter 5. As such, a general program statement has been added as ITS 5.5.9. The ITS also includes wording specific to the general descriptions of the diesel fuel oil testing specified in the Bases of ITS 3.8.3. This changes the CTS by providing a Diesel Fuel Oil Testing Program in the Administrative Controls Section of the Technical Specifications. In addition, a statement of applicability of ITS SR 3.0.2 (CTS 4.0.2) and ITS SR 3.0.3 (CTS 4.0.3) is provided to clarify that the allowances for Frequency extensions do apply to the test described in the Diesel Fuel Oil Testing Program. Consistent with NUREG-1431, Section 5.0, "Administrative Controls" requirements are not explicitly covered by the allowances provided in Section 3.0, "LCO/SR Applicability." Specific Frequency allowances must be directly stated in Section 5.0. As such, a statement of applicability of ITS SR 3.0.2 and SR 3.0.3 was added consistent with the CTS allowances pertaining to CTS 4.8.1.1.2.d and 4.8.1.1.2.e.

This change is acceptable since it is a clarification needed to maintain provisions that would be allowed in the LCO sections of the Technical Specifications and includes no new requirements. The change does not result in technical changes and is designated as administrative.

A.22 CTS 6.8.6 states that "Limitations on the operability..." ITS 5.5.2 states "Limitations of the functional capability..." The CTS has been revised to clarify the text of the requirement. The word "operability" is used in the Technical Specifications as a defined term. The proposed change to the wording is to prevent a misinterpretation of the usage of the word "operability." The change does not result in technical changes and is designated as administrative.

A.23 CTS 4.8.1.1.2.d and 4.8.1.1.2.e provide diesel fuel oil testing requirements associated with the Operability requirements of the diesel generators. ISTS 5.5.13 (ITS 5.5.9) includes a program for these requirements. The CTS are revised to conform to the ISTS. This changes the CTS by adding the Diesel Fuel Oil Testing Program. This program is provided to implement required testing of both new and stored fuel oil. The specific wording associated with this program may be found in ITS 5.5.9.

The changes are acceptable since they support implementation of the requirements of the ITS and the UFSAR. This change is designated as an administrative change since the programmatic requirements were moved from other sections in the Technical Specifications.

A.24 CTS 3.3.3 provides the Actions for inoperable Post Accident Monitoring (PAM) instrumentation including the requirement for a report to the NRC. The CTS Actions contain the details regarding the content of the report. ITS LCO 3.3.3 Required Actions in Conditions B and D reference Specification 5.6.5 instead of detailing the content of the required report. Specification 5.6.5 provides the details for preparing and submitting the report required by the ITS Actions.

The addition to Section 5.0 of this reporting requirement does not result in a technical change to the CTS reporting requirements. The movement of this requirement from the PAM Specification to Section 5.0 is described in the DOCs associated with ITS 3.3.3. The same reporting requirements are moved to a different location in the Technical Specifications. As such, this change is designated as an administrative change.

A.25 CTS 6.17.a specifies the containment leakage rate acceptance criteria for the first unit startup following testing in accordance with the Containment Leakage Rate Testing Program. ITS 5.5.12.d provides a clarification that this criteria must be met "prior to MODE 4."

This is acceptable since proposed wording clarifies the intended transition for meeting the containment system LCOs in accordance with LCO 3.0.4 following testing. The change does not result in technical changes and is designated as administrative.

A.26 (Unit 2 only) CTS 4.7.7.1.d provides a general level of detail for the charcoal adsorber testing. ITS 5.5.7.c provides additional details specifying the use of a "slotted tube sampler."

This change is acceptable since the level of detail proposed in the ITS is consistent with the requirements specified in the CTS. A similar level of detail describing this testing is provided in the Unit 1 CTS. This level of detail in the Unit 1 CTS specifies the use of a slotted tube sampler. The change does not result in technical changes and is designated as administrative.

ENCLOSURE 4

DETERMINATIONS OF *NO SIGNIFICANT HAZARDS CONSIDERATION (NSHC)* FOR CHANGES MADE TO THE BVPS CURRENT TECHNICAL SPECIFICATIONS (CTS)

Introduction

The determinations of NSHC contained within this Enclosure consist of two general types. This enclosure contains "Generic" NSHC developed for the categories of change identified in Enclosure 3 (Changes to the CTS) and "Specific" NSHC for those "Less Restrictive" changes that do not fit within one of the generic determinations of NSHC listed below. Each specific NSHC is identified by the associated Technical Specification and discussion of change (DOC) number from Enclosure 3.

Enclosure Contents

NO SIGNIFICANT HAZARDS DETERMINATION
FOR

ADMINISTRATIVE CHANGES

The Beaver Valley Power Station (BVPS) is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve reformatting, renumbering, and rewording of Technical Specifications with no change in intent. These changes, since they do not involve technical changes to the Technical Specifications, are administrative.

This type of change is associated with the movement of requirements within the Technical Specifications, or with the modification of wording or format that does not affect the technical content of the current Technical Specifications. In addition, these changes include all non-technical modifications of requirements to provide consistency with the ISTS in NUREG-1431. Administrative changes do not add, delete, or relocate any technical requirements of the current Technical Specifications.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change involves reformatting, renumbering, and rewording the existing Technical Specifications. The reformatting, renumbering, and rewording process involves no technical changes to the existing Technical Specifications. As such, this change is administrative in nature and does not affect initiators of analyzed events or assumed mitigation of accident or transient events. Therefore, this change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or changes in methods governing normal plant operation. The proposed change will not impose any new or eliminate any old requirements. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

   The proposed change will not reduce a margin of safety because it has no effect on any safety analyses assumptions. This change is administrative in nature. Therefore, the change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR

MORE RESTRICTIVE CHANGES

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve adding more restrictive requirements to the existing Technical Specifications by either making current requirements more stringent or by adding new requirements that currently do not exist.

These changes include such things as additional commitments that decrease allowed outage times, increase the frequency of surveillances, impose additional surveillances, increase the scope of specifications to include additional plant equipment, increase the applicability of specifications, or provide additional actions. These changes are generally made to conform to the ISTS in NUREG-1431 and are only included in the Technical Specifications when they serve to enhance the safe operation of the plant and are consistent with the applicable plant specific design basis and safety analysis assumptions.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change provides more stringent requirements for operation of the facility. These more stringent requirements do not result in operation that will increase the probability of initiating an analyzed event and do not alter assumptions relative to mitigation of an accident or transient event. The more restrictive requirements continue to ensure process variables, structures, systems, and components are maintained consistent with the safety analyses and licensing basis. Therefore, this change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or changes in methods governing normal plant operation. The proposed change does revise Technical Specification requirements. However, these changes are consistent with the assumptions in the safety analyses and licensing basis. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
MORE RESTRICTIVE CHANGES
(continued)

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

The imposition of more restrictive requirements either has no effect on or increases the margin of plant safety. Each change in this category is, by definition, providing additional restrictions to enhance plant safety. The change maintains requirements within the safety analyses and licensing basis. Therefore, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR

RELOCATED SPECIFICATIONS

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve relocating existing Technical Specification LCOs to licensee controlled documents.

FirstEnergy Nuclear Operating Company has evaluated the current Technical Specifications using the criteria set forth in 10 CFR 50.36. Specifications identified by this evaluation that did not meet the retention requirements specified in the regulation are not included in the ISTS conversion submittal. These specifications have been relocated from the current Technical Specifications to an appropriate licensee controlled document.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change relocates requirements and surveillances for structures, systems, components or variables that do not meet the criteria of 10 CFR 50.36 (c)(2)(ii) for inclusion in Technical Specifications as identified in the Application of Selection Criteria to the Beaver Valley Technical Specifications. The affected structures, systems, components or variables are not assumed to be initiators of analyzed events and are not assumed to mitigate accident or transient events. The requirements and surveillances for these affected structures, systems, components or variables will be relocated from the Technical Specifications to an appropriate administratively controlled document which will be maintained pursuant to 10 CFR 50.59. As such, the relocation of requirements will only affect the level of regulatory control applicable to changes to the requirements. Therefore, this change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or change in the methods governing normal plant operation. The proposed change will not impose or eliminate any requirements and adequate control of existing requirements will be maintained. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
RELOCATED SPECIFICATIONS
(continued)

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

The proposed change does not reduce a margin of safety. The affected requirements are not being changed and are not specific assumptions of any design basis safety analysis, as indicated by the fact that the requirements do not meet the 10 CFR 50.36 criteria for retention in the Technical Specifications. The affected requirements are relocated without change and any future changes to these requirements will be evaluated per 10 CFR 50.59. The provisions of 10 CFR 50.59 provide adequate assurance that future changes to the relocated material will not affect the safe operation of the plant. In addition, the proposed change is consistent with the application of the 10 CFR 50.36 criteria endorsed by the NRC, which provides additional assurance that the proposed change will not adversely affect the safe operation of the plant. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES -

REMOVED DETAIL

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve moving details out of the Technical Specifications and into the Technical Specifications Bases, the Updated Final Safety Analyses Report (UFSAR), the Licensing Requirements manual (LRM) or other documents under regulatory control such as the Quality Assurance Program. The removal of this information is considered to be less restrictive because the Technical Specification change process no longer controls the information. Typically, the affected information is descriptive detail and the removal of this information conforms to the NRC approved content and format of the ISTS in NUREG-1431.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change relocates certain details from the Technical Specifications to other documents under regulatory control. The Technical Specification Bases, UFSAR, and Licensing Requirement Manual will be maintained in accordance with 10 CFR 50.59. In addition to 10 CFR 50.59 provisions, the Technical Specification Bases are subject to the change control provisions in the Administrative Controls Chapter of the Technical Specifications. The UFSAR is subject to the change control provisions of 10 CFR 50.71(e). Other documents used to contain the removed information are subject to controls imposed by Technical Specifications or regulations. As such, the relocation of descriptive details will only affect the level of regulatory control applicable to changes to the information moved. Changes to the affected information will continue to be evaluated in accordance with 10 CFR 50.59. As such, no significant increase in the probability or consequences of an accident previously evaluated will result. Therefore, this change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operations. The proposed change will not impose or eliminate any requirements, and adequate control of the information will be maintained. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES - REMOVED DETAIL
(continued)

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

The proposed change will not reduce a margin of safety because it has no effect on any safety analysis assumptions. In addition, the descriptive details to be moved from the Technical Specifications to other documents are not being changed. Since any future changes to these details will be evaluated under the applicable regulatory change control mechanism, no significant reduction in a margin of safety will be allowed. A significant reduction in the margin of safety is not associated with the elimination of the 10 CFR 50.92 requirement for NRC review and approval of future changes to the relocated details. The proposed change provides consistency with the level of detail in the Westinghouse Standard Technical Specifications, NUREG-1431, issued and approved by the NRC Staff, which provides additional assurance that the proposed change has been evaluated and determined not to introduce a significant reduction in the margin of safety. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 6

RELAXATION OF SURVEILLANCE REQUIREMENT ACCEPTANCE CRITERIA

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve the relaxation of Surveillance Requirements acceptance criteria in the current Technical Specifications (CTS).

The CTS require safety systems to be tested and verified Operable prior to entering applicable operating conditions. The ISTS eliminates or relaxes the Surveillance Requirement acceptance criteria that do not contribute to verification that the equipment used to meet the Limiting Condition for Operation (LCO) can perform its required functions. For example, the ISTS allows some Surveillance Requirements to verify Operability under actual or test conditions. Adopting the ISTS allowance for "actual" conditions is acceptable because required features cannot distinguish between an "actual" signal and a "test" signal. Also included are changes to CTS requirements that are replaced in the ITS with separate and distinct testing requirements which, when combined, include Operability verification of all Technical Specification required components for the features specified in the CTS. Adopting this format preference in the ISTS is acceptable because Surveillance Requirements that remain include testing of all previous features required to be verified OPERABLE. Changes that provide exceptions to Surveillance Requirements to provide for variations that do not affect the results of the test are also included in this category. These changes are generally made to conform to NUREG-1431 and have been evaluated to not be detrimental to plant safety.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change relaxes the acceptance criteria of Surveillance Requirements. Surveillances are not initiators to any accident previously evaluated. Consequently, the probability of an accident previously evaluated is not significantly increased. The equipment being tested is still required to be OPERABLE and capable of performing the accident mitigation functions assumed in the accident analysis. As a result, the consequences of any accident previously evaluated are not significantly affected. Therefore, this change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 6
RELAXATION OF SURVEILLANCE REQUIREMENT ACCEPTANCE CRITERIA
(continued)

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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

   The relaxed acceptance criteria for Surveillance Requirements do not result in a significant reduction in the margin of safety. The relaxed Surveillance Requirement acceptance criteria have been evaluated to ensure that they are sufficient to verify that the equipment used to meet the LCO can perform its required functions. Therefore, appropriate equipment continues to be tested in a manner that gives confidence that the equipment can perform its assumed safety function. Therefore, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 7

RELAXATION OF SURVEILLANCE FREQUENCY

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve the relaxation of Surveillance Frequencies in the current Technical Specifications (CTS).

CTS and ISTS Surveillance Frequencies specify time interval requirements for performing surveillance testing. Increasing the time interval between Surveillance tests in the ISTS results in decreased equipment unavailability due to testing which also increases equipment availability. In general, the ISTS contain test frequencies that are consistent with industry practice or industry standards for achieving acceptable levels of equipment reliability. Adopting testing practices specified in the ISTS is acceptable based on similar design, like-component testing for the system application and the availability of other Technical Specification requirements which provide regular checks to ensure limits are met. Relaxation of Surveillance Frequency may also include changes such as the addition of Surveillance Notes which allow testing to be delayed until appropriate unit conditions for the test are established, or exempt testing in certain MODES or specified conditions in which the testing can not be performed.

Reduced testing can result in a safety enhancement because the unavailability due to testing is reduced and; in turn, reliability of the affected structure, system or component should remain constant or increase. Reduced testing is acceptable where operating experience, industry practice or the industry standards such as manufacturers' recommendations have shown that these components usually pass the Surveillance when performed at the specified interval, therefore the frequency is acceptable from a reliability standpoint. Surveillance Frequency changes to incorporate alternate train testing have been shown to be acceptable where other qualitative or quantitative test requirements are required which are established predictors of system performance. Surveillance Frequency extensions can be based on NRC-approved topical reports. The NRC staff has accepted topical report analyses that bound the plant-specific design and component reliability assumptions. These changes are generally made to conform to NUREG-1431 and have been evaluated to not be detrimental to plant safety.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change relaxes Surveillance Frequencies. The relaxed Surveillance Frequencies have been established based on achieving acceptable levels of equipment reliability.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 7
RELAXATION OF SURVEILLANCE FREQUENCY
(continued)

Consequently, equipment which could initiate an accident previously evaluated will continue to operate as expected and the probability of the initiation of any accident previously evaluated will not be significantly increased. The equipment being tested is still required to be OPERABLE and capable of performing any accident mitigation functions assumed in the accident analysis. As a result, the consequences of any accident previously evaluated are not significantly affected. Therefore, this change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The relaxed Surveillance Frequencies do not result in a significant reduction in the margin of safety. The relaxation in the Surveillance Frequency has been evaluated to ensure that it provides an acceptable level of equipment reliability. Thus, appropriate equipment continues to be tested at a Frequency that gives confidence that the equipment can perform its assumed safety function when required. Therefore, this change does not involve a significant reduction in a margin of safety.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 8

DELETION OF REPORTING REQUIREMENTS

The Beaver Valley Power Station is converting to the Improved Standard Technical Specifications (ISTS) as outlined in NUREG-1431, "Standard Technical Specifications, Westinghouse Plants." Some of the proposed changes involve the deletion of requirements in the current Technical Specifications (CTS) to send reports to the NRC.

The CTS includes requirements to submit reports to the NRC under certain circumstances. However, the ISTS eliminates these requirements for many such reports and, in many cases, relies on the reporting requirements of 10 CFR 50.73 or other regulatory requirements. The ISTS changes to reporting requirements are acceptable because the regulations provide adequate reporting requirements, or the requirement is administrative in nature and the elimination of the reporting requirement has no impact on the operation of the plant. Therefore, the change has no effect on the safe operation of the plant. These changes are generally made to conform to NUREG-1431 and have been evaluated to not be detrimental to plant safety.

In accordance with the criteria set forth in 10 CFR 50.92, FirstEnergy Nuclear Operating Company has evaluated these proposed Technical Specification changes and determined they do not represent a significant hazards consideration. The following is provided in support of this conclusion.

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

   The proposed change deletes reporting requirements. Sending reports to the NRC is not an initiator to any accident previously evaluated. Consequently, the probability of any accident previously evaluated is not significantly increased. Sending reports to the NRC has no effect on the ability of equipment to mitigate an accident previously evaluated. As a result, the consequences of any accident previously evaluated are not significantly affected. Therefore, this change does not involve a significant increase in the probability or 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 involve a physical alteration of the plant (no new or different type of equipment will be installed) or a change in the methods governing normal plant operation. Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

NO SIGNIFICANT HAZARDS DETERMINATION
FOR
LESS RESTRICTIVE CHANGES – CATEGORY 8
DELETION OF REPORTING REQUIREMENTS
(continued)

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

The deletion of reporting requirements does not result in a significant reduction in the margin of safety. The ITS eliminates the requirements for many such reports and, in many cases, relies on the reporting requirements of 10 CFR 50.73 or other regulatory requirements. The change to reporting requirements does not affect the margin of safety because the regulations provide adequate reporting requirements, or the requirement is administrative in nature and the elimination of the reporting requirement has no impact on the safe operation of the plant. Therefore, this change does not involve a significant reduction in a margin of safety.